



This electronic version (PDF) was scanned by the International Telecommunication Union (ITU) Library & Archives Service from an original paper document in the ITU Library & Archives collections.

La présente version électronique (PDF) a été numérisée par le Service de la bibliothèque et des archives de l'Union internationale des télécommunications (UIT) à partir d'un document papier original des collections de ce service.

Esta versión electrónica (PDF) ha sido escaneada por el Servicio de Biblioteca y Archivos de la Unión Internacional de Telecomunicaciones (UIT) a partir de un documento impreso original de las colecciones del Servicio de Biblioteca y Archivos de la UIT.

(ITU) نتاج تصوير بالمسح الضوئي أجراه قسم المكتبة والمحفوظات في الاتحاد الدولي للاتصالات (PDF) هذه النسخة الإلكترونية نقلاً من وثيقة ورقية أصلية ضمن الوثائق المتوفرة في قسم المكتبة والمحفوظات.

此电子版（PDF 版本）由国际电信联盟（ITU）图书馆和档案室利用存于该处的纸质文件扫描提供。

Настоящий электронный вариант (PDF) был подготовлен в библиотечно-архивной службе Международного союза электросвязи путем сканирования исходного документа в бумажной форме из библиотечно-архивной службы МСЭ.



**Documents of the World Administrative Radio Conference for dealing with
frequency allocations in certain parts of the spectrum (WARC-92)
(Malaga-Torremolinos, 1992)**

To reduce download time, the ITU Library and Archives Service has divided the conference documents into sections.

- This PDF includes Document No. 301-401
- The complete set of conference documents includes Document No. 1-401,
DL No. 1-37, DT No. 1-120

COMMITTEE 3

SUMMARY RECORD
OF THE
THIRD AND LAST MEETING OF COMMITTEE 3
(BUDGET CONTROL)

Thursday, 27 February 1992, at 0930 hours

Chairman: Mr. S. AL-BASHEER (Saudi Arabia)

Subjects discussed

Documents

- | | | |
|----|---|------------|
| 1. | Approval of the summary record of the second meeting of Committee 3 | 194 |
| 2. | Position of Conference accounts at 25 February 1992 | 273 |
| 3. | Financial implications of the decisions of WARC-92 | 269(Rev.1) |
| 4. | Draft report of the Budget Control Committee to the Plenary Meeting | DT/108 |

1. Approval of the summary record of the second meeting of Committee 3 (Document 194)

1.1 Document 194 was approved.

2. Position of Conference accounts at 25 February 1992 (Document 273)

2.1 The Chief of the Finance Department introduced Document 273, which was an update of Document 176 submitted to the Committee at its second meeting on 19 February. Estimated expenditure remained globally unchanged in relation to the 1992 budget as adjusted at 1 February 1992. Some transfers had been made to cater for the most recent estimates. He drew attention to the fact that the estimate for staff expenditure might be exceeded as a result of uncompensated overtime worked during the Conference. That item affected both the direct Conference costs and common services costs, the latter being covered by a separate chapter of the ordinary budget.

2.2 In reply to the delegate of France, who asked what the consequences would be if the Conference failed to keep to its original schedule, the Chairman said that it would no doubt be necessary to hold weekend meetings; however, he was not in a position to supply more precise information at the present juncture.

2.3 The Chief of the Finance Department observed that it was very difficult to draw up a precise estimate of the financial implications of the total overtime that would have been worked by the end of the Conference; to date, some 100,000 Swiss francs were involved. That sum, plus any further overtime worked, would be paid out of the Conference budget or, in the case of the common services, covered under Chapter 17 of the ordinary budget. To the extent possible, overtime would be compensated rather than paid.

2.4 The Secretary-General said that meetings would be scheduled for Sunday, 1 March if required, regardless of the financial implications. For logistical reasons, however, the Conference was obliged to complete its work by 2400 hours on Tuesday, 3 March.

2.5 Document 273 was noted.

3. Financial implications of the decisions of WARC-92 (Document 269(Rev.1))

3.1 The Chairman of the IFRB, referring first to the Board's current working environment, said that the IFRB's resources, like those of most of the Union's other organs, had been reduced since the Nice Plenipotentiary Conference, staff expenditure being the only section in which those cuts could be absorbed. Additional overheads had been generated by other requirements, such as implementation of the HLC Recommendations. Given that resources were barely adequate for the IFRB's current workload, any further work of the type that would be entailed by the adoption of Document 239 would clearly call for additional funds.

3.2 Document 269(Rev.1) set out the financial implications of the decisions of WARC-92: those entailed, on the one hand, by work on the preparation of Part III of the revised Appendix 26 and, on the other, by the development of the accelerated application of the RR 1218 procedure. The former would cost some 300,000 Swiss francs and the latter some 200,000 Swiss francs, giving a total of 500,000 Swiss francs. However, those figures were provisional since not all the related information was available; it would be possible to make a much more accurate analysis before the next session of the Administrative Council. The amount of 300,000 Swiss francs for Appendix 26 might possibly be adjusted downwards if certain amendments to Document 239, which were currently the subject of informal discussions, were approved. For the time being, however, the IFRB could not officially adopt any position other than that based on the assumption that Document 239 would be adopted by the Conference. Whatever the outcome, the IFRB would obviously make every effort to carry out as much of the additional work as possible without extra cost to the Union.

3.3 In reply to the delegate of Lebanon, who asked how an additional sum of 500,000 Swiss francs could be accommodated in the Union's budget, the Secretary-General said that the additional work to be performed would affect the budgets for 1992, 1993 and 1994. The situation of the 1992 budget was known, whereas the budgets for 1993 and 1994 had not yet been approved by the Administrative Council. If no new ideas entailing

additional costs emerged from the Conference other than those covered in Document 269(Rev.1), he was confident that a solution would be found for 1992, and that the Administrative Council would find a means of adjusting the 1993 and 1994 budgets as necessary.

3.4 The delegate of Spain said that he was not able to form an opinion on the estimates put forward by the IFRB. However, he was concerned that no other alternatives had been presented; one possibility might be for the work to be spread over a longer period. The Committee's report should emphasize the need to investigate alternative approaches to the IFRB's post-Conference activities; it should also reflect the financial implications of any relevant decisions taken by the Conference.

3.5 The delegate of the United States supported the views expressed by the previous speaker. The Committee was not in a position to pass judgement on the figures put forward by the IFRB, and it should certainly not be seen to endorse them. That, together with the need for the IFRB to make every effort to find less costly alternatives, should be reflected in the Committee's report to the Plenary Meeting.

3.6 The delegate of Australia said that he shared the concerns expressed by the two previous speakers. The Committee's report should also bring out the need for the additional work to be accommodated within the Union's overall budget.

3.7 The delegate of the Russian Federation supported the views already expressed, and asked whether the reductions hoped for could be quantified.

3.8 The delegate of Italy said that she too was concerned by both the financial implications of the IFRB's post-Conference work and the overtime worked by the staff during the Conference. The Committee's report should clearly indicate the effect on the 1992, 1993 and 1994 budgets as well as any possible repercussions on the contributory unit.

3.9 The Chairman of the IFRB observed that the deadline set for completion of the proposed work was 1994; that applied in particular to Part III of Appendix 26(Rev.), but also to the RR 1218 procedure. In reply to a question by the delegate of Spain, he said that some but not all of the additional work would be carried out by regular staff, and that the estimates given covered the recruitment of extra staff on a temporary basis.

3.10 In reply to comments by the delegate of Germany, he said that the figures had been prepared by the IFRB itself. In his view, they were realistic and it would serve little purpose at the present juncture to enter into discussions on hypothetical reductions.

3.11 The Chairman said that the estimates supplied by the IFRB would be transmitted to the Plenary together with the information that the IFRB would make every effort to contain costs. He noted that if Document 239 were adopted as it stood by the Conference, the IFRB's estimates would be applicable. However, no decision had yet been taken in that respect and it was to be hoped that a less costly alternative would be found in due course. Furthermore, the Secretary-General had said that it was hoped the resources would be found in the Union's budgets for 1992, 1993 and 1994. The views expressed during the discussion would be reflected in the Committee's report to the Plenary.

3.12 Document 269(Rev.1) was noted.

4. Draft report of the Budget Control Committee to the Plenary Meeting (Document DT/108)

4.1 The Chairman introduced Document DT/108 and its annexes.

Sections 1, 2, 3, 4 and 5

4.2 Sections 1 to 5 were approved without comment.

Section 6

4.3 The delegate of the United States drew attention to paragraph 4.11 of Document 194 and observed that his amendment did not seem to have been taken into account in preparing the new version of the draft report.

Section 7

4.4 The delegate of the United States said that section 7 should be amended to reflect the points he had brought out during the discussion of the previous agenda item, namely, the Committee's concern at the estimates presented and its hope that every effort would be made to find less costly alternatives. In addition, the penultimate paragraph of section 7 should be deleted because it created the misleading impression that a surplus of resources existed which might be used to finance the IFRB's work.

4.5 The delegates of Spain and Italy supported that proposal.

4.6 The Chairman of the IFRB considered that section 7 should reflect the IFRB's expected expenditure on post-Conference work, estimated on the assumption that the proposals in Document 239 would be adopted by the Conference, namely, 500,000 Swiss francs. It would, in his view, be inappropriate to mention alternative possibilities which depended on the outcome of informal discussions currently taking place.

4.7 The delegate of Lebanon agreed that the figure given in the report should be that mentioned by the IFRB in Document 269(Rev.1).

Section 8, Annexes 1 to 5

4.8 Section 8 and Annexes 1 to 5 were approved without comment.

4.9 The Chairman observed that no further meetings of Committee 3 were scheduled. If delegates agreed, he would prepare the final version of the report for submission to the Plenary Meeting, having regard to the comments and suggestions made during the discussion.

4.10 It was so agreed.

The meeting rose at 1100 hours.

The Secretary:
A. TAZI-RIFFI

The Chairman:
S. AL-BASHEER

COMMITTEE 4

SUMMARY RECORD

OF THE

FIFTEENTH MEETING OF COMMITTEE 4
(FREQUENCY ALLOCATION)

Thursday, 27 February 1992, at 0935 hours

Chairman: Mr. I.R. Hutchings (New Zealand)

Subjects discussed

1. Texts related to MSS and FPLMTS (continued)

Documents

277, 280

1. Texts related to MSS and FPLMTS (continued)

1.1 Note from the Chairman of Working Group 4B (Document 280)

1.1.1 The Chairman of Working Group 4B said that Document 280 reflected the Working Group's discussions on existing bands allocated to sub-components of the MSS in frequency ranges 1 530 - 1 559 MHz and 1 626.5 - 1 660.5 MHz. The Table on page 1 of the document also included the band 1 525 - 1 530 MHz, for new or additional allocations to the MSS to equalize the uplink and downlink spectrum in the 1.5 - 1.6 GHz bands. The Working Group had agreed to add to that Table, in all three Regions, maritime mobile-satellite (space-to-Earth) on a primary basis, and land mobile-satellite (space-to-Earth) on a secondary basis, which reflected the corresponding 5 MHz in the uplink direction between 1 626.5 - 1 631.5 MHz. After lengthy discussion on the bands covered by the Tables on pages 2, 3 and 4 of the document, and a number of proposed modifications, it had been agreed by a large majority to retain the existing allocations without change.

1.1.2 The Chairman, pointing out that "MOD" should be added in the margin opposite the Table on page 1, invited the Committee to consider the proposals to add to that Table "Maritime mobile-satellite (space-to-Earth)" (primary) and "Land mobile-satellite (space-to-Earth)" (secondary).

1.1.3 The Chairman of Working Group 4B, replying to a query by the delegate of the Russian Federation, confirmed that the Committee had indeed discussed whether the land mobile-satellite service at 1 525 - 1 530 MHz should be introduced on a primary or secondary basis. Replying to a further question by the Chairman, he said that the Working Group had not considered the continuation of Footnote 726B which applied to the corresponding downlink band in terms of land mobile-satellite use. The delegate of the United Kingdom stressed that the 1 525 - 1 530 MHz band was now being used also for fixed-satellite services on a primary basis, which was not the situation in the other mobile-satellite bands in that part of the spectrum. He therefore expressed concern over the use of land or aeronautical terminals in that band. If the allocation to the FSS were maintained, the only primary allocation he could accept would be the maritime mobile-satellite service.

1.1.4 The delegate of Mexico, supported by the delegates of the United States, Canada, New Zealand, Australia, Brazil and India, considered that the new allocation of 5 MHz should be extended to the whole mobile-satellite service and not restricted to the maritime-mobile satellite service.

1.1.5 The delegate of China was in favour of the allocation to the maritime-mobile satellite service on a primary basis.

1.1.6 The Chairman called for an indicative show of cards, from which it was clear that a large majority was in favour of the Table on page 1 as it stood.

1.1.7 The delegate of the United States proposed that in Region 2 the 1 525 - 1 530 MHz band be allocated to the MSS on a primary basis; that would not interfere with Regions 1 and 3 which also had FSS.

1.1.8 The delegate of Australia requested that if that revision were made for Region 2 it should also apply to Region 3.

1.1.9 The delegate of France spoke strongly against any division into regional allocations, which was detrimental to technological progress and ran counter to the whole purpose of the Conference. He reserved his position until all possible solutions had been examined.

1.1.10 The Chairman suggested that in his report to the Plenary, maritime-mobile satellite (space-to-Earth) (primary) and land mobile-satellite (space-to-Earth) (secondary) be placed in square brackets under Regions 1 and 3; that under Region 2, maritime-mobile satellite (space-to-Earth) (primary) and land mobile-satellite (space-to-Earth) (secondary) be placed in square brackets as an option and "mobile-satellite" also in square brackets as another option, that a reference to Footnote 726B be included under Regions 1 and 3 and after the indication land mobile-satellite (space-to-Earth) in Region 2; and that a reference to Footnote 726A be inserted under all three Regions.

1.1.11 That proposal was supported by the delegates of Mexico, Brazil, the United States and Singapore.

1.1.12 The Chairman, in response to the delegate of Ecuador who expressed concern regarding the transmission of the document to Plenary in its present form, indicated that he would group that issue with other satellite issues and transmit the whole package to Plenary.

1.1.13 The delegates of Niger, the United Arab Emirates, Denmark, Colombia and Germany were in favour of the worldwide allocation of the band. The delegate of Cuba said that as the bands in question were already operational, it would be extremely difficult to adopt anything other than a worldwide approach.

1.1.14 It was established by an indicative show of cards that a large majority of delegations were in favour of a worldwide rather than a regional allocation.

1.1.15 The Chairman therefore suggested maintaining the document as it stood, with the square brackets he had indicated, recording the reservations made by certain countries, and transmitting both to the Plenary.

1.1.16 The delegate of the United States, stressing the importance of taking different technologies and levels of development into account, proposed an alternative allocation in the United States for maritime bands, with adequate assurance for safety services.

1.1.17 The delegates of Canada, Brazil, Mexico and Australia associated themselves with that position.

1.1.18 It was established by an indicative show of cards that the majority of delegations were in favour of maintaining the Tables on pages 2, 3 and 4 of Document 280 as they stood. It was noted that as the date in Footnote 726 had expired, that reference should be suppressed.

1.1.19 The delegate of India observed that the band 1 625.5 - 1 631.5 MHz would be the paired sub-band corresponding to 1 525 - 1 530 MHz, which it had earlier been agreed to retain. Therefore, any decision taken with regard to the 1 525 - 1 530 MHz band should apply also to its paired sub-band 1 626.5 - 1 631.5 MHz, since it would not be necessary to await the decision of a future world administrative radio conference on balancing the uplink and downlink frequencies.

1.1.20 The Chairman replied that the Committee had taken the view that it should be a new band rather than a specifically aligned or paired band. In any event, when the final decision was adopted with regard to the 1 525 - 1 530 MHz band, there would be ample opportunity to review the upper band.

1.1.21 The delegate of Brazil said that, in general, worldwide allocations were preferable. Nevertheless, when the need for regional allocations arose, as with the bands under discussion, specific requirements should be met by means of negotiations which took account of all the bands concerned. In order to dispel any doubts, he also stressed that the allocation at 1 545 - 1 555 MHz to the aeronautical mobile-satellite service should remain unchanged.

1.2 Proposals for the work of the Conference (Document 277)

1.2.1 The Chairman, referring to the proposals relating to additional allocations for the mobile-satellite service above 1 GHz, summarized them in three categories: extension of existing bands at 1.5 GHz; introduction of a new paired band in the range (1.6 - 2.4 GHz); introduction of new bands above 2.5 GHz. He invited comments first of all on the latter option, recalling the need to ensure protection of existing space and terrestrial systems in that part of the spectrum.

1.2.2 The delegate of France recalled that concern had been expressed the previous day with regard to the implications for ARABSAT, INSAT and the fixed services of the proposed allocation between 2 500 - 2 690 MHz. Nonetheless, he recommended that the Committee should accept the basic proposal described in section 4B of the document, pointing out that the specific bands in which the allocation was to be made could be reviewed.

1.2.3 The delegate of the United States said that it was difficult to accept an allocation to the mobile-satellite service on the lines suggested in Document 277, on account of incompatibility with existing services in that area. However, recognizing the need for spectrum to be allocated to the mobile-satellite service throughout the world at both the international and the regional levels, his Administration had proposed that Footnotes 754 and 766 should be modified so as to include Region 1 and remove restrictions on the mobile-satellite, except aeronautical mobile, service. The bands concerned were 2 500 - 2 535 MHz and 2 655 - 2 690 MHz on the uplink and downlink, respectively. In conclusion, he suggested that appropriate band direction indicators should be assigned to each of the MSS bands in Region 1, subject to the Article 14 procedure.

1.2.4 The delegate of Sweden said that he could agree to the basic proposal set forth in section 4B of Document 277 with the proviso that the limits of the sub-bands should be reviewed with respect to other services, along the lines proposed by the delegate of Finland at the previous meeting. He stressed that a global solution was desirable and that regional allocations should be avoided as far as possible.

1.2.5 The delegate of Canada recalled that his delegation had submitted a number of proposals, one of which was for a global allocation around 2 500 - 2 600 MHz. However, his delegation would not insist on an allocation in those bands and was prepared to work out a compromise solution provided that it had the minimum impact on existing services.

1.2.6 The delegate of Saudi Arabia said that the allocation proposed in section 4B of Document 277 did not take due account of existing services operated by ARABSAT. As an alternative solution, he proposed an allocation of 2 500 - 2 520 MHz in the lower band and 2 670 - 2 690 MHz in the upper band on a secondary basis, which would enable Arab countries to continue using the services provided by ARABSAT. However, should a primary allocation prove indispensable, a 20 MHz allocation should be made in the same band and a note added to the effect that the fixed services should not cause harmful interference or elicit requests for protection from broadcasting stations in the countries using ARABSAT bands in accordance with Footnote 757 of the Radio Regulations.

1.2.7 The delegate of Oman endorsed the proposal by the delegate of Saudi Arabia.

1.2.8 The Chairman, referring to the concerns expressed with regard to INSAT and ARABSAT, observed that the protection of existing services could be afforded in two ways, namely, through the careful selection of frequency bands, and by means of a footnote requiring adequate coordination procedures.

1.2.9 The delegate of Germany could accept the allocations proposed in Document 277. He also endorsed the proposal made by the delegate of Finland at the Committee's previous meeting, the only drawback being the potential interference with ARABSAT systems. However, he could not agree to the proposed inclusion of Region 1 in Footnotes 754 and 766 under the Article 14 procedure, although it might be feasible under some other coordination procedure.

1.2.10 The delegates of Belgium and the Netherlands agreed to the proposal set out in Document 277, which would serve as a useful basis for a compromise solution, subject to some amendment. They also endorsed the suggestion by the delegate of Finland to the effect that any solution should have minimum impact on CCIR channelling arrangements.

1.2.11 In reply to a question by the Chairman, the delegate of Finland confirmed that he had proposed allocations in the bands 2 511 - 2 546 MHz and 2 630 - 2 665 MHz, respectively. Nonetheless, it might be feasible to move those frequency blocks within the 2 500 - 2 680 MHz band, provided that the same frequency separation was maintained. The time schedule was also an important element in that solution, and he therefore suggested that it might be advisable to start from the upper end of the block.

1.2.12 In response to further comments on the subject by the Chairman, the delegate of the United States observed that in his country allocations to the fixed service did not necessarily operate on the basis of CCIR channelling arrangements. Paragraph 2 of Document 277 emphasized the need to protect existing services; he trusted that similar protection would be afforded to existing services in his country. Since protection in Region 3 countries was provided by Footnotes 754 and 766, he proposed that the mobile-satellite service allocation be subject to coordination under the Article 14 procedure.

1.2.13 The delegate of France observed that the protection of existing services would be ensured to some degree by the gradual implementation of the proposed allocations. As for the impact on the fixed services, he pointed out that CCIR channelling arrangements were followed by the majority of countries concerned. However, the Committee might consider the possible expansion of provisions in Articles 27 and 28 of the Radio Regulations to cover those bands. Another possible solution might be to request the CCIR at a future competent conference to examine the sharing possibilities with respect to that service. In conclusion, he endorsed the comments by the delegate of Germany with regard to the Article 14 procedure.

1.2.14 The delegate of Syria recommended that there should be no change in the current allocations to the mobile-satellite service. Since the Committee was examining allocations around 2.5 GHz, he requested that due account be taken of allocations to the broadcasting-satellite service in the band 2 500 - 2 690 MHz.

1.2.15 The delegate of Japan agreed to the allocations proposed in section 4B of Document 277. His country had an allocation to the mobile-satellite service in the bands 2 500 - 2 535 and 2 655 - 2 690 MHz which it intended to upgrade to a primary allocation. He did not anticipate any sharing problems with existing services provided an appropriate coordination procedure was applied; however, he did not deem the Article 14 procedure appropriate for that purpose.

1.2.16 The observer for ARABSAT, speaking at the invitation of the Chairman, said that he appreciated the concern expressed by delegates with regard to possible interference to ARABSAT's systems. He then explained how ARABSAT's existing systems could be afforded the best possible protection, referring to Document 119 to support his comments. He concluded that Footnote 757 enabled ARABSAT to implement a regional system, adequate protection being ensured under the Article 14 procedures.

1.2.17 The delegate of India also appreciated the Committee's concern about adequate protection for existing systems. As far as INSAT was concerned, band segmentation would afford the best protection with respect to the mobile-satellite service. As for the protection of fixed services, perhaps provisions on the lines of those in Articles 27 and 28 of the Radio Regulations could be established.

1.2.18 The delegate of Thailand endorsed the statement by the previous speaker, adding that coordination under the Article 14 procedure would not provide satisfactory protection.

1.2.19 The delegate of New Zealand agreed in principle to the proposals outlined by the delegate of Finland, but felt that further work was required on certain aspects, including the time-scale factor. As the United States delegate had mentioned earlier, there were some variations in the fixed-band plans in that area, and the proposals made by the delegate of Finland would certainly affect those plans as well as the ARABSAT systems.

1.2.20 The Chairman, summing up the discussion on allocations above 2.5 GHz, said that further detailed study was clearly required on the proposals discussed so far. One possible solution the Committee might wish to bear in mind would be a requirement to coordinate new mobile-satellite systems with existing systems which had already been notified and registered, such as those operated by ARABSAT and INSAT. The Committee might also investigate the possibility of protecting fixed services operating according to CCIR channelling arrangements by adopting appropriate transmit-receive separation for the mobile-satellite service, corresponding to that of the fixed services. As for the concerns expressed by the United States delegate, rather than applying the complex Article 14 procedure, it might be preferable to consider a proviso to the effect that specific power flux-density limits should not be exceeded on the territory of certain countries without their prior agreement.

1.2.21 Replying to a question by the delegate of Indonesia, he said that he was not aware of any proposal to delete the allocation to the broadcasting-satellite service, and that for the purposes of the Committee's present discussion it should be taken that there was no change to the Table in that respect.

1.2.22 The delegate of Argentina considered that the concerns expressed with regard to Article 14 were on two counts. Underlying that Article was the principle of prior agreement; where an administration failed to signify its agreement within a given deadline, it in effect tacitly agreed to the request for coordination. Moreover, as was borne out by VGE Document 22, the present Conference had taken no steps to replace Article 14.

1.2.23 The Chairman invited comments on the possibility of accommodating the mobile-satellite service by extending existing bands below 2 GHz.

1.2.24 The delegate of Finland, referring the Committee to section 4C of Document 277, recalled his earlier proposals to lower the allocation on 2 010 - 2 025 MHz to 1 992.5 - 2 007.5 MHz. Those bands would tally with the CCIR channelling plans and be compatible with existing fixed services; the second pair of bands given in section 4C would also fit in with the CCIR channelling plan.

1.2.25 The delegate of France said that one of the arguments in favour of the allocations proposed in section 4C was their proximity to the bands used by the space services. Furthermore, in the light of the proposals for the Conference to request the CCIR to review the bands allocated to those services, the possibility that some allocations might use higher frequencies should not be ruled out. Such a solution would allow for an extension to the mobile-satellite service in those bands on a medium- or long-term basis. Secondly, the bands under discussion were also to be designated for the FPLMTS on a worldwide basis. One important aspect which was not covered by the proposal outlined in section 4C was that, initially, the use of the satellites would be directly related to the FPLMTS, and that it should be the responsibility of the CCIR to decide on the best way to use those bands. In conclusion, the fact that the bands were being allocated to the mobile-satellite service should not preclude their future use by FPLMTS only.

1.2.26 The Chairman, focusing the discussion more closely on the bands around 2 GHz related to FPLMTS, emphasized that the point at issue was not to set aside allocations for the new services, but to identify frequency bands in which the new systems would be established. The CCIR and the CCITT would develop corresponding system characteristics, which, in turn, would enable equipment manufacturers to design standard equipment with a common understanding of the frequencies in use. He underlined that administrations would not need to displace any services from the designated bands unless they intended to implement a FPLMTS in part of those bands.

1.2.27 In the ensuing discussion, the delegates of Canada, Japan and Denmark endorsed the Chairman's comments. The delegate of Syria endorsed the Chairman's comments in certain respects, but considered that some restriction should be placed on the bands designated for the new system, given its implications for the fixed services. The delegate of Algeria was also in favour of the designating bands for the new systems, but stressed the importance of the CCIR studies on the subject in order to ensure a minimum impact on the fixed services. The delegate of Brazil said that a more satisfactory technical solution would consist in making a designation in two segments, below 2 025 MHz and above 2 100 MHz, with corresponding CCIR channelling plans. The delegate of Yemen expressed concern with regard to existing bands and compatibility requirements.

1.2.28 The delegate of the United States recalled that on previous occasions he had indicated that the designation of spectrum to FPLMTS in the Radio Regulations to the detriment of other services was premature. The subject definitely required further study, with the emphasis placed on details rather than concepts. His Administration had submitted a number of proposals relating to the mobile-satellite service, including proposals for the allocation of spectrum below 2 GHz for possible use by geostationary-satellite systems and LEOs in which there might be interconnectivity with FPLMTS. Nonetheless, he could agree to the Chairman's suggestion to identify suitable bands; that might be done by means of an appropriate Resolution in the Radio Regulations. He would be prepared to assist in the drafting of such a text.

1.2.29 The delegate of Germany, commenting on a suggestion by the Chairman for the inclusion of an appropriate reference in the Radio Regulations, again emphasized the advisability of including a footnote covering the sub-bands and the dates on which the designated bands should, if necessary, be made available to FPLMTS.

1.2.30 The delegate of Algeria suggested that draft Resolution COM4/2, which requested the CCIR to carry out appropriate studies, might serve as a basis for any Resolution relating to the new system. However, it should be supplemented by a footnote covering dates.

The meeting rose at 1240 hours.

The Secretary:
T. GAVRILOV

The Chairman:
I.R. HUTCHINGS

COMMITTEE 4

SUMMARY RECORD

OF THE

SIXTEENTH MEETING OF COMMITTEE 4
(FREQUENCY ALLOCATION)

Thursday, 27 February 1992, at 1510 hours

Chairman: Mr. I.R. HUTCHINGS (New Zealand)

Subjects discussed

1. Texts related to MSS and FPLMTS (continued)
2. Future work of the Committee

Documents

259, 272, 277 + Corr.1,
279, 293,
DT/104, DT/118

1. Texts related to MSS and FPLMTS (continued) (Documents 259, 272, 277 + Corr.1, 279, 293, DT/104, DT/118)

1.1 FPLMTS (Documents 259, 277 + Corr.1)

1.1.1 The Chairman invited the Committee to continue its discussion of FPLMTS and enquired whether administrations would be ready to accept a designation of frequency bands for FPLMTS on the basis of a footnote and a Resolution containing cross-references to one another and referring back to the Table of Frequency Allocations.

1.1.2 The delegate of Germany expressed his full support for such an approach, with a footnote indicating some frequency bands for FPLMTS and possibly dates, and a cross-reference to a Resolution setting forth the details and the procedures.

1.1.3 The delegate of the United Arab Emirates, after endorsing the Chairman's suggestion, said he agreed with the views expressed at a previous meeting that the choice of the exact frequency for FPLMTS should be left to individual administrations.

1.1.4 The delegate of Algeria supported the addition of a footnote identifying frequencies for FPLMTS, but leaving the choice of the allocation and the date to each administration, together with a flexibly worded Resolution along the lines of that contained in Document 259. Both should be included in the Final Acts.

1.1.5 The delegate of Indonesia said that, while he supported the proposal for a Resolution as in Document 259, he was against the inclusion of a footnote to Article 8.

1.1.6 The delegate of the United States said he could agree to the approach outlined by the Chairman, but he would like to see a text. In addition to a Resolution along the lines of the draft in Document 259, it might be necessary to have a Recommendation setting a wideband that would leave national authorities with a choice. Like the previous speaker he was concerned about a footnote to Article 8 that might restrict the freedom of decision of national administrations, and he called for maximum flexibility in that regard.

1.1.7 The delegates of Norway and the United Kingdom supported the idea of a footnote linked to a Resolution which should not impose restrictions on the use of frequency bands by administrations.

1.1.8 The delegate of Pakistan endorsed the approach outlined by the Chairman and associated himself with the speakers who had stressed that the exact frequency to be used for FPLMTS should be left to each administration. It should be noted that Pakistan might require a small allocation for signalling purposes.

1.1.9 The delegate of Australia agreed with the delegate of Germany on the addition of a footnote indicating the bands proposed for FPLMTS, with a reference to a Resolution that could be based on the draft in Document 259. There was also a need to identify the initial phase for FPLMTS on a worldwide basis.

1.1.10 Replying to a comment by the delegate of the United States on the meaning of the term "designate", the Chairman suggested that use of the word "identify" might solve the problem. Given the broad agreement in principle within the Committee, he suggested that further discussion of the FPLMTS issue should be deferred until texts of the proposed footnote and Resolution were available.

1.1.11 It was so agreed.

1.2 Additional allocations for MSS in the 1.6 and 2.4 - 2.5 MHz bands (Documents 272, 277 + Corr.1, 279, 293)

1.2.1 The delegate of Argentina, referring to section 4 of Document 277, drew attention to the existence in the 1 610 - 1 626.5 MHz band of two complementary worldwide aeronautical radionavigation systems, namely GLONASS and GPS, which were of supreme importance for air safety. In addition, both had economic implications in that they could help to economize fuel through an optimum choice of route. In the search for additional allocations for MSS, reference had been made to commercial interests and to the need to take account of existing systems such as INSAT and ARABSAT. Surely safety concerns were of equal importance. In that connection he drew attention to the proposal for an allocation to MSS in the 1 622.5 - 1 626.5 MHz band contained in Document 279. Furthermore, proposed Footnote 731X did not provide worldwide protection for the aeronautical radionavigation service.

1.2.2 The delegate of Malaysia expressed his agreement with the proposal in Document 277 for an MSS primary allocation in the bands 1 610 - 1 626.5 MHz and 2 483.5 - 2 500 MHz.

1.2.3 The delegate of the Russian Federation, after stating that the Argentine delegate's point was well taken, noted that no compromise seemed to be emerging from the suggested solutions in Document 277. In that connection he pointed out that the protection offered by Footnote 731X was incompatible with the allocation of the bands concerned on a primary basis to MSS. He therefore regretted the fact that the informal ad hoc Group had not considered the joint proposals in Document 279 for the allocation to MSS of bands in the gaps between the two major radionavigation systems. Those allocations, it should be noted, did not interfere with the radio astronomy service.

1.2.4 The delegate of the United States supported the use of the 1 610 - 1 626.5 MHz band on a primary basis as an uplink and of the 1 613.8 - 1 626.5 MHz sub-band as a secondary downlink. He also proposed a primary downlink in the 2 483.5 - 2 500 MHz band and the upgrading to primary status of radio astronomy in the band 1 610.6 - 1 613.8 MHz. Coordination procedures, as developed in Document 293, were the best way of solving any difficulties in both the terrestrial and satellite services.

1.2.5 The delegate of Venezuela expressed his support for the introduction of MSS in the bands 1 610 - 1 626.5 and 2 483.5 - 2 500 MHz.

1.2.6 The delegate of Argentina said that he supported only the 1 622.5 - 1 626.5 MHz band proposed in Document 279, not the others.

1.2.7 The delegate of Mexico maintained his proposal for an MSS allocation in the 1 610 - 1 626.5 MHz band.

1.2.8 The delegate of Burkina Faso said that his Administration's proposal called for a better balance in the use of the bands from 1 525 MHz. He fully agreed with the view that every effort should be made to ensure the safety of air travel throughout the world and considered that Footnote 731X did not provide adequate protection. In his opinion the 1 610 - 1 626.5 MHz band should be reserved for the aeronautical radionavigation service.

1.2.9 The delegate of Israel supported MSS primary in the 1 610 - 1 626.5 MHz band (Earth-to-space) and secondary in the 1 613.8 - 1 626.5 MHz band (space-to-Earth), with appropriate coordination.

1.2.10 The Chairman said he would consult the Chairman of Committee 5 on the coordination procedure to see whether it would meet the concerns of Committee 4.

1.2.11 The delegate of Algeria said that his Administration's proposal was to maintain the present situation in Region 1 in the 1 610 - 1 626.5 and 2 483.5 - 2 500 MHz bands, particularly in view of the fact that CCIR studies had shown that sharing in those bands would be very difficult. Nevertheless, Algeria had added its name to the list of signatories of Document 277 in the hope that it might serve as a basis for discussion and compromise. If it did not obtain wide support, Algeria would revert to its original proposal.

1.2.12 Responding to a request by the Chairman for comments on the proposal for MSS secondary in the 1 613.8 - 1 626.5 MHz band (space-to-Earth), the delegate of the Russian Federation said he opposed it since it might interfere with the aeronautical radionavigation service. The delegate of the United Kingdom said that, if the proposal was adopted, some consequential steps would be essential. There was a linked proposal to upgrade radio astronomy in the band 1 610.6 - 1 613.8 MHz, which would necessitate the inclusion of MSS in Footnote 733E.

1.2.13 The delegate of the Netherlands supported the upgrading of radio astronomy.

1.2.14 The delegate of Germany also supported radio astronomy primary. Although not a signatory of Document 277, he could go along with it in a spirit of compromise, noting that if some of the proposals were formally tabled, protection measures would have to be included, to which No. 2558 was relevant. He requested the Chairman, when consulting with the Chairman of Committee 5 on the coordination procedure, to enquire whether it also covered coordination between mobile earth stations and fixed service receivers. In that context, the addition of Footnote 731X was essential.

1.2.15 The delegate of India supported the use of the bands 1 610 - 1 626.5 MHz for MSS (Earth-to-space) on a primary basis and 1 613.8 - 1 626.5 MHz for MSS (space-to-Earth) on a secondary basis. He was also in favour of upgrading the radio astronomy service.

1.2.16 The delegate of Indonesia proposed that the MSS allocation in the 1 610 - 1 626.5 MHz band should be reduced so as to allow the GLONASS system to develop.

1.2.17 The observer for the International Civil Aviation Organization (ICAO), after reading out paragraph 8.1.4.3 on page 8-23 of the CCIR Report, advocated an attempt to find a solution that would not involve the use of the entire band and would avoid those portions of it used by GLONASS.

1.2.18 The Chairman suggested that further consideration of the matter be deferred.

1.2.19 It was so agreed.

1.3 Extension of existing bands at 1.5 - 1.6 GHz (Documents 272, 279, DT/104, DT/118)

1.3.1 The delegate of Brazil, after pointing out that Document 277 gave no guidance in the matter, proposed that the Committee look into the possibility of an expansion in the space-to-Earth direction below 1 525 MHz and in the Earth-to-space direction from 1 675 MHz upwards, thus leaving the frequencies just below 1 675 MHz for a possible compromise on APC, not forgetting radio astronomy. It was, of course, essential to ensure the protection of existing services in those bands.

1.3.2 The delegate of Canada, referring to Documents 272 - which contained the Canadian proposal - 279 and DT/104, said there should be consideration of the feasibility of allocating mobile-satellite spectrum (space-to-Earth) immediately below 1 525 MHz. In the Earth-to-space direction two possibilities were available: the first lay in the spectrum range of the 1 610 MHz band, whose upper edge could be used as proposed in Document 279 without affecting GLONASS or the radio astronomy band. That proposal offered approximately 4 MHz of spectrum and could perhaps be further extended up to 6 MHz. The second proposal related to the 1 670 - 1 675 MHz band, currently used by the meteorological-satellite service, which would call for further study.

1.3.3 The delegate of Australia said that, with the support of several other countries, his Administration had proposed additional MSS allocations in the 1 515 - 1 525 MHz band on a co-primary basis with the fixed and mobile services, allowing flexibility to individual administrations. He also drew attention to Document DT/118 concerning allocations for BSS (Sound), including one in the 1 450 - 1 490 MHz band, which would create a gap further up the spectrum for an MSS allocation in the 1 515 - 1 525 MHz band.

1.3.4 The delegate of Germany said that after a thorough study of the possibility of expanding existing mobile-satellite bands, the European countries had concluded that the bulk of any such expansion should be in the 2.5 - 2.6 GHz range and that it would be extremely difficult to extend present allocations at 1.5 - 1.6 GHz.

1.3.5 The delegate of Japan said he could not accept the proposal to extend MSS allocations below 1 525 MHz. His Administration strongly supported the maintenance of present allocations in the 1 429 - 1 525 MHz band for the fixed and mobile services exclusively.

1.3.6 The delegate of Saudi Arabia said he could not accept any additional MSS allocations in the 1.5 - 1.6 GHz range, which was of great importance to his Administration.

1.3.7 The delegate of the United Kingdom pointed out that the 1 450 - 1 530 MHz band was already very intensely used for fixed links in his country. The United Kingdom was also concerned at the 5 MHz expansion of MSS allocations; any further extension, except over a very long time-scale, would cause his Administration major problems.

1.3.8 The delegate of the Russian Federation said he would not object to the Canadian proposal for an MSS extension (space-to-Earth) in the 1 515 - 1 525 MHz range and an Earth-to-space extension above 1 670 MHz, provided it was restricted to Region 2.

1.3.9 The delegate of Mexico supported an MSS expansion in the 1 515 - 1 525 MHz range and thought that further discussion might open up a possibility in the range around 2 GHz.

1.3.10 The Chairman noted that a show of cards seemed to indicate a strong disinclination to extend MSS allocations below 1 525 MHz.

1.3.11 The delegates of Brazil and Canada expressed the hope that further consultations might produce a solution acceptable to all administrations, possibly on a regional basis.

1.4 APC/TFTS (Documents 277 + Corr.1, section 7)

1.4.1 The Chairman said that the issue under consideration was similar to the FPLMTS designation, in that it involved the identification of bands for a system on a worldwide basis. Each administration would have the right to determine how much frequency band they could make available on their national territory.

1.4.2 The delegate of Germany said that Document 20 also covered Footnote 739A, and drew attention to the designation of two bands and the different uses to which they would be put. Worldwide designation was necessary, given that aircraft operated on such a basis.

1.4.3 The delegate of the United Arab Emirates said that although some kind of frequency designation might be necessary, it could perhaps be left to national authorities to decide whether the bands in question should apply. Communications between aircraft flying at high altitudes and the ground might cause interference with other neighbouring countries, especially near borders, and the footnote might therefore usefully contain a reference to the need to apply the Article 14 procedure, with the interference distance to be determined by the CCIR at a later date.

1.4.4 The delegates of Syria and Zimbabwe supported those views, saying that coordination should be carried out under Article 14 or a similar procedure.

1.4.5 The delegate of Israel said that frequencies as high as possible should be designated for services like APC, and that some form of coordination would be necessary.

1.4.6 The delegate of the United States said that national requirements had to be taken into consideration and that some administrations in his Region had implemented systems for APC which were in extensive use in the bands from 850 - 900 MHz. The two bands proposed for worldwide use in Document 277 would cause the United States serious difficulties, for various reasons, and a coordination procedure as suggested might provide a solution. It was also to be hoped that APC could be accommodated in the near future using satellite techniques.

1.4.7 The delegate of Germany pointed out that aircraft came under the control of an aeronautical station and that without such stations, there was no possible connection between aircraft and the ground. A suitable network would be set up for countries agreeing to participate in APC; there was therefore no need to apply the Article 14 procedure.

1.4.8 The delegate of the United Kingdom supported those views, saying that worldwide designation was desirable, without the application of Article 14.

1.4.9 The delegate of Australia supported the proposals in Document 277 and said that, given the nature of the APC service, a procedure other than the Article 14 one was necessary. Countries encountering difficulties could resort to Article 14, but it should not be made applicable unilaterally.

1.4.10 The delegate of Spain said that his Administration supported the proposals contained in Documents 20 and 277 and considered that the service could be coordinated without undue difficulty.

1.4.11 The Chairman said that one possibility might be for the system to require aircraft to respond only when contacted, with those implementing it coordinating with neighbouring administrations as appropriate.

1.4.12 The delegate of Israel drew attention to the risk of the whole wideband service being disrupted by a very narrow-band transmission.

1.4.13 The delegate of France said that since France had territories in Region 2, it reserved the right to use the same frequencies in that Region as in Regions 1 and 3. The Article 14 procedure was unsuitable for that kind of service.

1.4.14 The delegate of the United States said that the system under operation in North America was controlled by a ground station and was only used when passengers requested connections; neither air operations nor safety were affected. The interference radius was approximately 1,000 km, which meant that some form of coordination was necessary when the system was used near international borders. Both Canada and the United States used the same system successfully, and coordination was under way with the Administration of Mexico.

1.4.15 The delegate of Canada said that the United States had been the first to implement the system in the bands 849 - 851 MHz and 894 - 896 MHz, in which Canada operated fixed systems. Coordination had presented considerable challenges but had been possible, and Canada had chosen the same bands as the United States when introducing its own APC. The optimal solution was obviously to remove all fixed systems from the bands in due course. The interference radius of approximately 500 km depended on a number of factors, and the implementation of such a system in the bands suggested presupposed a suitable coordination procedure.

1.4.16 The delegate of Germany again emphasized his Administration's reluctance to apply the Article 14 procedure, and remarked that recent European studies indicated the need to have aeronautical stations at distances of about 250 km. However, the Committee was seeking to secure designation and implementation on a worldwide basis, which meant that coordination should be necessary only in the medium term and only in those countries which actually encountered difficulties in introducing the service.

1.4.17 The delegate of the United Kingdom said that the use of the bands in question had been carefully calculated and that coordination problems should not be difficult to overcome.

1.4.18 The Chairman, having regard to the views expressed, suggested the following text for inclusion in Footnote 739A: "Administrations operating aeronautical stations shall ensure that the frequencies actually assigned for the service from the above frequency bands do not cause harmful interference and shall coordinate such frequencies accordingly." The Committee could revert to the matter when delegates had had time to reflect on it.

1.5 Satellite component of FPLMTS (Documents 277 + Corr.1, section 4C)

1.5.1 The delegate of Canada said that the point at issue was to strike a balance in providing spectrum for MSS, accommodating the FPLMTS and ensuring the continued use of fixed systems, especially in rural areas.

1.5.2 The delegate of Germany said that the bands designated for FPLMTS and MSS should be considered separately. A footnote was proposed to that effect. The satellite component of the FPLMTS was merely a sub-set of the system and was not specifically identified with the mobile-satellite allocation.

1.5.3 The delegate of Canada said that his views were similar to those expressed by Germany; his delegation considered that the possibility should be investigated of allocating spectrum to the mobile-satellite service around 2 GHz, regardless of decisions taken concerning the FPLMTS, leaving the possible implementation of space techniques in the FPLMTS to be considered at some future date.

1.5.4 The delegate of Australia also endorsed the comments by the German delegate. He suggested that after the specific MSS allocation outside the FPLMTS had been considered, the question of designating a sub-band within FPLMTS on a secondary basis might be taken up. The references in the footnote on FPLMTS would depend on the MSS location. In that context, he drew attention to Document DT/105 which contained a draft Resolution addressed to the CCIR, to which more detail might be added in order to ensure that the fixed services would be able to use the bands concerned as extensively as possible once the FPLMTS and MSS allocations had been made.

1.5.5 The delegate of the United Arab Emirates said that it might be premature to endeavour to decide on the exact size of the satellite allocation at the present stage. Either the matter should be left for further study or a provisional band should be chosen, subject to future review.

1.5.6 The Chairman said that there were two issues to be considered: first, how to deal with the satellite components of FPLMTS while leaving sufficient flexibility to the CCIR, as well as to administrations in using the bands; second, what action to take on the Canadian proposal to consider an additional MSS allocation, separate from FPLMTS, around 2 GHz. Having asked for a show of cards, he noted some support for the Canadian proposal as well as some opposition.

1.5.7 The Chairman suggested that further discussion of the matter should be deferred to a subsequent meeting.

1.5.8 It was so agreed.

2. Future work of the Committee

2.1 The Chairman said that a document taking account of the views expressed so far would, if possible, be prepared for the following day.

2.2 It was decided to set up a small Working Group under the chairmanship of Finland to deal with specific technical issues related to interference and the development of a set of frequencies for space-to-Earth and Earth-to-space transmissions.

The meeting rose at 1815 hours.

The Secretary:
T. GAVRILOV

The Chairman:
I.R. HUTCHINGS

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

Document 304-E
26 February 1992
Original: English

COMMITTEE 5

SUMMARY RECORD
OF THE
TWELFTH MEETING OF COMMITTEE 5
(REGULATORY)

Wednesday, 26 February 1992, at 2010 hours

Chairman: Mr. E. GEORGE (Germany)

Subjects discussed

1. Pending items - Definitions
2. Resolution COM5/[5B4-3]
3. Modification of RR 5195 proposed by Brazil

Documents

132
256, DT/96
30(Corr.1)

1. Pending items - Definitions (Document 132)

1.1 The Chairman announced that Committee 4 had given up the concept of making allocations for the general-satellite service, and had instead made allocations for fixed and mobile services in the same band. Committee 5 therefore had no need to take action on either a definition or regulatory procedures for the general-satellite service. To the best of his knowledge, Committee 4 had made no allocation for the radiolocation-satellite service either; therefore, no further action was required regarding a definition for this service.

2. Resolution COM5/[5B4-3] (Documents 256, DT/96)

2.1 The delegate of Mexico, introducing Document 256, explained how the preliminary introduction of digital sound broadcasting would encourage the production of suitable transmitting and receiving equipment and enable economies of scale to be made. For many countries, particularly small ones, there were difficulties in establishing a satellite service, whereas a terrestrial service could be set up very quickly for local coverage. Moreover, the CCIR considered that a mixed satellite and terrestrial service could make the best use of the spectrum. Mexico did not regard the reference to complementarity in the Conference agenda as prejudging the order in which the service should be introduced, so that it would be perfectly possible to start with the terrestrial service before the satellite one. It proposed to amend the title of Resolution COM5/[5B4-3] in Document DT/96 accordingly.

2.2 The delegate of Canada endorsed the Mexican proposal. In Canada the combination of isolated areas with very low populations and very large metropolitan areas made a satellite-based system with complementary terrestrial services very suitable. Canadian broadcasters considered the current allocation for digital sound broadcasting inadequate, and they would probably wish to implement terrestrial services in urban areas before launching a satellite. Many other administrations supported that approach, and the title of the Resolution should therefore indicate the type of service that was desired.

2.3 The Chairman enquired if there were any objections to amending the title of the Resolution.

2.4 The delegate of the United Kingdom objected strongly to the amendment. Neither agenda item 2.2.3a of the Conference or Resolution No. 520 of Orb-88 referred to independent terrestrial sound broadcasting but only to satellite sound broadcasting, complementary terrestrial broadcasting and feeder links. If a country decided to use initially for terrestrial sound broadcasting a band allocated to it for BSS (Sound) and complementary terrestrial broadcasting, that was its own affair. He had no objection to amending the title to "Broadcasting-satellite service (sound) and complementary terrestrial broadcasting", but would not like to see the broadcasting service referred to as if it were something independent for which spectrum should be provided.

2.5 The delegate of Mexico did not agree with that argument. He repeated that complementarity did not prejudice the order in which a service was introduced. Moreover, the agenda mentioned the 0.5 to 3 GHz frequency bands, whereas the Committee was talking about VHF bands for the digital sound broadcasting service. That problem had to be solved. The Mexican proposal was a prudent and practical one, and it had received support.

2.6 The delegate of Germany endorsed the view of the United Kingdom delegate.

2.7 The delegate of Argentina supported the Mexican proposal for preliminary introduction of digital sound broadcasting services, which he believed should be subject to regional or bilateral agreements.

2.8 The delegate of the United States also supported the Mexican proposal. It was unfortunate that the allocations and dates of implementation were not yet available since, if they were, some of the differences of opinion expressed could be accommodated by implementing the Resolution on a regional basis so that the European countries wishing to introduce satellite broadcasting first could have their way and those countries preferring the terrestrial service could have theirs.

2.9 The delegate of Italy suggested that the concept of mixed or hybrid sound broadcasting mentioned in the CCIR Report provided the necessary compromise to meet the needs of Region 1 and Region 2. The title of the Recommendation might remain unchanged and the words "mixed satellite and terrestrial sound broadcasting service" added in **considering a)**.

2.10 The delegate of Algeria supported the Mexican proposal.

2.11 The delegate of the United Kingdom repeated that it was not the ITU's concern if a country wished to introduce terrestrial services first. What would concern the Union would be if the title of the Recommendation were amended to make it appear that an allocation was being made for terrestrial sound broadcasting and only incidentally for broadcasting-satellite (sound) purposes.

2.12 The delegate of the Netherlands supported the United Kingdom position, which corresponded to the agenda of the Conference. Moreover, complementary terrestrial broadcasting allowed administrations that so wished to engage in terrestrial DAB. Lastly, Committee 4 was at the moment looking for allocations for BSS (Sound) and not for terrestrial broadcasting.

2.13 The delegate of Mexico pointed out that it was not the task of Committee 5 to discuss frequency bands. He was encouraged by the support given to his proposal and suggested that the title of the Resolution should be amended to tally with the exact wording of agenda item 2.2.3a.

2.14 The Chairman said he took it that the Committee could agree to amend the title to read: "Relating to the introduction of systems in the broadcasting-satellite service (sound), including complementary terrestrial sound broadcasting uses within this allocation." He suggested that the text of the Resolution should be reviewed to see where amendments were needed.

2.15 The delegate of Australia said that he was unhappy at the idea of rewriting the Resolution. The critical need was for it to relate to the introduction of the satellite sound-broadcasting service; there was no need for a Resolution on the introduction of the terrestrial service.

2.16 The delegate of Morocco said that discussion of frequency bands was premature before the decision of Committee 4 was known. Committee 5 should discuss the bands chosen in the light of **resolves** 4 of Resolution No. 505 which referred to the need to develop appropriate procedures for protection and, if necessary, re-accommodation in other bands of assignments to stations of terrestrial services which might be affected. Moreover, the principle of a timetable and the principle of downgrading existing services was not acceptable to his delegation. Reference should be made to No. 2674 of the Radio Regulations and to Resolution No. 507 which stipulated that national and regional planning was required. His delegation agreed with the Mexican proposal to start with the terrestrial before the satellite service if the necessary coordination was effected with neighbouring countries.

2.17 After further discussion in which the delegates of Canada, the United Kingdom and India took part, the Chairman said that Committee 5 could not await the decisions of Committee 4. He called for discussion of the text of the Resolution.

considering a)

2.18 The Chairman said that the phrase "[that will become available for use from 1 January 2005]" must be retained for the moment pending the decision of Committee 4.

2.19 After some discussion, it was so agreed.

considering b)

2.20 The Chairman said that the square brackets around the words "the date referred to in **considering a)**" could be removed. He then drew attention to the words "an experimental/a preliminary" which were in square brackets.

2.21 The delegate of Australia, supported by the delegate of Canada, considered that neither of the words were necessary.

2.22 The delegate of the United Kingdom, supported by the delegate of the United States, said that since **resolves** 2 referred to Article 34 of the Radio Regulations, the word used should be "experimental".

2.23 After consultations, it was agreed to delete the square brackets and the words "a preliminary".

considering c)

2.24 The delegate of Cuba suggested the addition at the end of the sentence of a phrase such as "through the drawing up of a plan ensuring equitable access by all Members of the Union".

2.25 The delegate of the United Kingdom, supported by the delegate of New Zealand, considered that it was premature to talk about a plan since the Resolution dealt with experimental systems, on which much work still needed to be done.

2.26 **Considering c)** was approved as it stood.

resolves 1

2.27 After a lengthy discussion in which the delegates of Mexico, the United States, Italy, Canada, Australia, Nigeria, the Netherlands and the United Kingdom took part, followed by informal consultations, the Committee decided to replace "[experimental/preliminary] systems" by "all or parts of the band for BSS (Sound) systems including the complementary terrestrial use".

resolves 2

2.28 The delegate of the United States said that from that point onwards the draft Resolution became increasingly nonsensical; provision to operate an experimental system existed already in the Radio Regulations and it was therefore unnecessary to establish a procedure for that purpose.

2.29 The delegate of Mexico requested that square brackets be placed around the words "Article 34" pending Committee 4's decisions on the topic, as there might be other provisions allowing early introduction of the service.

2.30 The Member of the IFRB suggested that "introduced" in the first line should be replaced by "brought into use" to improve the regulatory tone of the text. Replying to a question by the delegate of Canada, he said that a terrestrial service could be introduced either under Article 34 of the Radio Regulations or under No. 342 if the station was not in conformity with the Table of Frequency Allocations. In both cases, operation had to cease if interference resulted.

2.31 **Resolves 2**, as amended by the delegate of Mexico and the Member of the IFRB, was approved.

resolves 3

2.32 The Member of the IFRB suggested that "[Sections B and C of]" and "[only]" should be deleted and "introduced" should be replaced by "brought into service".

2.33 It was so agreed.

2.34 The delegate of Japan proposed that square brackets be placed around "Resolution No. 33".

2.35 The delegates of the United Kingdom and Argentina disagreed.

2.36 **Resolves 3**, as amended by the IFRB, was approved.

resolves 4

2.37 After a discussion in which the delegates of the United States, Germany, Italy, the Netherlands and the United Kingdom took part, the paragraph was approved as it stood.

resolves 5

2.38 Approved.

resolves 6

2.39 The Member of the IFRB said that he failed to see the purpose of **resolves 6**.

2.40 The delegate of the United Kingdom said that the text related to concerns expressed in respect of Arabsat and Indian satellite services and that it would be necessary to reconsider the paragraph after Committee 4 had completed its work.

2.41 The delegate of India stressed the need to retain the paragraph.

2.42 it was so agreed.

3. Modification of RR 5195 proposed by Brazil (Corrigendum 1 to Document 30)

3.1 The delegate of Brazil introduced his proposal which was a consequential adjustment now that the Plenary had approved reallocation of the HF bands and deleted Footnotes 532 and 544.

3.2 The delegate of the United Kingdom said that he had no objection to the modification proposed. However, he considered that a composite set of adjustments, including that modification, would be required once the Conference had completed its work, and he looked to the Secretariat to perform that task in the usual way.

3.3 The delegate of the United States supported that approach and suggested that entry into force should take place approximately 18 months after the end of the Conference for provisions not otherwise controlled.

3.4 The observer for the International Maritime Organization requested that a reference to Resolution COM5/4 relating to the provisional application of Article 56 of the Radio Regulations pending the entry into force of changes, should be included in any composite set of adjustments prepared by the Secretariat.

3.5 The Member of the IFRB said that other Resolutions would also have to be referenced and suggested adopting the suggestion of the United Kingdom which encompassed the Brazilian proposal.

3.6 It was so decided.

The meeting rose at 2310 hours.

The Secretary:
J. LEWIS

The Chairman:
E. GEORGE

COMMITTEE 5

SUMMARY RECORD
OF THE
THIRTEENTH MEETING OF COMMITTEE 5
(REGULATORY)

Thursday, 27 February 1992, at 0935 hours

Chairman: Mr. E. GEORGE (Germany)

Subjects discussed

1. Articles 27, 28 and 29
2. Pending items - Definitions (continued)
3. Modification of RR 5195 proposed by Brazil
(continued)
4. Resolution COM5/10 (Terrestrial digital audio broadcasting)
(continued)

Documents

DT/110, DT/114, DT/116, 217,
218(Rev.1), 274
132
30(Corr.1)
192 (Annex 2)

1. Articles 27, 28 and 29 (Documents DT/110, DT/114, DT/116, 217, 218(Rev.1), 274)

1.1 The Chairman of ad hoc Group 1 introduced the text annexed to Document DT/116. She drew attention to a correction relating to ADD 2509.2: in the fourth line, the words "and keeping in mind the provisions of Recommendation 100" should be inserted after "with other services,". She also drew attention to Document DT/114, which referred to a number of issues relating to Articles 27 and 28, and to the fact that ADD 2613A, at the end of the Annex to Document DT/116, related to Article 29.

1.2 The Chairman thanked the Chairman of ad hoc Group 1. Responding to a comment by the delegate of the Russian Federation, he agreed that it was difficult to follow several documents at the same time, especially since some related to matters currently under consideration by Committee 4 and the Working Group of the Plenary. He suggested that the Committee should focus its attention on Document DT/116, since the other documents were listed simply for reference purposes and some were still to be approved by the bodies to which they related. He suggested that he should contact the Chairmen of Committee 4 and of the Working Group of the Plenary with a view to forming, with the respective secretaries, a small Working Group to consider outstanding questions relating to the frequency bands concerned, and that the Committee should proceed with the approval of Document DT/116 as far as possible and then hold it in abeyance, subject to that Group's observations, before submitting the text to the Plenary.

1.3 It was so agreed.

1.4 On that understanding, the Chairman invited the Committee to consider the Annex to Document DT/116 item by item, beginning with the consolidated text for Article 27.

NOC 2501 to 2503, MOD 2504

1.5 Approved.

ADD 2504A, ADD 2504A-1, ADD 2504A-2

1.6 Following observations by the delegates of the Russian Federation, the United States, Australia and Algeria, the Chairman of ad hoc Group 1 and the Chairman, it was agreed to delete the footnote references in ADD 2504A and the footnotes in ADD 2504A-1 and ADD 2504A-2.

1.7 ADD 2504A, as amended, was approved.

MOD 2509

1.8 The delegate of the United States drew attention to the further studies the CCIR would be requested to carry out in accordance with a Recommendation prepared by the Working Group of the Plenary, as mentioned in the note in Document DT/114. He suggested, following observations by the delegate of Australia and the Member of the IFRB, that, since Nos. 2502, 2505, 2506 and 2507 were deemed provisionally appropriate for the frequency bands mentioned in section 1 of Document DT/114, the asterisks could be removed from the text in Document DT/116 relating to MOD 2509.

1.9 The delegate of the Russian Federation observed that Document DT/114 was only a draft. His Administration would have difficulty in approving the text of MOD 2509 even as it stood in Document DT/116, and could accept it for the time being only if all the asterisks and square brackets were retained.

1.10 Following comments by the Chairman of ad hoc Group 1 and the delegate of Canada, the Chairman suggested that the text, including the asterisks and square brackets, should remain as it stood.

1.11 It was so agreed.

ADD 2509.2

1.12 After a brief discussion in which the delegates of the Russian Federation and the United States, the Chairman of ad hoc Group 1 and the Member of the IFRB took part, the Chairman said that the text was recognized as a provision, not a footnote, and that it should be identified as 2509A rather than 2509.2

1.13 On that understanding, and with the addition of the wording mentioned by the Chairman of ad hoc Group 1 in introducing Document DT/116, the provision was approved subject to the entire text being placed between square brackets.

MOD 2511

1.14 Approved, subject to replacement of the word "and" by "or" after the words "to the fixed-satellite service".

SUP 2511-2

1.15 Approved.

1.16 The Chairman invited the Committee to consider the consolidated text for Article 28.

NOC Section I. Choice of Sites and Frequencies; NOC 2539

1.17 Approved.

NOC Section II. Power Limits; NOC 2540 to 2548A, MOD 2548A

1.18 Approved.

MOD 2548A

1.19 The Chairman, responding to observations by the delegates of Argentina and the Russian Federation and the Chairman of ad hoc Group 1, said that the text was subject to a decision by Committee 4 and that, in the meantime, the square brackets and asterisks should suffice to allay any delegations' concerns.

1.20 On that understanding, the text was approved.

NOC Section III. Minimum Angle of Elevation; NOC 2549 to 2551

1.21 Approved.

NOC Section IV. Limits of Power Flux-Density from Space Stations; NOC 2552 to 2555

1.22 Approved.

MOD 2556

1.23 The Chairman, responding to observations by the delegates of France and Japan, said that Committee 5 was responsible for the wording of texts but not for technical parameters. He suggested that the Committee should consider the text before it from the standpoint of language and consistency, on the understanding that questions relating to the actual frequencies would be considered in the informal group of Chairmen that he had proposed.

1.24 The delegate of France agreed; it was also essential for Committee 5 to have clear guidelines from Committee 4 and the Working Group of the Plenary.

1.25 The Member of the IFRB drew attention to the fact that the text as it stood related to power flux-density limits for all types of space station.

1.26 MOD 2556 was approved.

NOC 2557, MOD 2558, MOD 2559, MOD 2561

1.27 Approved.

MOD 2562

1.28 Approved, with the addition of asterisks to the second and third indents.

MOD 2563

1.29 Approved, with the addition of square brackets around "~~2-562~~ 2 557".

(MOD) 2564, MOD 2581

1.30 Approved, subject to editorial amendments to the position of the square brackets in both texts.

MOD 2583

1.31 Approved, subject to amendment of the phrase "and the space research service" to "or the space research service".

MOD 2584

1.32 The Chairman of ad hoc Group 1 said, with reference to remarks by the delegates of Indonesia and India and the Chairman, that the text was based on a proposal contained in Document DT/1B.2; it also related to a proposal by Canada in Document 23 and a European common proposal in Document 20.

1.33 Following observations by the delegates of India, Pakistan and the United Kingdom, the Member of the IFRB suggested that the text of MOD 2509, already approved, should be placed within square brackets pending Committee 4's relevant decisions and the discussions by the informal meeting of Chairmen.

1.34 It was so agreed.

1.35 At the request of the delegate of India, it was also agreed to place the text of MOD 2562, also approved, within square brackets.

1.36 The delegate of Canada proposed that the entire text of the Annex to Document DT/116 should be placed within square brackets.

1.37 Following a comment by the Chairman of ad hoc Group 1 concerning the frequency band in the third line, the Chairman suggested that the square brackets should be adjusted so that the line read: "25.25 - 27.[50/1] GHz".

1.38 The delegate of the United States drew attention to the comment by the Working Group of the Plenary, in item 7 of Document 254, that No. 2578 was appropriate for the frequency bands 22.55 - 23.55 GHz, 25.25 - 27.502 GHz and 37.0 - 37.5 GHz. He also drew attention to the allocations, and the e.i.r.p. and power flux-density limitations, set forth in ADD 822A approved by Committee 4 and listed in Document 237 (B.5).

1.39 The Chairman suggested, in order to avoid undue complication of Committee 5's work, that consideration of all such technical matters should be left to the group of Chairmen; he invited any delegations wishing to take part in that group to inform him later.

1.40 The delegate of Argentina having supported that suggestion, it was so agreed.

1.41 On that understanding, the Committee took note of MOD 2584.

(MOD) 2585

1.42 Approved.

ADD 2613A

1.43 Approved for inclusion under Article 29.

1.44 The Chairman said that in the light of the discussion and the decision to refer any technical matters to the group of Chairmen, and subject to the relevant decisions of Committee 4, he would forward the text annexed to Document DT/116 to the Editorial Committee for submission to the Plenary.

2. Pending items - Definitions (continued) (Document 132)

2.1 The Chairman recalled that the definition of the radiolocation-satellite service had been approved by the Committee subject to the decision of Committee 4. He proposed that the definition be submitted to the Plenary without square brackets, provided there was to be an allocation to that service.

2.2 It was so agreed.

3. Modification of RR 5195 proposed by Brazil (continued) (Corrigendum 1 to Document 30)

3.1 The Chairman said that a text would be prepared along the lines agreed at the previous meeting and submitted to the Committee, if the Committee was still in existence.

4. Resolution COM5/10 (Terrestrial digital audio broadcasting) (continued) (Annex 2 to Document 192)

4.1 The Chairman gave a recapitulation of the amendments approved at the Committee's sixth meeting and invited comments on the **resolves further** paragraph.

4.2 The delegate of Spain suggested that "request" be replaced by "instruct", while the delegate of Senegal considered that the entire phrase "**resolves further** to request" could be replaced by "**instructs**".

4.3 The Chairman said that such amendments were of an editorial nature, but felt that "request" was more polite than "instruct".

4.4 The delegate of Spain, supported by the delegates of Australia, Canada, Mexico and the United States, suggested the addition, after "sound broadcasting", of the words "in the VHF bands".

4.5 It was so agreed.

4.6 The delegate of Australia, supported by the delegates of Canada, Turkey and the United States, suggested the further addition, after "in the VHF bands", of a reference to Region 1 and certain countries in Region 3.

4.7 The delegates of Spain and France stressed that the wording should not be the same as or similar to that of the 1984 Geneva Agreement, so as to avoid drawing a parallel with that Agreement.

4.8 The delegate of Senegal, supported by the delegate of Algeria, considered that there was no need to specify Regions 1 and 3. The delegates of Mali, Germany, Italy and Nigeria endorsed that view, noting that the matter could be left to the Administrative Council.

4.9 The delegate of New Zealand did not wish the scope of the Resolution to be open-ended. In Region 3, Pacific Island countries scattered from the Equator to the South Pole might not want to be part of a Plan. The text should therefore make explicit reference to Region 1 and some countries in Region 3. He asked how the provisions of No. 115 of the Nairobi Convention would apply.

4.10 The Member of the IFRB said that the expenses of such a conference would be defrayed by all the countries of the Regions concerned and any other countries that decided to participate, as identified in the establishment of the Conference agenda.

4.11 The delegate of Senegal said that it was unnecessary to specify a "competent" conference as well as making explicit reference to the Regions concerned.

4.12 The Chairman pointed out that the competence of the conference was self-evident and suggested that, to accommodate the view of the delegate of Senegal, the word "competent" might be deleted.

4.13 It was so agreed.

The meeting rose at 1230 hours.

The Secretary:
J. LEWIS

The Chairman:
E. GEORGE

Source: DT/116

COMMITTEE 6

**TENTH SERIES OF TEXTS FROM COMMITTEE 5
TO THE EDITORIAL COMMITTEE**

Committee 5 has approved the annexed text to be submitted to the Editorial Committee for consideration and subsequent transmission to the Plenary Session:

- Article 29, ADD 2613A

E. GEORGE
Chairman of Committee 5

Annex: 1

ANNEX

ARTICLE 29

ADD **2613A** Whenever the emissions from geostationary satellites in the inter-satellite service are directed towards space stations at distances from Earth greater than that of the geostationary-satellite orbit, the boresight of the antenna mainbeam of the geostationary satellite shall not be pointed within 15° of any point on the geostationary-satellite orbit.

Source: 192, 285

COMMITTEE 6

**ELEVENTH SERIES OF TEXTS FROM COMMITTEE 5
TO THE EDITORIAL COMMITTEE**

Committee 5 has approved the annexed texts to be submitted to the Editorial Committee for consideration and subsequent transmission to the Plenary Session:

- Resolution COM5/10
- Resolution COM5/11

With respect to Resolution COM5/10, the delegations of the Kingdom of Saudi Arabia, Israel and the United States expressed a reservation regarding the replacement of the text "in the VHF broadcasting bands" in resolves to invite the CCIR 1. by the text "in the VHF band".

E. George
Chairman of Committee 5

Annexes: 2

ANNEX 1

RESOLUTION COM5/10

TERRESTRIAL VHF DIGITAL SOUND BROADCASTING

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that advances in technology have made available digital sound broadcasting systems of high quality;
- b) that such a digital sound broadcasting system will offer a considerably higher sound quality as well as additional system characteristics which are not supported by the present FM broadcasting system;
- c) that digital sound broadcasting can, in addition to the properties mentioned above, have a higher frequency efficiency than conventional FM sound broadcasting;
- d) that digital sound broadcasting systems require less effective radiated power;
- e) that the bands 87.5 - 108 MHz in Region 1, 88 - 108 MHz in Region 2 and 87 - 108 MHz in Region 3 are generally much used for the high-powered FM sound broadcasting service, except in some countries;
- f) that several European countries are considering the implementation of digital sound broadcasting on an interim basis in the VHF bands allocated to the broadcasting service while ensuring the protection of assignments in the relevant broadcasting Plans in force;

resolves to invite the CCIR

in order to harmonize the implementation of terrestrial digital sound broadcasting;

- 1. to undertake as a matter of urgency, the relevant technical studies associated with introducing terrestrial digital sound broadcasting in the VHF band;
- 2. in particular, to consider the system characteristics and propagation in relation to developing compatibility criteria in the same and adjacent bands including protection of the safety services;

resolves further

to request the Secretary-General to bring this Resolution to the notice of the Administrative Council for consideration of placing on the agenda of a competent administrative radio conference the subject of terrestrial digital sound broadcasting in the VHF bands for Region 1 countries and those interested countries from Region 3;

invites administrations

to contribute actively to the CCIR studies in this respect.

ANNEX 2

RESOLUTION COM5/11

**Establishment of Standards for the
Operation of Low-Orbit Systems**

considering

- a) that the radio-frequency spectrum is a limited natural resource, to which all ITU Members should have access on equal conditions;
- b) that the ITU is required to coordinate efforts to harmonize the development of telecommunication facilities, notably those using space techniques, with a view to full advantage being taken of their possibilities;
- c) that one of the purposes of the Union is to foster collaboration among its Members with a view to the establishment of rates at levels as low as possible consistent with an efficient service and taking into account the necessity for maintaining independent financial administration of telecommunication on a sound basis;
- d) that in the performance of its studies, each International Consultative Committee is required to pay due attention to the study of Questions and to the formulation of Recommendations directly connected with the establishment, development and improvement of telecommunications in developing countries in both the regional and international fields;
- e) that the Telecommunications Development Bureau is required to carry out studies, as necessary, on technical, economic, financial, managerial, regulatory and policy issues in the field of telecommunications;
- f) that Resolution 15 of the Plenipotentiary Conference of Nice (1989), relating to the role of the International Telecommunication Union in the development of world telecommunications, established that the ITU should ensure that all its work reflected the position of the ITU as the authority responsible within the United Nations system for establishing in a timely manner technical and operational standards for all forms of telecommunication and for effecting the rational use of the radio-frequency spectrum;
- g) that CCITT Recommendations provide for the apportionment of accounting revenues on international traffic between terminal countries, in principle on an equitable basis;

recognizing

that current technological developments allow for the provision of telecommunication services through low-orbit satellite systems offering worldwide coverage, and that there are no standards governing the coordination, sharing and operation of such systems within the world telecommunication network;

bearing in mind

that only a very limited number of low-orbit systems offering worldwide coverage could coexist in any given frequency band;

resolves

1. to invite the organs of the Union within their fields of competence to carry out as a matter of priority technical, legal and operational studies to permit the establishment of standards governing the operation of low-orbit systems so as to ensure equitable and standard conditions of access for all ITU Members and to guarantee proper protection for existing services and systems in the telecommunication network at the world level;
 2. to invite administrations interested in or affected by the introduction and operation of low-orbit satellites to participate in such work as the organs of the Union may undertake in that connection.
-

COMMITTEE 6

Source: Documents 294, 132

TWELFTH AND LAST SERIES OF TEXTS FROM COMMITTEE 5
TO THE EDITORIAL COMMITTEE

Committee 5 has approved the annexed texts to be submitted to the Editorial Committee for consideration and subsequent transmission to the Plenary Session:

- Resolution COM5/12;
- Article 1 - definition of the radiolocation-satellite service.

E. GEORGE
Chairman of Committee 5

Annexes: 2

ANNEX 1

RESOLUTION COM5/[12]

**Introduction of Systems in the Broadcasting-Satellite Service (Sound),
BSS (Sound) in the Band [], Including the Complementary
Terrestrial Sound Broadcasting Uses**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made frequency allocations to the BSS (Sound), for the complementary terrestrial broadcasting and for the associated feeder links [that will become available for use from 1 January 2005];
- b) that some administrations or groups of administrations may wish to take a lead in an early introduction of BSS (Sound) systems of an experimental nature without affecting the continued operation of existing services in other countries prior to [the date referred to in **considering** a)];
- c) that it will be necessary to ensure that introduction of BSS (Sound) systems into this band proceeds in a flexible and equitable manner,

resolves

- 1. that, although the frequency band [] will not be available for general use by the BSS (Sound) service until [1 January 2005], some countries may make available all or parts of the band for BSS (Sound) systems including the complementary terrestrial uses before [1 January 2005];
- 2. that systems brought into use before [1 January 2005] shall operate in accordance with [Article 34] of the Radio Regulations, and for BSS (Sound) systems the procedure contained in Resolution 33 shall also be applied;
- 3. that for operational BSS (Sound) systems brought into use after [1 January 2005] the procedure in Resolution 33 shall be applied;
- [4. that up to the date of implementation of operational BSS (Sound) systems after [1 January 2005] the existing services in the above-mentioned band shall remain with primary status, and after this event their allocation shall become secondary;]
- 5. to urge administrations to ensure, to the maximum extent possible, that operational systems of the BSS (Sound) service introduced into the band [] have technical characteristics which take into account the relevant studies of the CCIR and with the understanding that these characteristics shall not limit a future conference in establishing a flexible plan and associated procedures;
- [6. that existing and planned BSS systems in the band 2 500 - 2 690 MHz may continue to operate after [1 January 2005]. Any BSS (Sound) systems introduced in accordance with the provisions of this Resolution in the band [] must be coordinated with the existing and planned BSS systems in the band 2 500 - 2 690 MHz.]

CHAPTER I

ARTICLE 1

Section III. Radio Services

ADD	46A	3.27A	Radiolocation-Satellite Service: A radiodetermination-satellite service used for the purpose of radiolocation.
------------	------------	--------------	---

This service may also include feeder links necessary for its operation.

COMMITTEE 6

Source: Document 236(Add.2)

SEVENTH SERIES OF TEXTS FROM COMMITTEE 4 TO THE EDITORIAL COMMITTEE

At its twelfth meeting, Committee 4 adopted the following texts:

- 1) Modifications to Article 8 of the Radio Regulations, as contained in Addendum 2 to Document 236, with modifications as indicated in Annex 1 to this document.
- 2) Recommendation COM4/D, contained in Addendum 2 to Document 236, with modifications as indicated in Annex 2 to this document.

The delegations of Ecuador, Mexico and Venezuela made reservations with respect to the modifications to Article 8, and the delegation of the United States reserved its position with respect to ADD 873D.

The above texts are submitted to the Editorial Committee for consideration and subsequent transmittal to the Plenary Meeting.

I. HUTCHINGS
Chairman

Annexes: 2

ANNEX 1

Modifications to Article 8

<p style="text-align: center;">GHz 19.7 - 20.2</p> <p style="text-align: center;">Allocation to Services</p>		
Region 1	Region 2	Region 3
<p>19.7 - 20.220.1</p> <p>FIXED-SATELLITE (space-to-Earth)</p> <p>Mobile-Satellite (space-to-Earth)</p> <p>MOD 873 <u>873A</u></p>	<p>19.7 - 20.220.1</p> <p>FIXED-SATELLITE (space-to-Earth)</p> <p><u>MOBILE-SATELLITE</u> <u>(space-to-Earth)</u></p> <p>Mobile-Satellite (space-to-Earth)</p> <p>MOD 873 <u>873A</u> <u>873B</u> <u>873C</u> <u>[873E]</u></p>	<p>19.7 - 20.220.1</p> <p>FIXED-SATELLITE (space-to-Earth)</p> <p>Mobile-Satellite (space-to-Earth)</p> <p>MOD 873 <u>873A</u></p>
<p>19.720.1 - 20.2</p> <p>FIXED-SATELLITE (space-to-Earth)</p> <p><u>MOBILE-SATELLITE (space-to-Earth)</u></p> <p>Mobile-Satellite (space-to-Earth)</p> <p>MOD 873 <u>873A</u> <u>873B</u> <u>873C</u> <u>873D</u></p>		

MOD 873 Additional allocation: in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Brazil, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Tanzania, Chad, Thailand, Togo, Tunisia and Zaire, the band 19.7 - 21.2 GHz is also allocated to the fixed and mobile services on a primary basis. This additional use shall not impose any limitation on the power flux-density of space stations in the fixed-satellite and to space stations in the mobile-satellite services where such allocation is on a primary basis within the band 19.7 - 21.2 GHz.

ADD 873A In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz.

ADD 873B In the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz in Region 2, and in the bands 20.1 - 20.2 GHz and 29.9 - 30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.

ADD 873C In the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz, the provisions of No. 953 do not apply in respect to the mobile-satellite service.

ADD 873D The allocation to the mobile-satellite service is intended for use by networks which use narrow spot beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7 - 20.1 GHz in Region 2, and in the band 20.1 - 20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of RR 873.

[ADD 873E The use of the bands 19.7 - 20.1 GHz and 29.5 - 29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the fixed-satellite service and in the mobile-satellite service as described in 873B.]

**GHz
29.5 - 30**

Allocation to Services		
Region 1	Region 2	Region 3
29.5 - 30 <u>29.9</u> FIXED-SATELLITE (Earth-to-space) Mobile-Satellite (Earth-to-space) <u>Earth Exploration-Satellite</u> <u>(Earth-to-space) 882C</u> 873A-882 MOD 883	29.5 - 30 <u>29.9</u> FIXED-SATELLITE (Earth-to-space) <u>MOBILE-SATELLITE</u> <u>(Earth-to-space)</u> Mobile-Satellite (Earth-to-space) <u>Earth Exploration-Satellite</u> <u>(Earth-to-space) 882C</u> 873A 873B 873C [873E] -882-MOD 883	29.5 - 30 <u>29.9</u> FIXED-SATELLITE (Earth-to-space) Mobile-Satellite (Earth-to-space) <u>Earth Exploration-Satellite</u> <u>(Earth-to-space) 882C</u> 873A-882 MOD 883
29.5-29.9 - 30 FIXED-SATELLITE (Earth-to-space) <u>MOBILE-SATELLITE (Earth-to-space)</u> Mobile-Satellite (Earth-to-space) <u>Earth Exploration-Satellite (Earth-to-space) 882C</u> <u>873A 873B 873C 882 882A 882B MOD 883</u>		

MOD 883 Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, the United Arab Emirates, Egypt, Ethiopia, Guam, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, the Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Pakistan, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Chad and Thailand, the band 29.5 - 31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. 2505 and 2508 shall apply.

- ADD 882A** Additional allocation: the bands 27.500 - 27.501 GHz and 29.999 - 30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for uplink power control.
- Such space-to-Earth transmissions shall not exceed an effective isotropic radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit, and shall not produce a power flux-density in excess of the values in No. 2578 on the Earth's surface in the band 27.500 - 27.501 GHz.
- ADD 882B** Additional allocation: the band 27.501 - 29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for uplink power control.
- ADD 882C** In the band 28.5 - 30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

ANNEX 2

RECOMMENDATION COM4/D

**Relating to Multiservice Satellite Networks
using the Geostationary-Satellite Orbit**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the Conference has allocated, on a primary basis, the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz in Region 2, and 20.1 - 20.2 GHz and 29.9 - 30 GHz in Regions 1 and 3 to the mobile-satellite service on a primary basis;
- b) that these bands are also allocated to the fixed-satellite service;
- c) that some administrations have expressed interest in developing multiservice satellite networks in these bands;
- d) that Recommendation 715 (Orb-88) calls for simplification of the process for bringing into use satellite networks with different classes of user terminals;
- e) that the Voluntary Group of Experts (VGE), among other means of simplifying the Radio Regulations, is evaluating service definitions accommodating a range of services;

recognizing

that the introduction of multiservice satellite networks using inter alia mobile earth stations may have an impact on networks operating in the fixed-satellite service;

recommends

that, as a matter of urgency, studies should be made of the technical characteristics, including pointing techniques, of multiservice satellite networks using the geostationary-satellite networks encompassing mobile-satellite and fixed-satellite applications and the sharing criteria necessary for compatibility with the fixed-satellite service in the frequency bands recommended above;

requests the CCIR

to carry out these studies;

encourages the administrations

to participate actively in these studies;

recommends further

- a) that a future competent world administrative radio conference review the allocations of these bands, taking into account the results of the CCIR studies and the work of the VGE;
- b) that a future competent world administrative radio conference consider the requirement for a single service definition encompassing mobile-satellite and fixed-satellite applications and the possible need for additional frequency spectrum to accommodate the growth of these services;

invites the Administrative Council

to place this matter on the agenda of the next competent world administrative radio conference.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 310-E
27 February 1992MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

B.9

PLENARY MEETINGNINTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 4	288	Article 8
		Resolution COM4/2
		Resolution COM4/3
COM 5	287	Resolution COM5/3
		Resolution COM5/9
COM 4	288	Recommendation COM4/B
		Recommendation COM4/C

Note by Committee 4:Reservations:

- | | | |
|----|--|--|
| 1) | Italy | for SUP 682 |
| 2) | Argentina
United States
Russian Federation | for some modifications (see pages B.9/4 - B.9/6) |
| 3) | Argentina | |

P. ABOUDARHAM
Chairman of Committee 6Annex: 18 pages

ARTICLE 8

MOD

MHz
400.15 - 401

Allocation to Services		
Region 1	Region 2	Region 3
400.15 - 401	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) 647A Space Operation (space-to-Earth) 647	

ADD

647A

The band 400.15 - 401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.

MOD

MHz
410 - 420

Allocation to Services		
Region 1	Region 2	Region 3
410 - 420	FIXED MOBILE except aeronautical mobile Space Research (space-to-space) 651A	

ADD

651A

Use of the band 410 - 420 MHz by the space research service is limited to communications within 5 km of an orbiting, manned space vehicle.

MOD**MHz
942 - 960**

Allocation to Services		
Region 1	Region 2	Region 3
942 - 960 FIXED MOBILE except aeronautical mobile BROADCASTING 703 704	942 - 960 FIXED MOBILE	942 - 960 FIXED MOBILE BROADCASTING 701

SUP**708**

MOD

MHz
1 700 - 2 290

Allocation to Services		
Region 1	Region 2	Region 3
1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 671 722	1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 671 722 743	
1 710 - 2 025 FIXED MOBILE 722 744 746	1 710 - 2 025 FIXED MOBILE 722 744 745 746	

MHz
1 700 - 2 290 (continued)

Allocation to Services		
Region 1	Region 2	Region 3
2 025 - 2 110	FIXED MOBILE 747A SPACE RESEARCH (Earth-to-space) (space-to-space) SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) 750A	
2 110 - 2 120	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space)	
2 120 - 2 200	FIXED MOBILE	

MHz

1 700 - 2 290 (continued)

Allocation to Services		
Region 1	Region 2	Region 3
2 200 - 2 290	FIXED SPACE RESEARCH (space-to-Earth) (space-to-space) SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) MOBILE 747A 750A	

SUP 747

ADD 747A In making assignments to the mobile service in the bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz, administrations shall take into account Resolution COM4/2.

SUP 748

SUP 749

SUP 750

ADD	750A	Administrations are urged to take all practicable measures to ensure that space-to-space transmissions between two or more non-geostationary satellites, in the space research, space operations and Earth exploration-satellite services in the bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz, shall not impose any constraints on Earth-to-space, space-to-Earth and other space-to-space transmissions of those services and in those bands between geostationary and non-geostationary satellites.
------------	-------------	--

MOD

MHz
2 290 - 2 450

Allocation to Services		
Region 1	Region 2	Region 3
2 290 - 2 300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	
2 300 - 2 450 FIXED MOBILE Amateur Radiolocation 664 752	2 300 - 2 450 FIXED MOBILE RADIOLOCATION Amateur 664 751 752	

[SUP

743A]

- MOD 596** Different category of service: in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, Brunei, China, the United Arab Emirates, India, Indonesia, Iran, Iraq, Malaysia, Oman, Pakistan, Philippines, Qatar, Singapore, Sri Lanka and Thailand, the band 137 - 138 MHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis (see No. 425).
- MOD 604** Additional allocation: in Ethiopia, Finland, Kenya, Malta, Somalia, Sudan, Tanzania and Yugoslavia, the band 138 - 144 MHz is also allocated to the fixed service on a primary basis.
- SUP 614**
- MOD 621**
Mob-87 Additional allocation: in the Federal Republic of Germany, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Monaco, Norway, the Netherlands, the United Kingdom, Sweden and Switzerland, the band 174 - 223 MHz is also allocated to the land mobile service on a permitted basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.
- MOD 622** Different category of service: in the Federal Republic of Germany, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Luxembourg, Monaco, Norway, the Netherlands, Portugal, the United Kingdom, Sweden and Switzerland, the band 223 - 230 MHz is allocated to the land mobile service on a permitted basis (see No. 425). However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.
- MOD 627** In Region 2, no new stations in the radiolocation service may be authorized in the band 216 - 225 MHz. Stations authorized prior to 1 January 1990 may continue to operate on a secondary basis.
- SUP 633**
- SUP 634**
- MOD 635** Alternative allocation: in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the bands 223 - 238 MHz and 246 - 254 MHz are allocated to the broadcasting service on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.

- MOD 658** Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei, Burundi, Egypt, the United Arab Emirates, Ecuador, Ethiopia, Greece, Guinea, India, Indonesia, Iran, Iraq, Israel, Italy, Jordan, Kenya, Kuwait, the Lebanon, Libya, Liechtenstein, Malaysia, Malta, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Singapore, Somalia, Switzerland, Tanzania, Thailand, Togo and Turkey, the band 430 - 440 MHz is also allocated to the fixed service on a primary basis and the bands 430 - 435 MHz and 438 - 440 MHz are also allocated to the mobile, except aeronautical mobile, service on a primary basis.
- MOD 659** Additional allocation: in Angola, Bulgaria, Cameroon, the Congo, Djibouti, Gabon, Hungary, [Malawi], Mali, Mongolia, Niger, Pakistan, Poland, the German Democratic Republic, Dem. People's Rep. of Korea, Romania, Rwanda, Chad, Czechoslovakia and the U.S.S.R., the band 430 - 440 MHz is also allocated to the fixed service on a primary basis.
- MOD 663** Additional allocation: in the French Overseas Departments in Region 2 and India, the band 433.75 - 434.25 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis. In France and in Brazil, the band is allocated to the same service on a secondary basis.
- MOD 672** Different category of service: in Afghanistan, Bulgaria, China, Cuba, Japan, Mongolia, Poland, Czechoslovakia and the U.S.S.R., the allocation of the band 460 - 470 MHz to the meteorological-satellite service (space-to-Earth) is on a primary basis (see No. 425) and is subject to agreement obtained under the procedure set forth in Article 14.
- MOD 675** Different category of service: in Chile, Colombia, Cuba, Ecuador, the United States, Guyana, Jamaica, Mexico and Panama, the allocation of the bands 470 - 512 MHz and 614 - 806 MHz to the fixed and mobile services is on a primary basis (see No. 425), subject to agreement obtained under the procedure set forth in Article 14.
- MOD 676** Additional allocation: in Burundi, Cameroon, the Congo, Ethiopia, Israel, Kenya, Lebanon, Libya, [Malawi], Senegal, Sudan, Syria and Yemen, the band 470 - 582 MHz is also allocated to the fixed service on a secondary basis.
- MOD 678** Additional allocation: in Costa Rica, Cuba, El Salvador, Ecuador, the United States, Guatemala, Guyana, Honduras, Jamaica, Mexico and Venezuela, the band 512 - 608 MHz is also allocated to the fixed and mobile services on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.
- SUP 682**

- MOD 697 Mob-87** Additional allocation: in the Federal Republic of Germany, Burkina Faso, Cameroon, Côte d'Ivoire, Denmark, Egypt, Finland, Israel, Kenya, Libya, Liechtenstein, Monaco, Norway, the Netherlands, Sweden, Switzerland and Yugoslavia, the band 790 - 830 MHz, and in these same countries and in Spain, France, Malta, the Gabonese Republic and Syria, the band 830 - 862 MHz, are also allocated to the mobile, except aeronautical mobile, service on a primary basis. However, stations of the mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, stations of services operating in accordance with the Table in countries other than those mentioned in connection with the band.
- MOD 703** In Region 1, in the band 862 - 960 MHz, stations of the broadcasting service shall be operated only in the African Broadcasting Area (see Nos. 400 to 403) excluding Algeria, Egypt, Spain, Libya and Morocco, subject to agreement obtained under the procedure set forth in Article 14.
- MOD 719** In Bulgaria, Mongolia, Poland, the German Democratic Republic, Roumania, Czechoslovakia and the U.S.S.R., the existing installations of the radionavigation service may continue to operate in the band 1 350 - 1 400 MHz.
- ADD 723B** Additional allocation: in Belarus, the Russian Federation and Ukraine, the band 1 429 - 1 535 MHz is also allocated to the aeronautical mobile service on a primary basis exclusively for the purposes of aeronautical telemetry within the national territory.
- MOD 724** Different category of service: in Afghanistan, Saudi Arabia, Bahrain, Bulgaria, Cameroon, Egypt, the United Arab Emirates, France, Iran, Iraq, Israel, Kuwait, the Lebanon, Morocco, Mongolia, Oman, Poland, Qatar, Syria, the German Democratic Republic, Roumania, Czechoslovakia, the U.S.S.R., Yemen and Yugoslavia, the allocation of the band 1 525 - 1 530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. 425).
- MOD 746** Additional allocation: in Bulgaria, Cuba, Mali, Mongolia, Poland, the German Democratic Republic, Roumania, Czechoslovakia and the U.S.S.R., the band 1 770 - 1 790 MHz is also allocated to the meteorological-satellite service on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.
- MOD 769** Additional allocation: in Afghanistan, Saudi Arabia, Bahrain, Bulgaria, Cameroon, the Central African Republic, the Congo, the Ivory Coast, Cuba, Egypt, the United Arab Emirates, Ethiopia, Gabon, Guinea, Guinea-Bissau, Iran, Iraq, Israel, the Lebanon, Malaysia, Malawi, Mali, Morocco, Mauritania, Mongolia, Nigeria, Oman, Pakistan, the Philippines, Poland, Qatar, Syria, the German Democratic Republic, Roumania, Singapore, Somalia, Sri Lanka, Czechoslovakia, Thailand, Tunisia, the U.S.S.R., Yemen, Yugoslavia, Zaire and Zambia, the band 2 690 - 2 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985.

RESOLUTION COM4/2**Use by the Mobile Service of the Frequency Bands
2 025 - 2 110 MHz and 2 200 - 2 290 MHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) the changes made by this Conference to the Table of Allocations to the space services in the bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz;
- b) the existing co-primary allocation to the mobile service in Regions 2 and 3 and the changes in the allocations to the mobile service in Region 1;
- c) the expected rapid growth of mobile systems in bands near 2 GHz;
- d) that the CCIR Report on the Technical and Operational Bases for the World Administrative Radio Conference 1992 concluded that the introduction of Future Public Land Mobile Telecommunication Systems (FPLMTS) or conventional land mobile systems in the frequency bands used by the space services would cause unacceptable interference to the space services;
- e) that in some countries the space services have successfully shared with low-density mobile electronic news gathering (ENG) and with aeronautical telemetry systems for many years;
- f) that the introduction in Article 27 of suitable limits on the characteristics of mobile systems may be an adequate means of facilitating the expansion of mobile systems in these bands without harmful interference to the space services;
- g) that the CCIR is currently studying sharing criteria and preliminary results are available;

noting

that these preliminary results indicate that low-density mobile systems (e.g., ENG) using either highly directive antennas (typically in excess of 24 dBi) or alternatively very low e.i.r.p. densities (typically below -12 dBW/MHz) can share with relevant space services in these bands;

resolves

1. to invite the CCIR to continue, as a matter of urgency, the study of appropriate provisions to protect the space services operating in the bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz from harmful interference from emissions by stations of the mobile service;
2. to recommend that administrations do not introduce high-density or conventional type land mobile systems in the 2 025 - 2 110 MHz and 2 200 - 2 290 MHz bands;
3. that administrations, when considering in the near future the introduction of mobile systems in the above bands, should permit only low-density mobile systems;

4. that until the CCIR develops appropriate Recommendations, the protection criteria for space services as given in CCIR Recommendation 609 (Space research), Recommendation 363 (Space operations) and Recommendation 514 (Earth exploration-satellite) be used as guidance;

5. that the next competent conference should consider reviewing Article 27 to define the conditions under which sharing between the mobile and the space services in these bands is possible;

invites the CCIR

1. to develop the appropriate provisions mentioned in **resolves 1**;
2. to report the results of its studies to the next competent conference;

instructs the Secretary-General

to bring this Resolution to the attention of the next Administrative Council with a view to including this subject in the agenda of the next competent conference.

RESOLUTION COM4/3

**Possible Relocation of Frequency Assignments to Certain
Space Missions from the 2 GHz Band to Bands above 20 GHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) the changes in the allocations to space services made by this Conference in the bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz;
- b) the possibility of technical improvements in the space services concerned which might lead to more efficient usage of the spectrum;
- c) the possibility that frequency assignments to some space missions could be relocated in bands above 20 GHz;

resolves

- 1. that it is desirable to review the present and planned use of the frequency bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz, with the intent, when practicable, of assigning frequencies to some space missions in bands above 20 GHz and possibly reducing the allocations to the space services in the 2 GHz band;
- 2. that the next competent world administrative radio conference should consider this matter, taking account of the results of the relevant CCIR studies, which may make it possible to revise the Radio Regulations, so that no frequency assignments would be permitted in the bands around 2 GHz after a date in the near future to be determined by that conference for those space missions whose frequency assignments might be accommodated in the bands above 20 GHz, and so that, if appropriate, the spectrum needs of the mobile and space services might be equitably accommodated in the 2 GHz band;

invites the CCIR

- 1. to carry out the review mentioned in **resolves 1** above;
- 2. to conduct the necessary studies on the evolution of the space research, space operations and Earth exploration-satellite services on the mobile services in the bands available to each service around 2 GHz and on the compatibility between these services in the 2 GHz band;
- 3. to report to the next competent conference the spectrum requirement of each service in the bands mentioned in 2 above and, where necessary, indicate the criteria for sharing between these services;

urges administrations

to participate actively in these studies;

instructs the Secretary-General

to bring this Resolution to the attention of the next Administrative Council with a view to including this subject in the agenda of the next competent conference.

RESOLUTION COM5/3

**Future Consideration of the Plans for the Broadcasting-Satellite Service in the
Band 11.7 - 12.5 GHz (Region 1) and the Band 11.7 - 12.2 GHz (Region 3)
in Appendix 30 and the Associated Feeder-Link Plans in Appendix 30A**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that Article 14 of Appendix 30 indicates that the broadcasting-satellite service Plan for Regions 1 and 3 in Appendix 30 meets requirements until January 1994;
- b) that WARC Orb-88 in Resolution 521, **resolves** 3, stated that "while the Plans for the 11.7 - 12.7 GHz band can already be used for certain types of high definition television, studies should be continued on the long range future suitability of these bands for HDTV without prejudice to the existing plans in this band";
- c) that modernization of the Plans in Appendix 30 associated with Regions 1 and 3, which had their origins in WARC-77, would be valuable in offering the prospects of more efficient utilization of the spectrum and orbit resources by taking into account technological improvements (e.g. satellite antennas and receiver sensitivity) which could be used to increase the capacity and the flexibility of the Plan without reducing the number of current assignments to each country;
- d) that improvements in the use of the 12 GHz planned band may enable countries, in particular those which have high rainfall climatic zones, to accommodate their BSS (HDTV) needs, or part of their needs, in that band;

invites the CCIR

to study, as a matter of priority, the technical possibilities for improving the efficiency and flexibility of the Plans for Regions 1 and 3 contained in Appendices 30 and 30A, taking into account the intent of the conference referred to below, and to study the particular needs of high rainfall climatic zones for HDTV and the technical methods which could be used to implement this service in the 12 GHz band;

urges administrations

to contribute to the studies of the CCIR and, also, to consider the need for a future competent conference to review and as necessary revise the relevant parts of Appendices 30 and 30A;

recommends the next Plenipotentiary Conference

to consider the convening of an administrative radio conference to revise those parts of the Plans in Appendices 30 and 30A applying to Regions 1 and 3 in the light of the studies carried out by the CCIR;

resolves

1. that the future conference, in revising the Region 1 and 3 parts of Appendices 30 and 30A, should:
 - a) maintain each country's assigned BSS capacity in the Plan, as a minimum;
 - b) provide for the needs of new countries;
 - c) protect notified systems which are in conformity with Appendices 30 and 30A;
 - d) take account, as far as possible, of systems which have been communicated to the IFRB under Article 4 of Appendices 30 and 30A;
2. that the future conference shall ensure that the integrity of the Region 2 Plans and their associated provisions is preserved, by providing the same protection to the assignments contained in those Plans as they now receive under the relevant provisions of the Radio Regulations and by not requiring more protection from assignments in the Region 2 Plans than that currently provided under the Radio Regulations;

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council with a view to the convening of a conference to undertake the review and any necessary revision of the relevant parts of Appendices 30 and 30A and associated provisions of the Radio Regulations, taking account of the latest CCIR studies.

RESOLUTION COM5/9

**Assistance to the Developing Countries to Facilitate the Implementation
of Changes in Frequency Band Allocations which Necessitate the
Transfer of Existing Assignments**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that major changes have been made in the Table of Frequency Allocations, extending bands allocated to some services and allocating bands to new services in order to facilitate the development of new technologies;
- b) that these extensions of bands and new allocations require that existing frequency assignments to stations of the services in the reallocated bands be transferred;
- c) that many of these assignments correspond to services which are vital to the telecommunication networks of many countries, particularly developing countries;
- d) that the allocations referred to in **considering** a) cannot be used effectively until the process of transferring the existing assignments therein has been concluded;
- e) that the transfer of these assignments will necessitate investments and in many cases a transfer of technology, which will require both resources and technical training;

recognizing

- a) that, owing to the world economic situation, most developing countries still lack the resources needed for investment in various sectors of development;
- b) that the Nice Plenipotentiary Conference established the Telecommunications Development Conferences and the Telecommunications Development Bureau (BDT) to discharge the Union's dual responsibility as a United Nations specialized agency and executing agency for implementing projects under the United Nations development system or other funding initiatives so as to facilitate and enhance telecommunications development by offering, organizing and coordinating technical cooperation and assistance activities;

resolves

- 1. to request the BDT, when formulating its immediate plans for assistance to the developing countries, to consider as a matter of priority the introduction of specific modifications in their radiocommunication networks, coordinating the necessary technical advisory activities with the IFRB and the CCIR;
- 2. that a future world development conference should, when defining the priorities of the BDT, consider the needs of developing countries and should assist them with the resources needed to implement the required modifications to their radiocommunication networks;

3. that the World Development Conference should give the BDT the necessary instructions and elements to enable it to provide technical assistance to the developing countries, and should monitor its activities in this respect;

requests the IFRB and the CCIR

to provide the BDT with their assistance in the implementation of this Resolution;

requests the Director of the BDT

to place this Resolution on the draft agenda of the next world development conference;

invites the Administrative Council

to ensure that this Resolution is placed on the agenda of the next world development conference.

RECOMMENDATION COM4/B**Elimination of HF Broadcasting on Frequencies Outside the
HF Bands Allocated to the Broadcasting Service**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that there is an increasing number of HF broadcasting transmitters operating on frequencies outside the bands allocated to the broadcasting service;
- b) that the common use of the HF bands by the broadcasting and other services, without the relevant allocations or detailed regulations, results in inefficient use of the frequency spectrum;
- c) that such use has led to harmful interference;
- d) that this Conference has allocated additional spectrum to the broadcasting service in the HF bands;

recommends

that administrations shall take practicable steps to eliminate HF broadcasting outside the HF bands allocated to the broadcasting service.

ADD**RECOMMENDATION COM4/C****Alignment of Allocations in the 7 MHz Band Allocated
to the Amateur Service**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that it is desirable to have exclusive worldwide allocations to the amateur and broadcasting services in the bands around 7 MHz;
- b) that the sharing of frequency bands by these services is undesirable and should therefore be avoided;
- c) that a number of administrations have made proposals to this Conference for the alignment of the allocations to the amateur service around 7 MHz;
- d) that this Conference was able to give only limited consideration to these proposals;

recommends

that a future competent world administrative radio conference should consider the possibility of aligning the allocations to the amateur service around 7 MHz, with due regard to the requirements of other services;

invites the Administrative Council

to place this Recommendation on the agenda of the next competent world administrative radio conference.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

Document 311-E

27 February 1992

Original: English

PLENARY MEETING

Report of the Chairman of Committee 5 to the Plenary

Committee 5 has authorized its Chairman to submit proposed modifications to Article 69, as contained in the annex, directly to the Plenary for consideration.

E. GEORGE
Chairman of Committee 5

Annex: 1

ANNEX

ARTICLE 69

Entry into Force of the Radio Regulations

- MOD 5187** § 1. These Regulations, which are annexed to the International
Orb-88 Telecommunication Convention, shall enter into force on 1 January 1982, except as
specified in Nos. 5188, 5189, 5193, 5194, 5195, ~~and 5196, and 5197.~~
- NOC 5188**
to
5194
- MOD 5195** (2) The use of the frequency bands ~~as listed in Nos. 532 and 544 of the~~
Mob-87 ~~Radio Regulations~~ 12 230 - 12 330 kHz, 16 360 - 16 460 kHz, 17 360 - 17 410 kHz,
18 780 - 18 900 kHz, 19 680 - 19 800 kHz, 22 720 - 22 855 kHz, 25 110 - 25 210 kHz
and 26 100 - 26 175 kHz by the maritime mobile service shall commence on
1 July 1991 at 0001 hours UTC under the conditions specified in Resolution 325
(Mob-87).
- NOC 5196**
Orb-88
- NOC 5196.1**
Orb-88
- ADD 5197** § 10. The partial revision of the Radio Regulations contained in the Final Acts
of WARC-92 shall enter into force on [] at 0001 hours UTC¹.
- ADD 5197.1** ¹ For the provisional application of Article 56, see Resolution COM5/4.
-

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 312-E
27 February 1992MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

B.10

PLENARY MEETINGTENTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 5	293	Article 11
		Article 12
		Article 13
		Resolution COM5/8

P. ABOUDARHAM
Chairman of Committee 6Annex: 16 pages

ARTICLE 11

(MOD) Orb-88

**Coordination of Frequency Assignments to Stations
in a Space Radiocommunication Service Except Stations
in the Broadcasting-Satellite Service and to
Appropriate Terrestrial Stations^{1, 2, 3, 5}**

NOC

**Section I. Procedures for the Advance Publication
of Information on Planned Satellite Networks⁴**

ADD

**A.11.5
WARC-92**

⁵ See Resolution COM5/8 relating to interim procedures for the coordination and notification of frequency assignments of non-geostationary-satellite networks in certain space services and the other services to which the bands are allocated.

ARTICLE 12

(MOD) Orb-85 **Notification and Recording in the Master International
Frequency Register of Frequency Assignments¹ to Terrestrial
Radiocommunication Stations^{2, 3, 4, 5}**

NOC **Section I. Notification of Frequency Assignments**

ADD A.12.5 ⁵ See Resolution COM5/8 relating to interim procedures for the notification and
WARC-92 recording of frequency assignments of non-geostationary-satellite networks in certain
space services and the other services to which the bands are allocated.

ARTICLE 13

(MOD) Orb-88 **Notification and Recording in the Master International
Frequency Register of Frequency Assignments¹ to Radio
Astronomy and Space Radiocommunication Stations Except
Stations in the Broadcasting-Satellite Service^{2, 3, 4, 5}**

NOC **Section I. Notification of Frequency Assignments**

ADD **A.13.5** ⁵ See Resolution COM5/8 relating to interim procedures for the notification and
WARC-92 recording of frequency assignments of non-geostationary-satellite networks in certain
space services and the other services to which the bands are allocated.

RESOLUTION COM5/8

**Interim Procedures for the Coordination and Notification of Frequency Assignments
of Non-Geostationary-Satellite Networks in Certain Space Services
and the Other Services to Which the Bands are Allocated¹**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that in several different space radiocommunication services there is increasing interest in the use of space systems using non-geostationary-satellite networks;
- b) that, in order to ensure the satisfactory operation of such networks, other networks and other radio services sharing the same frequency bands, taking into account the relevant allocations, there is a need for procedures to regulate the frequency assignments of non-geostationary-satellite networks;
- c) that the coordination methods for non-geostationary-satellite networks require specific criteria and calculation methods which are not yet available;
- d) that, consequently, there is a need for interim procedures to be applied until such time as a future conference, with the benefit of further studies by the CCIR and taking account of the experience gained in practice, is able to adopt a permanent procedure;

considering also

- e) that the Plenipotentiary Conference (Nice, 1989), initiated the formation of a Voluntary Group of Experts, one of whose tasks is to simplify the procedures of the Radio Regulations;
- f) that any new procedures adopted by this Conference must therefore be as simple as possible and should, where appropriate, make use of the existing procedures of the Radio Regulations;
- g) that any interim procedures must take full account of the status of the allocations to services, both terrestrial and space, in frequency bands which may be used by non-geostationary-satellite networks;
- h) that any interim procedures must also take full account of the interests of all countries, including the state of development of their terrestrial and space radiocommunication services;

considering further

- i) that the provisions of No. 2613 of the Radio Regulations, while necessary to safeguard geostationary-satellite networks in the fixed-satellite service from interference which might be caused by non-geostationary-satellite networks, would, if more widely applied, prejudice the development of such systems in other space radiocommunication services;

¹ This Resolution shall be applied only to the frequency bands [to be decided by Committee 4]. For the purpose of applying the interim procedures annexed to this Resolution, an administration, when providing information in the form of Appendices 3 or 4, shall state whether it relates to a geostationary satellite or to a non-geostationary satellite and shall provide the appropriate orbital information.

[noting

that the operation of telecommunication systems in the MSS bands must be in conformity with the International Telecommunication Convention and the Administrative Regulations in force, in particular their respective preambles and, in this respect:

- a) the right of each Member to decide how or whether to participate in the above systems, and to determine the terms and conditions of access to such systems from its territory;
- b) the obligation for entities and organizations providing international or national telecommunication services by non-geostationary-satellite networks to operate at the point of delivery under the legal, financial and regulatory requirements of the Member of the Union in whose territory these services are authorized;]

resolves

1. that, pending the adoption of a permanent procedure by a future competent conference, the use of frequency assignments by:
 - a) non-geostationary-satellite systems in the space services in relation to other non-geostationary-satellite systems, geostationary-satellite systems [and terrestrial systems];
 - b) geostationary-satellite systems in relation to non-geostationary-satellite systems; and,
 - c) terrestrial systems in relation to the earth stations of non-geostationary-satellite networks,

to which this Resolution applies shall be regulated in accordance with the interim procedures and the associated provisions in the annex hereto;

2. that the interim procedures annexed to this Resolution apply in addition to those of Articles 11 and 13 for geostationary-satellite networks and shall replace those of Articles 11 and 13 for non-geostationary-satellite networks;
3. that the interim procedures annexed to this Resolution shall be applied from 4 March 1992;

invites

1. all administrations concerned in or by the introduction and operation of non-geostationary-satellite systems in the relevant space services to cooperate in the application of these interim procedures;
2. all those administrations which acquire experience in the application of the annexed interim procedures to contribute to the studies of the CCIR;

instructs the IFRB

to apply these procedures and to provide the necessary assistance to administrations;

invites the CCIR

to study and develop Recommendations on the coordination methods, the necessary orbital data relating to non-geostationary-satellite systems, and the sharing criteria;

instructs the Secretary-General

to bring this Resolution, at an appropriate stage, to the attention of the Administrative Council with a view to the inclusion of this subject in the agenda of a future conference.

ANNEX TO RESOLUTION COM5/8

**Interim Procedures for the Coordination and Notification of Assignments of
Non-Geostationary-Satellite Networks in Certain Space Services and the Other
Services to Which the Bands are Allocated**

Section A. General Information

A.1 The assistance of the IFRB can be requested in the application of the provisions of this annex.

A.2 In the absence of specific provisions relating to the evaluation of the interference, the calculation methods and the criteria should be based on relevant CCIR Recommendations agreed by the administrations concerned either as a result of Resolution 703 (Rev. WARC-92) or otherwise. In the event of disagreement on a CCIR Recommendation or in the absence of such Recommendations, the methods and criteria shall be agreed between the administrations concerned. Such agreements shall be concluded without prejudice to other administrations.

A.3 When applying the provisions of this Resolution for non-geostationary-satellite networks, administrations should provide the following information in addition to that of Appendix 3 or Appendix 4:

- i) right ascension of the ascending node;
- ii) argument of perigee;
- iii) active service arc.

Section I. Procedures for the Advance Publication of Information on Planned Satellite Networks

Publication of Information

1.1 An administration (or one acting on behalf of a group of named administrations) which intends to bring into use a satellite network within a satellite system shall, prior to the coordination procedure described in paragraphs 2.1 and 2.2, send to the International Frequency Registration Board, not earlier than six years¹ and preferably not later than two years before the date of bringing into service of each satellite network, the information listed in Appendix 4.

1.2 Amendments to the information sent in accordance with the provisions of paragraph 1.1 shall also be sent to the Board as soon as they become available. Modifications which are of such a nature as to change significantly the character of the network may require recommencing the advance publication procedure.

1.3 On receipt of the complete information sent under paragraphs 1.1 and 1.2, the Board shall publish it in a special section of its weekly circular within three months and shall also, when the weekly circular contains such information, so advise all administrations by circular telegram. The circular telegram shall indicate the frequency bands to be used and, in the case of a geostationary satellite, the orbital location of the space station. When the Board is not in a position to comply with the time limit referred to above, it shall periodically so inform the administrations, giving the reasons therefor.

Comments on Published Information

1.4 If, after studying the information published under paragraph 1.3, any administration is of the opinion that interference which may be unacceptable may be caused to assignments of its existing or planned satellite networks [or to assignments to its existing or planned terrestrial radiocommunication stations], it shall, within four months after the date of the weekly circular containing the complete information listed in Appendix 4, send the administration concerned its comments on the particulars of the interference to its existing or planned satellite systems [or to its existing or planned terrestrial stations]. A copy of these comments shall also be sent to the Board. If no such comments are received from an administration within the period mentioned above, it may be assumed that the administration has no basic objections to the planned satellite network(s) of the system on which details have been published.

1.4A An administration sending information under paragraphs 1.1 and 1.2 shall, if requested by an administration receiving information published under paragraph 1.3, provide the technical methods and criteria it proposes to use for the evaluation of the interference.

1.4B An administration receiving information published under paragraph 1.3, may provide to the administration sending information under paragraphs 1.1 and 1.2 the technical methods and criteria it proposes to use for the evaluation of the interference.

¹ See also No. 1550.

Resolution of Difficulties

1.5 An administration receiving comments sent in accordance with paragraph 1.4 and administrations sending such comments shall endeavour to resolve any difficulties that may arise and shall provide any additional information that may be available.

1.5A In case of difficulties arising, the administration responsible for the planned network shall first explore all possible means of meeting its requirements without considering the possibility of adjustment to stations or networks of other administrations. If no such means can be found, the administration concerned may then request other administrations, either bilaterally or multilaterally, to mutually help resolve these difficulties.

1.5B An administration receiving a request under paragraph 1.5A shall, in consultation with the requesting administration, explore all possible means of meeting the latter's requirements.

1.5C If, after following the procedure described in paragraphs 1.5A and 1.5B, there are unresolved difficulties, the administrations concerned shall jointly make every possible effort to resolve these difficulties by means of mutually acceptable adjustments.

Results of Advance Publication

1.6 An administration on behalf of which details of planned satellite networks have been published in accordance with the provisions of paragraphs 1.1 to 1.3 shall, after the period of four months specified in paragraph 1.4, inform the Board whether or not comments provided for in paragraph 1.4 have been received and of the progress made in resolving any difficulties. Additional information on the progress made in resolving any remaining difficulties shall be sent to the Board at intervals not exceeding six months prior to the commencement of coordination or the sending of the notices to the Board. The Board shall publish this information in the special section of its weekly circular.

1.7 When, upon expiry of a period of six years plus the extension provided for in No. 1550 after the date of the publication of the special section referred to in paragraph 1.3, the administration responsible for the network has not submitted the Appendix 3 information for coordination under paragraph 2.1 or paragraph 2.2 [or notification under No. 1488, as appropriate], the information published under paragraph 1.3 shall be cancelled after the administration concerned has been informed.

Commencement of Coordination [or Notification] Procedures

1.8 When communicating to the Board the information referred to in paragraph 1.1, an administration may, at the same time or at a later time, communicate:

1.8A the information required for the network coordination of a frequency assignment to a station of a satellite network in accordance with the provisions of paragraph 2.6, or

[1.8B the information required for notification of a frequency assignment to a station of a satellite network when coordination for that assignment is not required.]

1.8C Such coordination [or notification] information,[as the case may be,] shall be considered as having been received by the Board not earlier than six months after the date of receipt of the information referred to in paragraph 1.1.

Section II. Coordination of Frequency Assignments to a Station of a Satellite Network

Requirement for Coordination

2.1 Before an administration (or one acting on behalf of one or more named administrations) notifies to the Board or brings into use any frequency assignment to a station of a non-geostationary-satellite network, it shall effect coordination of the assignment with any other administration whose assignment to a station in a geostationary-satellite network, or whose assignment to a station of a non-geostationary-satellite network [or whose assignment to a terrestrial station] might be affected.

2.2 Before an administration (or one acting on behalf of one or more named administrations) notifies to the Board or brings into use any frequency assignment to a station of a geostationary-satellite network, it shall effect coordination of the assignment with any other administration whose assignment to a station of a non-geostationary-satellite network might be affected.

2.3 Coordination under paragraphs 2.1 and 2.2 may be effected for a satellite network using the information relating to the space station, including its service area, and the parameters of one or more typical earth stations which may be located in all or part of the space station service area.

2.4 If a frequency assignment is brought into use before the commencement of the coordination procedure of paragraphs 2.1 or 2.2, when this coordination is required, the operation in advance of the receipt by the Board of the Appendix 3 information shall in no way afford any priority of the date.

2.5 Frequency assignments to be taken into account in the application of paragraphs 2.1 and 2.2 are those with a frequency overlap with the planned assignment, pertaining to the same service or to another service to which the band is allocated with equal rights, [or a higher category of allocation (see Nos. 420 to 425 and 435),] and which, for space services are:

- 2.5.1 in conformity with No. 1503, and
- 2.5.2 either recorded in the Master Register, or coordinated under the provisions of this Section or of Section II of Article 11, or
- 2.5.3 included in the coordination procedure with effect from the date of receipt by the Board, in accordance with paragraph 2.6 or No. 1074 or 1074A of Article 11, of the relevant information as specified in Appendix 3, [or, for terrestrial services, are:
- 2.5.4 recorded in the Master Register with a favourable finding with respect to No. 1240, or
- 2.5.5 not notified but in use or planned to be brought into use within the next three years.]

Coordination Data

- 2.6 The administration seeking coordination shall send to the Board the information listed in Appendix 3.
- 2.7 On receipt of the complete information referred to in paragraph 2.6, the Board shall:
- 2.7.1 examine this information with respect to its conformity with No. 1503; the date of its receipt shall be considered as the date from which the assignment will be taken into account for coordination;
 - 2.7.2 publish in the special section of its weekly circular, within three months, the information received under paragraph 2.6 and the result of the examination under paragraph 2.7.1.¹ When the Board is not in a position to comply with the time limit referred to above, it shall periodically so inform the administrations giving the reasons therefor.

Examination of Coordination Data and Agreement Between Administrations

2.8 On receipt of the special section referred to in paragraph 2.7.2, an administration shall promptly examine the matter with regard to interference which would be caused to the frequency assignments of its network [or terrestrial stations,] or caused by these assignments. In so doing, it shall have regard to the proposed date of bringing into use of the assignment for which coordination is sought. It shall then, within six months from the date of the relevant weekly circular, notify the administration seeking coordination of its agreement. If, however, the administration with which coordination is sought does not agree, it shall, within the same period, send to the administration seeking coordination the technical details of the networks or information on the terrestrial stations concerned upon which its disagreement is based, including the characteristics contained in [Section C of Appendix 1 or] Appendix 3 which have not previously been notified to the Board, and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem. A copy of these comments shall also be sent to the Board.

2.8A Affected administrations, as well as the administration seeking coordination, shall make all possible mutual efforts to overcome the difficulties in a manner acceptable to the parties concerned.

¹ To help administrations identify services that may be affected, the Board shall also publish a list of administrations whose assignments comply with paragraphs 2.5 and 2.5.1 to 2.5.3 or paragraphs 2.5 and 2.5.4.

Results of Coordination

2.9 An administration which has initiated a coordination procedure under the provisions of paragraphs 2.1 to 2.6 shall communicate to the Board the names of the administrations with which agreement has been reached. The Board shall publish this information in the special section of its weekly circular.

2.10 An administration which has sought coordination, as well as any administration which has complied with its provisions of paragraph 2.8, shall communicate to the Board any modifications to the published characteristics of their respective networks or stations that were required to reach agreement on the coordination. The Board shall publish this information in accordance with paragraph 2.7.2, indicating that these modifications resulted from the joint efforts of the administrations concerned to reach agreement on the coordination.

Notification of Frequency Assignments in the Event of Continuing Disagreement

2.11 In the event of continuing disagreement between an administration seeking to effect coordination and any administration with which coordination has been sought, the administration seeking coordination shall, except in the cases where the assistance of the Board has been requested, defer the submission of its notice concerning the proposed assignment by eight months from the date of publication of the special section referred to in paragraph 2.7.2, taking into account the provisions of No. 1496. When the assistance of the Board has been requested, the submission of the notice shall be deferred for a further three months.

Section III. Coordination of Frequency Assignments to Earth Stations of a Non-Geostationary-Satellite Network in Relation to Terrestrial Stations

Requirement for Coordination

3.1 Before an administration notifies to the Board or brings into use any frequency assignment to a fixed earth station or to typical earth stations in a particular band allocated with equal rights to space and terrestrial radiocommunication services, it shall effect coordination of the assignment with each administration whose territory lies wholly or partly within the coordination area¹. The request for coordination may specify all or some of the frequency assignments to the associated space station, but thereafter each assignment shall be dealt with individually.

Coordination Data

3.2 For the purpose of effecting coordination, the administration requesting coordination shall send to each administration concerned under paragraph 3.1 all pertinent information concerning the proposed frequency assignment as listed in Appendix 3, and an indication of the approximate date on which it is planned to begin operations. A copy of this information with the date of dispatch of the request for coordination shall also be sent to the Board for information.

Acknowledgement of Receipt of Coordination Data

3.3 An administration with which coordination is sought under paragraph 3.1 shall immediately acknowledge receipt of the coordination data.

Examination of Coordination Data and Agreement Between Administrations

3.4 On receipt of the coordination data, an administration shall, having regard to the proposed date of bringing into use of the assignment for which coordination was requested, promptly examine the matter with regard to both:

- 3.4.1 interference which would affect the service rendered by its terrestrial radiocommunication stations operating in accordance with the Convention and these Regulations, or to be so operated prior to the planned date of bringing into service of the earth station assignment, or within the next three years, whichever is the longer; and

¹ The coordination area is defined as the service area in which it is intended to operate the typical earth stations, extended in all directions by a coordination distance of 500 km, or as a circular zone with a radius of 500 km centred on the coordinates of the fixed earth station. For a service area in which aircraft earth stations operate, the coordination area is the service area extended in all directions by a coordination distance of 1,000 km.

- 3.4.2 interference which would be caused to reception at an earth station by the service rendered by its terrestrial radiocommunication stations operating in accordance with the Convention and these Regulations, or to be so operated prior to the planned date of bringing into service of the earth station assignment, or within the next three years, whichever is the longer.

3.5 The administration with which coordination is sought shall, within four months from dispatch of the coordination data:

- 3.5.1 notify the administration requesting coordination of its agreement with a copy to the Board, indicating, where appropriate, the part of the allocated frequency band containing the coordinated frequency assignments; or
- 3.5.2 notify that administration of its disagreement.

3.6 In the case mentioned in paragraph 3.5.2, the administration with which coordination is sought shall send to the administration requesting coordination a diagram drawn to an appropriate scale indicating the location of those terrestrial radiocommunication stations which are or will be within the coordination area, together with all other relevant basic characteristics using Appendix 1 and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem.

3.7 When the administration with which coordination is sought sends to the administration seeking coordination the information required in the case of paragraph 3.5.2, a copy thereof shall also be sent to the Board.

Notification of Frequency Assignments in the Event of Continuing Disagreement

3.8 In the event of continuing disagreement between an administration seeking to effect coordination and an administration with which coordination has been sought, the administration seeking coordination shall, except in the cases where the assistance of the Board has been requested, defer the submission of its notice concerning the proposed assignment by six months from the date of the request for coordination, taking into account the provisions of No. 1496. When the assistance of the Board has been requested, the submission of the notice shall be deferred for a further three months.

Section IV. Coordination of Frequency Assignments to Terrestrial Stations for Transmission in Relation to Earth Stations of a Non-Geostationary-Satellite Network

Requirement for Coordination

4.1 Before an administration notifies to the Board, or brings into use any frequency assignment to a terrestrial station for transmission within the coordination area¹ of an earth station of a non-geostationary-satellite network, in a band allocated with equal rights to terrestrial radiocommunication services and space radiocommunication services (space-to-Earth), it shall effect coordination of the proposed assignment with the administration responsible for the earth stations with respect to the frequency assignments:

- 4.1.1 which are in conformity with No. 1503; and
- 4.1.2 for which coordination has been agreed under 3.5.1.

Coordination Data

4.2 For the purpose of effecting coordination, the administration requesting coordination shall send to each administration concerned under paragraph 4.1 all pertinent information. The request for coordination may specify all or some of the frequency assignments expected to be used within the next three years by stations of a terrestrial network wholly or partly within the coordination area of the earth stations. Thereafter each assignment shall be dealt with individually.

Acknowledgement of Receipt of Coordination Data

4.3 An administration with which coordination is sought under paragraph 4.1 shall immediately acknowledge receipt of the coordination data.

Examination of Coordination Data and Agreement Between Administrations

4.4 On receipt of the coordination data, the administration with which coordination is sought shall promptly examine the matter with regard to interference which would affect the services rendered by its earth stations covered by paragraph 4.1, which are operating or are to be operated within the next three years.

¹ The coordination area is defined as the service area in which it is intended to operate the typical earth stations, extended in all directions by a coordination distance of 500 km, or as a circular zone with a radius of 500 km centred on the coordinates of the fixed earth station. For a service area in which aircraft earth stations operate, the coordination area is the service area extended in all directions by a coordination distance of 1,000 km.

4.5 The administration with which coordination is sought shall, within an overall period of four months from dispatch of the coordination data, either notify the administration requesting coordination of its agreement to the proposed assignment or, if this is not possible, indicate the reasons for its objection and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem.

Notification of Frequency Assignments in the Event of Continuing Disagreement

4.6 In the event of continuing disagreement between an administration seeking to effect coordination and an administration with which coordination has been sought, the administration seeking coordination shall, except in the cases where the assistance of the Board has been requested, defer the submission of its notice concerning the proposed assignment by six months from the date of the request for coordination, taking into account the provisions of Nos. 1230 and 1496. When the assistance of the Board has been requested, the submission of the notice shall be deferred for a further three months.

Section V. Notification of Frequency Assignments

Notification of Assignments to Space Stations and Earth Stations

5.1 An administration shall, for the purpose of notifying an assignment to the Board, apply the provisions of Article 13. When applying the provisions of Article 13 to frequency assignment notices relating to space stations and earth stations covered by this Resolution, the Board shall:

- 5.1.1 in applying No. 1504, also examine the notice with respect to its conformity with the provisions of paragraphs 2.1 or 2.2 relating to coordination of the use of the frequency assignment with the other administrations concerned;
- 5.1.2 in applying No. 1505, also examine the notice with respect to its conformity with the provisions of paragraph 3.1 relating to coordination of the use of the frequency assignment with the other administrations concerned;
- 5.1.3 in applying No. 1506, also examine the notice with respect to the probability of harmful interference when the coordination under paragraph 2.1 or 2.2 has not been successfully effected;
- 5.1.4 in applying No. 1509, also examine the notice with respect to the probability of harmful interference when the coordination under paragraph 3.1 has not been successfully effected;
- 5.1.5 not apply Nos. 1515 and 1516.

5.2 The examination under paragraph 5.1.3 or 5.1.4 shall take into account the frequency assignments for transmission or reception already recorded in the Master Register.

Notification of Assignments to Terrestrial Stations

5.3 An administration shall, for the purpose of notifying an assignment to the Board, apply the provisions of Article 12. When applying the provisions of Article 12 the Board shall, in application of No. 1353, examine frequency assignment notices relating to terrestrial stations covered by this Resolution with respect to their conformity with the provisions of paragraph 4.1 relating to coordination of the use of the frequency assignment with the other administrations concerned.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

**WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM**

Document 313-E
27 February 1992
Original: English

MÁLAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

COMMITTEE 6

Source: Documents DT/109 (Rev. 1) and
DT/112

**FOURTH SERIES OF TEXTS FROM THE WORKING GROUP
TO THE PLENARY TO THE EDITORIAL COMMITTEE**

The Working Group to the Plenary has approved the annexed texts to be submitted to the Editorial Committee for consideration and subsequent transmission to the Plenary Session:

- Resolution GT-PLEN/3
- Resolution GT-PLEN/4

M. MUROTANI
Chairman of the Working Group
to the Plenary

RESOLUTION GT-PLN/3

**Relating to the Review of Resolutions and Recommendations of the
World Administrative Radio Conferences [1979 - 1992]**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has reviewed a number of Resolutions and Recommendations of the following Conferences: [WARC-79], [MOB-83], [HFBC-87], [MOB-87] and [ORB-88],
- b) the actions taken according to Resolution No. [GT-PLN/4] adopted by this Conference,

further considering

the need to continue to review the Resolutions and Recommendations of the above Conferences and those of this Conference,

invites the CCIR, the IFRB and the Secretary General

to report to the next competent conferences referred to in *resolves* about the actions taken in response to the relevant Resolutions and Recommendations,

resolves

that the Administrative Council should include in the agenda of the next competent conferences the review of the relevant Resolutions and Recommendations in view of their possible revision, replacement and abrogation.

RESOLUTION No. GT-PLN/4

Review of certain Resolutions and Recommendations of the World Administrative Radio Conference (WARC-79), Geneva, 1979; the World Administrative Mobile Radio Conference (MOB-83), Geneva, 1983; the World Administrative Radio Conference Dealing with High Frequency Broadcasting Matters (HFBC-87), Geneva, 1987; the World Administrative Radio Conference Dealing with Mobile Telecommunications Matters (MOB-87), Geneva, 1987 and the World Administrative Radio Conference on the Use of the Geostationary Satellite Orbit and Planning of the Space Services Utilizing It (Second Session - Geneva, 1988) (ORB-88)

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

that because of actions taken at this Conference and the actions resulting from decisions taken at the indicated previous Conferences, there is a need to review the existing Resolutions and Recommendations for their appropriate consistency,

further considering

a) that the following Resolutions and Recommendations of the Conferences referred to above have been revised as indicated:

RESOLUTION No. 703 (Rev. WARC-92)

**Relating to the Calculation Methods and Interference Criteria
Recommended by the CCIR for Sharing Frequency Bands Between
Space Radiocommunication and Terrestrial Radiocommunication Services
or Between Space Radiocommunication Services**

RECOMMENDATION No. 66 (Rev. WARC-92)

**Studies of the Maximum
Permitted Levels of Spurious Emissions**

b) that the following Resolutions and Recommendations of the Conferences referred to above either have been implemented or do not require any further action:

RESOLUTION No. 6 (WARC-79)

**Relating to the Preparation of a Handbook to Explain
and Illustrate the Procedures of the Radio Regulations**

RESOLUTION No. 9 (WARC-79)

**Relating to the Revision of Entries in the
Master International Frequency Register in the Bands
Allocated to the Fixed Service Between 3 000 kHz and 27 500 kHz**

RESOLUTION No. 36 (WARC-79)

**Relating to the Preparation of Explanatory Information by the
International Frequency Registration Board on the Application
of the New Method for Designating Emissions in Notification
Procedures and the Consequential Revision of the Master
International Frequency Register**

RESOLUTION No. 62 (WARC-79)

**Relating to the Experimental Use of Radio Waves
by Ionospheric Research Satellites¹**

RESOLUTION No. 64 (WARC-79)

Relating to CCIR Study of Lightning Protection of Radio Equipment

RESOLUTION No. 66 (WARC-79)

**Relating to the Division of the World into Regions for the
Purposes of Allocating Frequency Bands**

RESOLUTION No. 67 (WARC-79)

**Relating to Improvements in the Design
and Use of Radio Equipment**

RESOLUTION No. 68 (WARC-79)

**Relating to the Redefinition of Certain Terms
Contained in Annex 2 to the International Telecommunication
Convention (Malaga-Torremolinos, 1973)
and Applicable to the Radio Regulations**

RESOLUTION No. 90 (Mob-83)

**Relating to the Revision, Replacement and Abrogation
of Resolutions and Recommendations of the World
Administrative Radio Conference, Geneva, 1979**

RESOLUTION No. 91 (HFBC-87)

**Revision, Replacement and Abrogation of Resolutions and
Recommendations of the World Administrative Radio Conference
(Geneva, 1979)**

RESOLUTION No. 92 (Orb-88)

**Revision, Replacement and Cancellation of Resolutions
of the World Administrative Radio Conference, Geneva, 1979, and the
World Administrative Radio Conference on the Use of the
Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It
(First Session - Geneva, 1985) (Orb-85)**

RESOLUTION No. 108 (Orb-88)

**Use of the Bands 4 500 - 4 800 MHz, 6 725 - 7 025 MHz, 10.70 - 10.95 GHz,
11.2 - 11.45 GHz and 12.75 - 13.25 GHz prior to the
Date of Entry into Force of Appendix 30B**

RESOLUTION No. 324 (Mob-87)

**Procedures to be Applied for the
Coordination of the Use of the Frequency 518 kHz
for the International NAVTEX System**

RESOLUTION No. 326 (Mob-87)

**Transfer of Frequency Assignments
of Radiotelephone Stations Operating in
Accordance with Appendix 25**

RESOLUTION No. 337 (Mob-87)

**Resolutions and Recommendations Which Remain in Effect
Until the Provisions of the Radio Regulations
as Partially Revised by WARC Mob-87 Take Effect**

RESOLUTION No. 501 (WARC-79)

**Relating to Examination by the IFRB of the Notices Referring
to Stations in the Broadcasting Service in Region 2 in the
Band 535 - 1 605 kHz During the Period Preceding
the Entry into Force of the Final Acts of the
Regional Administrative MF Broadcasting Conference (Region 2)**

RESOLUTION No. 509 (WARC-79)

**Relating to the Convening of a Regional Broadcasting Conference
to Review and Revise the Provisions of the Final Acts of the
African VHF/UHF Broadcasting Conference, Geneva, 1963**

RESOLUTION No. 510 (WARC-79)

**Relating to the Convening of a Planning Conference
for Sound Broadcasting in the Band 87.5 - 108 MHz
for Region 1 and Certain Countries Concerned in Region 3**

RESOLUTION No. 709 (Orb-88)

**Coordination Between Feeder-Link Earth Stations
and Stations of other Services in the Bands
14.5 - 14.8 GHz and 17.7 - 18.1 GHz in Regions 1 and 3**

RECOMMENDATION No. 3 (WARC-79)

**Relating to the Transmission of Electric Power
by Radio Frequencies from a Spacecraft**

RECOMMENDATION No. 12 (WARC-79)

**Relating to the Convening of Future Administrative Radio
Conferences to Deal with Specific Services**

RECOMMENDATION No. 67 (WARC-79)

Relating to the Definitions of "Service Area" and "Coverage Area"

RECOMMENDATION No. 70 (WARC-79)

**Relating to Studies
of the Technical Characteristics of Equipment ¹**

RECOMMENDATION No. 101 (WARC-79)

**Relating to Feeder Links for the
Broadcasting-Satellite Service ¹**

RECOMMENDATION No. 102 (WARC-79)

**Relating to the Study of Modulation Methods
for Radio-Relay Systems in Relation to Sharing
with Fixed-Satellite Service Systems ¹**

RECOMMENDATION No. 104 (Mob-87)

**Provision of Frequency Bands for Feeder Links in the
Fixed-Satellite Service for the Mobile-Satellite Service or for the
Aeronautical, Land, or Maritime Mobile-Satellite Services
in the Bands 1 530 - 1 559 MHz and 1 626.5 - 1 660.5 MHz**

RECOMMENDATION No. 304 (WARC-79)

**Relating to the Preparation of a Broadcasting Plan
in the Band 1 605 - 1 705 kHz in Region 2**

RECOMMENDATION No. 602 (Rev.Mob-83)

**Relating to the Planning of Frequencies in the Band 283.5 - 315 kHz Used
by Maritime Radiobeacons in the European Maritime Area**

RECOMMENDATION No. 708 (WARC-79)

**Relating to Frequency Bands Shared Between Space
Radiocommunication Services and Between Space and
Terrestrial Radiocommunication Services ¹**

resolves

that the Resolutions and Recommendations of the WARC-79, MOB-83, HFBC-87, MOB-87 and ORB-88 listed under a) above shall apply as revised by this Conference and that those listed under b) above shall be abrogated.

Note by the Chairman of the Working Group to the Plenary
to the Chairman of Committee 5

**EIRP LIMITS FOR CERTAIN FREQUENCY BANDS REFERRED TO
IN DOCUMENTS DT/107 AND DT/115**

In response to requests from the Chairman of Ad-hoc Group 1 to Committee 5 (see Documents DT/107 and DT/115), the Working Group to the Plenary presents the following reply.

Document DT/107

If the 1475 - 1525 MHz and 2483.5 - 2500 MHz bands are allocated to the mobile-satellite service (Earth-to-space), the comment in § 1 of Document 315 should apply.

If not, it is not applicable.

Document DT/115

1. *Frequency bands 1765-1775 and 1960-1990 MHz*

If these bands are allocated to the mobile-satellite service (Earth-to-space), the comment in § 1 of Document 315 should apply.

Note - The delegation of Russian Federation explained that trans-horizon systems are operating in these frequency bands, and expressed a view that therefore they should be allowed to exceed the limits given in Nos. 2505 and 2507.

2. *Frequency band 24.45-24.75 GHz*

The limits in Nos. 2505 and 2508 are appropriate for this band. Therefore, it should appear in No. 2511. No. 2504 is also applicable.

M. MUROTANI
Chairman, Working Group to the Plenary

Origin: DT/114

COMMITTEE 5

Note by the Chairman of the Working Group to the Plenary
to the Chairman of Committee 5

**SHARING CRITERIA IN ARTICLES 27 AND 28
(SECOND REPLY)**

In response to a request from the Chairman of Sub-Working Group 5B5 (see Document DT/91 (Rev. 1)), the Working Group to the Plenary offers the following comments as the second reply.

1. **EIRP limits on terrestrial systems to protect space stations in the mobile-satellite service- applicability of Nos. 2502, 2505, 2506 and 2507 to the 1610 - 1626.5 MHz, 1670 - 1690 MHz and 2638.5 - 2655 MHz bands (§ 1 of Doc. DT/91 (Rev. 1))**

Assuming that the fixed and mobile services share the same frequency bands with the mobile-satellite service (Earth-space) with equal rights, Nos. 2502, 2505, 2506 and 2507 are provisionally appropriate for the 1610 - 1626.5 MHz, 1670 - 1690 MHz and 2638.5 - 2655 MHz bands, but further study by the CCIR is required (see Note).

2. **PFD limits on the mobile-satellite service to protect the terrestrial systems - applicability of No. 2562 for MSS in the band 2483.5 - 2500 MHz (§ 6 of Doc. DT/91(Rev.1))**

The following is a status report of the study on this issue.

2.1 Views were expressed that the PFD values of No. 2562 should be applied "provisionally" in the band 2483.5 - 2500 MHz. Views were also expressed that No. 2562 should not be applied provisionally and that No. 2557 is appropriate for the band 2483.5 - 2500 MHz and, further, that procedures for increasing the power limits exist (No. 2585 and Doc. 257). If the higher PFD levels of No. 2562 were applied, existing services (involving transportable equipment) could suffer interference. Moreover, those services could not operate at higher frequencies with similar flexibility. The CCIR may be requested to conduct further studies on this matter (see Note).

2.2 The relevant PFD values may be exceeded in accordance with No. 2585.

2.3 No. 2560 should be applied for protection of trans-horizon systems.

2.4 The coordination procedure described in Resolution [Doc. 257] is appropriate for MSS systems using non-geostationary satellites in the band 2483.5 - 2500 MHz.

Note - The Working Group to the Plenary has prepared a Recommendation requesting the CCIR to carry out further studies on these subjects (see Document DT/117).

M. MUROTANI
Chairman, Working Group to the Plenary

COMMITTEE 4

Brunei Darussalam

PROPOSAL FOR THE WORK OF THE CONFERENCE

The Administration of Brunei Darussalam would like to be included in the following footnote:

BRU/316/1

MOD

854

Additional allocation: in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Brunei Darussalam, Cameroon, the Republic of Korea, Egypt, the United Arab Emirates, Finland, Gabon, Guinea, Indonesia, Iran, Iraq, Israel, Jordan, Kuwait, the Lebanon, Madagascar, Malaysia, Malawi, Mali, Malta, Morocco, Mauritania, Niger, Nigeria, Pakistan, Qatar, Syria, Senegal, Singapore, Sudan, Sri Lanka, Sweden, Chad, Thailand and Tunisia, the band 13.4 - 14 GHz is also allocated to the fixed and mobile services on a primary basis.

COMMITTEE 4

Republic of Poland

PROPOSALS FOR THE WORK OF THE CONFERENCE

The Polish delegation is asking for the deletion of the name of Poland from the following footnotes in Article 8 of the Radio Regulations:

446*, 447*, 587*, 804, 850, 855, 885, 889, 891**, and 896*.

POL/317/1

MOD 446

Additional allocation: in Bulgaria, Hungary, ~~Poland~~, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the band 14 - 17 kHz is also allocated to the radionavigation service on a permitted basis.

POL/317/2

MOD 447

The stations of services to which the bands 14 - 19.95 kHz and 20.05 - 70 kHz and in Region 1 also the bands 72 - 84 kHz and 86 - 90 kHz are allocated may transmit standard frequency and time signals. Such stations shall be afforded protection from harmful interference. In Bulgaria, Hungary, Mongolia, ~~Poland~~, Czechoslovakia and the U.S.S.R., the frequencies 25 kHz and 50 kHz will be used for this purpose under the same conditions.

POL/317/3

MOD 587
Mob-87

Additional allocation: in Austria, Bulgaria, Hungary, Israel, Kenya, Mongolia, ~~Poland~~, Syria, the German Democratic Republic, the United Kingdom, Somalia, Czechoslovakia, Turkey and the U.S.S.R., the band 104 - 108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a permitted basis until 31 December 1995 and, thereafter, on a secondary basis.

POL/317/4

MOD 804

Different category of service: in Bulgaria, Cuba, Hungary, Mongolia, ~~Poland~~, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the allocation of the band 5 670 - 5 725 MHz to the space research service is on a primary basis (see No. 425).

* Already notified in session.

** Automatic cancellation by change of Table.

POL/317/5
MOD 850

Additional allocation: in Austria, Bulgaria, Hungary, ~~Poland~~, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the band 12.5 - 12.75 GHz is also allocated to the fixed service and the mobile, except aeronautical mobile, service on a primary basis. However, stations in these services shall not cause harmful interference to fixed-satellite service earth stations of countries in Region 1 other than those mentioned in this footnote. Coordination of these earth stations is not required with stations of the fixed and mobile services of the countries mentioned in this footnote. The power flux-density limit at the Earth's surface given in No. 2574 for the fixed-satellite service shall apply on the territory of the countries mentioned in this footnote.

POL/317/6
MOD 855

Additional allocation: in Austria, Bulgaria, Hungary, Japan, Mongolia, ~~Poland~~, the German Democratic Republic, Roumania, the United Kingdom, Czechoslovakia and the U.S.S.R., the band 13.4 - 14 GHz is also allocated to the radionavigation service on a primary basis.

POL/317/7
MOD 885

Different category of service: in Bulgaria, Cuba, Hungary, Mongolia, ~~Poland~~, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the allocation of the band 31 - 31.3 GHz to the space research service is on a primary basis (see No. 425).

POL/317/8
MOD 889

Different category of service: in Bulgaria, Egypt, Hungary, Mongolia, ~~Poland~~, the German Democratic Republic, Roumania, Czechoslovakia and the U.S.S.R., the allocation of the band 31.5 - 31.8 GHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. 425).

POL/317/9
MOD 891

Different category of service: in Bulgaria, Cuba, Hungary, Mongolia, ~~Poland~~, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the allocation of the band 31.8 - 32.33 GHz to the space research service is on a primary basis (see No. 425).

POL/317/10
MOD 896

Different category of service: in Bulgaria, Cuba, Hungary, Mongolia, ~~Poland~~, the German Democratic Republic, Czechoslovakia and the U.S.S.R., the allocation of the band 34.2 - 35.2 GHz to the space research service is on a primary basis (see No. 425).

COMMITTEE 4

Algeria, Saudi Arabia, Bahrain, Cameroon, Gabon, India, Mali,
Mauritania, Niger, Senegal, Tunisia

DRAFT RESOLUTION

RESOLUTION No.

**Relating to the Convening of a World Administrative Radio Conference
for the Planning of HF Bands Allocated to
the Broadcasting Service**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made new allocations for the HF broadcasting service;
- b) that use of the new bands allocated, given in No. 521B of the Radio Regulations, will be governed by planning procedures to be established by a competent WARC;
- c) that use of these bands is limited to single-sideband transmissions;
- d) the decision by the ITU Administrative Council at its 46th session not to convene in 1993 the HFBC Conference scheduled under Resolution No. 1 of the Plenipotentiary Conference (Nice, 1989);
- e) that the Administrative Council's decision was based on an IFRB report stressing the difficulties encountered by administrations and the IFRB in implementing the improved HFBC planning system adopted by WARC HFBC-87,

noting

that the Council's decision was not accompanied by any guarantee that the planning conference would be held in the short or medium term,

resolves

- 1. that administrations will be required to abide strictly by the provisions of No. 531 of the Radio Regulations adopted by WARC-79 and by those adopted by this Conference (Nos. 521C, 528A, 529B and 534D);
- 2. that administrations will not put broadcasting stations into service in the bands mentioned in the provisions referred to above until the planning process has been completed, in conformity with those provisions,

resolves further

that a WARC shall be convened as soon as possible to undertake the planning process,

recommends

that the next Plenipotentiary Conference take the necessary steps to include the convening of that planning conference in the Union's schedule of future conferences,

instructs the IFRB

to make a comprehensive report to the next competent WARC on the planning trials undertaken since WARC HFBC-84 and, on the basis of the experience it has acquired, to propose a flexible, simplified method of planning, which could be used for the subsequent development of a planning system,

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council.

COMMITTEE 4

Australia. Canada. United States of America. Mexico

PROPOSALS FOR THE WORK OF THE CONFERENCE

AUS/CAN/USA/MEX/319/1

ADD 726C

Additional allocation: in Australia, Canada, Mexico and the United States, the band 1 530 - 1 544 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 626.5 - 1 645.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: Maritime mobile-satellite distress and safety communications, including GMDSS, shall have priority access and immediate availability over all other mobile-satellite communications within a network operating under this provision. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

AUS/CAN/USA/MEX/319/2

ADD 730B

Additional allocation: in Australia, Canada, Mexico and the United States, the band 1 545 - 1 559 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 646.5 - 1 660.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: The aeronautical mobile-satellite (R) service shall have priority access and immediate availability over all other mobile-satellite communications within a network operating under this provision. Mobile-satellite systems shall be interoperable with the aeronautical mobile-satellite (R) service. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

Document 320-E
28 February 1992
Original: English

COMMITTEE 4

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

The United States submits the following alternative proposal for allocations to the mobile-satellite service in the range 1 710 - 2 200 MHz.

This proposal provides 2 x 40 MHz for Region 1, 2 x 50 MHz for Region 2 and 2 x 60 MHz for Region 3 which includes a common 2 x 20 MHz for all three ITU Regions.

Annex: 1

ANNEX

MHz
1 710 - 2 025

Allocation to Services			
	Region 1	Region 2	Region 3
USA/320/1 MOD	<u>1 710 - 2 290</u> <u>1 970</u> FIXED <u>MOBILE</u> Mobile	<u>1 710 - 2 290</u> <u>1 940</u> FIXED MOBILE 722 744 745 746-747-748 749-750	<u>1 710 - 2 290</u> <u>1 950</u> FIXED MOBILE 722 744 745 746-747-748 749-750
USA/320/2 MOD	722-743A 744 746-747-748 750	<u>1 940 - 1 990</u> FIXED MOBILE	<u>1 950 - 2 010</u> FIXED MOBILE
USA/320/3 MOD		<u>MOBILE-SATELLITE</u> (Earth-to-space) 746A	
USA/320/4 MOD	<u>1 970 - 2 010</u> FIXED MOBILE	<u>1 990 - 2 025</u> FIXED MOBILE	<u>MOBILE-SATELLITE</u> (Earth-to-space) 746A
USA/320/5 MOD	<u>MOBILE-SATELLITE</u> (Earth-to-space) 746A		
USA/320/6 MOD	<u>2 010 - 2 025</u> FIXED MOBILE		

USA/320/7
ADD 746A

The allocation to the mobile-satellite service in the bands 1 970 - 1 990 MHz (Earth-to-space) and 2 160 - 2 180 MHz (space-to-Earth) shall be effective on 1 January 1998. The remainder of the band allocated to the mobile-satellite service will be effective on [2003]. The coordination of mobile-satellite service systems in these bands will be in accordance with Resolution COM5/8.

MHz 2 120 - 2 200			
Allocation to Services			
	Region 1	Region 2	Region 3
USA/320/8 MOD	<u>2 120 - 2 160</u> <u>FIXED</u> <u>MOBILE</u>	<u>2 120 - 2 150</u> <u>FIXED</u> <u>MOBILE</u> <u>MOBILE-SATELLITE</u> <u>(space-to-Earth) 746A</u>	<u>2 120 - 2 140</u> <u>FIXED</u> <u>MOBILE</u>
			<u>2 140 - 2 200</u> <u>FIXED</u> <u>MOBILE</u> <u>MOBILE-SATELLITE</u> <u>(space-to-Earth) 746A</u>
USA/320/9 MOD		<u>2 150 - 2 160</u> <u>FIXED</u> <u>MOBILE</u>	
USA/320/10 MOD		<u>2 160 - 2 200</u> <u>FIXED</u> <u>MOBILE</u> <u>MOBILE-SATELLITE</u> <u>(space-to-Earth) 746A</u>	
USA/320/11 MOD		<u>2 180 - 2 200</u> <u>FIXED</u> <u>MOBILE</u>	

PLENARY MEETING

MINUTES

OF THE

NINTH PLENARY MEETING

Friday, 28 February 1992, at 0940 hours

Chairman: Mr. J. BARRIONUEVO PEÑA (Spain)

<u>Subjects discussed</u>	<u>Documents</u>
1. Report of Committee 2	282
2. Report of Committee 3	296
3. Oral reports by the Chairmen of Committees 4 and 5 and the Working Group of the Plenary	-
4. Third series of texts submitted by the Editorial Committee for second reading (R.3)	295
5. Tenth series of texts submitted by the Editorial Committee for first reading (B.10)	312

1. Report of Committee 2 (Document 282)

1.1 The Chairman of Committee 2 introduced the report in Document 282. With reference to section 1 of the Annex, he said that the asterisk against the name of the People's Democratic Republic of Ethiopia should be deleted, and that, on page 3 of the French and Spanish texts, the footnote should be deleted. The words "Provisional accreditation in accordance with No. 383 of the Nairobi Convention" should be deleted from the entry for Mexico. Referring to section 5, he requested that he and the Vice-Chairman of Committee 2 should be authorized to verify any credentials received after the date of the report and to submit their conclusions to the Plenary. He thanked the Secretary and members of Committee 2 for their support.

1.2 The Chairman thanked the Chairman and members of Committee 2 for their work. Replying to a question by the delegate of Bangladesh, he said that the Chairman of Committee 2 could accept credentials submitted before the end of the Conference.

1.3 The Secretary-General said that credentials had been received from the delegations of Malawi, the Islamic Republic of Pakistan and the Republic of Zambia and that an appropriate corrigendum to Document 282 would be issued. On behalf of the Conference, he welcomed the delegation of Namibia; it was the first time that that country had been represented as an independent sovereign State at one of the Conferences of the Union. The appropriate addition would be made to section 4 of Document 282.

1.4 The report of Committee 2 (Document 282) was approved.

2. Report of Committee 3 (Document 296)

2.1 The Chairman of Committee 3 introduced the report in Document 296. Referring to sections 2 and 3, he expressed the Committee's appreciation of the facilities provided by the Spanish Administration for WARC-92. With regard to section 4, he observed that the adjustment shown in Annex 1, which took account of changes in the U.S. dollar/Swiss franc exchange rate, amounted to an increase of 116,000 Swiss francs. As could be seen from section 5 and Annex 2, the Conference expenditure was expected to remain within the approved limits. The fourth paragraph in section 7 referred to estimated additional expenditure of 400,000 Swiss francs for post-Conference work to be performed by the IFRB. As was stated in the fifth paragraph, Committee 3 had made no judgment on the matter but had expressed both its concern and its hope that the Board could pursue other, less costly alternatives; as noted in the sixth paragraph, more precise estimates would be submitted to the Administrative Council at its 47th session. The Plenary Meeting was requested to approve the report and transmit it to the Secretary-General for submission to the next session of the Administrative Council. He thanked the Secretary and members of the Committee for their efforts.

2.2 The delegate of Lebanon asked whether the Secretary-General and the IFRB could give any indication of the budget level envisaged for post-Conference work.

2.3 The delegate of Spain, referring to section 7 of the report, said that financial implications were frequently neglected in conference decisions. More thought should be given to the budgetary impact of the tasks to be undertaken, including the work of the IFRB.

2.4 The Chairman of the IFRB, referring to his note in Annex 4 to the report, said that the estimates related basically to two matters: actions in relation to Appendix 26(Rev.) and actions for the accelerated application of the RR 1218 procedure. The Board had been trimming costs and reorienting priorities ever since the Nice Plenipotentiary Conference, and little, if any, margin remained for further economies. If, therefore, the work in question was to be undertaken, further resources would be required. The budget figures shown were, of course, provisional, and every effort would be made to economize further; however, the Conference's decisions were not yet known, so no promises could be made at the present juncture.

2.5 The Secretary-General observed that the way in which section 7 of the report was worded represented a balanced view not only of the discussions in Committee 3 but also of what the Conference might wish to say on the subject. He emphasized that more precise estimates would be submitted to the Administrative Council, many of whose members were present at the current Conference and were therefore well aware of the views which prevailed in that regard.

2.6 Subject to a minor editorial addition to the English-language version of section 8, the report of Committee 3 (Document 296) was approved.

3. Oral reports by the Chairmen of Committees 4 and 5 and the Working Group of the Plenary

3.1 The Chairman of Committee 4 said that the Committee had met 16 times and that three further meetings were scheduled. Its task had not been easy, but he appreciated the efforts made by all the members of the Committee and its Sub-Groups. The next meeting would deal with outstanding issues relating to broadcasting and mobile-satellite services; in that connection, he expressed the hope that Document DT/119 would be accepted as a basis for discussion in a spirit of compromise.

3.2 The Chairman of Committee 5 said that the Committee had held 14 meetings and had concluded its work, with the exception of some issues which depended on decisions by Committee 4. He had been authorized by Committee 5 to take the necessary action as soon as Committee 4's conclusions were known, particularly in respect of Articles 27 and 28. He reiterated that it was not for Committee 5 to decide on either frequency bands or limits for power flux-density (PFD), but to ensure textual consistency; to that end, he would cooperate with the Chairmen of Committee 4 and the Working Group of the Plenary in preparing the final document for submission to the Plenary. He thanked the Chairmen of the Committee's Sub-Groups and all those who had assisted in Committee 5's work.

3.3 The Chairman of the Working Group to the Plenary said that the Group had met 13 times and was to hold its last meeting later that day. The only outstanding item concerned the development of sharing criteria for the mobile-satellite service.

3.4 The delegate of Morocco asked whether the Working Group to the Plenary could, as its final task, consider the power flux-density limit for BSS (Sound) transmissions outside the main beam that was required to protect services in countries not using the BSS (Sound).

3.5 The Chairman of the Working Group to the Plenary said that that question was not in the Group's terms of reference, neither was there sufficient time left to take up such a request. However, the delegate of Morocco's concern seemed to be covered, at least to some extent, by **considering d)** and **resolves 2 ii)** of Resolution GT-PLN/2.

3.6 The delegate of Morocco considered that the outcome of the relevant CCIR studies should be considered by the next administrative conference with a view to taking appropriate action on that important issue.

3.7 The Chairman said that due note would be taken of that proposal.

4. Third series of texts submitted by the Editorial Committee for second reading (R.3) (Document 295)

Article 8

MOD Table 5 730 - 6 200 kHz. ADD 521A. 521B. 521C

4.1 Approved.

MOD Table 7 300 - 8 100 kHz. ADD 528A

4.2 Approved.

MOD Table 9 040 - 9 900 kHz. ADD 529B

4.3 Approved.

MOD Tables 11 400 - 12 230 kHz and 13 410 - 14 000 kHz. ADD 534A

4.4 Approved.

MOD Tables 15 100 - 16 360 kHz. 17 410 - 17 900 kHz. 18 900 - 19 680 kHz

4.5 Approved.

MOD 518. SUP 532. SUP 537. SUP 543. SUP 544. MOD 572. SUP 582

4.6 Approved.

Resolution No. 703 (Rev.WARC-92)

4.7 Approved.

Resolution GT-PLN/2

4.8 The Chairman of the Working Group of the Plenary proposed that, in **considering** a) and b), the word "band" should appear in the plural, and that the square brackets should be removed from the text of **considering** a).

4.9 The delegate of the Islamic Republic of Iran said that "non-GSO", mentioned in **considering** c) and d) and **resolves** 2 i) required clarification.

4.10 The delegate of Morocco observed that the wording following **instructs the Secretary-General** might erroneously be interpreted to imply that the Administrative Council had the right to establish regulatory provisions. Furthermore, the delegate of the Islamic Republic of Iran had made a valid point. He therefore proposed that the second reading of the Resolution should be deferred and a revised text prepared for submission to the Plenary for the first reading.

4.11 The Chairman of Committee 4 and the Chairman of the Working Group to the Plenary endorsed that proposal, pointing out that the Plenary, in considering this Resolution, was anticipating decisions by Committee 4, not taken yet.

4.12 It was decided to defer consideration of Resolution GT-PLN/2.

4.13 The Secretary-General recalled that texts were submitted to the Plenary for second reading in order to correct mistakes and deal with square brackets. They should not give rise to detailed comments at that stage; if they did so, the implication was that they had been submitted prematurely.

4.14 The delegate of Lebanon welcomed the remarks by the Secretary-General and requested the Chairman of Committee 6 not to submit texts until he was sure that they were in acceptable form.

4.15 The Chairman of Committee 6 pointed out that texts submitted for second reading had already been approved by the Plenary on first reading; it was not up to Committee 6 to decide which texts to submit to the Plenary.

Recommendation COM4/A

4.16 The delegate of Japan said that, in the interests of consistency, the wording of **considering** f) should follow more closely the text of "**resolves** 2" of Resolution No. 517 (HFBC-87).

4.17 The Chairman of Committee 4 confirmed that Committee 4 had decided that the text should be aligned as far as practicable with that Resolution.

4.18 It was agreed that the necessary editorial amendment should be made.

4.19 Recommendation COM4/A, as amended, was approved.

4.20 With the exception of Resolution GT-PLN/2, the third series of texts submitted by the Editorial Committee (R.3) (Document 295), as a whole, as amended, was approved on second reading.

5. Tenth series of texts submitted by the Editorial Committee for first reading (B.10) (Document 312)

Articles 11, 12 and 13

5.1 Approved subject to the amendment of each of the three footnotes A.11.5, A.12.5 and A.13.5 to read simply: "See Resolution COM5/8."

Resolution COM5/8

5.2 The Chairman of Committee 5 explained that all the square brackets around the parts of the text relating to terrestrial systems would have to be maintained until the relevant decisions had been taken by Committee 4.

"considering", "considering also", "considering further"

5.3 There were no comments on those paragraphs.

"noting"

5.4 The Chairman of Committee 5 said that the square brackets around the **noting** paragraph had been inserted because there had been a difference of opinion within Committee 5 on whether such a text was needed.

5.5 The delegate of Morocco said that in Document 278, his delegation had proposed a text to replace the **noting** section of the Resolution; if that proposal were to be taken up by the Plenary, he would wish to introduce two corrections to it. The Conference had many important matters to resolve and, in his opinion, that issue was one of them. Nevertheless, to save time, he would not press his Administration's proposal; instead, he proposed the replacement of the word "**noting**" by "**confirming**" in the text in Document 312, together with the removal of the square brackets.

5.6 That proposal was supported by the delegates of Algeria, Colombia, Ecuador, Ethiopia, Gabon, the Islamic Republic of Iran, Kuwait, Lebanon, Mali, Mauritania, Niger, Nigeria, Oman, Pakistan, Saudi Arabia, Swaziland, Syria, Tanzania and Tunisia.

5.7 The delegate of the Netherlands, supported by the delegates of Germany and Uruguay, said that the text of the **noting** section in Document 312 was unnecessarily cumbersome; he therefore proposed the deletion of paragraph b) and the removal of the square brackets.

5.8 The delegate of New Zealand agreed but said that the text could be made even simpler by deleting the whole of the section following the words "Administrative Regulations in force."

5.9 The delegate of the United Kingdom, referring to the Moroccan proposal, said that it was not open to an administrative radio conference to confirm the decisions of a plenipotentiary conference of the Union; the word "recognizing" would be therefore the only one acceptable to his delegation. It should be emphasized that a strenuous effort had been made in Committee 5 to find a compromise, the result of which was reflected in the text now before the Plenary.

5.10 The delegates of the Russian Federation and Portugal supported the views of the previous speaker.

5.11 The delegate of Morocco proposed that the square brackets around the text of the whole paragraph should be deleted and that square brackets should be inserted around the word "**confirming**" to enable further discussion to take place before the second reading.

5.12 It was so agreed.

"resolves"

5.13 Referring to paragraph 1 a), the delegate of Morocco recalled that the square brackets around the phrase "and terrestrial systems" had been inserted because the related procedures involved coordination of space stations with terrestrial services, which was difficult for administrations to implement. It was unlikely at the present stage of the Conference that the Working Group to the Plenary would be able to develop power flux-density limits, thereby avoiding the use of square brackets. He therefore suggested introducing a footnote to the title of the Annex to Resolution COM5/8 on page B.10/6 and drafting a Resolution requesting the CCIR to consider the definition of power flux-density limits. The footnote might read: "Sections I, II and III apply to terrestrial services only in cases where a power flux-density limit at the surface of the Earth (for a space station) or at the border (for an earth station) appearing in the provisions of the Radio Regulations is exceeded".

5.14 It was agreed to remove the square brackets in paragraph 1a) and to insert the proposed footnote in the Annex to Resolution COM5/8.

5.15 The delegate of the United Kingdom, after stressing that the texts represented a complex balance between space and terrestrial services, suggested that any further amendments concerning those aspects should be reconsidered by a small group under the chairmanship of the Chairman of Committee 5, so as to ensure that the desirable balance was maintained.

5.16 It was so agreed.

"invites", "instructs the IFRB", "invites the CCIR", "instructs the Secretary-General"

5.17 Paragraphs were approved without comments.

Annex to Resolution COM5/8: Title and Section A

5.18 Approved subject to the addition of the footnote discussed in connection with the "resolves" paragraph (see 5.13).

Section I

5.19 Paragraphs 1.1 to 1.7 were approved.

5.20 The Member of the IFRB, replying to a query about the need to retain the square brackets in paragraph 1.8, said that sub-paragraph 1.8B had been intended to cover situations where there might be no need for coordination. Formerly, there had never been a situation in which coordination might have been unnecessary. Now, situations could arise in which coordination became unnecessary if no other space systems were involved. It might perhaps be advisable to retain the square brackets for the time being, in case there were any implications for other provisions.

5.21 The delegate of Morocco did not think that there would be any such implications; he therefore favours the deletion of the square brackets in both sub-paragraphs 1.8B and 1.8C.

5.22 It was so agreed.

Section II

5.23 The Chairman of Committee 5 said that the square brackets in paragraph 2.5 had been included in error and should be removed; however, those in sub-paragraphs 2.5.3 and 2.5.5 should be retained for the time being. The layout of sub-paragraph 2.5.3 would be improved if the phrase **"or, for terrestrial services, are:"** was moved to a separate line.

5.24 It was so agreed.

5.25 Replying to a query by the delegate of France as to whether the procedure described in paragraph 2.8 was sufficiently clearly spelt out, the Member of the IFRB confirmed that there would be a six-month period during which administrations would have an opportunity to submit their comments.

5.26 The delegate of Morocco said it should be made clear that an administration with terrestrial systems which had not commented within the six-month period was entitled to have its terrestrial stations taken into account at the time of notification for re-examination under No. 1509, as indicated in Section V of the Annex.

5.27 The Member of the IFRB explained that paragraph 2.8 dealt with the coordination process, in which administrations had six months in which to respond, whereas Section V set out clear provisions for the notification of assignments, to be followed if coordination had not been effected.

5.28 The delegate of the United Kingdom fully endorsed the explanation given by the Member of the IFRB.

Sections III, IV and V

5.29 Approved without comments.

5.30 Resolution COM5/8 as a whole, as amended, was approved.

5.31 The tenth series of texts submitted by the Editorial Committee (B.10) (Document 312), as a whole, and as amended, was approved on first reading.

The meeting rose at 1210 hours.

The Secretary-General:

P. TARJANNE

The Chairman:

J. BARRIONUEVO PEÑA

COMMITTEE 4

SUMMARY RECORD
OF THE
SEVENTEENTH MEETING OF COMMITTEE 4
(FREQUENCY ALLOCATION)

Friday, 28 February 1992, at 1435 hours

Chairman: Mr. I.R. HUTCHINGS (New Zealand)

Subjects discussed

1. Reports by the Chairman of ad hoc Group 1
(BSS-HDTV)
2. Report by the Chairman of ad hoc Group 4
(BSS (Sound))

Documents

253, 275, DT/110

DT/118

1. Reports by the Chairman of ad hoc Group 1 (BSS-HDTV) (Documents 253, 275, DT/110)

1.1 Document 253

1.1.1 The Chairman of ad hoc Group 1, introducing the part of the report dealing with downlinks, recalled that all three Regions had been represented in the Group. Three allocations - 17, 21 and 25 GHz - had received strong support, each of them presenting difficulties for some administrations, as described in section 3. After a long debate the Group had concluded that the needs of administrations for an optimum worldwide allocation, in the light of the 1977 and 1983 Plans, were the 17.3 - 17.8 GHz band for Region 2 and the 21.4 - 22 GHz band for Regions 1 and 3, taking note of Resolution COM5/3. The proposals in respect of the two bands were summarized in Table A of the report, with footnotes indicating that some administrations needed to clarify their position. LUX should be deleted from Footnote 1. The consequential matters referred to in section 5 were dealt with in Document 275.

1.1.2 The delegate of Indonesia said that his Administration wished to be included under the 17 GHz band which should be available to Region 3 countries.

1.1.3 The delegate of Guinea opted for the 21 GHz band.

1.1.4 The delegate of Saudi Arabia said that he could take no final position on the question of the regional approach until he knew what transition dates were proposed.

1.1.5 The delegate of Gabon, clarifying his position as requested in Footnote 1 to Table A, said that his Administration took the view that due consideration should be given to the needs of countries which experienced propagation difficulties owing to high rainfall. It had therefore proposed an allocation for those countries between 12 and 17 GHz and had called for further studies by the CCIR.

1.1.6 The delegate of Pakistan reminded participants that the CCIR had advocated an international service for HDTV, which, combined with the requirements of standardization and product development, argued against the regional approach. With regard to the transition period, the service was likely to be introduced sometime between 2007 and 2010, by which time 17 GHz allocations might have completely altered.

1.1.7 The Chairman of ad hoc Group 1 pointed out that the transition times were dealt with in Document 275; the date proposed was 1 April 2005 for both bands. Initially, the Group had looked for a single band, but had found that impossible. Eventually it had been able to narrow the choice to two bands, emphasizing that the high rainfall countries could look to the 12 GHz band during its replanning in order to meet their needs. That possibility had persuaded the majority of administrations that the 21.4 - 22 GHz band provided an acceptable solution.

1.1.8 The Chairman said he took it that the Committee accepted the regional approach for downlinks outlined in the report.

1.1.9 It was so agreed.

1.1.10 The Chairman of ad hoc Group 1, turning to the feeder links, said that after a detailed discussion the Group had decided on a new allocation in the 24.25 - 25.25 GHz range and existing allocations in the 27 - 31 GHz range, noting that many high rainfall countries would need to use existing feeder-link allocations in the 17.3 - 18.1 GHz band and a possible new allocation in the 18.1 - 18.4 GHz range. Those proposals covered all requirements and left some room for manoeuvre.

1.1.11 The proposals were approved.

1.2 Document 275

1.2.1 The Chairman of ad hoc Group 1 drew attention to the 17.3 - 18.1 GHz Table, Footnote 868A, and two options for Footnotes 869A and 869B, both of them were in square brackets. In fact, only two administrations were concerned and the issue could best be addressed in Plenary. In reply to a question by the Chairman, he said that the change from primary to secondary for the mobile service would come into effect at the same time as the allocation to the broadcasting-satellite service, i.e. on 1 April 2005.

1.2.2 The delegate of the United States supported the retention of the square brackets.

1.2.3 The 17.3 - 18.1 GHz Table and the footnotes were approved under that understanding.

1.2.4 The Chairman of ad hoc Group 1 introduced the 18.1 - 18.6 GHz Table with the addition of the fixed-satellite (Earth-to-space) allocation intended for feeder links for the broadcasting-satellite service, as specified in Footnote 870A.

1.2.5 The delegate of the United Kingdom said that the use of that band for feeder links gave rise to problems for his country. He therefore proposed a new Footnote 870B reading as follows:

"Alternative Allocation: In the United Kingdom the band 18.1 - 18.4 GHz is allocated to the fixed, fixed-satellite (space-to-Earth) and mobile services on a primary basis. The provisions of No. 870 also apply."

1.2.6 The delegations of Denmark, the Czech and Slovak Federal Republic, Greece, Poland and the United Arab Emirates asked to be included in the footnote.

1.2.7 The 18.1 - 18.6 GHz Table and Footnotes 870A and 870B were approved.

1.2.8 The Chairman of ad hoc Group 1 introduced the 21.4 - 22 GHz Table, with the addition of the broadcasting-satellite service in Regions 1 and 3, which was to become available from 1 April 2005. The procedures for the use of the band were contained in Resolution COM5/5, addressed in Footnote 873A, which unfortunately did not cover the date of entry into force. He therefore suggested a modification to Footnote 873A reading as follows:

"The allocation to the broadcasting-satellite service in the band 21.4 - 22 GHz shall come into effect on 1 April 2005. The use of this band by the broadcasting-satellite service after this date and on an interim basis prior to this date is subject to the provisions of Resolution COM5/5."

1.2.9 The delegate of Canada proposed the addition of the words "in Regions 1 and 3" after the phrase "in the band 21.4 - 22 GHz".

1.2.10 It was so agreed.

1.2.11 The delegate of Saudi Arabia, supported by the delegates of Oman and Pakistan, proposed the date of 1 April 2010.

1.2.12 Following a show of cards, the Chairman's compromise suggestion of 1 April 2007 was accepted.

1.2.13 The delegate of the United States said he had agreed to that date as a compromise.

1.2.14 The 21.4 - 22 GHz Table, Footnote 873A, as amended, and Footnote 873B were approved.

1.2.15 The Committee agreed to use the date of 1 April 2007 throughout the document.

1.2.16 The Chairman of ad hoc Group 1 introduced the 22.5 - 23 GHz Table, with consequential changes in Regions 2 and 3 involving the deletion of Footnotes 877 and 878.

1.2.17 The Table for the 22.5 - 23 GHz was approved.

1.2.18 The Chairman of ad hoc Group 1 introduced the 24.25 - 25.25 GHz Table and Footnotes 882X, 882Y and 882Z, pointing out that the reference to Footnote 882X in the 24.65 - 24.75 GHz band under Region 2 should be deleted.

1.2.19 The 24.25 - 25.25 GHz Table, as amended, and Footnotes 882X, 882Y and 882Z were approved.

1.2.20 The Chairman of ad hoc Group 1, introducing the 27 - 30 GHz Table and Footnote 882W, drew attention to the square brackets round the fixed-satellite service (Earth-to-space) in the 27 - 27.5 band under Regions 2 and 3. He proposed the addition of new Footnote 881B reading as follows: "Non-geostationary space stations operating in the inter-satellite service in the band 27 - 27.5 GHz are exempt from the provisions of No. 2613", which would permit the removal of the square brackets.

1.2.21 It was so agreed.

1.2.22 At the suggestion of the delegate of Canada, the Committee agreed to the consequential deletion of the reference to the earth exploration-satellite service (space-to-space) in the 27 - 27.5 GHz band.

1.2.23 The 27 - 30 GHz Table, as amended, and Footnotes 881B and 882W were approved.

1.3 Document DT/110

1.3.1 The Chairman of ad hoc Group 1, introducing Document DT/110, said that it contained consequential modifications to Appendix 30A in the band 17.3 - 17.8 GHz and to Article 28 in the band 24.45 - 24.75 GHz. He thanked the members of the ad hoc Group and all concerned for their efforts.

1.3.2 The Chairman said that he would consult the Chairman of Committee 5 on how best to incorporate the modifications in the Final Acts.

1.3.3 It was so agreed.

2. Report by the Chairman of ad hoc Group 4 (BSS (Sound)) (Document DT/118)

2.1 The Chairman of ad hoc Group 4 introduced the report of his Group (Document DT/118). The Group had found it extremely hard to carry out its terms of reference and to reach the compromise of a split-band approach. In the Group's wide-ranging discussion it had been emphasized that particular care must be taken to safeguard ARABSAT and INSAT. Several general principles, referred to as a) to h) in the document, had been agreed. A small sub-group had then developed a package of three main items. Firstly, there would be an allocation of 40 MHz in the 1.5 GHz band and 40 MHz in the 2.3 - 2.5 GHz band. Administrations themselves would determine in which of the allocated bands they introduce the service as well as the implementation date, band segmentation and applicable power flux-density limits, in cooperation with other interested countries. Secondly, there would need to be a new conference, preferably not later than 2000. Thirdly, countries wishing to proceed should be able to start services as soon as they chose, in coordination with other countries affected.

2.2 On the basis of those three elements, an approach was submitted to the Committee, as set out in paragraphs 1 - 5. Agreement had been reached on the bands 1 450 - 1 490 MHz but there had been no consensus on the 40 MHz allocation in the upper band, which therefore appeared as 2.3/2.5 GHz. There had been insufficient time to discuss paragraphs 3, 4 and 5, but there had been support for the proposal for phased implementation, based on 25 MHz being made available in each of the bands by 1995 by agreement between the administrations concerned, the remainder being made available by 2005, but subject to review by a conference to be held not later than 2000. It might be worthwhile for Committee 4 to consider that proposal; if the general idea were adopted, paragraph 4 might be amended accordingly.

2.3 Referring to the notes at the end of the document, he said that the proposal by the delegate of Japan referred to in Note 1 had been supported by India. Note 3 should be reworded as follows: "The delegate of Algeria proposed that, in general, only geostationary satellites can be used before the decisions of the appropriate conference and highly-inclined-orbit satellites can only be used from the high-latitude countries before the decisions of the appropriate conference." Note 4 containing the views of the delegates of Canada and Germany had in fact been submitted after the meeting.

2.4 The Chairman thanked the members of the ad hoc Group. He called for a show of cards to indicate whether the Committee was in favour of the split-band approach. If it was, the question would then be whether there should be two or three bands for the service.

2.5 Following a procedural discussion in which the delegates of Australia, Mexico and Brazil took part, the Chairman asked delegates to indicate, by a show of cards, whether they would support only a single-band approach. Following the show of cards, he noted that there was a clear majority, in favour of such an approach.

2.6 Following a further exchange of views regarding procedure, the Chairman said that he would put the question in another way. Having asked for a show of cards to ascertain whether there was agreement on accepting the split-band approach as part of a compromise, he noted that approximately half of the delegations which supported single-band approach, could accept the split-band approach as well.

2.7 The delegate of Canada said that, before going any further, clarification was needed as to what would be the band in the 2.3/2.5 GHz range.

2.8 The delegate of the United Arab Emirates considered that the only possible compromise would be for each country to receive a single band. His Administration would prefer 2.5 GHz.

2.9 In reply to the delegate of the Russian Federation, who asked whether the Committee was to understand that two bands or three were involved, namely 1.5 GHz and 2.3 GHz and/or 2.5 GHz, the Chairman said that, in his view, two bands were involved. That interpretation was confirmed by the delegate of Lebanon, who said that the choice should be between 2.3 and 2.5 GHz.

2.10 The Chairman pointed out that the Committee had not taken a vote but merely indicated its opinion. Moreover, the issue on which he had consulted the Committee did not relate to specific frequency bands but merely to the preference for a single- or multiple-band approach. No definitive statements had yet been made on band preferences.

2.11 The delegate of Japan observed that although the majority was in favour of the single-band approach, it was extremely difficult to select one band. Without a compromise it would be impossible for the BSS (Sound) to be introduced. More careful consideration should therefore be given to the proposals of the ad hoc Group.

2.12 The delegate of Italy considered that eliminating the split-band approach was not a good solution since all the items of the compromise package were linked. The proposed allocations were for 1.5 GHz and something above 2 GHz. The exact figure would be decided after the proposals of ad hoc Group 4 were approved.

2.13 The delegate of Australia formally proposed that the solution set out in paragraphs 1 to 5 of Document DT/118 should be forwarded to the Plenary as a compromise proposal, subject to clarification of whether the band above 2 GHz would be 2.3 or 2.5 GHz. He requested the Chairman to enquire whether that proposal had any support.

2.14 The Chairman said that before putting the Australian proposal to the Committee he would give the floor to the delegates who had requested it earlier.

2.15 The delegate of the United States said that if his delegation had been aware that notes were to be added to Document DT/118 after the meeting of the ad hoc Group, it would have wished to add its own. The preference of the Committee and of his Administration was for a one-band approach. In examining the various bands, account had to be taken of the distribution of existing users, the level of protection that might be required, the displacement of users nationally and globally, and ways and means of finding space to accommodate all the services concerned. His delegation believed that the 2.3 GHz spectrum readily permitted satellite and complementary terrestrial broadcasting. It had earlier proposed a range of 2 310 - 2 360 MHz, possibly widened to 2 370 or 2 380 MHz, within which it might be possible for administrations to implement the services they required, and it still considered that range to be the most appropriate.

2.16 The delegate of Pakistan said that a compromise could perhaps be reached on the basis of the formula in Document DT/118. It might also be worthwhile to find a smaller range of 20 MHz in the 2.3/2.5 GHz band and leave the remaining 20 MHz to be decided at the next WARC, which should be held no later than 1998, when appropriate sharing criteria might be developed. In addition, the time frame for the introduction of BSS (Sound) in place of existing services might be extended beyond 2005.

2.17 The delegate of Venezuela said that his Administration had initially been in favour of a single band between 2.3 and 2.5 GHz. However, it understood that that would not be possible and it could endorse the compromise solution proposed in Document DT/118, which would enable administrations to use the part of the band that suited them best.

2.18 The delegate of Nigeria also supported the compromise solution. Indeed, it was essential for the developing countries that a solution should be found at the Conference, since BSS (Sound) was of fundamental importance to them. However, the details of technical specifications still needed to be worked out.

2.19 The delegate of Algeria supported the Australian proposal to refer the matter to the Plenary. To facilitate the task of the Plenary, however, the Committee should choose between 2.3 GHz and 2.5 GHz.

2.20 The delegate of Tanzania suggested that Document DT/118 should be examined section by section.

2.21 The delegate of Senegal advocated submitting the document to the Plenary.

2.22 The delegate of Canada considered that the Committee should decide on two frequency bands prior to forwarding the matter to the Plenary.

2.23 The delegate of New Zealand, supported by the delegate of Swaziland, found the document to be an acceptable compromise basis for discussion in the Committee before transmission to Plenary; specific bands should be selected, together with an allocation of between 20 and 25 MHz chosen in one of them as a first stage, with others to be added by a future WARC.

2.24 The delegates of Syria and Niger said that the Committee should reach a decision on whether to propose the 2.3 GHz or the 2.5 GHz band.

2.25 The delegate of Japan stressed the need to approve the general principles set out in the document, particularly regarding protection of existing services, before holding an in-depth discussion on the substance.

2.26 The delegate of the United Kingdom emphasized the difficulty for future planning if the split-band approach were adopted. The document seemed to assume that the only option in the 1.5 GHz band was the 1 450 - 1 490 MHz range; in his view, that was far from being the best choice and he would revert to the issue if the 1.5 GHz band were chosen.

2.27 The delegate of Zimbabwe considered that the time had come to take up specifics such as orbit positions, timing and exact frequencies in the 2.5 GHz band.

2.28 The delegate of Burkina Faso said that the document should not be transmitted to the Plenary. The Conference should decide on two bands and allow the CCIR and administrations to give the matter further thought, both nationally and regionally, leaving a final decision to be taken by a future competent WARC. The Committee could prepare a Resolution to that effect.

2.29 The delegate of Thailand could accept the compromise proposed in the document provided that existing services received adequate protection.

2.30 The delegate of Brazil urged the proponents of the 2.3 or 2.5 GHz band to make specific proposals, as the proponents of the 1.5 GHz band had done.

2.31 The Chairman observed that the United States had proposed the band 2 310 MHz - 2 360 MHz, with some flexibility at the top end of the range, and a number of European countries had suggested the band 2 570 MHz - 2 620 MHz.

2.32 The delegate of Finland said he regretted the failure to agree on a single allocation; that posed problems, not only in forward planning as noted by the United Kingdom but also in accommodating sharing between areas. It was wishful thinking to imagine that in bands around 2 GHz the spillover to neighbouring areas could be limited effectively to a low level, and that would inevitably lead to far less than optimum utilization of the bands between 1 GHz and 3 GHz. Finally, as there were other unresolved issues in the adjacent bands, it was absolutely impossible to vote for any one alternative without knowing the exact limits of the bands in question.

2.33 The delegate of Italy said the 1.5 GHz band imposed serious constraints and urged that the Committee make a choice between the 2.3 GHz and 2.5 GHz bands.

2.34 The delegate of the United States said that he could generally agree to the adoption of the 2.3 GHz band.

2.35 The delegate of the Russian Federation expressed his preference for a broad band of 2 500 MHz - 2 650 MHz, in which it ought to be possible to find a 40 MHz allocation that was generally acceptable.

2.36 The delegate of Côte d'Ivoire proposed selection of the 2 310 MHz - 2 360 MHz band.

2.37 The Chairman reminded the Committee of the proposal by Australia first to choose between the bands 2.3 GHz and 2.5 GHz and then to transmit Document DT/118 to the Plenary for further consideration.

2.38 The delegate of Japan suggested that options within the bands 2.3/2.5 GHz should be identified so that an informal decision could be taken when choosing between 2.3 GHz and 2.5 GHz.

2.39 The delegate of Canada said that 40 MHz should be considered in each band, not 50 kHz as mentioned by the Chairman.

2.40 The delegate of the Russian Federation said the band 2.3 GHz or 2.5 GHz should be chosen first, after which a 40 MHz allocation could be selected.

2.41 The delegate of France stressed that it would be very useful if a decision could be taken regarding the specific frequency bands under consideration in the 1.5 GHz, 2.3 GHz and 2.5 GHz bands.

2.42 The delegate of Australia reiterated his proposal to choose between 2.3 GHz and 2.5 GHz before selecting specific frequency bands.

2.43 The Chairman suggested identifying options in the band 2.5 GHz. The Russian Federation had proposed 40 MHz in the band 2 500 - 2 655 MHz. What suggestions could other delegations make?

2.44 The delegate of Finland urged the Committee to progress in its work, observing that many other important issues remained undecided. His Administration could not consider any option outside the band 2 570 - 2 600 MHz.

2.45 The delegate of the United Kingdom said that it was impossible to be precise about band limits because of the interaction with possible mobile-satellite provisions above 2.5 GHz. From proposals to the Conference and comments by Finland, it would appear that consideration should be given to the band in the vicinity of 2.6 GHz. He would be happy to proceed on that basis.

2.46 The delegate of India emphasized the need to adhere to the principle agreed in the document of protecting existing and planned services, both terrestrial and satellite-based, including INSAT and ARABSAT. Taking into account also the provision of suitable spectrum resources for the MSS allocation, he felt that only some 15 to 20 MHz in the band 2 657 - 2 670 MHz remained available.

2.47 The delegate of Oman, after noting that some administrations had proposed bands in which his Administration had interests, stressed the need to protect existing and planned systems.

2.48 Following a procedural discussion, the Chairman said that he would first ask all administrations to express a preference for 2.3 GHz or 2.6 GHz, after which those who could not support 1.5 GHz would be asked to express theirs. On a show of cards by all administrations, preference was given to the band 2.6 GHz. On a show of cards only by administrations unable to support the band 1.5 GHz, preference was also given to the band 2.6 GHz.

2.49 The Chairman said that he had asked the Committee to indicate its preferences as a way of advancing the debate, not in order to report the result to the Plenary. However, he had no option but to report to the Plenary that some administrations had difficulty in accepting the band 2.3 GHz, and that a majority would favour the band 2.6 GHz.

2.50 The delegate of Finland deplored the course which the meeting was taking. The Chairman would be reporting to the Plenary as though a vote had been taken, although the voting procedure laid down in No. 497 of the Convention had not been followed. The Plenary would have extreme difficulty in reaching a decision on the basis of such a method.

2.51 The delegate of the United Kingdom stressed that if the report were forwarded to the Plenary, the precise frequency band around 1.5 GHz should remain in square brackets in Document DT/118.

2.52 It was so agreed.

2.53 The Chairman said that his report to the Plenary would be accompanied by Document DT/118, the paragraph read out by the Chairman of ad hoc Group 4 referring to support for a narrower basis initially and a wider basis later, and a covering note giving the indications received during the present meeting of Committee 4.

2.54 It was so agreed.

The meeting rose at 1810 hours.

The Secretary:
T. GAVRILOV

The Chairman:
I.R. HUTCHINGS

COMMITTEE 4

SUMMARY RECORD
OF THE
EIGHTEENTH MEETING OF COMMITTEE 4
(FREQUENCY ALLOCATION)

Friday, 28 February 1992, at 2010 hours

Chairman: Mr. I.R. HUTCHINGS (New Zealand)

Subjects discussed:

1. Texts relating to MSS and FPLMTS (continued)
2. Outstanding issues

Documents

DT/119
277, 279
319, 325

1. Texts relating to MSS and FPLMTS (continued) (Documents DT/119, 277, 279, 319, 325)

1.1 The Chairman introduced Document DT/119 which summarized the discussions in Committee 4 concerning the texts relating to MSS and FPLMTS.

1.2 Annex 1: Allocations below 1 GHz (LEO MSS)

Band 137 - 137.175 MHz

1.2.1 The delegate of the Russian Federation proposed that, in the band 137 - 137.025 MHz, the allocation to the MSS should be on a secondary basis and that the square brackets should be deleted.

1.2.2 The delegate of Cuba said he had some difficulties with the inclusion of the MSS in the band 137 - 137.025 MHz. He requested that his country's name be added in Footnote 596, and that the words "with other satellite systems" be inserted in Footnote 599A after the words "Coordination of mobile-satellite systems". If those proposals were adopted, he could then approve the Table of Frequency Allocations as set out in Document DT/119.

1.2.3 The delegate of Germany recalled that the matter had been left pending when Resolution COM5/8 had been approved in the Plenary, and that Committee 4 had to make its decision known. With regard to Footnote 599A which specified a power flux-density limit, he wished to know the source of the precise value which had been included. The Chairman said that the value had been provided by the Working Group of the Plenary (Document 223).

1.2.4 The delegate of Cuba believed that the power flux-density limit recommended by the Working Group of the Plenary was appropriate in order to protect the fixed and mobile services, and was willing to accept the proposal. However, if coordination with the terrestrial services was maintained, that would alter the meaning of the limit. Resolution COM5/8 provided for coordination of frequency assignments to transmitting terrestrial stations and earth stations operating in a non-geostationary satellite network; the footnote to Section IV of the Annex to that Resolution specified a distance of 500 km for the coordination area for the operation of typical earth stations and a distance of 1,000 km for the service area in which aircraft earth stations operated. Coordination of the primary mobile-satellite service with secondary terrestrial services appeared complex.

1.2.5 The delegate of the United States said that the power flux-density limit stipulated in Footnote 599A had already been examined by the Working Group of the Plenary. The values corresponded to systems in frequency bands allocated on a primary basis. An amendment to Footnote 599A had been put forward in Document 223, to the effect that the provisions of No. 599A would apply until such time as the CCIR prepared a Recommendation on the maximum allowable power flux-density at the Earth's surface. Such a reference to the CCIR might help to settle the problem.

1.2.6 The Chairman explained that CCIR Recommendations were not mandatory, which was why it was clearly specified in No. 599A that the power flux-density limit in question would apply until it was revised by a competent WARC.

1.2.7 The delegate of France raised a general question. Resolution COM5/8 had been approved in Plenary and it had been decided to study an amendment which would restrict its application to cases in which mobile-satellite services exceeded the power flux-density limit indicated in the different footnotes. If that amendment was adopted, it would mean that a system which complied with the power flux-density limit indicated in the footnotes should not give rise to any coordination. Under those circumstances, the specified value, rather than just being technical criterion, became important from the regulatory point of view, since it would act as a trigger point for coordination. To safeguard the interests of existing services, the limit should be considered as a threshold triggering coordination. He therefore suggested that a limit be set which was lower than -125 dB.

1.2.8 The Chairman of the IFRB explained that the first sentence of Footnote 599A was in fact mandatory, since coordination would be carried out in accordance with the provisions of a Resolution. The second sentence set the power flux-density limit imposed on the mobile-satellite service at the Earth's surface, unless otherwise agreed by the affected administrations.

1.2.9 The delegate of France said he understood that there was a proposal to add, in Resolution COM5/8, a footnote stipulating that Sections I, II and III of the Annex to Resolution COM5/8 applied to terrestrial services solely in the event that a power flux-density limit at the Earth's surface was exceeded. He wished to know, however, what would happen in respect of the new provisions when the limit was not exceeded.

1.2.10 The Member of the IFRB said that the footnote in Document DT/119 was in two parts. First, coordination of mobile-satellite service systems in accordance with the provisions of Resolution COM5/8; secondly, the power flux-density of the mobile-satellite service which should not exceed -125 dB at the Earth's surface, unless the administrations agreed otherwise. The footnote which had been added in the Annex to Resolution COM5/8 did not specify any precise value; it was thus up to Committee 4 to set appropriate levels in order to protect the various services.

1.2.11 The delegates of Canada and Finland confirmed the interpretation given by the Member of the IFRB.

1.2.12 Replying to the delegate of Cuba, the Chairman assured him that Cuba's name would be added in Footnote 596, thereby solving the problem raised by the delegate of Cuba at the beginning of the discussion.

1.2.13 Noting that the delegate of the Russian Federation did not maintain his reservation concerning allocation of the band 137 - 137.025 MHz to the MSS on a primary basis, he said that the square brackets could be deleted.

1.2.14 The Table of Frequency Allocations 137 - 137.175 MHz was thus approved, as amended.

1.2.15 It was decided to request the Member of the IFRB to find a better wording for Footnote 599A, in consultation with the delegates of France and Cuba.

1.2.16 Footnote 599B was approved, subject to replacement of the words "LEO systems" by "non-geostationary satellite systems".

Band 137.175 - 138 MHz

1.2.17 The delegate of the Russian Federation proposed that the MSS should be given a primary allocation and that the square brackets should therefore be deleted.

1.2.18 It was so agreed.

1.2.19 The Chairman recalled that for the bands 312 - 315 MHz and 387 - 390 MHz, when considering Document 377 the delegate of the Russian Federation had expressed the wish that the mobile-satellite service be inserted with primary allocations.

1.2.20 The delegate of Belarus also urged that humanitarian services be accommodated in those two bands, in particular to combat disasters such as Chernobyl. The service in question would not be used for public correspondence, but solely to serve humanitarian interests.

1.2.21 The delegate of Germany had no objection, provided that the allocations in the two bands were made on a secondary basis.

1.2.22 The delegate of India had no objection of principle to the proposal by the delegate of Belarus; if it was accepted, however, a footnote similar to Footnote 599A should be included to protect the radio astronomy service.

1.2.23 The delegate of the Russian Federation was willing to agree to secondary allocations for the service.

1.2.24 The Chairman noted that there was no objection to adding the mobile-satellite service (Earth-to-space) with secondary allocations in the band 312 - 315 MHz.

1.2.25 The delegate of Australia wondered whether it might not be appropriate to set a power flux-density limit like the one set for the 137 MHz band, namely -125 dBW. The Chairman recalled that the allocations in the bands 312 - 315 MHz and 387 - 390 MHz would be secondary, and the question was whether coordination would be required or limits needed to be set for services, in which case the limit would be the same as that provided for in Footnote 599A. However, that might not actually be necessary, given the secondary status of the allocations. The delegate of Australia confirmed that if the allocations were on a secondary basis there was indeed no need to set a power flux-density limit.

1.2.26 Following a comment by the delegate of Qatar concerning protection of his country's fixed service in the band 400.15 - 401 MHz, the Chairman proposed that such protection should be achieved by adding Footnote 647X.

1.2.27 It was so agreed.

1.2.28 The delegate of India requested clarification concerning the footnote to the band 312 - 315 MHz restricting its use to LEO systems, since under the current Footnote 641 the band 235 - 322 MHz could be used by geostationary-satellite systems.

1.2.29 The Chairman said that the meeting would have to come back to the question of including a footnote restricting the mobile-satellite service to non-geostationary systems, in the light of the provisions of Footnote 641.

1.2.30 The delegate of the United States said he understood the concerns expressed by the delegate of India, since under the current Footnote 641 even if the allocations were on a secondary basis the approximately 3 MHz of spectrum in the upper and lower parts of the bands in question would enjoy a higher status than that intended in the footnote.

1.2.31 The delegate of Syria urged that Footnote 647X should apply to the whole region for the band 387 - 390 MHz and that the power flux-density limit should be -135 dBW.

1.2.32 The Chairman recalled that the limit of -125 dB had been set by the Working Group of the Plenary. In response to a request for explanations from the delegate of Syria, the Director of the CCIR said that the value of -120 dBW identified in the CCIR Report was not specifically linked to the frequency bands concerned. The delegate of Canada added that the Working Group of the Plenary had increased the value indicated in the CCIR Report to -125 dB in order to provide additional protection for services, as indicated in Document 223.

1.2.33 The Chairman having said that there was perhaps no need to include a footnote in view of the secondary status of the allocations, the delegate of Syria urged that the Chairman's report to the Plenary should mention that he was in favour of the inclusion of a footnote securing protection for the services in question.

1.2.34 Replying to the Chairman, who asked whether he wished to amend Footnote 641 in view of the fact that it had been decided to insert secondary allocations in the Table of Frequency Allocations to take account of his proposal in the bands 312 - 315 MHz and 387 - 390 MHz, the delegate of the Russian Federation said that the amendments he had indicated for Footnote 641 had been covered, and that it was not necessary to stipulate an additional power flux-density limit for the service.

1.2.35 The delegate of the United States added that the current Footnote 641 permitted the operation of mobile-satellite systems in the bands 235 - 322 MHz and 335.4 - 399 MHz. That usage might be disrupted by the addition of the mobile-satellite service with secondary allocations in the bands 312 - 315 MHz and 387 - 390 MHz. He also enquired about the protection of the radio astronomy service according to the Russian Federation's proposal.

1.2.36 The Chairman proposed that the United States and the Russian Federation should settle the matter outside the meeting and come back with their decision on the subject. The radio astronomy service would be protected through the insertion of an appropriate footnote.

1.2.37 It was so agreed.

Band 400.15 - 401 MHz

1.2.38 The Chairman recalled that the issue was primary allocations to the mobile-satellite service (space-to-Earth) and the insertion of Footnote 599B and Footnote 647X concerning the power flux-density limits; he also suggested that reference be made to the radio astronomy service.

1.2.39 Following an exchange of views between the delegate of the Netherlands and the Chairman, it was decided that the allocations to the mobile-satellite service would be on primary basis and that references to Footnotes 599B and 647X would be made in the Table of Frequency Allocations.

Band 148 - 150.05 MHz

1.2.40 The delegate of the United Arab Emirates stressed that the addition of the mobile-satellite service in the band 148 - 149.9 MHz was liable to cause interference to existing services and that coordination would probably prove extremely complex. Accordingly, his delegation maintained its reservations with a regard to the addition of that service.

1.2.41 The delegate of Cuba proposed that the words "and shall not claim protection from" should be inserted in the first sentence of Footnote 608X.

1.2.42 The delegate of the United States pointed out that the use of that band depended on national authorities; Footnote 608Z in Document 234 provided a means of including the names of countries which were not to suffer harmful interference.

1.2.43 The delegate of Cuba recalled that lengthy discussion had taken place concerning the band in question and that it had been unanimously acknowledged that the proposed mobile-satellite service should not be protected and should not cause interference to terrestrial services in that band. Nevertheless, the authors of the proposal in Footnote 608Z were implying that the allocations should be primary in order to enable the development of satellite networks. To his mind, his proposed amendment to the note was a more accurate reflection of the discussions which had taken place in the Working Groups.

1.2.44 The Chairman said that Footnote 608Z could be included, with Cuba's name. Any other administrations wishing their name to be inserted in the footnote in question should contact the Secretariat.

1.2.45 The delegate of Cuba said that if his amendment to Footnote 608X was accepted, he was willing to agree to another footnote mentioning the names of administrations specifically requesting protection for their stations operating in accordance with the Table of Frequency Allocations.

1.2.46 The Chairman said that instead of amending Footnote 608X, the matter could be handled by using Footnote 608Z which had not been included in Document DT/119 by omission, although it appeared in Document 277. In his opinion, the wording of that footnote corresponded exactly to the Cuban delegate's intention. Summarizing the debate, he suggested that the band 148 - 149.9 MHz be adopted with Footnotes 608X and 608Z, both of which would begin with the first sentence of Footnote 647X concerning coordination in accordance with the provisions of Resolution COM5/8.

1.2.47 It was so agreed.

1.2.48 The Chairman pointed out that for the sub-band 149.9 - 150.05 MHz, reference should be made to the need for coordination in accordance with Resolution COM5/8.

1.2.49 The delegate of the United Kingdom pointed out that Footnote 609B should refer to the land mobile-satellite service rather than the mobile-satellite service.

1.2.50 Subject to that correction, the Table of Frequency Allocations relating to 148 - 150.05 MHz was approved.

1.2.51 The Chairman said that consideration of Annex 1 had been completed, it only remaining for the Member of the IFRB to settle the point concerning Footnote 599A and the delegates of the Russian Federation and the United States to settle the question of allocations in the 300 MHz band.

1.3 Annex 2: MSS allocations in the bands between 1 525 MHz and 1 660.5 MHz

Band 1 525 - 1 530 MHz

1.3.1 The Chairman asked whether the square brackets in the part of the Table of Frequency Allocations concerning Region 1 could be deleted.

1.3.2 It was so agreed.

1.3.3 For Regions 2 and 3, the Chairman said that an amendment was required to place separate square brackets around the reference to the mobile-satellite service (space-to-Earth).

1.3.4 The delegate of France wondered whether a reference to Footnote 726B should not be included against that service for Regions 2 and 3.

1.3.5 The delegate of Canada said that he could not agree to that suggestion, since the allocation was intended to enable voice communications in the different components of the mobile-satellite service.

1.3.6 The delegate of the Russian Federation, supported by the delegates of China and Singapore, said that Regions 2 and 3 should be given the same treatment as Region 1; in other words the mobile-satellite service (space-to-Earth) should be excluded, since it was likely to cause interference to the maritime mobile service.

1.3.7 In the absence of an adequate majority in favour of deleting or including the mobile-satellite service in the Table of Frequency Allocations, the Chairman proposed that the matter be referred to the Plenary Meeting. Recalling that the bands were used by geostationary space stations, he asked delegates whether their intention was to exclude non-geostationary space stations. If the Table of Frequency Allocations was not modified, that would imply that such stations were not excluded, moreover, they could be introduced without the coordination procedure foreseen in Resolution COM5/8.

1.3.8 The majority of delegates having spoken in favour of excluding non-geostationary stations, the Chairman proposed that a footnote be included stipulating that if non-geostationary stations were to be introduced, then their introduction shall be subject to the application of Resolution COM5/8.

1.3.9 It was so agreed.

Band 1 530 - 1 559 MHz

1.3.10 With regard to Footnotes 726C and 730B proposed in Document 319, the delegate of France had no objection concerning the additional allocations for the mobile-satellite service but feared that, as regards the respective priority of systems, the proposed provisions might be detrimental to existing services. It was regrettable that the priority of services apart from those relating to distress and safety communications was merely "taken into account". If the text were accepted, it would imply that all the problems concerning priority access for such communications were resolved. The second part of the text should be amended so that, for any network or system, all distress and safety communications would have priority not only over the network in question but also over all other existing networks.

1.3.11 The delegate of the United Kingdom considered that for the band 1 545 to 1 555 MHz and the paired band used on a worldwide basis by the aeronautical service, it would be difficult to allow additional allocations country by country. Referring to Document 319, he had no objection concerning Footnote 726C; with regard to Footnote 730B, on the other hand, he failed to understand how a system could be implemented in which mobile-satellite systems had to be able to operate with the aeronautical mobile-satellite (R) service. More specifically, he was concerned about these additional allocations in the bands allocated exclusively to the aeronautical mobile-satellite service.

1.3.12 The delegate of Malaysia asked that his country's name be included in Footnotes 726C and 730B.

1.3.13 The delegate of Brazil requested that his country be included in Footnote 726C only.

1.3.14 The delegates of Spain and Kenya supported the position adopted by the United Kingdom.

1.3.15 The Chairman asked whether, subject to exclusion of the aeronautical band, the delegates would approve Footnotes 726C and 730B.

1.3.16 The delegate of the United States requested time to reflect on the amendment to Footnote 726C proposed by France and the delegate of the United Kingdom said he agreed to the substance but wondered how the proposal would actually be put into practice.

1.3.17 Replying to a question by the delegate of Australia, the Chairman said he would not revert to the question of modification of the band foreseen in Footnote 730B since a sufficient number of administrations had expressed their points of view on the matter. The reservations formulated by Australia and the United States were noted. He recalled that the two footnotes in Document 319 had been drafted on the basis of Document DT/119 and said that a majority had clearly emerged in favour of modification of the bands so as to exclude the aeronautical service. In conclusion, and in reply to a request for clarification from the delegate of France, he summarized his proposal as follow: include the footnotes on the basis of Document DT/119 and, if the parties involved reached agreement on the matter, include a further text in the form of an annex which would be transmitted to the Plenary meeting.

1.3.18 It was so agreed.

1.3.19 The Tables of Frequency Allocations 1 530 - 1 533 MHz and 1 533 - 1 559 MHz were approved without amendment.

1.3.20 The delegate of the United States introduced Document 325 providing for an alternative allocation in the United States, Canada and Mexico in the bands 849 - 851 MHz and 894 - 896 MHz to the aeronautical mobile service on a primary basis for public correspondence with aircraft. The proposal corresponded to an operational requirement in the area concerned.

1.3.21 The delegate of France pointed out that the Table of Frequency Allocations for Region 2 would probably then also have to be amended above 890 MHz, deleting the words "except aeronautical mobile". With that comment, it was decided to include the proposed Footnote 700A given in Document 325 in the bands concerned.

Band 1 559 - 1 626.5 MHz

1.3.22 The Chairman invited comments on the proposals contained in Documents DT/119, 277 and 279, noting that there was some support for the proposals in Document 279 but rather more for those in Document 277.

1.3.23 The delegate of the United States supported the proposals in Document DT/119. Drawing attention to Footnote 753F to the band 2 483.5 - 2 500 MHz, he said that a similar footnote referring to Resolution COM5/8 should be applied to the band 1 610 - 1 626.5 MHz.

1.3.24 The delegate of the Russian Federation said that if the proposals in Document 277 were accepted, it would be virtually impossible to implement services in his country. As a compromise, he suggested a downgrading of those proposals from primary to secondary status.

1.3.25 In view of objections to that suggestion, the Chairman proposed that the concerns of the Russian Federation and the other sponsors of Document 279 should be recorded and that the proposals in Document 277 should be transmitted to the Plenary.

1.3.26 It was so agreed.

1.3.27 The delegate of the United Kingdom said that since the radio astronomy service was to be given primary status in the sub-band 1 610.6 - 1 613.8 MHz, Footnote 734 should appear only in the boxes corresponding to that sub-band. Also, in order to protect the radio astronomy service, especially from the MSS in the same and adjacent bands, Footnote 733E should appear in all the boxes.

1.3.28 It was so agreed.

1.3.29 SUP 731A, 731B, 731C and 731D were approved without comment.

1.3.30 The delegate of Pakistan having suggested that a reference to Footnote 727 should be included in ADD 731X, the Chairman said that Footnote 727 dealt with services to which allocations were made on a secondary basis. That matter could be taken up once the primary services had been considered.

1.3.31 Following a discussion on Footnote 731X in which the delegates of Argentina, Canada, Colombia, the United States, Finland, France, Sweden, the Chairman of the IFRB, the Member of the IFRB and the Chairman took part, it was decided to set up a drafting group composed of the delegates of Germany, Argentina, the United States, the Russian Federation, Finland, France and Sweden and a representative of the IFRB, to prepare a new text for the footnote. In the meantime, ADD 731X would be placed between square brackets.

1.3.32 MOD 733A and MOD 734 were approved without comment.

Band 1 626.5 - 1 660 MHz

1.3.33 The delegate of Canada, supported by the delegate of India, said that the alternatives considered by the Plenary for the band 1 626.5 - 1 631.5 MHz should be the same as those for the band 1 525 - 1 530 MHz. Furthermore, it should be indicated in both ADD 728A and ADD 728B that the allocations in question had primary status.

1.3.34 The Chairman suggested that those remarks should be taken into account and that the Table of Frequency Allocations and footnotes should be transmitted to the Plenary.

1.3.35 It was so agreed.

1.3.36 The Chairman asked whether the Brazilian delegation wished to comment on its earlier request that a possible extension of the 1.5/1.6 GHz bands be considered by the Committee.

1.3.37 The delegate of Brazil said that since his Administration's initial proposal regarding the extension of the 1.5 and 1.6 GHz bands for additional mobile-satellite allocations on a worldwide basis had received little support, his delegation had prepared an alternative proposal which might prove to be more generally acceptable, namely, to extend the band by some 35 MHz downwards from 1 525 MHz and upwards from 1 675 MHz, for national or subregional systems in Region 2. He went on to describe the five main elements of the proposal, which should be regarded as a package.

1.3.38 The Chairman, having asked for a show of cards, noted that opinions were divided regarding the proposal. He therefore suggested that the Brazilian delegation should continue its discussions with other administrations, particularly in respect of the protection aspect and the related CCIR studies and prepare a conference document for submission to the Plenary.

1.3.39 It was so agreed.

1.4 Annex 3: Allocations between 1 660.5 and 2 690 MHz

Band 1 660.5 - 1 670 MHz: NOC

1.4.1 Approved.

Band 1 670 - 1 700 MHz

1.4.2 The delegate of Germany, supported by the delegate of the Netherlands, proposed that the sub-band 1 670 - 1 690 MHz be broken down into two blocks. The first, from 1 670 - 1 675 MHz would include MOBILE with "except aeronautical mobile" deleted and with mention of Footnote 740A. The second, from 1 675 - 1 690 MHz, would remain unchanged without mention of Footnote 740A. The rest of the Table of Frequency Allocations would remain the same.

1.4.3 The delegates of India and the United States having expressed concern at the proposal because of the need to protect the METSAT applications, the Chairman pointed out that METSAT would be covered in the lower block.

1.4.4 The proposal was approved.

1.4.5 The delegate of Germany, referring to ADD 740A, drew attention to an error in the bands given in the text. The second set of bands should be amended, in two places, to read: "1 800 - 1 805 MHz". He also questioned the necessity of the last sentence, which contained a reference to coordination procedures, and proposed that it be deleted.

1.4.6 The delegate of Canada, supported by the delegate of the United States, said that the words "The use of APC in" should be inserted at the beginning of the second sentence for the sake of clarity. He opposed the deletion of the last sentence, saying that the reference to coordination procedures was useful.

1.4.7 In the ensuing discussion, the delegates of Israel and Zimbabwe objected to the proposed deletion, while the delegate of France gave it his full support. The Chairman, observing that the Committee was divided on the issue, suggested that the last sentence be placed between square brackets.

1.4.8 Footnote 740A, as amended, was approved on that understanding.

1.4.9 As a result of a proposal by the delegate of Germany, the delegate of Denmark proposed that the last sentence of Footnote 740A be added to the text of Footnote 700A and placed between square brackets.

1.4.10 The delegate of the United States observed that Footnote 700A concerned an alternative allocation in three countries, and was intended to cover an existing system; accordingly the addition of the text was not appropriate.

1.4.11 After further discussion involving the delegates of the United States and Norway, the Chairman noted that, with the exception of the delegates of the United States, Canada and Mexico who had expressed reservations, there was considerable support for the proposal by the delegate of Denmark. He therefore suggested that the matter should be deferred for discussion in a Plenary Meeting.

1.4.12 It was so agreed.

Band 1 700 - 2 025 MHz

1.4.13 The delegate of Japan, supported by the delegates of India, Cuba, Saudi Arabia, Zimbabwe and Argentina, proposed the deletion of the third sentence of Footnote 746A, since decisions regarding the implementation of FPLMTS should be taken at the discretion of administrations.

1.4.14 The Member of the IFRB, replying to a request for clarification by the delegate of Zimbabwe, recalled that it had been agreed that administrations could implement FPLMTS at their own discretion. The second sentence of ADD 746A had no impact on the Table of Frequency Allocations, and was intended to signify that the services included therein could operate normally.

1.4.15 The delegate of Argentina, in the light of that clarification, proposed the deletion of the second sentence of Footnote 746A.

1.4.16 The delegate of Saudi Arabia objected to that proposal.

1.4.17 The delegate of Germany proposed that Footnote 746A should be amended on the basis of Document 277 to include the following text: "In the bands designated for FPLMTS, a combination of terrestrial and space techniques may also be used in accordance with the relevant Recommendations of the CCIR and the CCITT in order to ensure the efficient use of the radio spectrum".

1.4.18 The delegates of Cuba, New Zealand, Zimbabwe and Saudi Arabia said that they could not agree to that amendment.

1.4.19 In response to comments by the delegate of Finland concerning the intent of Footnotes 746A and 746B, the delegate of Germany pointed out that the two footnotes served entirely different purposes. He reiterated the need for his proposed amendment, stressing that an MSS allocation in the sub-bands had to be clearly identified with the possible use of space techniques.

1.4.20 The delegate of Canada endorsed the comments by the delegate of Germany, recalling that it had been agreed in principle during a previous Committee 4 meeting to consider a MSS allocation in the 2 GHz frequency range which should be distinct from the designation for FPLMTS. He attributed the association of the MSS allocations and the FPLMTS designation in draft Resolution COM4/[FPLMTS] to an oversight in the drafting of the Resolution.

1.4.21 The delegate of the United Kingdom said that, as he understood it, the allocations to the mobile-satellite service, in the bands where reference was made to FPLMTS, were not necessarily to be restricted to FPLMTS applications. However, it was perhaps unnecessary to spell that out in the footnote as proposed by the delegate of Germany; the inclusion of such details would be more appropriate in the draft Resolution. Turning to the second sentence of Footnote 746B, he observed that Resolution COM5/8 applied to non-geostationary satellite systems only; accordingly, the sentence should be amended to read: "The coordination of non-geostationary-orbit MSS systems in these bands will be in accordance with Resolution COM5/8".

1.4.22 Replying to a request for clarification from the delegate of Canada, the Member of the IFRB said that Resolution COM5/8 covered all interaction between space systems except where geostationary-satellite systems alone were involved. Furthermore, it did not provide for interaction between geostationary and terrestrial systems, which was usually covered by power flux-density limits in the relevant bands. However, the Resolution did call for coordination of non-geostationary-satellite systems in relation to terrestrial systems, and of terrestrial systems in relation to the earth stations of non-geostationary satellite networks.

1.4.23 The delegate of Australia, while agreeing that the amendment proposed by the delegate of Germany would afford greater flexibility, pointed out that it might increase the requirement for coordination. The development of space techniques might also be hindered due to the breadth of the allocation. Lastly, the impact with regard to accommodation of the fixed services needed to be studied. For all those reasons, the FPLMTS issue warranted further discussion.

1.4.24 The delegate of the Netherlands said that there had been ample opportunity to discuss the matter; furthermore, it had been generally agreed that there was a space element in FPLMTS. So as to provide the CCIRs with maximum flexibility in the development and standardization process, he supported the amendment proposed by the delegate of Germany.

1.4.25 The delegate of Finland said that he could not recall any mention of possible space elements with respect to FPLMTS in the relevant CCIR reports. He would therefore be reluctant to include a sentence such as that proposed by the delegate of Germany, particularly since space techniques were inherently not spectrum-efficient.

1.4.26 The delegate of the United States suggested, in order to meet the concerns expressed, that the text proposed by the delegate of Germany should be modified to read as follows: "In the bands indicated for FPLMTS, a combination of terrestrial and space techniques may be used, taking into account the relevant Resolutions of the CCIR". The amendment proposed by the United Kingdom delegate was not acceptable to his Administration, which had submitted proposals for allocations between 1.9 and 2.2 GHz.

1.4.27 The Director of the CCIR, after providing additional information by quoting from a relevant CCIR report, concluded that while it was not explicitly stated that the same amount of spectrum had to be allocated to the terrestrial and satellite components, the implication was that the satellite component would be substantial. Furthermore, the CCIR had taken the view that a common frequency on a worldwide basis would be preferable for the FPLMTS.

1.4.28 The delegate of the United Arab Emirates endorsed the comments by the delegate of Finland, emphasizing that terrestrial cellular mobile systems called for particularly spectrum-efficient methods. It was clear by any standards of system design that separate frequency bands should be used for terrestrial and satellite techniques.

1.4.29 The delegate of Canada observed that it was difficult to define space techniques for FPLMTS since studies on the use of such techniques were still in their early stages. After endorsing the views expressed by the United Kingdom delegate, he said that in view of the uncertainty surrounding the space element in FPLMTS, the German amendment should not be included in the footnote, although it might possibly find a place in the relevant Resolution.

1.4.30 The Chairman suggested that Footnotes 746A and 746B, together with the amendment proposed by the delegate of Germany, should be placed between square brackets pending resolution of the issue by means of informal discussions.

1.4.31 It was so agreed.

1.4.32 The delegate of France requested the inclusion, in square brackets, of a reference to RR 2557 on the subject of power flux-density limits, for the purpose of implementation of Resolution COM5/8.

1.4.33 In reply to a question by the delegate of Saudi Arabia, the Chairman said that the text would be forwarded to the Plenary with square brackets but that any results reached through informal discussions would also be transmitted to the Plenary, preferably in the form of agreed wording.

1.4.34 The delegate of Canada said that the size and location of the mobile-satellite allocation should be addressed in conjunction with Footnote 746B. He noted that Document 320 submitted by the United States was relevant in that context.

Band 1 710 - 2 200 MHz

1.4.35 The Chairman observed that the concern expressed on an earlier occasion by the delegate of the United States about Footnote 747A in the band 2 025 - 2 110 MHz was addressed in Document 288, which had been sent to the Editorial Committee. Footnote 750A, mentioned by the delegate of India, had been dealt with in the same document.

1.4.36 The delegate of Germany said that a reference to Footnote 746A should be added in the bands 2 110 - 2 120 MHz and 2 120 - 2 185 MHz for Region 1 and for Regions 2 and 3.

1.4.37 The delegate of Syria suggested that the Table of Frequency Allocations be simplified by grouping Region 1 with Regions 2 and 3 where the allocations were identical.

1.4.38 The Chairman said that the Editorial Committee could undertake that task.

1.4.39 On that understanding, the modified Table of Frequency Allocations for the band 1 710 - 2 200 MHz was approved.

Band 2 483.5 - 2 500 MHz

1.4.40 The delegate of France requested the addition in Footnote 753F of a reference to power flux-density limits, with mention of RR 2557.

1.4.41 There being some opposition, the Chairman said that the addition proposed by the delegate of France would be included in square brackets.

1.4.42 The Table of Frequency Allocations and ADD 753F were approved on that understanding.

2. Outstanding issues

2.1 As the Committee had very little time left at its disposal, the Chairman asked delegates to identify any outstanding issues for immediate discussion or for inclusion in his report to the Plenary.

2.2 The delegate of Finland pointed out that, in the interests of consistency, Resolution COM4/[FPLMTS] would have to be aligned with the decisions taken on the Table of Frequency Allocations.

2.3 The delegate of France, referring to the band 2 655 - 2 690 MHz (Document DT/119, page 17), said that the proposal was to add "MOBILE-SATELLITE (Earth-to-space)", whereas the power flux-density mentioned in Footnote 764A was for the other direction. He therefore suggested the deletion of the appropriate part of the footnote.

2.4 The Chairman drew attention to Documents 316 and 317 which contained proposals, respectively, for the inclusion of Brunei Darussalam in a footnote and the deletion of Poland from a series of footnotes.

2.5 Those proposals were approved.

2.6 The delegate of the United States observed that the proposals in Documents 320 and 328 remained to be discussed.

2.7 The delegate of Brazil stressed that any additional allocation either to the future public land mobile telecommunication systems (FPLMTS) or the mobile-satellite service (MSS) should take into account the channelling arrangements specified by the CCIR Recommendations.

2.8 The delegate of the Russian Federation requested first that "except aeronautical mobile" be added in the band 2 200 - 2 450 MHz (Document 288); second, that the text agreed to by the United States be included in the relevant footnotes for 312 - 315 MHz etc; and third, that Footnote 700A relating to the band 610 - 890 MHz (Document 270) be deleted.

2.9 The Chairman said first that the mobile, except aeronautical mobile, service had been upgraded from secondary to primary status, as shown in Document 288; second, that the agreed text would be included in the footnotes for 312 - 315 MHz etc; and third, that Footnote 700A would be considered at a later stage.

2.10 The delegate of China requested that the name of China be added to Footnotes 733B and 753C.

2.11 The delegate of the United Kingdom said that, as a consequence of the new allocation to the fixed-satellite service in the band 13.75 - 14 GHz, he would welcome the opportunity to discuss the proposal in Document 238 for the convening of a world administrative radio conference.

2.12 The delegate of the Netherlands suggested that no frequency bands should be specified in Resolution COM5/8; the procedure would then be applicable to all satellites with non-geostationary orbits.

2.13 The delegates of Saudi Arabia and Algeria called for consideration to be given to the draft Resolution in Document 318.

2.14 The delegate of Japan, referring to Footnote 760A relating to the band 2 500 - 2 655 MHz (Document DT/119), said that -152 dB was too restrictive a limit for the mobile-satellite service; he suggested that it be replaced by the limit given in RR 2562, by extending Articles 27 and 28 to cover the mobile-satellite service. He further proposed the deletion of the text of "noting" in Resolution COM4/[FPLMTS], given in Annex 4 to Document DT/119.

2.15 The delegate of Argentina drew attention to the need to consider Document DT/120 in relation to the band 2.5 - 2.6 GHz.

2.16 The delegate of Canada noted that the draft Resolutions contained in Documents DT/105 and DT/113 remained to be addressed.

2.17 The delegate of Syria said that, in view of the rapidity with which decisions had been taken in Committee 4, it might be necessary to raise certain points in the Plenary upon closer consideration of the proposals.

2.18 The Chairman said that it would be up to the Chairman of the Conference whether or not to allow further points to be raised. Since the present meeting was in principle the last meeting of Committee 4, he suggested that he should be authorized by the Committee to approve the remaining summary records of its meetings, as was the usual practice at administrative radio conferences.

2.19 It was so agreed.

The meeting rose at 0210 hours on Saturday, 29 February 1992.

The Secretary:
T. GAVRILOV

The Chairman:
I.R. HUTCHINGS

COMMITTEE 4

SUMMARY RECORD
OF THE
NINETEENTH AND LAST MEETING OF COMMITTEE 4
(FREQUENCY ALLOCATION)

Saturday, 29 February 1992, at 1415 hours and 1850 hours

Chairman: Mr. I.R. HUTCHINGS (New Zealand)

Subjects discussed

1. Texts related to MSS and FPLMTS (continued)
2. Remaining proposals by administrations
3. Draft Resolutions
4. Completion of the Committee's work

Documents

DT/119, DT/120,
234, 277, 288, 320,
330, 339

334, 337, 338,
342, 343

318, 328, DT/105, DT/113

1. Texts related to MSS and FPLMTS (continued) (Documents DT/119, DT/120, 234, 277, 288, 320, 330, 339)

1.1 MSS around 2 GHz (Documents DT/119, 277, 320)

1.1.1 The delegate of France said that the question of the application of Resolution COM5/8 had been left pending at the Committee's previous meeting. Depending on the decisions taken in that regard, the Committee would have to discuss certain power flux-density or other values. He enquired how the Chairman intended to tackle that problem.

1.1.2 The Chairman replied that the matter referred to by the delegate of France could be taken up the first time the Committee encountered a reference to Resolution COM5/8 in the texts before it.

1.1.3 The delegate of France emphasized that the Committee needed to know how the text, which could be interpreted in two ways, was going to be applied. If the addition which had been proposed was retained in the final version, there would be no coordination procedure outside a certain limit, which meant that power flux-density values lower than those in the present text might be required.

1.1.4 The Chairman suggested that the decision of principle to be taken by the Committee in making the allocations concerned was whether coordination should always be required, even if the system had a fairly low power flux-density, or whether there should be a threshold below which coordination was not required.

1.1.5 The delegate of the United Kingdom, referring to the text of Resolution COM5/8 as submitted to the Plenary in Document 312, said that no decision had yet been taken on the bands to which the procedure should be applied, pending the decisions of Committee 4 on allocations to services, their relative status, and whether there were power flux-density limits or not. It was his understanding that the Chairman of Committee 5, after consulting the Chairman of Committee 4 and the Secretariat, intended to put forward a composite proposal in that connection. Perhaps the discussion should be postponed until the Chairman of Committee 5 was present.

1.1.6 The delegate of Finland said that, as he understood it, there would be no need to coordinate non-geostationary-satellite systems vis-à-vis terrestrial services unless the power flux-density limit was exceeded.

1.1.7 The Member of the IFRB recalled that the matter had been discussed at the previous meeting in connection with some of the footnotes in Document DT/119. The text of Resolution COM5/8 submitted to the Plenary for first reading in Document 312 stated that certain sections of its Annex relating to terrestrial services would apply only in cases where the power flux-density limit was exceeded. On the assumption that that text would be adopted, Committee 4 would have to make sure that there was a clear link between the procedures of the Annex to the Resolution and the footnotes in the Table itself. To that end, he suggested that the text of Footnote 599A (Document DT/119, page 2) might be reworded as follows: "Coordination of mobile satellite systems will be in accordance with the provisions of Resolution COM5/8. If the power flux-density at the surface of the Earth does not exceed [...], coordination of the space station with terrestrial stations is not required."

1.1.8 The delegate of Argentina considered that there would be some merit in identifying upper and lower power flux-density values. The lower figure might perhaps be based on thermal noise at the frequency. As to the upper figure, from which point onwards coordination would be required, he sought clarification on the value given in ADD 722A (Document 334), which seemed to be lower than suggested by the relevant calculations.

1.1.9 The Chairman said that if power flux-density limits were already established in the Regulations for services operating in or above the frequency ranges with which the Committee was dealing, and if those limits protected existing terrestrial services in the presence of satellite signals, they should perhaps be adopted as the trigger limits for the coordination procedure. He noted that the delegate of France agreed with that interpretation, and took it that the Committee could agree to proceed on that basis. If he heard no objection, the relevant text would be adjusted accordingly.

1.1.10 The delegate of Canada drew attention to Document 330 from the Working Group of the Plenary, which discussed power flux-density limits for the mobile-satellite service in the frequency range 1 525 - 2 500 MHz.

1.1.11 The delegate of the United States observed that there was a difference between the values given, respectively, for the band 1 525 - 2 500 MHz in Document 330 and the band 1 435 - 1 525 MHz in Document 334.

1.1.12 The Chairman said that note would be taken of those comments. He requested the Committee to resume consideration of Documents DT/119 and 277.

1.1.13 The delegate of the United Arab Emirates said that some of the proposals made for MSS in the different segments of the 2 GHz band caused his delegation great difficulty. He wished it to be recorded that his delegation reserved its position on the proposal for MSS in the band 2 483.5 - 2 690 MHz.

1.1.14 The delegate of the United States introduced his delegation's proposals for additional allocations in the range 1 710 - 2 200 MHz (Document 320), observing that they were intended to accommodate international, regional and national services as well as LEO systems. In response to a question by the Chairman, he confirmed his delegation's endorsement of the decisions to the effect that the application of Resolution COM5/8 should be triggered by power flux-density levels somewhat akin to the present regulatory levels.

1.1.15 The delegate of Japan said that the United States proposal provided too much spectrum for the mobile-satellite service, especially in Region 3, and would create FPLMTS/MSS sharing problems. He supported the proposal in section 4B of Document 277.

1.1.16 The delegate of Syria said that the spectrum proposed for MSS in Document 320 was far too wide in the relevant band. In view of the need to protect existing fixed services, the proposal was not acceptable on a primary basis.

1.1.17 The delegate of Finland said that his delegation too had major difficulties with the United States proposal for three reasons: the bandwidth proposed for Region 1 was excessive; the bands chosen were ill-situated in relation to the fixed service; and the timing proposed in Footnote 746A was unsuitable for his Administration.

1.1.18 The delegate of Oman expressed serious concern over the United States proposal and agreed with the Syrian delegate that it was acceptable only on a secondary basis.

1.1.19 The delegate of Pakistan endorsed the views of the Japanese delegate and said that his Administration favoured the 2 560 - 2 670 MHz band for MSS.

1.1.20 The delegate of Brazil, while agreeing in principle with the United States proposal, said that he would like to move the 2 160 - 2 180 MHz band to 2 180 - 2 200 MHz, which would bring it into line with CCIR Recommendation 382.

1.1.21 The delegate of Canada supported the United States proposal in principle and considered that appropriate power flux-density limits and coordination measures could be used to protect existing fixed systems from interference from the space segment. Concern had been voiced with regard to the magnitude of spectrum proposed for Regions 1 and 3, but that could be dealt with by making a core spectrum available for global applications. Moreover, additional spectrum could be allocated in Region 2 if that was acceptable to the administrations concerned. Generally speaking, Canada preferred the United States choice of band lower down the spectrum than that in Document 277.

1.1.22 The delegate of Indonesia said that he had difficulty in accepting the United States proposal since the suggested bands were too wide, they were already extensively used for terrestrial services and the timing was not suitable. In his view, a band higher up the spectrum should be allocated to MSS.

1.1.23 The delegate of Australia, after endorsing the remarks of the Japanese delegate, expressed surprise at the amount of spectrum proposed by the United States for Region 3. During the Conference Australia had supported several proposals for additional MSS allocations, but it also had a continuing need for fixed links and therefore preferred to pursue a solution along the lines indicated in Document 277.

1.1.24 The delegate of France, commenting on the United States proposal, recalled the efforts made by the authors of Document 277 to set reasonable limits to MSS extensions. There was also the problem of the differences in the amount of spectrum proposed for the different regions, which seemed to run counter to the goal of a worldwide allocation - a difficulty avoided by the proposals in Document DT/119, which attempted to find a different basis for the extensions in each region. If the United States wanted more spectrum for Region 2, it could perhaps be accepted on a secondary basis, or subject to Article 14, or by applying the power flux-density principles underlying the proposals in Document 334.

1.1.25 The delegate of Germany, after associating himself with the observations made by the French delegate, said he found it difficult to discuss allocations around 2 GHz before knowing what decisions would be taken on the 2 500 - 2 690 MHz band.

1.1.26 The delegate of the United States said that he was prepared to be flexible regarding his proposal which attempted to respond to the differing needs of the different regions. He certainly did not seek to impose a solution on Regions 1 and 3 which was not acceptable to them. His main aim had been to try to find a common band somewhere in the middle of the various allocations. He could agree to some power flux-density limits and coordination measures to protect existing users. Part of his proposal was predicated on the retention of the mobile service on a primary basis in the bands concerned, with a view to providing future flexibility. It was because it would be very difficult to find extra spectrum above 2 500 - 2 690 MHz that the United States proposal went further down the range.

1.1.27 The Chairman, after recalling that the United States delegate had accepted the figures proposed in Document 330 to trigger the application of Resolution COM5/8, noted that an indicative show of cards revealed strong opposition to the United States proposal. A further show of cards indicated that a very small number of delegations were in favour of the United States proposal for Region 2 alone, while some more opposed it.

1.1.28 Following a suggestion by the delegate of the United States, the Chairman called for a show of cards on the principle of a worldwide core spectrum, common to all three regions, for international systems, either around 2 GHz or in the 2.5 - 2.7 GHz range. He noted that there was strong support for that proposal.

1.1.29 At the suggestion of the delegate of France, the Chairman then called for a show of cards on the proposals contained in Document DT/119 (2 010 - 2 025 MHz (Earth-to-space) and 2 185 - 2 200 MHz (space-to-Earth)). He noted the ratio of approximately 3:1 in favour of those allocations.

1.1.30 The delegate of the United States said he could accept the higher band, but suggested that the lower band should be moved down to 1 970 - 1 990 GHz. A regional approach might prove to be the best solution for the Earth-to-space link.

1.1.31 Following a suggestion by the delegate of Canada to move both bands down by about 20 MHz, the Chairman asked for a show of cards on the bands 1 990 - 2 005 MHz and 2 165 - 2 180 MHz. He noted strong opposition to the proposal, with a very small number of delegations in favour.

1.1.32 The delegate of the United Kingdom suggested that opposition to the bands proposed in Document DT/119 might be less if the whole operation was viewed in a much longer time scale.

1.1.33 The delegate of Brazil expressed strong support for the allocation of a core of about 20 MHz for the expansion of international systems. Some additional allocation might be needed, but it could vary from region to region, as suggested in the United States proposal (Document 320). However, he did not agree with Footnote 746A in that proposal; he would like to see the date slightly modified. Brazil would have difficulty with any allocation in the 2.5 - 2.6 GHz band since it was heavily used in his own country. He suggested the establishment of a small group to study the question of the allocation of a 20 MHz core for international use.

1.1.34 The delegate of Finland, supported by the delegates of Sweden and the Netherlands, suggested as a compromise that the lower band could be moved down to around 1 992.5 - 2 007.5 MHz.

1.1.35 The delegate of New Zealand said that in the longer term, around the year 2010, when the bands were replanned, the fixed services would probably be associated with space operations where they could function satisfactorily. He therefore agreed that the upper bands were very suitable for MSS. He also agreed with the Finnish proposal for the lower band.

1.1.36 The delegate of Zimbabwe appealed for a spirit of give-and-take in the negotiations. As he saw it, the bandwidth should be small and the time scale long.

1.1.37 The delegate of Denmark said that the proposals in Document DT/119 were excellent, although he would be in favour of an earlier date than 1 January 2010 in Footnote 746B. He did not support the Finnish proposal.

1.1.38 The delegate of Nigeria called for a compromise solution at a frequency around 2 GHz, with a bandwidth of between 15 and 40 MHz for the up- and downlinks. He endorsed the United States proposal for entry into force on 1 January 1998, provided that existing systems were protected indefinitely.

1.1.39 The delegate of Algeria said he was in favour of the new services; however, due account must be taken of the fixed services in the 2 GHz band. As a signatory of Document 277, he supported the proposals in Document DT/119, with some minor adjustments. In any compromise solution, no one obtained complete satisfaction, but everyone got something.

1.1.40 The delegate of Morocco said that it was essential to know the proposed time frame before opting for a particular frequency range.

1.1.41 The Chairman suggested the year 2000 approximately and requested delegates, by a show of cards, to express their preferences for one of three frequency bands for Earth-to-space transmission. He noted no sufficient support for any of the proposed options, namely, 1 970 - 1 990 MHz, 1 992.5 - 2 007.5 MHz and 2 010 - 2 025 MHz.

1.1.42 The delegate of Canada requested that at some point during consideration of the global core spectrum, the feasibility of adding a similar amount of spectrum for regional use, perhaps just in Region 2, should also be examined.

1.1.43 The Chairman said that if necessary that suggestion could be studied in due course.

1.1.44 The delegate of Oman said that his Administration would object to any time frame earlier than the year 2010.

1.2 2 500 - 2 690 MHz (Document DT/120)

1.2.1 The Chairperson of ad hoc Group 5, introducing the report in Document DT/120, said that the Group had met twice and focused on sharing issues at around both 2.5 GHz and 2 GHz, taking into account the proposed new MSS allocations in those bands. There were a number of primary services operating around 2.5 GHz, as well as two satellite systems, and the issue was therefore very complex. She drew attention to the Group's conclusions in sections 2 and 3 of the document.

1.2.2 The Chairman thanked the ad hoc Group for its excellent work and reminded the Committee that its task was to protect allocations as a whole, not specific systems.

1.2.3 The delegate of Algeria said that although he was a signatory of the compromise proposal put forward in Document 277, he could endorse Document DT/120, particularly section 2.4 and the fifth paragraph of section 2.2 relating to the frequency translation between the uplink and downlink MSS allocations so as to place fewer constraints on the operation of the fixed service.

1.2.4 The delegate of Morocco could agree to the adoption of two 20-MHz segments in the band in question. He considered that the BSS and the MSS should be placed on an equal footing, in the sense that either both or neither of them should be subject to Article 14. With the new allocation, he understood that the bands in question could no longer be used for satellite broadcasting (sound).

1.2.5 The delegate of Pakistan could support the allocation of the band for MSS and the time frame given in Document DT/119, as well as the two 20-MHz segments mentioned in Document DT/120, section 2.1, second paragraph.

1.2.6 The delegate of India said that the difficulties inherent in the band 2 500 - 2 520 MHz called for very careful handling and coordination and he complimented ad hoc Group 5 on the clarity of its conclusions. He stressed the need to protect the INSAT and ARABSAT systems, which served around one fifth of the world's population and to which enormous public and private investment had been devoted. His Administration had three further launches planned in the near future and any new allocation in that range for MSS would have to be restricted to two 20-MHz segments as proposed in the report of the ad hoc Group. Finally, he endorsed the Moroccan delegate's views regarding Article 14 and the difficulties of including the broadcasting-satellite service (sound) in that particular limited segment.

1.2.7 The delegates of Saudi Arabia and Kuwait supported the conclusions on the 2.5 GHz band set out in section 2.4 of Document DT/120.

1.2.8 The delegate of Norway commended the ad hoc Group for its efforts but had difficulty in endorsing its conclusions. A new worldwide allocation of at least 2 x 20 MHz to MSS would mean that no room would be left for a BSS allocation in that part of the spectrum. If such a worldwide allocation were to be made for MSS, a number of European countries would be prepared to consider an allocation for BSS (Sound) around 1.4 - 1.5 GHz, even though that would cause difficulties for some countries. It was to be hoped that the sentiments expressed in Document DT/118 as well as the conclusions in Document DT/120 could form the basis for adequate protection of existing services as well as for appropriate time limits. Perhaps a small drafting group would be able to work out the necessary details; furthermore, in order to meet the concern of other countries, the Conference might appropriately leave it to a future competent conference to consider segments such as 2 330 - 2 370 MHz and the 2.5 GHz band once administrations and the CCIR had had time to study the consequences of WARC-92. In order to achieve a reasonable balance, the MSS worldwide allocation should not be considered in isolation from the MSS requirements in the band 1.8 - 2.2 GHz.

1.2.9 The delegate of Indonesia said that Document DT/120 would be of great value in finding a solution to the problem under consideration. In order to protect existing services, which provided great benefits, MSS allocations in the band should be made in as low a part of the spectrum as possible.

1.2.10 The delegate of Japan expressed the view that the MSS and BSS could coexist in the 2.5 GHz frequency band; accordingly, he supported the MSS allocation proposed in Document DT/119.

1.2.11 The Chairman said that the apparent deadlock regarding BSS (Sound) appeared to be loosening. He had intended to conclude his report to the Plenary by noting that while there was a substantial majority in favour of a single band there was no agreement on what that band should be, and that he could propose no specific allocation to the Plenary for consideration. Now that Norway had mentioned the possibility of accommodating a BSS (Sound) allocation in the 1.5/1.4 GHz band, he invited delegates to address that issue while examining the possibility of including an MSS allocation in the 2.5 GHz, and possibly the 2 GHz, frequency ranges.

1.2.12 The delegate of Canada welcomed the constructive comments by the Norwegian delegate, which would be very helpful in finding a compromise solution. In addition, he could see the possibility of allocating some spectrum for the MSS in the 2 500 - 2 600 MHz band, as indicated in Document DT/120.

1.2.13 The delegate of the United States said that there were various fixed services in operation in his country in the 2.5 GHz range. His Administration would therefore submit a written proposal for a different category of service in the United States if an allocation in the 2.5 GHz band were to be approved for the MSS.

1.2.14 The delegate of France paid a tribute to the initiative taken by Norway with regard to BSS (Sound) which might help the Conference to reach a final compromise. He supported the initiative and was willing to take part in working out specific aspects for submission to the Plenary.

1.2.15 The delegate of Algeria, while endorsing the report of ad hoc Group 5, would have preferred to refer to a majority or possibly a consensus rather than using the expression "the Group arrived at the conclusion". He saw no problem in seeking a broader compromise once a decision had been taken on satellite sound broadcasting.

1.2.16 The delegate of Finland pointed out that allocations to the MSS in the 2.5 - 2.7 GHz band would be to the detriment of the fixed service, which would only operate at 20% of its capacity. He could accept the contents of DT/120 as far as the proposed MSS allocations were concerned, but some caution should be exercised with regard to the bands below 2 500 MHz, in view of the future restructuring of the fixed service.

1.2.17 The delegate of Australia had taken note of Documents DT/120 and DT/119. Like the United States, his country operated various services in the band around 2.5 GHz. However, Australia was prepared to accept the allocation to the MSS of two 20-MHz segments in the bands 2 500 - 2 520 MHz and 2 655 - 2 675 MHz, although it would have to restructure existing services within those bands in view of the impact of the MSS. He welcomed the initiative of the Norwegian delegation which could, with improvement, be transmitted to the Plenary.

1.2.18 The delegate of Germany considered that the current discussion implied significant changes for the future of the fixed service, the MSS and the BSS (Sound). The observations made by the delegate of Finland were equally valid for a number of Regions; an allocation in the 1.5 GHz band would be detrimental to the fixed services, which would also be threatened by any allocation in the 1.6 GHz band. He fully understood the position of the delegation of Morocco, which had requested that the reference to Article 14 should be deleted, but wondered what the procedure would be for ensuring coordination between the sound broadcasting service and other services in the 1.5 and 2.5 GHz bands. His delegation would only agree to 1.5 GHz if obliged to do so by a large majority, in which case the 2.5 GHz band would serve as a replacement band for the displaced services. In conclusion, he withdrew his note proposing the deletion of Footnote 758, pending subsequent discussions.

1.2.19 The delegate of Venezuela acknowledged the considerable efforts which had been made to produce Document DT/120. In Venezuela, the 2.5 - 2.7 GHz band was used for television broadcasting. Consequently, if the band were allocated to the mobile-satellite service, his country would be obliged to enter a reservation. With regard to the possible use of the band for the broadcasting-satellite service, he could agree to the compromise in the 1.5 GHz band.

The meeting was adjourned at 1720 hours and resumed at 1850 hours.

1.2.20 The Chairman took stock of the situation, emphasizing that the matter at issue was a basis for a possible compromise to be put forward in his report to the Plenary, and asked delegates to reserve judgement until Document 339 became available. One item was the possible worldwide allocation to the mobile-satellite service of the band around 2.5 GHz, with 20 MHz of bandwidth allocated in the upper and lower parts of the band on the understanding that administrations which had difficulties in accepting the proposal would be allowed the appropriate flexibility, either to have a different category of service in the band or to protect their national use. Dates for the effective allocation would be set in due course.

1.2.21 With regard to mobile-satellite service applications in the band 1.9 - 2 GHz, agreement had emerged on an allocation in the band just below 2.2 GHz. However, the required bandwidth remained to be determined, bearing in mind the different channelling plans which existed for the fixed service. The CCIR should draw up another channelling plan for the fixed service and rationalize the use of the band in order to facilitate the development of new services.

1.2.22 A bandwidth for FPLMTS (possibly 10 MHz) and for mobile-satellite systems (possibly 20 MHz) remained to be determined. The proposal relating to the 1.5 GHz band allocation to the sound broadcasting service had received fairly wide support. The band included fixed and mobile services which must be protected, through formal planning of the band and the introduction of an adequate coordination procedure.

1.3 Power flux-density limits (Documents DT/119, 330)

1.3.1 The Chairman proposed that the meeting return to the subject of the power flux-density limit set for the coordination of small LEOs with the fixed service.

1.3.2 The delegate of the United States reiterated his earlier comment that the power-flux density for small LEOs of -125 dB was also used for current systems such as the METSAT services, which were operating with that value without any harmful interference being caused to the fixed and mobile services. The CCIR had referred in its Report to a figure of -120 dB. The Working Group of the Plenary had considered the question and added -5 dB (Document 330). If lower values were set, the new services would tend to become unreliable. He stressed that -125 dB was sufficient to protect the fixed service in that band.

1.3.3 The delegate of Morocco recalled that, in view of the discussions which had taken place on the subject within Committee 5, a limit would have to be defined which would allow small LEOs to operate. Space services had been operating for many years with the same power flux-density limit, and there appeared to be no reason to impose a lower power flux-density on the MSS. All the African countries present at the Conference, which were in favour of such systems, had studied the matter and concluded that a power flux-density limit below -125 dB would not allow such systems to operate. He therefore proposed that Footnote 599A should be retained as it stood.

1.3.4 The delegate of Australia fully endorsed the views expressed by the delegates of the United States and Morocco.

1.3.5 The delegate of France stressed that the -125 dB limit was a technical limit for the purpose of ensuring compatibility with terrestrial systems and mobile or fixed systems, either existing or new. However, the point at issue was an administrative procedure which would make coordination between new and existing systems obligatory. In that case, the limits proposed could differ from the technical limits. Coordination would therefore take place if the limit set took account of existing services, whether the CCIR value or a higher figure was used. In the case of a technical limit, there was no reason to contemplate not applying the coordination procedure; whereas if the limit was an administrative or regulatory value, the procedure would have to be dissociated from any technical approach. He urged that the power flux-density limit should be set at -130 dB, which would be the threshold for triggering a procedure.

1.3.6 The delegate of Venezuela saw no reason to set the coordination trigger point at a figure lower than the one identified by the Working Group of the Plenary. He therefore concurred with the delegate of the United States, who proposed retaining -125 dB.

1.3.7 The delegate of India, fearing that a different threshold would give rise to many complications for coordination said that he also preferred to keep the power flux-density limit at -125 dB.

1.3.8 The delegate of Nigeria reminded delegates that several levels of audio quality were possible and that developing countries preferred a cost effective and economical solution, even with slightly inferior quality. For that reason, he endorsed the statement by Morocco.

1.3.9 The delegate of France was willing to accept the value of -125 dB, pointing out that it would probably change with time.

1.3.10 The delegate of Argentina considered that the only solution was to apply technical criteria, there being no other rational method of fixing the limit.

1.3.11 The Chairman, not wishing to open a technical debate on the subject, said that -125 dB would be indicated as the threshold value beyond which administrations would have to seek coordination.

1.3.12 Following an observation by the delegate of Syria, who urged that a different power flux-density limit should be adopted for the 400 MHz band, the Chairman stated that an appropriate value would be set for each band, i.e. the figure fixed by the Working Group of the Plenary. The values adopted could thus be the same or different according to the individual case.

1.4 Draft Resolution COM4/[FPLMTS] (Document DT/119)

1.4.1 The delegate of Finland said that he had a number of general comments to make in the light of the discussions which had taken place. He considered that under **noting**, the dates were superfluous, as was the reference to duplexing methods under **invites the CCIR**. For that reason, bearing in mind the **resolves** paragraph, his delegation proposed that the reference to the 1 910 - 1 990 MHz band should be deleted under **noting a)**, which would thus only mention the initial implementation date; and that under **noting b)** the phrase "in the bands 2 010 - 2 025 MHz and 2 185 - 2 200 MHz" should be deleted. **Noting c)** and **d)** should be deleted in their entirety. Under **invites the CCIR**, greater flexibility would be desirable, allowing the parties concerned to decide how to handle the question. He emphasized that his proposal did not mean that the bands mentioned in Footnote 746A would be exempt from other uses.

1.4.2 The delegate of Japan fully endorsed that view, adding that in accordance with the agreement reached in Working Group 4B, the frequency bands mentioned in Footnote 746A would have to be corrected to 1 885 - 2 025 MHz and 2 110 - 2 200 MHz.

Title of the Resolution

1.4.3 The Chairman said that the Resolution actually referred to the implementation of services and it would therefore be more logical to refer to "Implementation of frequency bands ...".

1.4.4 It was so agreed.

Considering a) to d), considering further e) and f)

1.4.5 Approved, subject to the addition of a reference to Footnote 746A under **considering d)** after the words "Radio Regulations", as proposed by the delegate of Finland.

Noting a)

1.4.6 The delegate of Saudi Arabia proposed that the date to be adopted should be the year 2010.

1.4.7 The delegate of New Zealand, referring to the proposal by the delegate of Finland, was not in favour of deleting the reference to the bands concerned in that part of the text. Such a course of action would give rise to several problems. Firstly, for the band 1 850 - 1 900 MHz, Working Group 4B had specifically requested that allocations be made in the band as from the year 2020. Without an indication of the band, the footnote would become meaningless. Secondly, one of the key problems associated with FPLMTS was the effective allocation of a worldwide band for roaming subscribers. If the starting date for operation of the system in the band 2 010 - 2 025 MHz was not specified, it would be extremely difficult to obtain FPLMTS standardized worldwide. Finally, it was important that the initial date foreseen, namely the year 2000, should be maintained; otherwise, the CCIR's work would probably no longer be relevant.

1.4.8 The delegate of Australia shared that opinion, since the matter at issue was initial implementation. It was preferable to identify a portion of spectrum at the outset, and it would be more judicious to bring the date forward rather than defer it for example to the year 2010.

1.4.9 The delegate of Finland supported the previous speaker with regard to the need to identify the portion of spectrum required for roaming at some stage. However, no-one had been able to state so far which portion of the spectrum should be allocated for that purpose; it would be unwise to take a hasty decision which might hamper the CCIR's studies. For that reason, it would be preferable not to enter into a detailed timetable, which could be included in square brackets in a footnote. For the time being, it was impossible to be more specific as to the time when the band would become available.

1.4.10 The delegate of the Netherlands agreed that it was extremely difficult to specify a timetable for introduction of the services in question, and proposed that the text should refer to implementation of the terrestrial components as from the year 2000 and implementation of the satellite component as from the year 2010.

1.4.11 The Chairman pointed out that the dates quoted in the different paragraphs under **noting** were taken from Document 259 drawn up by Working Group 4B. The wording of the paragraphs in question was not crucial, as they only referred to expected dates, and he therefore proposed that the dates be maintained.

1.4.12 The delegate of Saudi Arabia said that his delegation considered it important to set a specific date, since the band was currently in use in his country.

1.4.13 The Chairman, after suggesting that the date in **noting a)** should be placed in square brackets, noted that there was no objection to that suggestion or to deletion of the reference to the band, although he recorded the delegate of Zimbabwe's fears that the amendments to the draft Resolution might in fact alter the nature of the text.

Noting b)

1.4.14 The Chairman said that the date would be placed in square brackets and the reference to the band deleted. The position of the delegate of the United Arab Emirates, who objected to inclusion of the satellite component in the bands in question, was noted.

Noting c) and d)

1.4.15 Deleted.

Invites administrations

1.4.16 Approved.

Invites the CCIR

1.4.17 The delegate of the United Arab Emirates pointed out that signalling and communication protocols, which were referred to in that part of the Resolution, were in fact CCITT matters. It would therefore be more appropriate to refer to them under **invites the CCITT**. The Director of the CCIR confirmed that view.

1.4.18 It was thus decided to delete the term "signalling and communication protocols" from the **invites the CCIR** paragraph and to insert it under **invites the CCITT**.

1.4.19 The delegate of Saudi Arabia proposed that the paragraph should read: "to continue their studies for the development of suitable and acceptable technical characteristics for FPLMTS that will facilitate worldwide use and roaming, and ensure that FPLMTS can also meet the telecommunication needs of the developing countries and rural areas".

1.4.20 The Director of the CCIR having stated that the proposed text was quite comprehensive, it was decided to insert it in the Resolution.

Invites the CCITT

1.4.21 The delegate of New Zealand suggested that for the sake of completeness the words "and associated network capabilities" be added after "a common worldwide numbering plan".

1.4.22 It was so agreed.

Resolves

1.4.23 In the opinion of the delegate of the United States, the different aspects of that part of the text would be better highlighted with the following layout:

"resolves

- that administrations who implement FPLMTS:
 - a) should make the relevant frequencies available, as necessary, for system development;
 - b) should use those frequencies when FPLMTS is implemented;
 - c) should use the relevant international technical characteristics, as identified by the Recommendations of the CCIR and CCITT."

1.4.24 The new wording was approved.

1.4.25 The delegate of Kenya pointed out that the CCITT should be mentioned under **resolves** and a reference should be included to the numbering plan. That comment was noted.

1.4.26 Draft Resolution COM4/[FPLMTS], as amended, was approved.

1.4.27 The delegate of the United Kingdom was concerned that, with the changes adopted in the Resolution and the draft text for the footnote concerning FPLMTS contained in Document 339, it was no longer very clear which part of the broad frequency range involved could be used first by the future systems. An opportunity should be provided to re-examine the question of the frequency bands.

1.5 Bands up to 2 500 MHz (Document 339)

1.5.1 The Chairman said that the document could be adopted as a report to the Editorial Committee summarizing the discussions on the bands up to 2 500 MHz, and invited delegates to consider it section by section.

Table 137 - 137.175 MHz

1.5.2 Approved.

ADD 599A

1.5.3 The Member of the IFRB recalled that the power flux-density limit was not an absolute limit, but a trigger point for coordination. He proposed that the second sentence of the footnote be reworded as follows: "If the power flux-density at the surface of the Earth exceeds -125 dB (W/m²/4 kHz), coordination of the space station with terrestrial stations is required". In that way, the text would highlight the need for coordination beyond a certain threshold.

1.5.4 The delegate of the Russian Federation, who considered that the text was quite clear in so far as it specified a power flux-density limit to be observed unless otherwise agreed by the authorities, urged that the text remain unchanged.

1.5.5 The Chairman said he had understood that the Committee had concluded that there should be a coordination trigger point, which constituted an administrative threshold. In that case, coordination was strictly mandatory if the limit was exceeded.

1.5.6 Following an exchange of views between the delegate of the Russian Federation and the Member of the IFRB, the Chairman suggested that the text of Footnote 599A be approved with the amendment proposed by the IFRB, on the understanding that the delegation of the Russian Federation could seek any additional explanations required outside the meeting.

1.5.7 It was so agreed.

ADD 599B, Table 137.175 - 138 MHz, Table 148 - 150.05 MHz, ADD 608X, ADD 608Y, ADD 609B, ADD 608Z, Table 273 - 322 MHz, Table 335.4 - 399.9 MHz

1.5.8 Approved.

MOD 641, ADD 641A

1.5.9 In reply to a question by the delegate of India, the Chairman said that he interpreted Footnote 641A to mean that when non-geostationary satellite systems were used, Resolution COM5/8 was applicable. The footnote was intended to permit the use of both geostationary and non-geostationary satellite systems. Use of geostationary-satellite systems for the MSS was also possible in the bands 312 - 315 and 387 - 390 MHz with secondary allocations, in accordance with the Table.

1.5.10 The delegate of the United States asked whether Footnote 641 as amended would exclude mobile-satellite services from the 3 MHz between the bands 312 - 315 and 387 - 390 MHz.

1.5.11 The Chairman replied that those bands could be used by geostationary and non-geostationary systems on a secondary basis, subject to the application of Resolution COM5/8 for non-geostationary systems, whereas all the other bands could be used by the mobile-satellite service subject to application of the Article 14 procedure and provided that no harmful interference was caused. If the delegations which had requested that the two footnotes be included now had difficulties with the text, they might wish to contact the Secretariat.

1.5.12 Subject to that reservation, Footnotes 641 and 641A were approved.

Table 400.15 - 401 MHz. ADD 647X

1.5.13 Approved.

ADD 700A

1.5.14 The delegate of France proposed an amendment which gave rise to objections from the delegate of the United States. Given the late hour, the Chairman suggested that the text of the footnote be transmitted to the Plenary as it stood.

1.5.15 It was so agreed.

New ADD 700B

1.5.16 In reply to the delegate of the Russian Federation, who asked what decision had been taken concerning the proposal for ADD 700A as contained in Document 270, page 6, the delegate of Germany said that the proposal had received little support and considerable opposition.

1.5.17 The delegates of Belarus, the Russian Federation and Ukraine asked for the text in question to be included for their Administrations, as ADD 700B.

1.5.18 It was so agreed.

1.5.19 The delegate of the United Kingdom reserved his Administration's position with regard to that decision. Considerable difficulties would arise in ensuring adequate protection for the extensive use of terrestrial mobile services in other European countries.

1.5.20 The Chairman said that his report to the Plenary meeting would reflect that concern.

Bands below 1 525 MHz: NOC

1.5.21 Approved.

Table 1 525 - 1 530 MHz

1.5.22 Following comments by the delegate of Mexico concerning the MSS allocation for Region 2, the Chairman said that the issue was one of those which the Committee had not been able to resolve and that it would no doubt have to be discussed in the Plenary.

MOD 726A, MOD 726B, ADD 726X

1.5.23 Approved, subject to the replacement of "should" by "shall" in the second line of ADD 726X.

1.5.24 The delegate of Brazil requested the Chairman to draw the Plenary meeting's attention to his Administration's reservations as outlined in the note on the cover page of Document 339.

Table 1 530 - 1 533 MHz. SUP 726. ADD 726C. Table 1 533 - 1 559 MHz. ADD 730B

1.5.25 The delegate of Canada said that a footnote similar to ADD 726X should be included in respect of the other bands currently allocated to MSS.

1.5.26 The Chairman confirmed that it had been agreed to add such a footnote, between square brackets, for consideration by the Plenary. In reply to a comment by the delegate of France concerning the power flux-density limit, he confirmed that a reference to the relevant provisions of the Radio Regulations would be included in the footnotes relating to Resolution COM5/8.

1.5.27 The delegate of the United Kingdom, recalling that the Committee had already agreed to apply the principle contained in Footnote 726X to all existing L-band mobile satellite allocations, said that a similar footnote should be included for all the bands between 1 530 MHz and 1 559 MHz. He further observed that the figures in ADD 730B should read "1 555 - 1 559 MHz" and 1 656.5 - 1 660.5 MHz".

1.5.28 Subject to those changes and comments, the tables and related footnotes were approved.

1.5.29 The Chairman said that the Committee did not have time to complete its consideration of Document 339. Delegations should continue their discussions informally, with a view to reaching agreement on outstanding issues before they were taken up in the Plenary, and should submit to the Secretariat any further comments they might have on the document.

1.5.30 It was so agreed.

2. Remaining proposals by administrations (Documents 334, 337, 338, 342, 343)

2.1 The proposals by Honduras (Document 338) and Yugoslavia (Document 342) were approved.

2.2 The Chairman suggested that the proposals by the United States (Documents 334 and 343) and Brazil (Document 337) should be referred to the Plenary for consideration in conjunction with his report on the work of Committee 4.

2.3 It was so agreed.

2.4 The delegate of the United States requested that Document 320 should also be referred to the Plenary Meeting for consideration.

2.5 The Chairman observed that there had not been sufficient support for the proposals in Document 320 to justify their transmittal to the Plenary on behalf of Committee 4. He appealed to the delegate of the United States not to press the point.

2.6 The delegate of the United States withdrew his request.

3. Draft Resolutions (Documents 318, 328, DT/105, DT/113)

3.1 Draft Resolution relating to the convening of a world administrative radio conference for the planning of HF bands allocated to the broadcasting service (Document 318)

3.1.1 The delegate of Algeria introduced the draft Resolution, drawing attention to an editorial correction to be made in **resolves** 1.

3.1.2 The delegate of the United Kingdom, referring to the paragraph headed **instructs the IFRB**, enquired whether any estimate had been made of the expenditure and effort involved in the task entrusted to the IFRB, which he considered might prove costly. Furthermore, did the IFRB truly expect that it would be able to propose a flexible, simplified method of planning as described in the Resolution?

3.1.3 The Chairman of the IFRB replied that the availability of staff resources to carry out the work in question would depend on the decisions of the next session of the Administrative Council, which would be reviewing the work of the IFRB. Even if administrations were to respond as requested in the draft Resolution, the so-called improved method was so cumbersome that it was clearly not practicable. The intention was therefore to investigate a more simplified approach, pending the introduction of SSB.

3.1.4 The delegate of the United Kingdom said that he maintained his reservation with regard to **instructs the IFRB**.

3.1.5 The delegate of Germany recalled that the matter would be considered at the next session of the Administrative Council, as indicated in the Circular-letter by which Members had been informed that the world administrative radio conference on the planning of HFBC bands would no longer take place in 1993 as initially scheduled.

3.1.6 The draft Resolution in Document 318 was approved, subject to the reservation expressed by the delegate of the United Kingdom.

3.2 Draft Resolution relating to the convening of a world administrative radio conference for dealing with allocations to space services which were not placed on this agenda (Document 328)

3.2.1 The delegate of the United States, introducing Document 328, explained that the intent of the draft Resolution was to ensure that a number of issues which had not been considered during the present Conference would be addressed by a future competent conference. The CCIR was therefore requested to carry out appropriate studies which could be used as the technical basis for such a conference.

3.2.2 The delegate of the United Kingdom endorsed the substance of Document 328 but considered that the specific issues to be addressed by the future conference should be listed in the draft Resolution. Furthermore, it was probably unnecessary to convene a special conference for that purpose, since the matters in question could be dealt with by any future competent conference. Perhaps the text of the draft Resolution could be amended along those lines.

3.2.3 The delegate of France observed that his delegation had proposed several amendments to Document 328 which had already been brought to the attention of the United States delegation informally.

3.2.4 The Chairman suggested that the Committee should approve the draft Resolution in principle, on the understanding that it would be amended to meet the concerns of the delegates of France, the United Kingdom, the United States and Canada, which would be addressed in a small drafting group made up of those delegates.

3.2.5 It was so agreed.

3.3 Draft Resolution relating to adjustments to the fixed service as a consequence of changes to the frequency allocations within the range 1 - 3 GHz (Document DT/105)

3.3.1 The delegate of Canada, referring to **considering e)**, requested that a reference should be included to the specific frequency bands which had been shared satisfactorily between the fixed, space research, space operation and earth exploration-satellite services.

3.3.2 The delegate of the United States, referring to **considering a)**, requested likewise the inclusion of a reference to the specific spectrum designated for FPLMTS.

3.3.3 It was so agreed.

3.3.4 The draft Resolution was approved subject to those amendments.

3.4 Draft Resolution relating to consideration of the feasibility of allocations of the mobile-satellite service in the band 1 670 - 1 710 MHz (Document DT/113)

3.4.1 The delegate of Germany considered that the CCIR should also be invited to study problems relating to the radio astronomy service in the adjacent bands. He would submit amendments to the draft Resolution to that effect in due course.

3.4.2 The draft Resolution was approved on that understanding.

4. Completion of the Committee's work

4.1 The delegate of the Russian Federation expressed the Committee's gratitude to the Chairman who, despite the heavy responsibilities he had shouldered, had guided the Committee successfully through its work with great skill and patience. Thanks to his masterly conduct of the proceedings, the Committee had been able to reach solutions on the most complex issues without recourse to voting. His businesslike and good-humoured approach had been invaluable assets, particularly in the latter stages of the Committee's work.

4.2 The Chairman declared closed the last meeting of Committee 4.

The meeting rose at 2145 hours.

The Secretary:
T. GAVRILOV

The Chairman:
I.R. HUTCHINGS

COMMITTEE 4

Canada, United States of America, Mexico

PROPOSAL FOR THE WORK OF THE CONFERENCE

TFTS/AERONAUTICAL PUBLIC CORRESPONDENCE

Proposed Country Footnote

CAN/USA/MEX/325/1
ADD 700A

Alternative Allocation: in Canada, the United States and Mexico, the bands 849 - 851 MHz and 894 - 896 MHz are allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The band 849 - 851 MHz is limited to transmissions from aeronautical stations and the use of the band 894 - 896 MHz is limited to transmissions from aircraft stations.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 326-E
28 February 1992MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

B.11

PLENARY MEETINGELEVENTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 4	309	Article 8
COM 5	306	Article 29
WG PL	313	Resolution GT-PLN/3
		Resolution GT-PLN/4
COM 5	307	Resolution COM5/10
		Resolution COM5/11
COM 4	309	Recommendation COM4/D

Note by Committee 4:

The delegations of Ecuador, Mexico and Venezuela made reservations with respect to the modifications to Article 8, and the delegation of the United States reserved its position with respect to ADD 873D.

Note by Committee 5:

With respect to Resolution COM5/10, the delegations of the Kingdom of Saudi Arabia, Israel and the United States expressed a reservation regarding the replacement of the text "in the VHF broadcasting bands" in **resolves to invite the CCIR 1.** by the text "in the VHF band".

P. ABOUDARHAM
Chairman of Committee 6Annex: 16 pages

ARTICLE 8

MOD

GHz
19.7 - 20.2

Allocation to Services		
Region 1	Region 2	Region 3
19.7 - 20.1 FIXED-SATELLITE (space-to-Earth) Mobile-Satellite (space-to-Earth) 873 873A	19.7 - 20.1 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 873 873A 873B 873C [873E]	19.7 - 20.1 FIXED-SATELLITE (space-to-Earth) Mobile-Satellite (space-to-Earth) 873 873A
20.1 - 20.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 873 873A 873B 873C 873D		

MOD

873

Additional allocation: in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Brazil, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Tanzania, Chad, Thailand, Togo, Tunisia and Zaire, the band 19.7 - 21.2 GHz is also allocated to the fixed and mobile services on a primary basis. This additional use shall not impose any limitation on the power flux-density of space stations in the fixed-satellite service and of space stations in the mobile-satellite service where such allocation is on a primary basis within the band 19.7 - 21.2 GHz.

ADD

873A

In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz.

ADD

873B

In the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz in Region 2, and in the bands 20.1 - 20.2 GHz and 29.9 - 30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.

- ADD 873C** In the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz, the provisions of No. 953 do not apply with respect to the mobile-satellite service.
- ADD 873D** The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7 - 20.1 GHz in Region 2 and in the band 20.1 - 20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. 873.
- [ADD 873E** The use of the bands 19.7 - 20.1 GHz and 29.5 - 29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the fixed-satellite service and in the mobile-satellite service as described in No. 873B.]

MOD

GHz
29.5 - 30

Allocation to Services		
Region 1	Region 2	Region 3
29.5 - 29.9 FIXED-SATELLITE (Earth-to-space) Mobile-Satellite (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 873A 883	29.5 - 29.9 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 873A 873B 873C [873E] 883	29.5 - 29.9 FIXED-SATELLITE (Earth-to-space) Mobile-Satellite (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 873A 883
29.9 - 30 FIXED-SATELLITE (Earth-to-space) MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 873A 873B 873C 882 882A 882B 883		

ADD

882A

Additional allocation: the bands 27.500 - 27.501 GHz and 29.999 - 30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for beacon transmissions intended for up-link power control.

Such space-to-Earth transmissions shall not exceed an effective isotropic radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit, and shall not produce a power flux-density in excess of the values in No. 2578 on the Earth's surface in the band 27.500 - 27.501 GHz.

ADD

882B

Additional allocation: the band 27.501 - 29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

ADD

882C

In the band 28.5 - 30 GHz, the Earth exploration-satellite service is limited to the transfer of data between stations and is not intended for the primary collection of information by means of active or passive sensors.

MOD

883

Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, the United Arab Emirates, Egypt, Ethiopia, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, the Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Pakistan, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Chad and Thailand, the band 29.5 - 31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. 2505 and 2508 shall apply.

ARTICLE 29

ADD**2613A**

Whenever the emissions from geostationary satellites in the inter-satellite service are directed towards space stations at distances from Earth greater than that of the geostationary-satellite orbit, the boresight of the antenna mainbeam of the geostationary satellite shall not be pointed within 15° of any point on the geostationary-satellite orbit.

RESOLUTION GT-PLN/3

**Review of Resolutions and Recommendations of the
World Administrative Radio Conferences [1979-1992]**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has reviewed a number of Resolutions and Recommendations of the following Conferences: [WARC-79], [Mob-83], [HFBC-87], [Mob-87] and [Orb-88];
- b) the action taken under Resolution GT-PLN/4 adopted by this Conference;

further considering

the need to continue to review the Resolutions and Recommendations of the above Conferences and of this Conference;

invites the CCIR and the IFRB**and instructs the Secretary-General**

to report to the future competent conferences referred to in **resolves** on the action taken in response to the relevant Resolutions and Recommendations;

resolves

that the Administrative Council should include in the agenda of future competent conferences the review of the relevant Resolutions and Recommendations with a view to their possible revision, replacement or abrogation.

RESOLUTION GT-PLN/4

Review of Certain Resolutions and Recommendations of the World Administrative Radio Conference (Geneva, 1979) (WARC-79); the World Administrative Mobile Radio Conference (Geneva, 1983) (Mob-83); the World Administrative Radio Conference Dealing with High Frequency Broadcasting Matters (Geneva, 1987) (HFBC-87); the World Administrative Radio Conference Dealing with Mobile Telecommunications Matters (Geneva, 1987) (Mob-87), and the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and Planning of the Space Services Utilizing It (Second Session - Geneva, 1988) (Orb-88)

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

that owing to the action taken at this Conference and that resulting from decisions adopted at the above-mentioned Conferences, there is a need to review the existing Resolutions and Recommendations to ensure their appropriate consistency;

further considering

a) that the following Resolutions and Recommendations of the above-mentioned Conferences have been revised as indicated:

RESOLUTION No. 703 (Rev.WARC-92)

**Calculation Methods and Interference Criteria Recommended
by the CCIR for Sharing Frequency Bands Between Space
Radiocommunication and Terrestrial Radiocommunication Services
or Between Space Radiocommunication Services**

RECOMMENDATION No. 66 (Rev.WARC-92)

**Studies of the Maximum
Permitted Levels of Spurious Emissions**

b) that the following Resolutions and Recommendations of the above-mentioned Conferences either have been implemented or do not require any further action:

RESOLUTION No. 6 (WARC-79)

**Relating to the Preparation of a Handbook to Explain
and Illustrate the Procedures of the Radio Regulations**

RESOLUTION No. 9 (WARC-79)

**Relating to the Revision of Entries in the
Master International Frequency Register in the Bands
Allocated to the Fixed Service Between 3 000 kHz and 27 500 kHz**

RESOLUTION No. 36 (WARC-79)

**Relating to the Preparation of Explanatory Information by the
International Frequency Registration Board on the Application
of the New Method for Designating Emissions in Notification
Procedures and the Consequential Revision of the Master
International Frequency Register**

RESOLUTION No. 62 (WARC-79)

**Relating to the Experimental Use of Radio Waves
by Ionospheric Research Satellites¹**

RESOLUTION No. 64 (WARC-79)

Relating to CCIR Study of Lightning Protection of Radio Equipment

RESOLUTION No. 66 (WARC-79)

**Relating to the Division of the World into Regions for the
Purposes of Allocating Frequency Bands**

RESOLUTION No. 67 (WARC-79)

**Relating to Improvements in the Design
and Use of Radio Equipment**

RESOLUTION No. 68 (WARC-79)

**Relating to the Redefinition of Certain Terms
Contained in Annex 2 to the International Telecommunication
Convention (Malaga-Torremolinos, 1973)
and Applicable to the Radio Regulations**

RESOLUTION No. 90 (Mob-83)

**Relating to the Revision, Replacement and Abrogation
of Resolutions and Recommendations of the World
Administrative Radio Conference, Geneva, 1979**

RESOLUTION No. 91 (HFBC-87)

**Revision, Replacement and Abrogation of Resolutions and
Recommendations of the World Administrative Radio Conference
(Geneva, 1979)**

RESOLUTION No. 92 (Orb-88)

**Revision, Replacement and Cancellation of Resolutions
of the World Administrative Radio Conference, Geneva, 1979, and the
World Administrative Radio Conference on the Use of the
Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It
(First Session - Geneva, 1985) (Orb-85)**

RESOLUTION No. 108 (Orb-88)

**Use of the Bands 4 500 - 4 800 MHz, 6 725 - 7 025 MHz, 10.70 - 10.95 GHz,
11.2 - 11.45 GHz and 12.75 - 13.25 GHz Prior to the
Date of Entry into Force of Appendix 30B**

RESOLUTION No. 324 (Mob-87)

**Procedures to be Applied for the
Coordination of the Use of the Frequency 518 kHz
for the International NAVTEX System**

RESOLUTION No. 337 (Mob-87)

**Resolutions and Recommendations Which Remain in Effect
Until the Provisions of the Radio Regulations
as Partially Revised by WARC Mob-87 Take Effect**

RESOLUTION No. 501 (WARC-79)

**Relating to Examination by the IFRB of the Notices Referring
to Stations in the Broadcasting Service in Region 2 in the
Band 535 - 1 605 kHz During the Period Preceding
the Entry into Force of the Final Acts of the
Regional Administrative MF Broadcasting Conference (Region 2)**

RESOLUTION No. 509 (WARC-79)

**Relating to the Convening of a Regional Broadcasting Conference
to Review and Revise the Provisions of the Final Acts of the
African VHF/UHF Broadcasting Conference, Geneva, 1963**

RESOLUTION No. 510 (WARC-79)

**Relating to the Convening of a Planning Conference
for Sound Broadcasting in the Band 87.5 - 108 MHz
for Region 1 and Certain Countries Concerned in Region 3**

RESOLUTION No. 709 (Orb-88)

**Coordination Between Feeder-Link Earth Stations
and Stations of other Services in the Bands
14.5 - 14.8 GHz and 17.7 - 18.1 GHz in Regions 1 and 3**

RECOMMENDATION No. 3 (WARC-79)

**Relating to the Transmission of Electric Power
by Radio Frequencies from a Spacecraft**

RECOMMENDATION No. 12 (WARC-79)

**Relating to the Convening of Future Administrative Radio
Conferences to Deal with Specific Services**

RECOMMENDATION No. 67 (WARC-79)

Relating to the Definitions of "Service Area" and "Coverage Area"

RECOMMENDATION No. 70 (WARC-79)

**Relating to Studies
of the Technical Characteristics of Equipment¹**

RECOMMENDATION No. 101 (WARC-79)

**Relating to Feeder Links for the
Broadcasting-Satellite Service¹**

RECOMMENDATION No. 102 (WARC-79)

**Relating to the Study of Modulation Methods
for Radio-Relay Systems in Relation to Sharing
with Fixed-Satellite Service Systems¹**

RECOMMENDATION No. 104 (Mob-87)

**Provision of Frequency Bands for Feeder Links in the
Fixed-Satellite Service for the Mobile-Satellite Service or for the
Aeronautical, Land, or Maritime Mobile-Satellite Services
in the Bands 1 530 - 1 559 MHz and 1 626.5 - 1 660.5 MHz**

RECOMMENDATION No. 504 (WARC-79)

**Relating to the Preparation of a Broadcasting Plan
in the Band 1 605 - 1 705 kHz in Region 2**

RECOMMENDATION No. 602 (Rev.Mob-83)

**Relating to the Planning of Frequencies in the Band 283.5 - 315 kHz Used
by Maritime Radiobeacons in the European Maritime Area**

RECOMMENDATION No. 708 (WARC-79)

**Relating to Frequency Bands Shared Between Space
Radiocommunication Services and Between Space and
Terrestrial Radiocommunication Services¹**

resolves

that the Resolutions and Recommendations of WARC-79, Mob-83, HFBC-87, Mob-87 and Orb-88 listed under a) above shall apply as revised by this Conference and that those listed under b) above shall be abrogated.

RESOLUTION COM5/10

Terrestrial VHF Digital Sound Broadcasting

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that advances in technology have made available digital sound broadcasting systems of high quality;
- b) that such digital sound broadcasting systems will offer a considerably higher sound quality as well as additional system characteristics which the present FM broadcasting system does not possess;
- c) that digital sound broadcasting can, in addition to possessing the properties mentioned above, permit greater spectrum efficiency than conventional FM sound broadcasting;
- d) that digital sound broadcasting systems require less effective radiated power;
- e) that the bands 87.5 - 108 MHz in Region 1, 88 - 108 MHz in Region 2 and 87 - 108 MHz in Region 3 are generally widely used for high-powered FM sound broadcasting service, except in some countries;
- f) that several European countries are considering the implementation of digital sound broadcasting on an interim basis in the VHF bands allocated to the broadcasting service, while ensuring the protection of assignments in the relevant broadcasting Plans in force;

resolves to invite the CCIR

in order to harmonize the implementation of terrestrial digital sound broadcasting;

- 1. to undertake, as a matter of urgency, the relevant technical studies associated with the introduction of terrestrial digital sound broadcasting in the VHF band;
- 2. in particular, to consider the system characteristics and propagation phenomena in relation to developing compatibility criteria in the same and adjacent bands, including protection of the safety services;

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council with a view to placing on the agenda of a competent administrative radio conference the subject of terrestrial VHF digital sound broadcasting for Region 1 countries and interested countries in Region 3;

invites administrations

to contribute actively to the relevant CCIR studies.

RESOLUTION COM5/11

**Establishment of Standards for the
Operation of Low-Orbit Satellite Systems**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the radio-frequency spectrum is a limited natural resource, to which all ITU Members should have access on equitable conditions;
- b) that the ITU is required to coordinate efforts to harmonize the development of telecommunication facilities, notably those using space techniques, with a view to taking the utmost advantage of their possibilities;
- c) that one of the purposes of the ITU is to foster collaboration among its Members with a view to the establishment of rates at levels as low as possible consistent with an efficient service and with the independent and sound financial administration of telecommunications;
- d) that, in the performance of its studies, each International Consultative Committee is required to pay due attention to the study of questions and to the formulation of recommendations directly connected with the establishment, development and improvement of telecommunications in developing countries at both the regional and international level;
- e) that the Telecommunications Development Bureau is required to carry out studies, as necessary, on technical, economic, financial, managerial, regulatory and general policy issues in the field of telecommunications;
- f) that Resolution No. 15 of the Plenipotentiary Conference (Nice, 1989), relating to the role of the ITU in the development of world telecommunications, establishes that the ITU should ensure that all its work reflects the position of the ITU as the authority responsible within the United Nations system for establishing in a timely manner technical and operational standards for all forms of telecommunication and for effecting the rational use of the radio-frequency spectrum;
- g) that CCITT Recommendations provide for the apportionment of accounting revenues on international traffic between terminal countries, in principle on an equitable basis;

recognizing

that current technological developments allow for the provision of telecommunication services through low-orbit satellite systems offering worldwide coverage, and that there are no standards governing the coordination, sharing and operation of such systems within the world telecommunication network;

bearing in mind

that only a very limited number of low-orbit satellite systems offering worldwide coverage could coexist in any given frequency band;

resolves

1. to invite the organs of the ITU within their fields of competence to carry out as a matter of priority technical, legal and operational studies to permit the establishment of standards governing the operation of low-orbit satellite systems so as to ensure equitable and standard conditions of access for all ITU Members and to guarantee proper worldwide protection for existing services and systems in the telecommunication network;
2. to invite administrations interested in, or affected by, the introduction and operation of low-orbit satellite systems to participate in such work as the organs of the ITU may undertake in that connection.

RECOMMENDATION COM4/D

**Multiservice Satellite Networks Using
the Geostationary-Satellite Orbit**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the Conference has allocated, on a primary basis, the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz in Region 2, and 20.1 - 20.2 GHz and 29.9 - 30 GHz in Regions 1 and 3 to the mobile-satellite service;
- b) that these bands are also allocated to the fixed-satellite service;
- c) that some administrations have expressed interest in developing multiservice satellite networks in these bands;
- d) that Recommendation 715 (Orb-88) calls for simplification of the process for bringing into use satellite networks with different classes of user terminals;
- e) that the Voluntary Group of Experts (VGE), among other means of simplifying the Radio Regulations, is studying service definitions accommodating a range of services;

recognizing

that the introduction of multiservice satellite networks using, inter alia, mobile earth stations, may have an impact on networks operating in the fixed-satellite service;

recommends

that, as a matter of urgency, studies should be carried out on the technical characteristics, including pointing techniques of multiservice satellite networks using the geostationary-satellite networks encompassing mobile-satellite and fixed-satellite applications, and the sharing criteria necessary for compatibility with the fixed-satellite service in the frequency bands referred to above;

invites the CCIR

to carry out these studies;

recommends administrations

to participate actively in these studies;

recommends further

- a) that a future competent world administrative radio conference review the allocations of these bands, taking into account the results of the CCIR studies and the work of the VGE;
- b) that a future competent world administrative radio conference consider the requirement for a single service definition encompassing mobile-satellite and fixed-satellite applications, and the possible need for additional frequency spectrum to accommodate the growth of these services;

invites the Administrative Council

to place this matter on the agenda of the next competent world administrative radio conference.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

Document 327-E
28 February 1992

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

B.12

PLENARY MEETING

TWELFTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 6	-	Recapitulation of the changes to be introduced in certain footnotes of Article 8

P. ABOUDARHAM
Chairman of Committee 6

Annex: 1 page

**RECAPITULATION OF THE CHANGES TO BE INTRODUCED
IN CERTAIN FOOTNOTES OF ARTICLE 8**

Note by the Editorial Committee:

During the examination of Document 284 (R.2) at the eighth Plenary Meeting (Thursday, 27 February 1992), a number of delegations requested changes to the footnotes of Article 8 of the Radio Regulations. These changes, which the Secretary-General is instructed to introduce in the definitive version of the Final Acts of WARC-92, are recapitulated below:

ADD/SUP	SYMBOL	FOOTNOTE
SUP	AUS	475
ADD	COG	826, 857 and 866
ADD	JOR	647, 769, 779, 819, 834, 857, 866, 868, 883 and 894
SUP	JOR	860
ADD	LIE	797B
ADD	MLI	518
SUP	MLT	803, 857 and 866
ADD	MLT	797B
ADD	OMA	826, 857, 866 and 830
SUP	POL	804, 850, 855, 885 and 889
SUP	S	866
ADD	SWZ	803, 819 and 866
ADD	YEM	779, 819 and 834

COMMITTEE 4

United States of America

ADDITIONAL PROPOSAL FOR THE CONFERENCE

RESOLUTION No. XXX

**Convening of a World Administrative Radio Conference
for Dealing with Allocations to Space Services
which were not placed on this Agenda**

considering

- a) that the agenda of the Conference calls for the development of new Recommendations and Resolutions in relation to allocations to space services which were not placed on this agenda;
- b) that the allocation to the earth exploration-satellite service at 8.025 - 8.4 GHz is complex and not uniform worldwide;
- c) Resolution COM4/1 [Document 283] relative to the allocation to the fixed-satellite service in the band 13.75 - 14 GHz which has potential for impact on compatibility with the space research and the earth exploration-satellite services;
- d) that the earth exploration-satellite service is secondary in Regions 1 and 3 and in the 18.6 - 18.8 GHz band, and that this band is vital for sensing ecologically important data, and is being implemented in an increasing number of earth exploration-satellites;
- e) that the current allocation at 23 GHz for the intersatellite service is insufficient to provide full inter-operability between data-relay satellite forward link channels;

resolves

that a world administrative radio conference shall be convened to address, inter alia:

- examination of the use by existing EES and SR systems of the frequency bands in the range of 8 - 19 GHz, with a view to establishing common worldwide primary allocations to the earth exploration-satellite service in these bands;
- additional intersatellite service requirements near 23 GHz (23.55 - 23.6 GHz);

invites the Administrative Council

to make preparations for convening the said world administrative radio conference, using the provisions of this Resolution as a basis for the agenda of the Conference;

invites the CCIR

to carry out the necessary studies with a view to presenting, at the appropriate time, the technical information likely to be required as a basis for the work of the Conference.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 329-E
28 February 1992MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

R.4

PLENARY MEETINGFOURTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for second reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 6	276/B.7	Preamble
		Article 1
	283/B.8	Article 8
		Resolution COM4/1
	276/B.7	Resolution COM5/5
		Resolution COM5/6
		Resolution COM5/7

P. ABOUDARHAM
Chairman of Committee 6Annex: 13 pages

FINAL ACTS
of the
World Administrative Radio Conference for Dealing with Frequency Allocations
in Certain Parts of the Spectrum (WARC-92)
Malaga-Torremolinos 1992

PREAMBLE

Taking into account the relevant Resolutions and Recommendations adopted by the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) (HFBC-87), the World Administrative Radio Conference for the Mobile Services (Geneva, 1987) (MOB-87) and the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It (Geneva, 1988) (ORB-88), the Plenipotentiary Conference of the International Telecommunication Union (Nice, 1989) decided, in its Resolution No. 1, to convene in Spain, for a period of four weeks and two days, in the first quarter of 1992, a World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum, having regard to the Resolutions and Recommendations of the above-mentioned Conferences.

On the basis of this decision, the Administrative Council of the Union, at its 45th session in 1990, adopted Resolution No. 995 making the necessary arrangements for convening such a world administrative radio conference. In Resolution No. 995, the Administrative Council decided that the Conference would be held in Spain for a period of four weeks and two days from 3 February 1992. When establishing the agenda for the Conference, the Administrative Council took full account of Resolutions Nos. 1, 7 and 9 of the Plenipotentiary Conference (Nice, 1989).

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum, accordingly convened on the appointed date, considered and adopted a partial revision of the Radio Regulations in accordance with its agenda. Details of this partial revision and of the related action taken by the Conference are given in the Annex hereto.

In accordance with its agenda, the Conference also reviewed and, where necessary, revised or abrogated certain existing Resolutions and Recommendations and adopted a number of new Resolutions and Recommendations.

The partial revision of the Radio Regulations, as adopted by the Conference, shall form an integral part of those Regulations and shall enter into force on [..... 199. at hours UTC], [except for those elements of the partial revision for which a different date of entry into force is specifically stipulated therein].

The delegates signing the partial revision of the Radio Regulations contained in the present Final Acts hereby declare that, should a Member of the Union make reservations concerning the application of one or more of the provisions of the revised Radio Regulations, no other Member shall be obliged to observe that provision or those provisions in its relations with that particular Member.

In accordance with No. 172 of the International Telecommunication Convention (Nairobi, 1982), Members of the Union shall inform the Secretary-General of their approval of the partial revision of the Radio Regulations by the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992). The Secretary-General shall inform Members promptly of the receipt of such notifications of approval.

IN WITNESS WHEREOF, the delegates of the Members of the International Telecommunication Union named below have, on behalf of their respective competent authorities, signed one copy of the present Final Acts in the English, Arabic, Chinese, Spanish, French and Russian languages. This copy shall remain in the archives of the Union. The Secretary-General shall forward one certified copy to each Member of the International Telecommunication Union.

Done at Malaga-Torremolinos, [3] March 1992

ARTICLE 1

Terms and Definitions

Section VIII. Technical Terms Relating to Space

NOC **181**

MOD **182** 8.14 Geostationary-satellite orbit: The orbit of a geosynchronous satellite whose circular and direct orbit lies in the plane of the Earth's equator.

ARTICLE 8

MOD

GHz
13.75 - 14

Allocation to Services		
Region 1	Region 2	Region 3
13.75 - 14	RADIOLOCATION FIXED-SATELLITE (Earth-to-space) Standard Frequency and Time Signal-Satellite (Earth-to-space) Space Research 713 853 854 855 855A 855B	

ADD

855A

In the band 13.75 - 14 GHz, the e.i.r.p. of any emission from an earth station in the fixed-satellite service shall be at least 68 dBW, and should not exceed 85 dBW, with a minimum antenna diameter of 4.5 metres. In addition the e.i.r.p., averaged over one second, radiated by a station in the radiolocation and radionavigation services towards the geostationary-satellite orbit shall not exceed 59 dBW. These values shall apply subject to review by the CCIR and until they are changed by a future competent world administrative radio conference (see Resolution COM4/1).

ADD

855B

In the band 13.75 - 14 GHz geostationary space stations in the space research service, for which information for advance publication has been received by the IFRB prior to 31 January 1992, shall operate on an equal basis with stations in the fixed-satellite service; after that date new geostationary space stations in the space research service will operate on a secondary basis.

Until 1 January 2000, stations in the fixed-satellite service shall not cause harmful interference to non-geostationary space stations in the space research and Earth exploration-satellite services; after that date these non-geostationary space stations will operate on a secondary basis in relation to the fixed-satellite service.

MOD

404

§ 4. The "European Broadcasting Area" is bounded on the west by the western boundary of Region 1, on the east by the meridian 40° East of Greenwich and on the south by the parallel 30° North so as to include the western part of the U.S.S.R., the northern part of Saudi Arabia and that part of those countries bordering the Mediterranean within these limits. In addition, Iraq, Jordan and that part of the territory of Turkey lying outside the above limits are included in the European Broadcasting Area.

RESOLUTION COM4/1

**Allocation of Frequencies to the
Fixed-Satellite Service in the
Band 13.75 - 14 GHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has added an allocation to the fixed-satellite service in the band 13.75 - 14 GHz;
- b) that this band is shared with the radiolocation and radionavigation services and certain limitations have been placed on the fixed-satellite, radiolocation and radionavigation services;
- c) that the impact of the allocation to the fixed-satellite service on the space research service, the Earth exploration-satellite service and the standard frequency and time-signal satellite service needs to be studied;
- d) the impact of the allocation to the fixed-satellite service on the use of the space research service and the Earth exploration-satellite service under the provisions of No. 713 of the Radio Regulations and the scientific and environmental value of the observations by active sensors;

recognizing

- a) that stations in the space research service which underwent advance publication prior to 31 January 1992 shall operate on an equal basis with stations in the fixed-satellite service;
- b) that provisions of No. 855B of the Radio Regulations stipulate that until 1 January 2000, stations in the fixed-satellite service shall not cause harmful interference to non-geostationary space stations in the space research service and the Earth exploration-satellite service;

resolves to invite the CCIR

- 1. to conduct the necessary studies, prior to 31 January 1994, with respect to the values given in No. 855A of the Radio Regulations relating to allocations in the band 13.75 - 14 GHz and to report the outcome at least one year before the next competent conference;
- 2. to conduct the necessary studies with regard to technical compatibility between the primary allocation to the fixed-satellite service (Earth-to-space) and the secondary allocations to the space research service and the Earth exploration-satellite service in the band 13.75 - 14 GHz;

also resolves

to invite administrations and organizations interested in these radiocommunication services having allocations in the band 13.75 - 14 GHz to participate in the work of the CCIR;

further resolves

to invite administrations concerned to establish bilateral coordination procedures for the introduction of new earth stations in the fixed-satellite service;

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council and the next ordinary Plenipotentiary Conference with a view to placing the review of No. 855A on the agenda of the next world administrative radio conference.

RESOLUTION COM5/5

Introduction of High-Definition Television (HDTV) Systems of the Broadcasting-Satellite Service (BSS) in the Band [21.4 - 22.0] GHz [in Regions ...]

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has reallocated the band [21.4 - 22.0] GHz to the broadcasting-satellite service to be implemented after [1 April 2005] and that under No. [ADD 873A] of the Radio Regulations this reallocation is intended for use by the BSS for wide RF-band high-definition television (HDTV);
- b) that until [1 April 2005] the existing services operating in the band [21.4 - 22.0] GHz in accordance with the Table of Frequency Allocations are therefore entitled to continue operating without harmful interference from other services;
- c) that it is nevertheless desirable to facilitate the introduction of experimental HDTV systems in this band before [1 April 2005] without affecting the continued operation of existing services;
- d) that it also may be possible to introduce operational HDTV systems in this band before [1 April 2005] without affecting the continued operation of existing services;
- e) that after [1 April 2005] the introduction of HDTV systems in this band must be regulated in a flexible and equitable manner until such time as a future competent world administrative radio conference has adopted definitive provisions for this purpose in accordance with Resolution 507;
- f) that procedures are required for the three sets of circumstances envisaged in **considerings c), d) and e)** above;

resolves

to adopt the interim procedures contained in the annex hereto with effect from 1 April 1992;

invites all administrations

to comply with the above procedures;

instructs the IFRB

to apply the above procedures.

ANNEX TO RESOLUTION COM5/5

**Interim Procedures for the Introduction of BSS (HDTV) Systems
in the Band [21.4 - 22.0] GHz [in Regions ...]****Section I. General Provisions**

1. It shall be understood that prior to [1 April 2005] all existing services in the band [21.4 - 22.0] GHz operating in accordance with the Table of Frequency Allocations shall be entitled to continue to operate. After that date they may continue to operate, but only on the basis of [No. 873A] of the Radio Regulations; they shall neither cause harmful interference to BSS (HDTV) systems nor be entitled to claim protection from such systems. It shall be understood that the introduction of an operational BSS (HDTV) system in the band [21.4 - 22.0] GHz should be regulated by an interim procedure in a flexible and equitable manner until the date to be decided by a future competent conference.

**Section II. Interim Procedure Relating to Experimental BSS (HDTV) Systems
Introduced Before [1 April 2005]**

2. For the purpose of introducing experimental BSS (HDTV) systems in the band [21.4 - 22.0] GHz before [1 April 2005] under the provisions of Article 34 of the Radio Regulations, the procedures contained in Resolution 33 shall be applied.

**Section III. Interim Procedure Relating to Operational BSS (HDTV) Systems
Introduced Before [1 April 2005]**

3. For the purpose of introducing operational BSS (HDTV) systems in the band [21.4 - 22.0] GHz before [1 April 2005], the procedure contained in Resolution 33 shall be applied, if the power flux-density at the Earth's surface produced by emissions from a space station, on the territory of any other country, exceeds:

- -115 dB(W/m²) in any 1 MHz band for angles of arrival between 0 and 5 degrees above the horizontal plane; or
- -105 dB(W/m²) in any 1 MHz band for angles of arrival between 25 and 90 degrees above the horizontal plane; or
- values to be derived by linear interpolation between these limits for angles of arrival between 5 and 25 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

4. If the power flux-density at the Earth's surface produced by emissions from a space station does not exceed these limits, the procedure in Sections B and C of Resolution 33 only shall be applied.

**Section IV. Interim Procedure Relating to BSS (HDTV) Systems
Introduced After [1 April 2005]**

5. For the purpose of introducing and operating BSS (HDTV) systems in the band [21.4 - 22.0] GHz after [1 April 2005], and before a future conference has taken decisions on definitive procedures, the procedure in Sections B and C of Resolution 33 shall be applied.
6. For the purpose of this Section, BSS (HDTV) systems introduced under provisions of Sections II and III of this Resolution shall be taken into account.
7. Administrations shall, to the maximum extent possible, seek to ensure that operational BSS (HDTV) systems introduced in the band [21.4 - 22.0] GHz under Sections III or IV of this Resolution have characteristics which take into account the studies of the CCIR for the preparation of a future competent world administrative radio conference.

RESOLUTION COM5/6

**Future Adoption of Procedures to Ensure Flexibility in the
Use of the Frequency Band Allocated to the Broadcasting-Satellite
Service (BSS) for Wide RF-Band High-Definition Television (HDTV)
[and to the Associated Feeder Links]**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has added an allocation to the BSS in the band [] GHz for use by wide RF-band HDTV;
- b) that considerable further technological development of wide RF-band HDTV is expected before it can be introduced for general operational use;
- c) that this Conference has adopted interim provisions to be applied during the period before [1 April 2005] to regulate the introduction of experimental or operational BSS (HDTV) systems (see Resolution COM5/5);
- d) that in the longer term regulatory provisions designed to ensure flexible and equitable use of the BSS (HDTV) [and associated feeder-link] allocation[s] will be necessary to replace these interim provisions;

resolves to urge all administrations

to study the development of future regulatory provisions for BSS (HDTV) to ensure flexibility in the use of the [] GHz band, having regard to the interests of all countries and the state of technical development of this new service;

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council with a view to placing an appropriate item on the agenda of a future world administrative radio conference.

RESOLUTION COM5/7**Implementation of Changes in Frequency Allocations
Between 5 900 kHz and 19 020 kHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that parts of the frequency bands between 5 900 kHz and 19 020 kHz which were previously allocated on an exclusive or shared basis to the fixed and mobile services have been reallocated to the broadcasting service;
- b) that some existing fixed and mobile assignments may need to be removed progressively from those reallocated bands to make way for the broadcasting service;
- c) that the assignments to be removed, termed "displaced assignments", must be reaccommodated in other appropriate frequency bands;
- d) that developing countries may require special assistance from the IFRB, as well as in application of Resolution COM5/9, in replacing their displaced assignments with appropriate protection;
- e) that procedures already exist in Article 12 of the Radio Regulations that may be used to this effect;

recognizing

the difficulties that administrations and the IFRB might encounter during the period of transition from the previous allocations to those made by this Conference;

resolves

- 1. that the duration of the transition period shall be from 1 April 1992 to 1 April 2007;
- 2. that, as of 1 April 1992, administrations should no longer notify any frequency assignments to stations of the fixed and mobile services in the reallocated bands. Assignments notified in these bands after 1 April 1992, shall bear a symbol to indicate that the finding will be examined by the IFRB as of 1 April 2007 in accordance with the provisions of No. 1240 of the Radio Regulations;
- 3. that, as of 1 April 1992, the IFRB shall undertake a continuing action to review the Master International Frequency Register with the help of administrations. In this respect the IFRB shall periodically consult the administrations concerning the frequency assignments to links for which another satisfactory means of telecommunication exists, with a view to either downgrading assignments of class of operation A or deleting such assignments;
- 4. that administrations shall, for assignments of class of operation A in the reallocated bands, either notify the replacement frequencies to the IFRB or request the IFRB's assistance in selecting the replacement frequencies in application of No. 1218 of the Radio Regulations and Resolution 103;

5. that the IFRB shall develop in due time a draft procedure to be used for the replacement of remaining frequency assignments and shall consult administrations in accordance with No. 1001.1 of the Radio Regulations;
6. that the IFRB should modify the draft procedures taking into account, to the extent practicable, comments received from administrations and propose replacement assignments at the latest three years before 1 April 2007. In so doing, the IFRB shall request administrations to take appropriate action to bring their assignments in conformity with the Table of Frequency Allocations by the due date;
7. that a replacement frequency assignment whose basic characteristics, with the exception of the assigned frequency, have not been modified in the above process, shall keep its original date. However, if these basic characteristics of a replacement frequency assignment are different from those of the displaced assignment, the replacement assignment shall be treated in accordance with Nos. 1376 to 1380 of the Radio Regulations;

invites administrations

when seeking reaccommodation of the displaced assignments for their fixed and mobile services in the bands between 5 900 kHz and 19 020 kHz which have been reallocated to the broadcasting service, to make every effort to find replacement assignments in the bands allocated to the fixed and mobile services concerned.

THE CHAIRMAN OF COMMITTEE 5

Note by the Chairman of the Working Group to the Plenary
to the Chairman of Committee 5

**SHARING CRITERIA IN ARTICLES 27 AND 28
(THIRD AND LAST REPLY)**

In response to a request from the Chairman of Sub-Working Group 5B5 (see Document DT/91 (Rev. 1)), the Working Group to the Plenary offers the following comments as the third and last reply. (See Documents 254 and 315 for the first and second replies, respectively.)

1. Applicability of the power limit in No. 2548A to earth stations in the mobile-satellite service in the band 1610 - 1626.5 MHz (§ 4 of Doc. DT/91 (Rev. 1))

The Working Group to the Plenary determined that it is appropriate to apply an EIRP density limit of -3 dB(W/4 kHz) to mobile earth stations in the mobile-satellite service in the 1610 - 1626.5 MHz band until the CCIR develops a Recommendation on this matter (see Note 2).

Note 1 - Canada expressed the opinion that this limit will unduly constrain the operation of systems in the mobile-satellite service.

2. PFD limits on the mobile-satellite service to protect the terrestrial systems in the frequency range between 1525 MHz and 2500 MHz (§ 6 of Doc. DT/91(Rev.1))

In Document DT/91 (Rev. 1), the Chairman of Sub-Working Group 5B5 asked the Working Group to the Plenary to determine whether the PFD limits in No. 2562 of Article 28 are appropriate for protecting the terrestrial systems from the mobile-satellite service in the band 2483.5 - 2500 MHz.

The Working Group to the Plenary considered the applicability of the following two PFD limits to the mobile-satellite service in the frequency range between 1525 MHz and 2500 MHz.

No. 2557

-154 dB(W/m ² /4 kHz)	angle of incidence < 5°
-144 dB(W/m ² /4 kHz)	angle of incidence > 25°

No. 2562

-152 dB(W/m ² /4 kHz)	angle of incidence < 5°
-137 dB(W/m ² /4 kHz)	angle of incidence > 25°

Proponents of applying the PFD limits of No. 2557 felt that further study of the question by the CCIR is required before a decision could be made to apply No. 2562. Proponents of applying No. 2562 felt that the provisions of No. 2562 are the most appropriate PFD level for protecting the terrestrial systems in the frequency range because the characteristics and deployment of MSS satellites are more nearly like those of the BSS (for which No. 2562 provides PFD protection for the terrestrial systems).

Thus, the Working Group to the Plenary could not reach an agreement on which of the above is more appropriate. However, if the Chairman of Committee 5 feels it necessary that some kind of PFD limits on the mobile-satellite service should be included in the Final Acts, the Chairman of the Working Group to the Plenary, as the Chairman of CCIR Study Group 9 who is responsible for the fixed service, offers the following comment for the consideration by the Chairman of Committee 5.

"The PFD limits in No. 2562 seem provisionally appropriate for the application to the mobile-satellite service in the frequency range between 1525 MHz and 2500 MHz, taking account of both the satellite system design requirements and the need for the protection to be afforded to terrestrial systems, although No. 2562 will introduce slightly more interference to terrestrial systems than No. 2557. The CCIR should be invited to make further study on this subject (see Note 2)."

Note 2 - See Recommendation GT-PLN/B in Document 331.

M. MUROTANI
Chairman, Working Group to the Plenary

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

Document 331-E
28 February 1992
Original: English

MÁLAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

COMMITTEE 6

Source: Documents DT/117

**FIFTH AND LAST SERIES OF TEXTS FROM THE WORKING GROUP
TO THE PLENARY TO THE EDITORIAL COMMITTEE**

The Working Group to the Plenary has approved the annexed text to be submitted to the Editorial Committee for consideration and subsequent transmission to the Plenary Session:

- Recommendation GT-PLN/B

M. MUROTANI
Chairman of the Working Group
to the Plenary

RECOMMENDATION GT-PLN/B

**Relating to Sharing Criteria in Frequency Bands
Shared by the Mobile-Satellite Service and the Fixed,
Mobile and Other Radio Services**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this present Conference has made frequency allocations for the mobile-satellite service shared with other radio services;
- [b) that provisional sharing criteria have been adopted in the bands allocated by this Conference to the mobile-satellite service,]
- c) that both geostationary and non-geostationary satellites may be operated in the mobile-satellite service,

recommends that, as a matter of urgency, the CCIR

- 1. study the appropriate criteria for sharing between the mobile-satellite service and other services in the same frequency bands, including power limits and power flux-density limits as indicated in Articles 27 and 28 of the Radio Regulations, while placing minimum restrictions on the services operating in these bands,
- 2. issue Recommendations on the subject,

recommends that administrations

as a matter of urgency, send their contributions relating to these studies to the CCIR.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

Document 332-E
28 February 1992
Original: English

COMMITTEE 6

Source: Documents 275, 309

EIGHTH SERIES OF TEXTS FROM COMMITTEE 4
TO THE EDITORIAL COMMITTEE

At its seventeenth meeting Committee 4 adopted the modifications to Article 8 of the Radio Regulations, as contained in Document 275, with amendments as indicated in the Annex to this document.

I. HUTCHINGS
Chairman of Committee 4

Annex: 1

ANNEX

GHz
17.3 - 18.1

Allocation to Services		
Region 1	Region 2	Region 3
17.3 - 17.7 FIXED-SATELLITE (Earth-to-space) 869 Radiolocation 868	17.3 - 17.7 FIXED-SATELLITE (Earth-to-space) 869 <u>BROADCASTING-SATELLITE 869A</u> Radiolocation 868 <u>868A</u>	17.3 - 17.7 FIXED-SATELLITE (Earth-to-space) 869 Radiolocation 868
17.7 - 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE	17.7 - 17.8484 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE <u>BROADCASTING-SATELLITE 869A 869B</u> <u>Mobile 869C</u> <u>868A</u>	17.7 - 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE
	17.8 - 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE	

ADD 868A In the band 17.3 - 17.8 GHz sharing between the fixed-satellite service (Earth-to-space) and the broadcasting-satellite service shall also be in accordance with the provisions of section 1 of Annex 4 of Appendix 30A.

ADD 869A In Region 2, the allocation to the broadcasting-satellite service in the 17.3 - 17.8 GHz band shall be effective from 1 April 2007.

ADD 869B Broadcasting-satellite service receiving stations in this band shall not claim protection from interference from the operations of stations in the fixed service. Broadcasting-satellite service space stations operating in the 17.7 - 17.8 GHz band shall not exceed the power flux-density limits at the surface of the Earth specified in No. 2578.

ADD 869C The allocation of the band 17.7 - 17.8 GHz to the mobile service, in Region 2, is on a primary basis until 31 March 2007.

ADD 869A In Region 2 the allocation to the broadcasting-satellite service in the 17.3 - 17.8 GHz band shall be effective from 1 April 2005. After 1 April 2007 use of the fixed and fixed-satellite (space-to-Earth) services in the band 17.7 - 17.8 GHz shall not claim protection from and shall not cause harmful interference to operating systems in the broadcasting-satellite service.

**GHz
18.1 - 18.6**

Allocation to Services		
Region 1	Region 2	Region 3
18.1 - 18.418.6	FIXED FIXED-SATELLITE (space-to-Earth) <u>(Earth-to-space) 870A</u> MOBILE 870 <u>870B</u>	
18.118.4 - 18.6	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 870	

ADD 870A The use of the band 18.1 - 18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

ADD 870B Alternative allocation: in Denmark, Greece, Poland, the United Arab Emirates, the United Kingdom and the Czech and Slovak Republic, the band 18.1 - 18.4 GHz is allocated to the fixed, fixed-satellite (space-to-Earth) and mobile services on a primary basis. The provisions of No. 870 also apply.

**GHz
21.4 - 22**

Allocation to Services		
Region 1	Region 2	Region 3
21.4 - 22 FIXED MOBILE <u>BROADCASTING-SATELLITE</u> <u>873A</u>	21.4 - 22 FIXED MOBILE	21.4 - 22 FIXED MOBILE <u>BROADCASTING-SATELLITE</u> <u>873A 873B</u>

ADD 873A The allocation of the broadcasting-satellite service in the band 21.4 - 22 GHz, in Regions 1 and 3, shall come into effect on 1 April 2007. The use of this band by the broadcasting-satellite service after this date and on an interim basis prior to this date is subject to the provisions of Resolution COM5/5.

ADD 873B Additional allocation: in Japan, the band 21.4 - 22 GHz is also allocated to the broadcasting service on a primary basis.

**GHz
22.5 - 23**

Allocation to Services		
Region 1	Region 2	Region 3
22.5 - 22.55 FIXED MOBILE	22.5 - 22.55 FIXED MOBILE BROADCASTING-SATELLITE-877 878	
22.55 - 23 FIXED INTER-SATELLITE MOBILE 879	22.55 - 23 FIXED INTER-SATELLITE MOBILE BROADCASTING-SATELLITE-877 878-879	

SUP 877, 878

GHz
24.25 - 25.25

Allocation to Services		
Region 1	Region 2	Region 3
24.25 - 25.25 <u>24.45</u> RADIONAVIGATION <u>FIXED</u>	24.25 - 25.25 <u>24.45</u> RADIONAVIGATION	24.25 - 25.25 <u>24.45</u> RADIONAVIGATION <u>FIXED</u> <u>MOBILE</u>
24.25 <u>24.45</u> - 25.25 <u>24.65</u> RADIONAVIGATION <u>FIXED</u> <u>INTER-SATELLITE</u>	24.25 <u>24.45</u> - 25.25 <u>24.65</u> RADIONAVIGATION <u>INTER-SATELLITE</u> <u>882X</u>	24.25 <u>24.45</u> - 25.25 <u>24.65</u> RADIONAVIGATION <u>FIXED</u> <u>INTER-SATELLITE</u> <u>MOBILE</u> <u>882X</u>
24.25 <u>24.65</u> - 25.25 <u>24.75</u> RADIONAVIGATION <u>FIXED</u> <u>INTER-SATELLITE</u>	24.25 <u>24.65</u> - 25.25 <u>24.75</u> RADIONAVIGATION <u>INTER-SATELLITE</u> <u>RADIOLOCATION-SATELLITE</u> <u>(Earth-to-space)</u>	24.25 <u>24.65</u> - 25.25 <u>24.75</u> RADIONAVIGATION <u>FIXED</u> <u>INTER-SATELLITE</u> <u>MOBILE</u> <u>882X 882Y</u>
24.25 <u>24.75</u> - 25.25 RADIONAVIGATION <u>FIXED</u>	24.25 <u>24.75</u> - 25.25 RADIONAVIGATION <u>FIXED-SATELLITE</u> <u>(Earth-to-space)</u> <u>882Z</u>	24.25 <u>24.75</u> - 25.25 RADIONAVIGATION <u>FIXED</u> <u>FIXED-SATELLITE</u> <u>(Earth-to-space)</u> <u>882Z</u> <u>MOBILE</u> <u>882Y</u>

ADD

882X

The inter-satellite service shall not claim protection of harmful interference from airport surface detection equipment stations of the radionavigation service.

ADD 882Y Additional allocation: in Japan, the band 24.65 - 25.25 GHz is also allocated to the radionavigation service on a primary basis until 2008.

ADD 882Z In the band 24.75 - 25.25 GHz, feeder links to stations in the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Other assignments within the fixed-satellite service shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.

**GHz
27 - 29.5**

Allocation to Services		
Region 1	Region 2	Region 3
27 - 27.5 FIXED MOBILE <u>INTER-SATELLITE 881A</u> Earth Exploration-Satellite (space-to-space)	27 - 27.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE <u>INTER-SATELLITE 881A 881B</u> Earth Exploration-Satellite (space-to-space)	
27.5 - <u>28.529.5</u>	FIXED FIXED-SATELLITE (Earth-to-space) <u>882W</u> MOBILE <u>882A 882B</u>	
<u>27.528.5</u> - 29.5	FIXED FIXED-SATELLITE (Earth-to-space) <u>882W</u> MOBILE <u>Earth Exploration-Satellite (Earth-to-space) 882C</u> <u>882B</u>	

ADD 881B Non-geostationary space services operating in the inter-satellite service in the band 27 - 27.5 GHz are exempt from the provisions of No. 2613.

GHz
29.5 - 30

Allocation to Services		
Region 1	Region 2	Region 3
<p>29.5 - 30<u>29.9</u></p> <p><u>FIXED-SATELLITE 882W</u> (Earth-to-space)</p> <p>Mobile-Satellite (Earth-to-space)</p> <p><u>Earth Exploration-Satellite</u> (Earth-to-space) 882C</p> <p>873A-882 MOD 883</p>	<p>29.5 - 30<u>29.9</u></p> <p><u>FIXED-SATELLITE 882W</u> (Earth-to-space)</p> <p><u>MOBILE-SATELLITE</u> (Earth-to-space)</p> <p>Mobile-Satellite (Earth-to-space)</p> <p><u>Earth Exploration-Satellite</u> (Earth-to-space) 882C</p> <p>873A 873B 873C [873E] 882-MOD 883</p>	<p>29.5 - 30<u>29.9</u></p> <p><u>FIXED-SATELLITE 882W</u> (Earth-to-space)</p> <p>Mobile-Satellite (Earth-to-space)</p> <p><u>Earth Exploration-Satellite</u> (Earth-to-space) 882C</p> <p>873A-882 MOD 883</p>
<p>29.5<u>29.9</u> - 30</p> <p><u>FIXED-SATELLITE (Earth-to-space) 882W</u></p> <p><u>MOBILE-SATELLITE (Earth-to-space)</u></p> <p>Mobile-Satellite (Earth-to-space)</p> <p><u>Earth Exploration-Satellite (Earth-to-space) 882C</u></p> <p><u>873A 873B 873C 882 882A 882B MOD 883</u></p>		

MOD 883 Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, the United Arab Emirates, Egypt, Ethiopia, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, the Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Pakistan, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Chad and Thailand, the band 29.5 - 31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. 2505 and 2508 shall apply.

ADD 882W The band 27.5 - 30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.

ADD 882A Additional allocation: the bands 27.500 - 27.501 GHz and 29.999 - 30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up-link power control.

Such space-to-Earth transmissions shall not exceed an effective isotropic radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit, and shall not produce a power flux-density in excess of the values in No. 2578 on the Earth's surface in the band 27.500 - 27.501 GHz.

ADD 882B Additional allocation: the band 27.501 - 29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up-link power control.

ADD 882C In the band 28.5 - 30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

PLENARY MEETING

Source: Document 239

Note by the Chairman of ad hoc 1 to the Plenary

1. The Plenary of the Conference, when considering Document 239 relating to the development of an allotment arrangement for the aeronautical mobile (OR) service and associated issues at its meeting on 26 February 1992, agreed to postpone further consideration of the issue and requested the Chairman of the Conference to carry out negotiations outside the meeting with those delegations having raised concern and those otherwise interested in the matter, in order to find a compromise solution to the problem. The Chairman of the Conference authorized me to carry out these negotiations on his behalf.
2. Consequently, an informal meeting was convened which was attended by those delegations referred to in paragraph 1 above. The meeting took place on 28 February 1992, considered the matter and arrived at a compromise, supported by a great majority, which can be summarized as follows:

Draft Resolution [PLEN/AH-1], appearing in Annex 1 of Document 239, should be modified in such a way that the final allotment arrangement would be based on the allotment arrangement contained in the Report of the IFRB to the Conference as modified during the Conference, to which would be added further allotments as specified in detail in **resolves** 1. While preserving the principle of equitable access to the arrangement, this attempt would minimize the additional costs incurred in the preparation of the arrangement.
3. A complete text of the draft Resolution, as revised in accordance with paragraph 2 above, is given in the Annex. Annexes 2, 3 and 4 of Document 239 would remain unchanged.

E. GEORGE
Chairman

Annex: 1

ANNEX

RESOLUTION [PLEN/AH-1]

**Development of an Arrangement for the Allotment of
Frequencies for the Aeronautical Mobile (OR) Service in
the Exclusive Bands Between 3 025 kHz and 18 030 kHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that Resolution No. 9 of the Plenipotentiary Conference, Nice, 1989 instructed the IFRB to undertake actions relating to the improvement of use by the aeronautical mobile (OR) service of the frequency bands governed by Appendix 26 to the Radio Regulations;
- b) that the IFRB prepared, following consultation with administrations, a draft channelling arrangement;
- c) that a revision of Article 12 and consequential amendments to Appendix 26 have been adopted by this Conference;
- d) that the allotment arrangement presented by the IFRB to this Conference will need to be further developed in accordance with this Resolution;

appreciating

the efforts made by the IFRB despite the limited resources available;

resolves

- 1. that the IFRB shall, immediately after the Conference, add to the allotment arrangement contained in its Report to the Conference and as modified during the Conference, the following in the development of Part III of Appendix 26(Rev.):
 - a) one 3 kHz allotment, on the nearest possible channel within the same band, for each allotment contained in Appendix 26 (Part IV), which is not covered by an assignment in the Master Register;
 - b) one 3 kHz allotment, on the nearest possible channel within the same band, for each requirement presented to the Conference or for which assignment notice is received by the Board by 1 May 1992;
 - c) one 3 kHz allotment, on an appropriate channel in each band, for those administrations not having an allotment in the new allotment arrangement as a result of the above actions, except for those administrations which have explicitly stated that they do not require an allotment;
- 2. that the IFRB shall communicate the results of its above actions to administrations by 15 December 1992;
- 3. that in applying the above process, the IFRB shall endeavour to resolve any difficulties that may arise from the sharing of a channel by two or more allotments in consultation with the administrations concerned;
- 4. that the IFRB shall distribute to all administrations Part III of Appendix 26(Rev.) as soon as possible and in any case not later than [date of entry into force of the Final Acts];
- 5. to request the Secretary-General to publish Part III of Appendix 26(Rev.) after the IFRB has completed its tasks under **resolves** 1 to 4 above.

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

PLENARY MEETING

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

MOBILE-SATELLITE SERVICE AND BROADCASTING-SATELLITE SERVICE (SOUND)

In the event that the WARC-92 decides to allocate spectrum to the mobile-satellite (space-to-Earth) service in the band 1 435 - 1 525 MHz, the following proposal is submitted:

USA/334/1

ADD 722A

In the United States, in the band 1 435 - 1 525 MHz, the power flux-density at the surface of the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed -172 dB(W/m²)/4 kHz, unless otherwise agreed by affected administrations. The provisions of No. 723 apply. The mobile-satellite service is not allocated in the United States.

In the event that the WARC-92 decides to allocate spectrum for the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service in the band 1 435 - 1 525 MHz, the following proposal is submitted:

USA/334/2

ADD 722B

In the United States, in the band 1 435 - 1 525 MHz, the power flux-density at the surface of the Earth from space stations operating in the broadcasting-satellite service (sound) shall not exceed -172 dB(W/m²)/4 kHz, unless otherwise agreed by affected administrations. Complementary terrestrial broadcast transmitters will not cause a power flux-density in excess of -172 dB(W/m²)/4 kHz outside of national boundaries unless agreed by affected administrations. The provisions of No. 723 apply. The broadcasting-satellite service (sound) and complementary terrestrial broadcasting service are not allocated in the United States.

COMMITTEE 4

France

DRAFT RECOMMENDATION

POSSIBLE ALLOCATION OF FREQUENCY BANDS TO THE EARTH
EXPLORATION-SATELLITE SERVICE FOR THE OPERATION OF
RADIOLOCATION STATIONS ON BOARD SPACECRAFT

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) this Conference's decisions regarding the allocation of the frequency band 13.75 - 14.00 GHz to the fixed-satellite service (Earth-to-space), and in particular Resolution COM4/1;
- b) that the use of this frequency band by radiolocation stations on board spacecraft for the earth exploration-satellite service could become difficult after 1 January 2000,

recognizing

- a) the scientific and environmental value of active detector observations for the study of meteorology, climatology and oceanography;
- b) the need to have a sufficiently wide frequency band available after 1 January 2000 for such earth exploration-satellite service applications,

invites the CCIR

to undertake the necessary studies to identify a sufficiently wide frequency band, preferably below 20 GHz, suitable for allocation to the earth exploration-satellite service for the operation of radiolocation stations on board spacecraft,

invites Administrations

to take an active part in the CCIR's work,

instructs the Secretary-General

to bring this Recommendation to the attention of the Administrative Council and the next Plenipotentiary Conference, with a view, if necessary, to including an item on the agenda of a forthcoming WARC the allocation to the earth exploration-satellite service not later than 1 January 2000, of a frequency band suited to that service's needs.

Note by the Secretary-General

SIGNING CEREMONY

1. At the close of the last Plenary Meeting, the Chairman will announce the time at which the signing ceremony and closure of the Conference will take place.
2. The procedure for the signing ceremony will be as follows:
 - 2.1 Before the ceremony begins, delegations are invited to collect the files containing the sheets of paper to be signed. The files can be collected from the tables by the entrance of Room Malaga.
 - 2.2 In the files, delegations will find the following:
 - a) a sheet marked "ACTES FINALS" for signature to the Final Acts;
 - b) a sheet marked "PROT FINAL" for signature to the Final Protocol;
 - c) a pink sheet, on which those signing are kindly requested to print their surnames and first names (or initials) in the order in which they sign.
3. At the opening of the signing ceremony, the Secretary of the Conference will invite delegations to sign the sheets as indicated above.
4. After a period of about ten minutes, the role will be called of delegations whose credentials entitle them to sign, inviting delegations to deposit the files with the signed sheets on the table at the rostrum.
5. As the signatures are deposited, the name of the delegation which has deposited its signatures will be announced.
6. At the end of the signing ceremony, the total number of delegations that have deposited their signatures will be announced.

Pekka TARJANNE
Secretary-General

COMMITTEE 4

Brazil

PROPOSALS FOR THE WORK OF THE CONFERENCE

It is proposed to include the following footnote:

B/337/1

ADD 723B

The use of the bands 1 490 - 1 525 MHz (space-to-Earth) and 1 675 - 1 710 MHz (Earth-to-space) by the mobile-satellite service in Region 2 is limited to national or sub-regional systems. The power flux-density at the Earth's surface from the space stations shall not exceed -137 dB(W/m²)/4 kHz.

It is proposed to include the following footnote:

B/337/2

ADD 723C

The use of the band 1 490 - 1 525 MHz by the mobile-satellite service in Region 2 shall not cause harmful interference to stations of the fixed and mobile services operating in this band.

B/337/3

It is proposed to protect the aeronautical mobile service for telemetry which operate under Footnote 723 by establishing a power flux-density limit at the Earth's surface in the countries listed in Footnote 723.

It is proposed to include the following footnote:

B/337/4

ADD 735A

In making assignments to stations of the mobile-satellite service to which the band 1 675 - 1 710 MHz is allocated, administrations are urged to take all practicable steps to protect the meteorological-satellite service from harmful interference in that band. The use of this band by the mobile-satellite service shall not impose constraints to the development of the meteorological-satellite service.

It is proposed to include Resolution COM4/[] as contained in the Annex.

B/337/5
ADD

ANNEX

Draft Resolution COM4/[]

**Sharing Studies Concerning the Use of the Bands 1 490 - 1 525 MHz and
1 675 - 1 710 MHz by the Mobile-Satellite Service**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that agenda item 2.2.4 of this Conference requested the consideration, i.e., of an allocation of frequency bands to the mobile-satellite service;
- b) that spectrum adjacent to or near the existing mobile satellite allocations may offer opportunities for implementation;
- c) that the band 1 490 - 1 525 MHz is used by the aeronautical mobile service in the countries listed in Footnote 723 and by other terrestrial services;
- d) that the band 1 675 - 1 710 MHz is principally used by the meteorological-satellite and meteorological aids services;
- e) that operational and technical means may be found that would allow sharing of the band 1 490 - 1 525 MHz between the services mentioned in c) above and the mobile-satellite service;
- f) that operational and technical means may be found that would allow sharing of the band 1 675 - 1 710 MHz between the services mentioned in d) above and the mobile-satellite service;
- g) that there is a need to determine the operational and technical means for preventing harmful interference to the services mentioned in c) and d) above,

resolves

- 1. that studies be undertaken by the CCIR to examine the operational and technical measures that would facilitate sharing;
- 2. that the WMO be invited to participate in these sharing studies,

invites

- 1. the CCIR to study as a matter of urgency the technical and operational issues relating to the sharing of these bands between the services mentioned in c) and d) above and the mobile-satellite service;
- 2. administrations to actively participate in such studies by sending contributions to the CCIR relating to the aforementioned studies.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

Document 338-E
29 February 1992
Original: Spanish

COMMITTEE 4

Republic of Honduras

PROPOSAL FOR THE WORK OF THE CONFERENCE

ADDITIONAL ALLOCATION

HND/338/1
MOD 675

Different category of service: in Chile, Colombia, Ecuador, the United States, Guyana, Honduras and Jamaica, the allocation of the bands 470 - 512 MHz and 614 - 806 MHz to the fixed and mobile services is on a primary basis (see No. 425), subject to agreement obtained under the procedure set forth in Article 14.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

Document 339-E
29 February 1992
Original: English

Source: Document DT/119

COMMITTEE 4

Note from the Chairman of Committee 4

PROPOSED MODIFICATIONS TO ARTICLE 8 OF THE RADIO REGULATIONS
(MSS AND FPLMTS, BANDS UP TO 2 500 MHz)

Attached are the proposed modifications to Article 8 resulting from the discussions in respect to Document DT/119.

The delegation of Brazil reserved its position with regard to the possible presentation to the Plenary of a number of measures relating to mobile-satellite allocations in the bands 1 490 - 1 525 MHz and 1 675 - 1 710 MHz which it may propose.

I.R. HUTCHINGS
Chairman

MHz
137 - 137.175

Allocation to Services		
Region 1	Region 2	Region 3
137 - 138137.025	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) <u>MOBILE-SATELLITE (space-to-Earth) 599B</u> Fixed Mobile except aeronautical mobile (R) 596 597 598 599 <u>599A</u>	
137137.025 - 138137.175	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) <u>Mobile-Satellite (space-to-Earth) 599B</u> Fixed Mobile except aeronautical mobile (R) 596 597 598 599 <u>599A</u>	

ADD 599A Coordination of mobile satellite systems in the frequency band 137 - 138 MHz will be in accordance with the provisions of Resolution COM5/8. The power flux-density of the mobile-satellite service will not exceed -125 dB(W/m²/4 kHz) at the surface of the Earth unless otherwise agreed by the affected administrations. The above power flux-density limit shall apply until such time as a competent world administrative radio conference revises it. In making assignments to the space stations in the mobile-satellite service in the above band administrations shall take all practicable steps to protect the radio astronomy service in the 150.05 - 153 MHz band from harmful interference from unwanted emissions. (RR 2904 applies.)

ADD 599B The use of the bands 137 - 138 MHz, 148 - 149.9 MHz and 400.15 - 401 MHz by the mobile-satellite service and the band 149.9 - 150.05 MHz by the land mobile-satellite service is limited to non-geostationary-satellite systems.

MHz
137.175 - 138

Allocation to Services		
Region 1	Region 2	Region 3
137 <u>137.175</u> - 138 <u>137.825</u>	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) <u>MOBILE-SATELLITE (space-to-Earth) 599B</u> Fixed Mobile except aeronautical mobile (R) 596 597 598 599 <u>599A</u>	
137 <u>137.825</u> - 138	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) <u>Mobile-Satellite (space-to-Earth) 599B</u> Fixed Mobile except aeronautical mobile (R) 596 597 598 599 <u>599A</u>	

MHz
148 - 150.05

Allocation to Services		
Region 1	Region 2	Region 3
148 - 149.9 FIXED MOBILE except aeronautical mobile (R) <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 599B</u> 608 <u>608X</u> <u>608Z</u>	148 - 149.9 FIXED MOBILE <u>MOBILE-SATELLITE (Earth-to-space) 599B</u> 608 <u>608X</u> <u>608Z</u>	
149.9 - 150.05	RADIONAVIGATION-SATELLITE <u>LAND MOBILE-SATELLITE (Earth-to-space) 599B</u> <u>608Y</u> 609 609A <u>609B</u>	

ADD

608X

Coordination of the mobile-satellite systems in the frequency band 148 - 149.9 MHz will be in accordance with the provisions of Resolution COM5/8. The mobile-satellite service shall not constrain the development and use of fixed, mobile and space operations services in the band 148 - 149.9 MHz. MSS mobile earth station transmitters will not cause a power flux-density in excess of -150 dB(W/m²/4 kHz) outside of national boundaries.

- ADD 608Y** Coordination of the land mobile-satellite systems in the frequency band 149.9 - 150.05 MHz will be in accordance with the provisions of Resolution COM5/8. The land mobile-satellite service shall not constrain the development and use of the band 149.9 - 150.05 MHz by the radionavigation-satellite service. The power flux-density of the land mobile-satellite service will not exceed the limit of -150 dB(W/m²/4 kHz) outside of national boundaries.
- ADD 609B** The land mobile-satellite service shall be secondary in this allocation until 1 January 1997.
- ADD 608Z** Stations of the mobile-satellite service in the band 148 - 149.9 MHz shall not cause harmful interference to, or claim protection from, fixed or mobile stations in the following countries: the Federal Republic of Germany, Algeria, Belgium, Cameroon, Canada, Colombia, the Congo, Czech and Slovak Federal Republic, Cuba, Ecuador, Finland, Ghana, Ireland, Israel, Kenya, Luxembourg, Malaysia, Mali, New Zealand, Pakistan, Papua New Guinea, Qatar, Singapore, Sri Lanka, Sweden, Syria, Thailand, the United Arab Emirates, the United Kingdom and Yugoslavia, that operate in accordance with the Table.

**MHz
273 - 322**

Allocation to Services		
Region 1	Region 2	Region 3
MOD	273 - 322312 FIXED MOBILE MOD 641	
MOD	273312 - 322315 FIXED MOBILE <u>Mobile-Satellite (Earth-to-space) 641A</u>	
MOD	273315 - 322 FIXED MOBILE MOD 641	

MHz
335.4 - 399.9

Allocation to Services		
Region 1	Region 2	Region 3
MOD	335.4 - 399.9387	FIXED MOBILE MOD 641
MOD	335.4387 - 399.9390	FIXED MOBILE <u>Mobile-Satellite (space-to-Earth) 641A</u>
MOD	335.4390 - 399.9	FIXED MOBILE MOD 641

MOD 641 Subject to agreement obtained under the procedure set forth in Article 14, the bands 235 - 312 MHz, 315 - 322 MHz and 335.4 - 387 MHz and 390 - 399.9 MHz may be used by the mobile-satellite service, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table.

ADD 641A The frequency bands 312 - 315 MHz (Earth-to-space) and 387 - 390 MHz (space-to-Earth) in mobile-satellite service may also be used by non-geostationary-satellite systems, subject to the coordination procedure set forth in Resolution COM5/8.

MHz
400.15 - 401

Allocation to Services		
Region 1	Region 2	Region 3
400.15 - 401	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Space Operation (space-to-Earth) <u>MOBILE-SATELLITE (space-to-Earth) 599B</u> 647 <u>647X</u>	

ADD 647X Coordination of mobile satellite systems in the frequency band 400.15 - 401 MHz will be in accordance with the provisions of Resolution COM5/8. The power flux-density of the mobile-satellite service will not exceed -125 dB(W/m²/4 kHz) at the surface of the Earth unless otherwise agreed by the affected administrations. The above power flux-density limit shall apply until such time as a competent world administrative radio conference revises it. In making assignments to the space stations in the mobile-satellite service in the above band, administrations shall take all practicable steps to protect the radio astronomy service in the 406.1 - 410 MHz band from harmful interference from unwanted emissions (RR 2904 applies.)

ADD 700A Alternative allocation: in Canada, the United States and Mexico, the bands 849 - 851 MHz and 894 - 896 MHz are allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The band 849 - 896 MHz is limited to transmissions from aeronautical stations and the use of the band 894 - 896 MHz is limited to transmissions from aircraft stations.

[Administrations operating systems for public correspondence with aircraft in these frequency bands shall ensure that the frequencies actually assigned to their stations shall not cause harmful interference and shall coordinate such use accordingly.]

BANDS BELOW 1 525 MHz: NOC

MHz 1 525 - 1 530			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 525 - 1 530 SPACE OPERATION (space-to-Earth) <u>MARITIME</u> <u>MOBILE-SATELLITE</u> (space-to-Earth) <u>Land Mobile-Satellite</u> (space-to-Earth) 726B FIXED Earth Exploration-Satellite Mobile except aeronautical mobile 724 722 725 <u>726A 726X</u>	1 525 - 1 530 SPACE OPERATION (space-to-Earth) <u>MARITIME</u> <u>MOBILE-SATELLITE</u> (space-to-Earth) <u>Land Mobile-Satellite</u> (space-to-Earth) 726B <u>MOBILE-SATELLITE</u> (space-to-Earth) [726B] Earth Exploration-Satellite Fixed Mobile 723 722 723A <u>726A 726X</u>	1 525 - 1 530 SPACE OPERATION (space-to-Earth) <u>MARITIME</u> <u>MOBILE-SATELLITE</u> (space-to-Earth) <u>Land Mobile-Satellite</u> (space-to-Earth) 726B <u>MOBILE-SATELLITE</u> (space-to-Earth) [726B] FIXED Earth Exploration-Satellite Mobile 723 724 722 <u>726A 726X</u>

MOD **726A** The bands ~~1 530~~ 1 525 - 1 544 MHz, 1 545 - 1 559 MHz,
Mob-87 1 626.5 - 1 645.5 MHz and 1 646.5 - 1 660.5 MHz shall not be used for feeder links of
any service. In exceptional circumstances, however, an earth station at a specified
fixed point in any of the mobile-satellite services may be authorized by an
administration to communicate via space stations using these bands.

MOD **726B** The use of the bands 1 525 - 1 530 MHz, 1 533 - 1 544 MHz,
Mob-87 1 626.5 - 1 631.5 MHz and 1 634.5 - 1 645.5 MHz by the land mobile-satellite service
is limited to non-speech low bit-rate data transmissions.

ADD **726X** Introduction of non-geostationary satellite systems in the band
1 525 - 1 530 MHz should be in accordance with Resolution COM5/8.

MHz
1 530 - 1 533

MOD

Allocation to Services		
Region 1	Region 2	Region 3
1 530 - 1 533 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) LAND MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile except aeronautical mobile 722 726A	1 530 - 1 533 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) LAND MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile 723 722 726A <u>726C</u>	

SUP

726

ADD

726C

Additional allocation: in Australia, Brazil, Canada, Malaysia, Mexico and the United States, the band 1 530 - 1 544 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 626.5 - 1 645.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: Maritime mobile-satellite distress and safety communications, [established within any network operating under this provision, or any other network of the mobile-satellite service] including GMDSS, shall have priority access and immediate availability over all other mobile-satellite communications within a network operating under this provision. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

MHz
1 533 - 1 559

Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 533 - 1 535 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile except aeronautical mobile Land Mobile-Satellite (space-to-Earth) 726B 722 726A	1 533 - 1 535 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile 723 Land Mobile Satellite (space-to-Earth) 726B 722 726A 726C	
MOD	1 535 - 1 544	MARITIME MOBILE-SATELLITE (space-to-Earth) Land Mobile-Satellite (space-to-Earth) 726B 722 726A 727 <u>726C</u>	
<u>NOC</u>	1 544 - 1 545	MOBILE-SATELLITE (space-to-Earth) 722 727 727A	
MOD	1 545 - 1 555	AERONAUTICAL MOBILE-SATELLITE (R) (space-to-Earth) 722 726A 727 729 729A 730 <u>730B</u>	
MOD	1 555 - 1 559	LAND MOBILE-SATELLITE (space-to-Earth) 722 726A 727 730 730A <u>730B</u>	

ADD 730B

Additional allocation: in Australia, Canada, Malaysia, Mexico and the United States, the band 1 545 - 1 559 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 646.5 - 1 660.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: The aeronautical mobile-satellite (R) service shall have priority access and immediate availability over all other mobile-satellite communications within a network operating under this provision. Mobile-satellite systems shall be interoperable with the aeronautical mobile-satellite (R) service. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

BANDS 1 559 - 1 610 MHz: NOC

MHz 1 610 - 1 626.5			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 610 - 1 626.5 1 610.6 AERONAUTICAL RADIONAVIGATION <u>MOBILE-SATELLITE 731X</u> <u>(Earth-to-space)</u> 722 727 730 731 731A-731B 731D-732 733 733A 733B 733E-733F 734	1 610 - 1 626.5 1 610.6 AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) 733A 733E <u>MOBILE-SATELLITE 731X</u> <u>(Earth-to-space)</u> 722 731B-731C-732 733 733C 733D 734	1 610 - 1 626.5 1 610.6 AERONAUTICAL RADIONAVIGATION Radiodetermination-Satellite (Earth-to-space) 733A 733E <u>MOBILE-SATELLITE 731X</u> <u>(Earth-to-space)</u> 722 727 730 731B-731C-732 733 733B 734
MOD	1 610 1 610.6 - 1 626.5 1 613.8 AERONAUTICAL RADIONAVIGATION <u>MOBILE-SATELLITE 731X</u> <u>(Earth-to-space)</u> <u>RADIO ASTRONOMY</u> 722 727 730 731 731A-731B 731D-732 733 733A 733B 733E 733F 734	1 610 1 610.6 - 1 626.5 1 613.8 AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) 733A 733E <u>MOBILE-SATELLITE 731X</u> <u>(Earth-to-space)</u> <u>RADIO ASTRONOMY</u> 722 731B-731C-732 733 733C 733D <u>733E</u> 734	1 610 1 610.6 - 1 626.5 1 613.8 AERONAUTICAL RADIONAVIGATION Radiodetermination-Satellite (Earth-to-space) 733A 733E <u>MOBILE-SATELLITE 731X</u> <u>(Earth-to-space)</u> <u>RADIO ASTRONOMY</u> 722 727 730 731B-731C-732 733 733B <u>733E</u> 734

MHz
1 610 - 1 626.5 (continued)

Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 610 <u>1 613.8 - 1 626.5</u> AERONAUTICAL RADIONAVIGATION <u>MOBILE-SATELLITE 731X</u> (Earth-to-space) <u>Mobile-Satellite 731X</u> (space-to-Earth) 722 727 730 731 731A-731B 731D-732 733 733A 733B 733E-733F 734	1 610 <u>1 613.8 - 1 626.5</u> AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) 733A 733E <u>MOBILE-SATELLITE 731X</u> (Earth-to-space) <u>Mobile-satellite</u> (space-to-Earth) 722 731B-731C 732 733 733C 733D 734	1 610 <u>1 613.8 - 1 626.5</u> AERONAUTICAL RADIONAVIGATION Radiodetermination-Satellite (Earth-to-space) 733A 733E <u>MOBILE-SATELLITE 731X</u> (Earth-to-space) <u>Mobile-Satellite</u> (space-to-Earth) 722 727 730 731B-731C 732 733 733B 734

SUP 731A
SUP 731B
SUP 731C
SUP 731D
ADD 731X

The use of the frequency band 1 610 - 1 626.5 MHz by the mobile-satellite service is subject to the application of the procedure for coordination and notification set forth in Resolution COM5/8. [Mobile earth stations in the mobile-satellite service shall not use e.i.r.p. density limit in excess of -3 dB(W/4 kHz) until such time as a competent world administrative radio conference revises this limit.] Stations of the mobile-satellite service shall not cause harmful interference to, or claim protection from stations in the aeronautical radionavigation service. Stations operating in accordance with the provisions of No. 732, and stations in the fixed service operating in accordance with the provisions of No. 730.

MOD 733E ~~In Regions 1 and 3~~ Harmful interference shall not be caused to stations
Mob-87 of the radio astronomy service using the band 1 610.6 - 1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite service.

MOD 733A In respect of the radiodetermination-satellite and mobile-satellite service
Mob-87 the provisions of No. 953 do not apply in the frequency band 1 610 - 1 626.5 MHz.

MOD 734 ~~The band 1 610.6 - 1 613.8 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations.~~ In making assignments to stations of other services to which the band 1 610.6 - 1 613.8 MHz is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service from harmful interference. Emissions from space or air-borne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).

MHz
1 626.5 - 1 660

Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 626.5 - 1 631.5	MARITIME MOBILE-SATELLITE (Earth-to-space) Land Mobile-Satellite (Earth-to-space) 726B 722 726A 727 730 <u>726C</u>	
MOD	1 631.5 - 1 634.5	MARITIME MOBILE-SATELLITE (Earth-to-space) LAND MOBILE-SATELLITE (Earth-to-space) 722 726A 727 730 734A <u>726C</u>	
MOD	1 634.5 - 1 645.5	MARITIME MOBILE-SATELLITE (Earth-to-space) Land Mobile-Satellite (Earth-to-space) 726B 722 726A 727 730 <u>726C</u>	
<u>NOC</u>	1 645.5 - 1 646.5	MOBILE-SATELLITE (Earth-to-space) 722 734B	
MOD	1 646.5 - 1 656.5	AERONAUTICAL MOBILE-SATELLITE (R) (Earth-to-space) 722 726A 727 729A 730 735 <u>730B</u>	
MOD	1 656.5 - 1 660	LAND MOBILE-SATELLITE (Earth-to-space) 722 726A 727 730 730A 734A <u>730B</u>	

MHz
1 660 - 1 660.5

Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 660 - 1 660.5	RADIO ASTRONOMY LAND MOBILE-SATELLITE (Earth-to-space) 722 726A 730A 736 <u>730B</u>	

MHz
1 670 - 1 700

Allocation to Services		
Region 1	Region 2	Region 3
MOD	1 670 - 1 690 <u>1 675</u> METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile <u>722 740A</u>	
MOD	1 670 <u>1 675</u> - 1 690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 722	
1 690 - 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 671 722 741		1 690 - 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) 671 722 740 742

ADD 740A

The bands 1 670 - 1 675 MHz and 1 800 - 1 805 MHz are intended for use, on a worldwide basis, by administrations wishing to implement aeronautical public correspondence. The use of the band 1 670 - 1 675 MHz by stations in the systems for public correspondence with aircraft is limited to transmissions from aeronautical stations and the band 1 800 - 1 805 MHz is limited to transmissions from aircraft stations. [Administrations operating systems for public correspondence with aircraft in these frequency bands shall ensure that the frequencies actually assigned to their stations do not cause harmful interference and shall coordinate such use of frequencies accordingly]. [In Canada, the United States and Mexico public correspondence with aircraft is operating in accordance with the provisions of No. 700A].

MHz 1 700 - 2 025			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) <u>MOBILE except aeronautical mobile</u> Mobile except aeronautical mobile 671 722 743A	1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 671 722 743	
MOD	1 710 - 2 299 2 010 FIXED <u>MOBILE</u> Mobile 722 740A 743A 744 746 746A 747 748 750	1 710 - 2 299 2 010 FIXED MOBILE 722 740A 744 745 746 746A 747 748 749 750	
MOD	<u>2 010 - 2 025</u> FIXED <u>MOBILE</u> <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 746B</u> 722 744 <u>746A</u>	<u>2 010 - 2 025</u> FIXED MOBILE <u>MOBILE-SATELLITE (Earth-to-space) 746B</u> 722 744 745 <u>746A</u>	

ADD 746A The frequency bands 1 850 - 2 025 MHz and 2 110 - 2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement the future public land mobile telecommunication systems (FPLMTS). Such use does not preclude the use of these bands by other services to which these bands are allocated. [In the bands 2 010 - 2 025 MHz and 2 185 - 2 200 MHz a combination of terrestrial and space techniques may also be used.]

The frequency bands shall be made available for FPLMTS in accordance with Resolution COM4/FPLMTS.

ADD 746B The allocation of the band 2 010 - 2 025 MHz to the mobile-satellite service (Earth-to-space) and of the band 2 185 - 2 200 MHz to the mobile-satellite service (space-to-Earth) shall be effective on 1 January 2010. The coordination of non-geostationary MSS systems in these bands will be in accordance with Resolution COM5/8. The power flux-density limits in No. 2562 will be applied pending revision by a competent world administrative radio conference.

MHz
1 710 - 2 200

Allocation to Services		
Region 1	Region 2	Region 3
MOD <u>1-7102 025 - 2-2902 110</u> FIXED <u>SPACE RESEARCH</u> (Earth-to-space, space-to-space) <u>SPACE OPERATION</u> (Earth-to-space, space-to-space) <u>EARTH EXPLORATION-SATELLITE</u> (Earth-to-space, space-to-space) <u>MOBILE 747A</u> Mobile 722-743A-744-746-747 748-750-750A	<u>1-7102 025 - 2-2902 110</u> FIXED <u>MOBILE 747A</u> <u>SPACE RESEARCH</u> (Earth-to-space, space-to-space) <u>SPACE OPERATION</u> (Earth-to-space, space-to-space) <u>EARTH EXPLORATION-SATELLITE</u> (Earth-to-space, space-to-space)	
MOD <u>1-7102 110 - 2-2902 120</u> FIXED <u>MOBILE</u> <u>SPACE RESEARCH</u> (deep space) (Earth-to-space) Mobile 722-743A-744-746-746A 747-748-750	<u>1-7102 110 - 2-2902 120</u> FIXED MOBILE <u>SPACE RESEARCH</u> (deep space) (Earth-to-space)	722-744-745-746-746A 747-748-749-750
MOD <u>2 120 - 2 185</u> FIXED <u>MOBILE</u> Mobile 722-743A-744-746-746A 747-748-750	<u>2 120 - 2 185</u> FIXED MOBILE 722-744-745-746-746A 747-748-749-750	
MOD <u>2 185 - 2 200</u> FIXED <u>MOBILE</u> <u>MOBILE-SATELLITE</u> (space-to-Earth) 746B <u>746A</u>	<u>2 185 - 2 200</u> FIXED MOBILE <u>MOBILE-SATELLITE</u> (space-to-Earth) 746B <u>746A</u>	

Band 2 200 - 2 450 MHz: See Document 288

Band 2 450 - 2 483.5 MHz: NOC

MHz 2 483.5 - 2 500			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	2 483.5 - 2 500 FIXED MOBILE Radiolocation <u>MOBILE-SATELLITE 753F</u> <u>(space-to-Earth)</u> 733F 752 753A 753B 753C 753E	2 483.5 - 2 500 FIXED MOBILE RADIODETERMINATION- SATELLITE (space-to-Earth) 753A RADIOLOCATION <u>MOBILE-SATELLITE 753F</u> <u>(space-to-Earth)</u> 752 753D	2 483.5 - 2 500 FIXED MOBILE RADIOLOCATION <u>MOBILE-SATELLITE 753F</u> <u>(space-to-Earth)</u> Radiodetermination-Satellite (space-to-Earth) 753A 752 753C

ADD **753F** The use of the frequency band 2 483.5 - 2 500 MHz by the mobile-satellite service except the aeronautical mobile service is subject to the application of the procedure for coordination and notification set forth in Resolution COM5/8. The power flux-density limits in No. 2562 will be applied pending revision by a competent world administrative radio conference.

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

PLENARY MEETING

Source: Document DT/110

Note from the Chairman of Committee 5 to the Plenary

As a consequence of the allocations agreed to in Committee 4 with respect to BSS (HDTV) and the associated feeder links, there are proposed changes to Appendix 30A as follows:

ANNEX 4

Criteria for Sharing Between Services

1. Threshold values for determining when coordination is required between ~~a~~ transmitting space stations in the fixed-satellite service or in the broadcasting-satellite service and a receiving space station in the feeder-link Plans in the frequency bands ~~17.7~~ 17.3 - 18.1 GHz (Regions 1 and 3) and ~~17.7~~ 17.3 - 17.8 GHz (Region 2)

With respect to paragraph 7.1, Article 7 of this Appendix, coordination of a transmitting space station in the fixed-satellite service or in the broadcasting-satellite service with a broadcasting-satellite feeder link in the Regions 1 and 3 Plan or the Region 2 Plan is required, for inter-satellite geocentric angular separations of less than 3° or greater than 150°, when the power flux-density arriving at the receiving space station of a broadcasting-satellite feeder-link station of another administration would cause an increase in the noise temperature of the feeder-link space station which exceeds a threshold value of $\Delta T_s/T_s$ corresponding to 4%. $\Delta T_s/T_s$ is calculated in accordance with Case II of the method given in Appendix 29.

The above provision does not apply when the geocentric angular separation, between a transmitting space station in the fixed-satellite service or in the broadcasting-satellite service and a receiving space station in the feeder-link Plan, exceeds 150° of arc and the free-space power flux-density of the transmitting space station in the fixed-satellite service does not exceed a value of -137 dB(W/m²/MHz) on the Earth's surface at the equatorial Earth limb.

E. GEORGE
Chairman

WORKING GROUP OF
THE PLENARY

Note by the Chairman of Committee 5 to the
Chairman of the Working Group of the Plenary

SHARING CRITERIA IN ARTICLES 27 AND 28

Following decisions taken by Committee 4, further advice is sought on two sharing situations concerning Articles 27 and 28. These are:

1. Article 27

Committee 4 introduced in Document 332 two new fixed-satellite service (Earth-to-space) allocations, namely:

- 18.1 - 18.4 GHz worldwide; and
- 24.75 - 25.25 GHz in Region 3.

Are the limits given in Nos. 2505 and 2508 appropriate for these services in the bands shown?

2. Article 28

Are the limits given in No. 2578 appropriate for the inter-satellite service operating in the band 24.45 - 24.75 GHz?

E. GEORGE
Chairman

COMMITTEE 4

Yugoslavia

PROPOSALS FOR THE WORK OF THE CONFERENCE

Please add the name Yugoslavia (Socialist Federal Republic of) to Footnote 596.

YUG/342/1

MOD 596

Different category of service: in Afghanistan, Saudi Arabia, Bahrain, Brunei, China, the United Arab Emirates, India, Indonesia, Iran, Iraq, Kuwait, Malaysia, Oman, Pakistan, Qatar, Singapore, Thailand, Yemen A.R., ~~and~~ Yemen (P.D.R. of), and Yugoslavia, the allocation of the band 137 - 138 MHz to the fixed and mobile, except aeronautical mobile (R), services is on a primary basis (see No. 425).

As a consequence, the name of Yugoslavia shall be deleted from Footnote 598.

YUG/342/2

MOD 598

Different category of service: in Austria, Bulgaria, Egypt, Finland, Greece, Hungary, the Lebanon, Mongolia, Poland, the German Democratic Republic, Romania, Czechoslovakia, and the U.S.S.R. ~~and Yugoslavia~~, the allocation of the band 137 - 138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. 425).

Reasons: To meet the real requirements of the existing and planned systems.

COMMITTEE 4

United States of America

PROPOSAL FOR THE WORK OF THE CONFERENCE

MOBILE-SATELLITE SERVICE

In the event that the WARC-92 decides to allocate spectrum to the mobile-satellite (space-to-Earth) service in the band 2 500 - 2 690 MHz, the following proposal is submitted:

USA/343/1

ADD 755A

In the United States, in the band 2 500 - 2 690 MHz, the power flux-density at the surface of the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed -152 dB(W/m²/4 kHz), unless otherwise agreed by affected administrations. The provisions of No. 757 apply. The mobile-satellite service is not allocated in the United States.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 344-E
29 February 1992MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

B.13

PLENARY MEETINGTHIRTEENTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 4	332	Article 8
WG PL	331	Recommendation GT-PLEN/B

P. ABOUDARHAM
Chairman of Committee 6Annex: 7 pages

ARTICLE 8

MOD

GHz
17.3 - 18.1

Allocation to Services		
Region 1	Region 2	Region 3
17.3 - 17.7 FIXED-SATELLITE (Earth-to-space) 869 Radiolocation 868	17.3 - 17.7 FIXED-SATELLITE (Earth-to-space) 869 BROADCASTING-SATELLITE 869A Radiolocation 868 868A	17.3 - 17.7 FIXED-SATELLITE (Earth-to-space) 869 Radiolocation 868
17.7 - 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE	17.7 - 17.8 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 BROADCASTING-SATELLITE 869A 869B Mobile 869C 868A	17.7 - 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE
	17.8 - 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE	

ADD 868A In the band 17.3 - 17.8 GHz, sharing between the fixed-satellite service (Earth-to-space) and the broadcasting-satellite service shall also be in accordance with the provisions of section 1 of Annex 4 of Appendix 30A.

ADD 869A In Region 2, the allocation to the broadcasting-satellite service in the band 17.3 - 17.8 GHz shall come into effect on 1 April 2007.

ADD 869B Broadcasting-satellite service receiving stations in this band shall not claim protection from interference from the operation of stations in the fixed service. Broadcasting-satellite service space stations operating in the band 17.7 - 17.8 GHz shall not exceed the power flux-density limits at the Earth's surface specified in No. 2578.

ADD 869C In Region 2, the allocation of the band 17.7 - 17.8 GHz to the mobile service is on a primary basis until 31 March 2007.

ADD 869A In Region 2, the allocation to the broadcasting-satellite service in the band 17.3 - 17.8 GHz shall come into effect on 1 April 2007. After that date, use of the fixed and fixed-satellite (space-to-Earth) services in the band 17.7 - 17.8 GHz shall not claim protection from and shall not cause harmful interference to operating systems in the broadcasting-satellite service.

MOD

**GHz
18.1 - 18.6**

Allocation to Services		
Region 1	Region 2	Region 3
18.1 - 18.4	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 870A MOBILE 870 870B	
18.4 - 18.6	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE 870	

ADD 870A The use of the band 18.1 - 18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

ADD 870B Alternative allocation: in Denmark, the United Arab Emirates, Greece, Poland, the Czech and Slovak Federal Republic and the United Kingdom, the band 18.1 - 18.4 GHz is allocated to the fixed, fixed-satellite (space-to-Earth) and mobile services on a primary basis. The provisions of No. 870 also apply.

MOD

GHz
21.4 - 22

Allocation to Services		
Region 1	Region 2	Region 3
21.4 - 22 FIXED MOBILE BROADCASTING- SATELLITE 873AA	21.4 - 22 FIXED MOBILE	21.4 - 22 FIXED MOBILE BROADCASTING- SATELLITE 873AA 873AB

ADD

873AA

In Regions 1 and 3, the allocation to the broadcasting-satellite service in the band 21.4 - 22 GHz shall come into effect on 1 April 2007. The use of this band by the broadcasting-satellite service after that date and on an interim basis prior to that date is subject to the provisions of Resolution COM5/5.

ADD

873AB

Additional allocation: in Japan, the band 21.4 - 22 GHz is also allocated to the broadcasting service on a primary basis.

MOD

GHz
22.5 - 23

Allocation to Services		
Region 1	Region 2	Region 3
22.5 - 22.55	FIXED MOBILE	
22.55 - 23	FIXED INTER-SATELLITE MOBILE 879	

SUP

877, 878

MOD

GHz
24.25 - 25.25

Allocation to Services		
Region 1	Region 2	Region 3
24.25 - 24.45 FIXED	24.25 - 24.45 RADIONAVIGATION	24.25 - 24.45 RADIONAVIGATION FIXED MOBILE
24.45 - 24.65 FIXED INTER-SATELLITE	24.45 - 24.65 RADIONAVIGATION INTER-SATELLITE 882X	24.45 - 24.65 RADIONAVIGATION FIXED INTER-SATELLITE MOBILE 882X
24.65 - 24.75 FIXED INTER-SATELLITE	24.65 - 24.75 INTER-SATELLITE RADIOLOCATION- SATELLITE (Earth-to-space)	24.65 - 24.75 FIXED INTER-SATELLITE MOBILE 882X 882Y
24.75 - 25.25 FIXED	24.75 - 25.25 FIXED-SATELLITE (Earth-to-space) 882Z	24.75 - 25.25 FIXED FIXED-SATELLITE (Earth-to-space) 882Z MOBILE 882Y

ADD 882X The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service.

ADD 882Y Additional allocation: in Japan, the band 24.65 - 25.25 GHz is also allocated to the radionavigation service on a primary basis until 2008.

ADD 882Z In the band 24.75 - 25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.

MOD

GHz 27 - 29.5		
Allocation to Services		
Region 1	Region 2	Region 3
27 - 27.5 FIXED MOBILE INTER-SATELLITE 881A	27 - 27.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE INTER-SATELLITE 881A 881B	
27.5 - 28.5	FIXED FIXED-SATELLITE (Earth-to-space) 882W MOBILE 882A 882B	
28.5 - 29.5	FIXED FIXED-SATELLITE (Earth-to-space) 882W MOBILE Earth Exploration-Satellite (Earth-to-space) 882C 882B	

ADD

881B

Space services using non-geostationary satellites operating in the inter-satellite service in the band 27 - 27.5 GHz are exempt from the provisions of No. 2613.

MOD

GHz
29.5 - 30

Allocation to Services		
Region 1	Region 2	Region 3
29.5 - 29.9 FIXED-SATELLITE (Earth-to-space) 882W Mobile-Satellite (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 882B 883	29.5 - 29.9 FIXED-SATELLITE (Earth-to-space) 882W MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 873A 873B 873C 873E 882B 883	29.5 - 29.9 FIXED-SATELLITE (Earth-to-space) 882W Mobile-Satellite (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 882B 883
29.9 - 30	FIXED-SATELLITE (Earth-to-space) 882W MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 873A 873B 873C 882 882A 882B 883	

ADD

882A

Additional allocation: the bands 27.500 - 27.501 GHz and 29.999 - 30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for uplink power control.

In the band 27.500 - 27.501 GHz, such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit, and shall not produce a power flux-density in excess of the values specified in No. 2578 on the Earth's surface.

ADD

882B

Additional allocation: the band 27.501 - 29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for uplink power control.

ADD

882C

In the band 28.5 - 30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

ADD

882W

The band 27.5 - 30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.

MOD

883

Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, Congo, the Republic of Korea, Egypt, the United Arab Emirates, Ethiopia, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Pakistan, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Chad and Thailand, the band 29.5 - 31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. 2505 and 2508 shall apply.

RECOMMENDATION GT-PLN/B

**Sharing Criteria in Frequency Bands Shared by the
Mobile-Satellite Service and the Fixed, Mobile
and Other Radio Services**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made frequency allocations for the mobile-satellite service shared with other radio services;
- [b) that provisional sharing criteria have been adopted in the bands allocated by this Conference to the mobile-satellite service;]
- c) that both geostationary and non-geostationary satellites may be operated in the mobile-satellite service;

recommends that the CCIR

- 1. study, as a matter of urgency, the appropriate criteria for sharing between the mobile-satellite service and other services in the same frequency bands, including power limits and power flux-density limits as indicated in Articles 27 and 28 of the Radio Regulations, while placing minimum restrictions on the services operating in these bands;
- 2. issue, as a matter of urgency, Recommendations on the subject;

recommends that administrations

send, as a matter of urgency, their contributions relating to these studies to the CCIR.

PLENARY MEETING

REPORT TO THE PLENARY
FROM THE CHAIRMAN OF THE WORKING GROUP OF THE PLENARY

At the ninth Plenary Meeting on 28 February 1992, the Conference Chairman ordered the Chairman of the Working Group of the Plenary to review the text of Resolution GT-PLN/2 contained in Document 295, in order to resolve the points raised by the delegations of IRN and MRC.

After consultation with the above delegations, the Chairman of the Working Group of the Plenary submits the attached revised text of Resolution GT-PLN/2 for consideration by the Plenary Meeting.

Note - The Chairman of the Working Group of the Plenary was unable to find a suitable text to cover the point raised by the delegation of IRN.

M. MUROTANI
Chairman, Working Group of the Plenary

REVISION OF RESOLUTION GT-PLN/2

**Further Work by the CCIR Concerning the
Broadcasting-Satellite Service (Sound)**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made frequency allocations for the broadcasting-satellite service (sound) (BSS (Sound)) down links and the complementary terrestrial service in the [bands] (as specified in Article 8), with an interim procedure to govern the introduction of this service;
- b) that further technical development is necessary for the introduction of BSS (Sound) in the frequency [bands] mentioned above;
- c) that systems in the BSS (Sound) could employ satellites in the geostationary-satellite orbit (GSO) or in non-geostationary-satellite orbits (non-GSO);
- d) that the most urgent guidance required will relate to the means to be employed for coordinating and for avoiding mutual harmful interference between non-GSO systems, and between GSO and non-GSO systems of the broadcasting-satellite service(sound), and between BSS (Sound) systems and other services,

noting

the provisions of No. 2674 in the Radio Regulations,

resolves

- 1. that the CCIR should study this subject as a matter of urgency;
- 2. that CCIR studies should focus in particular on:
 - i) the characteristics of GSO and non-GSO BSS (Sound) systems,
 - ii) the appropriate sharing criteria;
- 3. to invite administrations and the IFRB to participate in the work of the CCIR on this subject;
- 4. to invite administrations which introduce BSS (Sound) systems to publish reports on their experience of such systems,

invites the Administrative Council

to take account of the urgent need for regulatory provisions including measures to ensure frequency sharing between the BSS (Sound) and other services in the same frequency bands and to place this matter on the agenda of the next competent administrative radio conference,

instructs the Secretary-General

to bring this Resolution to the notice of the Administrative Council.

THE CHAIRMAN OF
COMMITTEE 5

Note by the Chairman of the Working Group of the Plenary
to the Chairman of Committee 5

SHARING CRITERIA IN ARTICLES 27 AND 28

This is a reply to the questions from the Chairman of Committee 5 in Document 341:

- 1) Article 27
The answer is yes.
- 2) Article 28
The answer is yes.

M. MUROTANI
Chairman of the Working Group
of the Plenary

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 347-E
29 February 1992MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

R.5

PLENARY MEETINGFIFTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for second reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 6	310/B.9	Resolution COM4/2 Resolution COM4/3 Resolution COM5/3
	312/B.10	Resolution COM5/8
	310/B.9	Resolution COM5/9
	326/B.11	Resolution COM5/10
	310/B.9	Recommendation COM4/B Recommendation COM4/C
	326/B.11	Recommendation COM4/D

P. ABOUDARHAM
Chairman of Committee 6Annex: 25 pages

RESOLUTION COM4/2

**Use by the Mobile Service of the Frequency Bands
2 025 - 2 110 MHz and 2 200 - 2 290 MHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) the changes made by this Conference to the Table of Allocations to the space services in the bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz;
- b) the existing co-primary allocation to the mobile service in Regions 2 and 3 and the changes in the allocations to the mobile service in Region 1;
- c) the expected rapid growth of mobile systems in bands near 2 GHz;
- d) that the CCIR Report on the Technical and Operational Bases for the World Administrative Radio Conference 1992 concluded that the introduction of Future Public Land Mobile Telecommunication Systems (FPLMTS) or conventional land mobile systems in the frequency bands used by the space services would cause unacceptable interference to the space services;
- e) that in some countries the space services have successfully shared with low-density mobile electronic news gathering (ENG) and with aeronautical telemetry systems for many years;
- f) that the introduction in Article 27 of suitable limits on the characteristics of mobile systems may be an adequate means of facilitating the expansion of mobile systems in these bands without harmful interference to the space services;
- g) that the CCIR is currently studying sharing criteria and preliminary results are available;

noting

that these preliminary results indicate that low-density mobile systems (e.g., ENG) using either highly directive antennas (typically in excess of 24 dBi) or alternatively very low e.i.r.p. densities (typically below -12 dBW/MHz) can share with relevant space services in these bands;

resolves

1. to invite the CCIR to continue, as a matter of urgency, the study of appropriate provisions to protect the space services operating in the bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz from harmful interference from emissions by stations of the mobile service;
2. to recommend that administrations do not introduce high-density or conventional type land mobile systems in the 2 025 - 2 110 MHz and 2 200 - 2 290 MHz bands;
3. that administrations, when considering in the near future the introduction of mobile systems in the above bands, should permit only low-density mobile systems;

4. that until the CCIR develops appropriate Recommendations, the protection criteria for space services as given in CCIR Recommendation 609 (Space research), Recommendation 363 (Space operations) and Recommendation 514 (Earth exploration-satellite) be used as guidance;

5. that the next competent conference should consider reviewing Article 27 to define the conditions under which sharing between the mobile and the space services in these bands is possible;

invites the CCIR

1. to develop the appropriate provisions mentioned in **resolves 1**;
2. to report the results of its studies to the next competent conference;

instructs the Secretary-General

to bring this Resolution to the attention of the next Administrative Council with a view to including this subject in the agenda of the next competent conference.

RESOLUTION COM4/3

**Possible Relocation of Frequency Assignments to Certain
Space Missions from the 2 GHz Band to Bands above 20 GHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) the changes in the allocations to space services made by this Conference in the bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz;
- b) the possibility of technical improvements in the space services concerned which might lead to more efficient usage of the spectrum;
- c) the possibility that frequency assignments to some space missions could be relocated in bands above 20 GHz;

resolves

- 1. that it is desirable to review the present and planned use of the frequency bands 2 025 - 2 110 MHz and 2 200 - 2 290 MHz, with the intent, when practicable, of assigning frequencies to some space missions in bands above 20 GHz and possibly reducing the allocations to the space services in the 2 GHz band;
- 2. that the next competent world administrative radio conference should consider this matter, taking account of the results of the relevant CCIR studies, which may make it possible to revise the Radio Regulations, so that no frequency assignments would be permitted in the bands around 2 GHz after a date in the near future to be determined by that conference for those space missions whose frequency assignments might be accommodated in the bands above 20 GHz, and so that, if appropriate, the spectrum needs of the mobile and space services might be equitably accommodated in the 2 GHz band;

invites the CCIR

- 1. to carry out the review mentioned in **resolves 1** above;
- 2. to conduct the necessary studies on the evolution of the space research, space operations, Earth exploration-satellite and mobile services in the bands available to each service around 2 GHz and on the compatibility between these services in the 2 GHz band;
- 3. to report to the next competent conference the spectrum requirement of each service in the bands mentioned in **invites the CCIR 2** and, where necessary, indicate the criteria for sharing between these services;

urges administrations

to participate actively in these studies;

instructs the Secretary-General

to bring this Resolution to the attention of the next Administrative Council with a view to including this subject in the agenda of the next competent conference.

RESOLUTION COM5/3

**Future Consideration of the Plans for the Broadcasting-Satellite Service in the
Band 11.7 - 12.5 GHz (Region 1) and the Band 11.7 - 12.2 GHz (Region 3)
in Appendix 30 and the Associated Feeder-Link Plans in Appendix 30A**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that Article 14 of Appendix 30 indicates that the broadcasting-satellite service Plan for Regions 1 and 3 in Appendix 30 meets requirements until January 1994;
- b) that WARC Orb-88 in Resolution 521, **resolves** 3, stated that "while the Plans for the 11.7 - 12.7 GHz band can already be used for certain types of high definition television, studies should be continued on the long range future suitability of these bands for HDTV without prejudice to the existing plans in this band";
- c) that modernization of the Plans in Appendix 30 associated with Regions 1 and 3, which had their origins in WARC-77, would be valuable in offering the prospects of more efficient utilization of the spectrum and orbit resources by taking into account technological improvements (e.g. satellite antennas and receiver sensitivity) which could be used to increase the capacity and the flexibility of the Plan without reducing the number of current assignments to each country;
- d) that improvements in the use of the 12 GHz planned band may enable countries, in particular those which have high rainfall climatic zones, to accommodate their BSS (HDTV) needs, or part of their needs, in that band;

invites the CCIR

to study, as a matter of priority, the technical possibilities for improving the efficiency and flexibility of the Plans for Regions 1 and 3 contained in Appendices 30 and 30A, taking into account the intent of the conference referred to below, and to study the particular needs of high rainfall climatic zones for HDTV and the technical methods which could be used to implement this service in the 12 GHz band;

urges administrations

to contribute to the studies of the CCIR and, also, to consider the need for a future competent conference to review and as necessary revise the relevant parts of Appendices 30 and 30A;

recommends the next Plenipotentiary Conference

to consider the convening of an administrative ~~radio conference to revise those~~ parts of the Plans in Appendices 30 and 30A applying to Regions 1 and 3 ~~in the light of the studies carried out~~ by the CCIR;

resolves

1. that the future conference, in revising the Region 1 and 3 parts of Appendices 30 and 30A, should:
 - a) maintain each country's assigned BSS capacity in the Plan, as a minimum;
 - b) provide for the needs of new countries;
 - c) protect notified systems which are in conformity with Appendices 30 and 30A;
 - d) take account, as far as possible, of systems which have been communicated to the IFRB under Article 4 of Appendices 30 and 30A;
2. that the future conference shall ensure that the integrity of the Region 2 Plans and their associated provisions is preserved, by providing the same protection to the assignments contained in those Plans as they now receive under the relevant provisions of the Radio Regulations and by not requiring more protection from assignments in the Region 2 Plans than that currently provided under the Radio Regulations;

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council with a view to the convening of a conference to undertake the review and any necessary revision of the relevant parts of Appendices 30 and 30A and associated provisions of the Radio Regulations, taking account of the latest CCIR studies.

RESOLUTION COM5/8

**Interim Procedures for the Coordination and Notification of Frequency Assignments
of Non-Geostationary-Satellite Networks in Certain Space Services
and the Other Services to Which the Bands are Allocated¹**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that in several different space radiocommunication services there is increasing interest in the use of space systems using non-geostationary-satellite networks;
- b) that, in order to ensure the satisfactory operation of such networks, other networks and other radio services sharing the same frequency bands, taking into account the relevant allocations, there is a need for procedures to regulate the frequency assignments of non-geostationary-satellite networks;
- c) that the coordination methods for non-geostationary-satellite networks require specific criteria and calculation methods which are not yet available;
- d) that, consequently, there is a need for interim procedures to be applied until such time as a future conference, with the benefit of further studies by the CCIR and taking account of the experience gained in practice, is able to adopt a permanent procedure;

considering also

- e) that the Plenipotentiary Conference (Nice, 1989), initiated the formation of a Voluntary Group of Experts, one of whose tasks is to simplify the procedures of the Radio Regulations;
- f) that any new procedures adopted by this Conference must therefore be as simple as possible and should, where appropriate, make use of the existing procedures of the Radio Regulations;
- g) that any interim procedures must take full account of the status of the allocations to services, both terrestrial and space, in frequency bands which may be used by non-geostationary-satellite networks;
- h) that any interim procedures must also take full account of the interests of all countries, including the state of development of their terrestrial and space radiocommunication services;

considering further

- i) that the provisions of No. 2613 of the Radio Regulations, while necessary to safeguard geostationary-satellite networks in the fixed-satellite service from interference which might be caused by non-geostationary-satellite networks, would, if more widely applied, prejudice the development of such systems in other space radiocommunication services;

¹ This Resolution shall be applied only to the frequency bands [to be decided by Committee 4]. For the purpose of applying the interim procedures annexed to this Resolution, an administration, when providing information in the form of Appendices 3 or 4, shall state whether it relates to a geostationary satellite or to a non-geostationary satellite and shall provide the appropriate orbital information.

[confirming]

that the operation of telecommunication systems in the MSS bands must be in conformity with the International Telecommunication Convention and the Administrative Regulations in force, in particular their respective preambles and, in this respect:

- a) the right of each Member to decide how or whether to participate in the above systems, and to determine the terms and conditions of access to such systems from its territory;
- b) the obligation for entities and organizations providing international or national telecommunication services by non-geostationary-satellite networks to operate at the point of delivery under the legal, financial and regulatory requirements of the Member of the Union in whose territory these services are authorized;

resolves

1. that, pending the adoption of a permanent procedure by a future competent conference, the use of frequency assignments by:
 - a) non-geostationary-satellite systems in the space services in relation to other non-geostationary-satellite systems, geostationary-satellite systems and terrestrial systems;
 - b) geostationary-satellite systems in relation to non-geostationary-satellite systems; and,
 - c) terrestrial systems in relation to the earth stations of non-geostationary-satellite networks;

to which this Resolution applies shall be regulated in accordance with the interim procedures and the associated provisions in the annex hereto;

2. that the interim procedures annexed to this Resolution apply in addition to those of Articles 11 and 13 for geostationary-satellite networks and shall replace those of Articles 11 and 13 for non-geostationary-satellite networks;
3. that the interim procedures annexed to this Resolution shall be applied from 4 March 1992;

invites

1. all administrations concerned in or by the introduction and operation of non-geostationary-satellite systems in the relevant space services to cooperate in the application of these interim procedures;
2. all those administrations which acquire experience in the application of the annexed interim procedures to contribute to the studies of the CCIR;

instructs the IFRB

to apply these procedures and to provide the necessary assistance to administrations;

invites the CCIR

to study and develop Recommendations on the coordination methods, the necessary orbital data relating to non-geostationary-satellite systems, and the sharing criteria;

instructs the Secretary-General

to bring this Resolution, at an appropriate stage, to the attention of the Administrative Council with a view to the inclusion of this subject in the agenda of a future conference.

ANNEX TO RESOLUTION COM5/8

Interim Procedures for the Coordination and Notification of Assignments of Non-Geostationary-Satellite Networks in Certain Space Services and the Other Services to Which the Bands are Allocated¹**Section A. General Information**

A.1 The assistance of the IFRB can be requested in the application of the provisions of this annex.

A.2 In the absence of specific provisions relating to the evaluation of the interference, the calculation methods and the criteria should be based on relevant CCIR Recommendations agreed by the administrations concerned either as a result of Resolution 703 (Rev. WARC-92) or otherwise. In the event of disagreement on a CCIR Recommendation or in the absence of such Recommendations, the methods and criteria shall be agreed between the administrations concerned. Such agreements shall be concluded without prejudice to other administrations.

A.3 When applying the provisions of this Resolution for non-geostationary-satellite networks, administrations should provide the following information in addition to that of Appendix 3 or Appendix 4:

- i) right ascension of the ascending node;
- ii) argument of perigee;
- iii) active service arc.

¹ Sections I, II and III apply to terrestrial services only in the case where a power flux-density limit at the surface of the Earth (for a space station) or at the border of the territory of another administration (for an earth station) specified in a provision of the Radio Regulations is exceeded.

Section I. Procedures for the Advance Publication of Information on Planned Satellite Networks

Publication of Information

1.1 An administration (or one acting on behalf of a group of named administrations) which intends to bring into use a satellite network within a satellite system shall, prior to the coordination procedure described in paragraphs 2.1 and 2.2, send to the International Frequency Registration Board, not earlier than six years¹ and preferably not later than two years before the date of bringing into service of each satellite network, the information listed in Appendix 4.

1.2 Amendments to the information sent in accordance with the provisions of paragraph 1.1 shall also be sent to the Board as soon as they become available. Modifications which are of such a nature as to change significantly the character of the network may require recommencing the advance publication procedure.

1.3 On receipt of the complete information sent under paragraphs 1.1 and 1.2, the Board shall publish it in a special section of its weekly circular within three months and shall also, when the weekly circular contains such information, so advise all administrations by circular telegram. The circular telegram shall indicate the frequency bands to be used and, in the case of a geostationary satellite, the orbital location of the space station. When the Board is not in a position to comply with the time limit referred to above, it shall periodically so inform the administrations, giving the reasons therefor.

Comments on Published Information

1.4 If, after studying the information published under paragraph 1.3, any administration is of the opinion that interference which may be unacceptable may be caused to assignments of its existing or planned satellite networks or to assignments to its existing or planned terrestrial radiocommunication stations, it shall, within four months after the date of the weekly circular containing the complete information listed in Appendix 4, send the administration concerned its comments on the particulars of the interference to its existing or planned satellite systems or to its existing or planned terrestrial stations. A copy of these comments shall also be sent to the Board. If no such comments are received from an administration within the period mentioned above, it may be assumed that the administration has no basic objections to the planned satellite network(s) of the system on which details have been published.

1.4A An administration sending information under paragraphs 1.1 and 1.2 shall, if requested by an administration receiving information published under paragraph 1.3, provide the technical methods and criteria it proposes to use for the evaluation of the interference.

1.4B An administration receiving information published under paragraph 1.3, may provide to the administration sending information under paragraphs 1.1 and 1.2 the technical methods and criteria it proposes to use for the evaluation of the interference.

¹ See also No. 1550.

Resolution of Difficulties

1.5 An administration receiving comments sent in accordance with paragraph 1.4 and administrations sending such comments shall endeavour to resolve any difficulties that may arise and shall provide any additional information that may be available.

1.5A In case of difficulties arising, the administration responsible for the planned network shall first explore all possible means of meeting its requirements without considering the possibility of adjustment to stations or networks of other administrations. If no such means can be found, the administration concerned may then request other administrations, either bilaterally or multilaterally, to mutually help resolve these difficulties.

1.5B An administration receiving a request under paragraph 1.5A shall, in consultation with the requesting administration, explore all possible means of meeting the latter's requirements.

1.5C If, after following the procedure described in paragraphs 1.5A and 1.5B, there are unresolved difficulties, the administrations concerned shall jointly make every possible effort to resolve these difficulties by means of mutually acceptable adjustments.

Results of Advance Publication

1.6 An administration on behalf of which details of planned satellite networks have been published in accordance with the provisions of paragraphs 1.1 to 1.3 shall, after the period of four months specified in paragraph 1.4, inform the Board whether or not comments provided for in paragraph 1.4 have been received and of the progress made in resolving any difficulties. Additional information on the progress made in resolving any remaining difficulties shall be sent to the Board at intervals not exceeding six months prior to the commencement of coordination or the sending of the notices to the Board. The Board shall publish this information in the special section of its weekly circular.

1.7 When, upon expiry of a period of six years plus the extension provided for in No. 1550 after the date of the publication of the special section referred to in paragraph 1.3, the administration responsible for the network has not submitted the Appendix 3 information for coordination under paragraph 2.1 or paragraph 2.2 or notification under No. 1488, as appropriate, the information published under paragraph 1.3 shall be cancelled after the administration concerned has been informed.

Commencement of Coordination or Notification Procedures

1.8 When communicating to the Board the information referred to in paragraph 1.1, an administration may, at the same time or at a later time, communicate:

- 1.8A the information required for the network coordination of a frequency assignment to a station of a satellite network in accordance with the provisions of paragraph 2.6, or
- 1.8B the information required for notification of a frequency assignment to a station of a satellite network when coordination for that assignment is not required.
- 1.8C Such coordination or notification information, as the case may be, shall be considered as having been received by the Board not earlier than six months after the date of receipt of the information referred to in paragraph 1.1.

Section II. Coordination of Frequency Assignments to a Station of a Satellite Network

Requirement for Coordination

2.1 Before an administration (or one acting on behalf of one or more named administrations) notifies to the Board or brings into use any frequency assignment to a station of a non-geostationary-satellite network, it shall effect coordination of the assignment with any other administration whose assignment to a station in a geostationary-satellite network, or whose assignment to a station of a non-geostationary-satellite network or whose assignment to a terrestrial station might be affected.

2.2 Before an administration (or one acting on behalf of one or more named administrations) notifies to the Board or brings into use any frequency assignment to a station of a geostationary-satellite network, it shall effect coordination of the assignment with any other administration whose assignment to a station of a non-geostationary-satellite network might be affected.

2.3 Coordination under paragraphs 2.1 and 2.2 may be effected for a satellite network using the information relating to the space station, including its service area, and the parameters of one or more typical earth stations which may be located in all or part of the space station service area.

2.4 If a frequency assignment is brought into use before the commencement of the coordination procedure of paragraphs 2.1 or 2.2, when this coordination is required, the operation in advance of the receipt by the Board of the Appendix 3 information shall in no way afford any priority of the date.

2.5 Frequency assignments to be taken into account in the application of paragraphs 2.1 and 2.2 are those with a frequency overlap with the planned assignment, pertaining to the same service or to another service to which the band is allocated with equal rights, or a higher category of allocation (see Nos. 420 to 425 and 435), and which:

for space services, are:

- 2.5.1 in conformity with No. 1503, and
- 2.5.2 either recorded in the Master Register, or coordinated under the provisions of this Section or of Section II of Article 11, or
- 2.5.3 included in the coordination procedure with effect from the date of receipt by the Board, in accordance with paragraph 2.6 or No. 1074 or 1074A of Article 11, of the relevant information as specified in Appendix 3;

or, for terrestrial services, are:

- 2.5.4 recorded in the Master Register with a favourable finding with respect to No. 1240, or
- 2.5.5 not notified but in use or planned to be brought into use within the next three years.

Coordination Data

- 2.6 The administration seeking coordination shall send to the Board the information listed in Appendix 3.
- 2.7 On receipt of the complete information referred to in paragraph 2.6, the Board shall:
- 2.7.1 examine this information with respect to its conformity with No. 1503; the date of its receipt shall be considered as the date from which the assignment will be taken into account for coordination;
 - 2.7.2 publish in the special section of its weekly circular, within three months, the information received under paragraph 2.6 and the result of the examination under paragraph 2.7.1.¹ When the Board is not in a position to comply with the time limit referred to above, it shall periodically so inform the administrations giving the reasons therefor.

Examination of Coordination Data and Agreement Between Administrations

2.8 On receipt of the special section referred to in paragraph 2.7.2, an administration shall promptly examine the matter with regard to interference which would be caused to the frequency assignments of its network or terrestrial stations, or caused by these assignments. In so doing, it shall have regard to the proposed date of bringing into use of the assignment for which coordination is sought. It shall then, within six months from the date of the relevant weekly circular, notify the administration seeking coordination of its agreement. If, however, the administration with which coordination is sought does not agree, it shall, within the same period, send to the administration seeking coordination the technical details of the networks or information on the terrestrial stations concerned upon which its disagreement is based, including the characteristics contained in Section C of Appendix 1 or Appendix 3 which have not previously been notified to the Board, and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem. A copy of these comments shall also be sent to the Board.

2.8A Affected administrations, as well as the administration seeking coordination, shall make all possible mutual efforts to overcome the difficulties in a manner acceptable to the parties concerned.

¹ To help administrations identify services that may be affected, the Board shall also publish a list of administrations whose assignments comply with paragraphs 2.5 and 2.5.1 to 2.5.3 or paragraphs 2.5 and 2.5.4.

Results of Coordination

2.9 An administration which has initiated a coordination procedure under the provisions of paragraphs 2.1 to 2.6 shall communicate to the Board the names of the administrations with which agreement has been reached. The Board shall publish this information in the special section of its weekly circular.

2.10 An administration which has sought coordination, as well as any administration which has complied with the provisions of paragraph 2.8, shall communicate to the Board any modifications to the published characteristics of their respective networks or stations that were required to reach agreement on the coordination. The Board shall publish this information in accordance with paragraph 2.7.2, indicating that these modifications resulted from the joint efforts of the administrations concerned to reach agreement on the coordination.

Notification of Frequency Assignments in the Event of Continuing Disagreement

2.11 In the event of continuing disagreement between an administration seeking to effect coordination and any administration with which coordination has been sought, the administration seeking coordination shall, except in the cases where the assistance of the Board has been requested, defer the submission of its notice concerning the proposed assignment by eight months from the date of publication of the special section referred to in paragraph 2.7.2, taking into account the provisions of No. 1496. When the assistance of the Board has been requested, the submission of the notice shall be deferred for a further three months.

Section III. Coordination of Frequency Assignments to Earth Stations of a Non-Geostationary-Satellite Network in Relation to Terrestrial Stations

Requirement for Coordination

3.1 Before an administration notifies to the Board or brings into use any frequency assignment to a fixed earth station or to typical earth stations in a particular band allocated with equal rights to space and terrestrial radiocommunication services, it shall effect coordination of the assignment with each administration whose territory lies wholly or partly within the coordination area¹. The request for coordination may specify all or some of the frequency assignments to the associated space station, but thereafter each assignment shall be dealt with individually.

Coordination Data

3.2 For the purpose of effecting coordination, the administration requesting coordination shall send to each administration concerned under paragraph 3.1 all pertinent information concerning the proposed frequency assignment as listed in Appendix 3, and an indication of the approximate date on which it is planned to begin operations. A copy of this information with the date of dispatch of the request for coordination shall also be sent to the Board for information.

Acknowledgement of Receipt of Coordination Data

3.3 An administration with which coordination is sought under paragraph 3.1 shall immediately acknowledge receipt of the coordination data.

Examination of Coordination Data and Agreement Between Administrations

3.4 On receipt of the coordination data, an administration shall, having regard to the proposed date of bringing into use of the assignment for which coordination was requested, promptly examine the matter with regard to both:

- 3.4.1 interference which would affect the service rendered by its terrestrial radiocommunication stations operating in accordance with the Convention and these Regulations, or to be so operated prior to the planned date of bringing into service of the earth station assignment, or within the next three years, whichever is the longer; and

¹ The coordination area is defined as the service area in which it is intended to operate the typical earth stations, extended in all directions by a coordination distance of 500 km, or as a circular zone with a radius of 500 km centred on the coordinates of the fixed earth station. For a service area in which aircraft earth stations operate, the coordination area is the service area extended in all directions by a coordination distance of 1,000 km.

- 3.4.2 interference which would be caused to reception at an earth station by the service rendered by its terrestrial radiocommunication stations operating in accordance with the Convention and these Regulations, or to be so operated prior to the planned date of bringing into service of the earth station assignment, or within the next three years, whichever is the longer.

3.5 The administration with which coordination is sought shall, within four months from dispatch of the coordination data:

- 3.5.1 notify the administration requesting coordination of its agreement with a copy to the Board, indicating, where appropriate, the part of the allocated frequency band containing the coordinated frequency assignments; or
- 3.5.2 notify that administration of its disagreement.

3.6 In the case mentioned in paragraph 3.5.2, the administration with which coordination is sought shall send to the administration requesting coordination a diagram drawn to an appropriate scale indicating the location of those terrestrial radiocommunication stations which are or will be within the coordination area, together with all other relevant basic characteristics using Appendix 1 and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem.

3.7 When the administration with which coordination is sought sends to the administration seeking coordination the information required in the case of paragraph 3.5.2, a copy thereof shall also be sent to the Board.

Notification of Frequency Assignments in the Event of Continuing Disagreement

3.8 In the event of continuing disagreement between an administration seeking to effect coordination and an administration with which coordination has been sought, the administration seeking coordination shall, except in the cases where the assistance of the Board has been requested, defer the submission of its notice concerning the proposed assignment by six months from the date of the request for coordination, taking into account the provisions of No. 1496. When the assistance of the Board has been requested, the submission of the notice shall be deferred for a further three months.

Section IV. Coordination of Frequency Assignments to Terrestrial Stations for Transmission in Relation to Earth Stations of a Non-Geostationary-Satellite Network

Requirement for Coordination

4.1 Before an administration notifies to the Board, or brings into use any frequency assignment to a terrestrial station for transmission within the coordination area¹ of an earth station of a non-geostationary-satellite network, in a band allocated with equal rights to terrestrial radiocommunication services and space radiocommunication services (space-to-Earth), it shall effect coordination of the proposed assignment with the administration responsible for the earth stations with respect to the frequency assignments:

- 4.1.1 which are in conformity with No. 1503; and
- 4.1.2 for which coordination has been agreed under 3.5.1.

Coordination Data

4.2 For the purpose of effecting coordination, the administration requesting coordination shall send to each administration concerned under paragraph 4.1 all pertinent information. The request for coordination may specify all or some of the frequency assignments expected to be used within the next three years by stations of a terrestrial network wholly or partly within the coordination area of the earth stations. Thereafter each assignment shall be dealt with individually.

Acknowledgement of Receipt of Coordination Data

4.3 An administration with which coordination is sought under paragraph 4.1 shall immediately acknowledge receipt of the coordination data.

Examination of Coordination Data and Agreement Between Administrations

4.4 On receipt of the coordination data, the administration with which coordination is sought shall promptly examine the matter with regard to interference which would affect the services rendered by its earth stations covered by paragraph 4.1, which are operating or are to be operated within the next three years.

¹ The coordination area is defined as the service area in which it is intended to operate the typical earth stations, extended in all directions by a coordination distance of 500 km, or as a circular zone with a radius of 500 km centred on the coordinates of the fixed earth station. For a service area in which aircraft earth stations operate, the coordination area is the service area extended in all directions by a coordination distance of 1,000 km.

4.5 The administration with which coordination is sought shall, within an overall period of four months from dispatch of the coordination data, either notify the administration requesting coordination of its agreement to the proposed assignment or, if this is not possible, indicate the reasons for its objection and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem.

Notification of Frequency Assignments in the Event of Continuing Disagreement

4.6 In the event of continuing disagreement between an administration seeking to effect coordination and an administration with which coordination has been sought, the administration seeking coordination shall, except in the cases where the assistance of the Board has been requested, defer the submission of its notice concerning the proposed assignment by six months from the date of the request for coordination, taking into account the provisions of Nos. 1230 and 1496. When the assistance of the Board has been requested, the submission of the notice shall be deferred for a further three months.

Section V. Notification of Frequency Assignments

Notification of Assignments to Space Stations and Earth Stations

5.1 An administration shall, for the purpose of notifying an assignment to the Board, apply the provisions of Article 13. When applying the provisions of Article 13 to frequency assignment notices relating to space stations and earth stations covered by this Resolution, the Board shall:

- 5.1.1 in applying No. 1504, also examine the notice with respect to its conformity with the provisions of paragraphs 2.1 or 2.2 relating to coordination of the use of the frequency assignment with the other administrations concerned;
- 5.1.2 in applying No. 1505, also examine the notice with respect to its conformity with the provisions of paragraph 3.1 relating to coordination of the use of the frequency assignment with the other administrations concerned;
- 5.1.3 in applying No. 1506, also examine the notice with respect to the probability of harmful interference when the coordination under paragraph 2.1 or 2.2 has not been successfully effected;
- 5.1.4 in applying No. 1509, also examine the notice with respect to the probability of harmful interference when the coordination under paragraph 3.1 has not been successfully effected;
- 5.1.5 not apply Nos. 1515 and 1516.

5.2 The examination under paragraph 5.1.3 or 5.1.4 shall take into account the frequency assignments for transmission or reception already recorded in the Master Register.

Notification of Assignments to Terrestrial Stations

5.3 An administration shall, for the purpose of notifying an assignment to the Board, apply the provisions of Article 12. When applying the provisions of Article 12 the Board shall, in application of No. 1353, examine frequency assignment notices relating to terrestrial stations covered by this Resolution with respect to their conformity with the provisions of paragraph 4.1 relating to coordination of the use of the frequency assignment with the other administrations concerned.

RESOLUTION COM5/9

**Assistance to the Developing Countries to Facilitate the Implementation
of Changes in Frequency Band Allocations which Necessitate the
Transfer of Existing Assignments**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that major changes have been made in the Table of Frequency Allocations, extending bands allocated to some services and allocating bands to new services in order to facilitate the development of new technologies;
- b) that these extensions of bands and new allocations require that existing frequency assignments to stations of the services in the reallocated bands be transferred;
- c) that many of these assignments correspond to services which are vital to the telecommunication networks of many countries, particularly developing countries;
- d) that the allocations referred to in **considering a)** cannot be used effectively until the process of transferring the existing assignments therein has been concluded;
- e) that the transfer of these assignments will necessitate investments and in many cases a transfer of technology, which will require both resources and technical training;

recognizing

- a) that, owing to the world economic situation, most developing countries still lack the resources needed for investment in various sectors of development;
- b) that the Plenipotentiary Conference (Nice, 1989) established the Telecommunications Development Conferences and the Telecommunications Development Bureau (BDT) to discharge the Union's dual responsibility as a United Nations specialized agency and executing agency for implementing projects under the United Nations development system or other funding initiatives so as to facilitate and enhance telecommunications development by offering, organizing and coordinating technical cooperation and assistance activities;

resolves

1. to request the BDT, when formulating its immediate plans for assistance to the developing countries, to consider as a matter of priority the introduction of specific modifications in their radiocommunication networks, coordinating the necessary technical advisory activities with the IFRB and the CCIR;
2. that a future world development conference should, when defining the priorities of the BDT, consider the needs of developing countries and should **assist them with the resources needed to implement the required modifications to their radiocommunication networks;**

3. that the World Development Conference should give the BDT the necessary instructions and elements to enable it to provide technical assistance to the developing countries, and should monitor its activities in this respect;

requests the IFRB and the CCIR

to provide the BDT with their assistance in the implementation of this Resolution;

requests the Director of the BDT

to place this Resolution on the draft agenda of the next world development conference;

invites the Administrative Council

to ensure that this Resolution is placed on the agenda of the next world development conference.

RESOLUTION COM5/10

Terrestrial VHF Digital Sound Broadcasting

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that advances in technology have made available digital sound broadcasting systems of high quality;
- b) that such digital sound broadcasting systems will offer a considerably higher sound quality as well as additional system characteristics which the present FM broadcasting system does not possess;
- c) that digital sound broadcasting can, in addition to possessing the properties mentioned above, permit greater spectrum efficiency than conventional FM sound broadcasting;
- d) that digital sound broadcasting systems require less effective radiated power;
- e) that the bands 87.5 - 108 MHz in Region 1, 88 - 108 MHz in Region 2 and 87 - 108 MHz in Region 3 are generally widely used for high-powered FM sound broadcasting service, except in some countries;
- f) that several European countries are considering the implementation of digital sound broadcasting on an interim basis in the VHF bands allocated to the broadcasting service, while ensuring the protection of assignments in the relevant broadcasting Plans in force;

resolves to invite the CCIR

in order to harmonize the implementation of terrestrial digital sound broadcasting;

- 1. to undertake, as a matter of urgency, the relevant technical studies associated with the introduction of terrestrial digital sound broadcasting, focusing primarily on the VHF broadcasting bands;

[2. in particular, to consider the system characteristics and propagation phenomena in relation to developing compatibility criteria in the same and adjacent bands, including protection of the safety services;]

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council with a view to placing on the agenda of a competent administrative radio conference the subject of terrestrial VHF digital sound broadcasting for Region 1 countries and interested countries in Region 3;

invites administrations

to contribute actively to the relevant CCIR studies.

RECOMMENDATION COM4/B

**Elimination of HF Broadcasting on Frequencies Outside the
HF Bands Allocated to the Broadcasting Service**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that there is an increasing number of HF broadcasting transmitters operating on frequencies outside the bands allocated to the broadcasting service;
- b) that the common use of the HF bands by the broadcasting and other services, without the relevant allocations or detailed regulations, results in inefficient use of the frequency spectrum;
- c) that such use has led to harmful interference;
- d) that this Conference has allocated additional spectrum to the broadcasting service in the HF bands;

recommends

that administrations shall take practicable steps to eliminate HF broadcasting outside the HF bands allocated to the broadcasting service.

RECOMMENDATION COM4/C**Alignment of Allocations in the 7 MHz Band Allocated
to the Amateur Service**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that it is desirable to have exclusive worldwide allocations to the amateur and broadcasting services in the bands around 7 MHz;
- b) that the sharing of frequency bands by these services is undesirable and should therefore be avoided;
- c) that a number of administrations have made proposals to this Conference for the alignment of the allocations to the amateur service around 7 MHz;
- d) that this Conference was able to give only limited consideration to these proposals;

recommends

that a future competent world administrative radio conference should consider the possibility of aligning the allocations to the amateur service around 7 MHz, with due regard to the requirements of other services;

invites the Administrative Council

to place this Recommendation on the agenda of the next competent world administrative radio conference.

RECOMMENDATION COM4/D

**Multiservice Satellite Networks Using
the Geostationary-Satellite Orbit**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the Conference has allocated, on a primary basis, the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz in Region 2, and 20.1 - 20.2 GHz and 29.9 - 30 GHz in Regions 1 and 3 to the mobile-satellite service;
- b) that these bands are also allocated to the fixed-satellite service;
- c) that some administrations have expressed interest in developing multiservice satellite networks in these bands;
- d) that Recommendation 715 (Orb-88) calls for simplification of the process for bringing into use satellite networks with different classes of user terminals;
- e) that the Voluntary Group of Experts (VGE), among other means of simplifying the Radio Regulations, is studying service definitions accommodating a range of services;

recognizing

that the introduction of multiservice satellite networks using, inter alia, mobile earth stations, may have an impact on networks operating in the fixed-satellite service;

recommends

that, as a matter of urgency, studies should be carried out on the technical characteristics, including pointing techniques of multiservice satellite networks using the geostationary-satellite networks encompassing mobile-satellite and fixed-satellite applications, and the sharing criteria necessary for compatibility with the fixed-satellite service in the frequency bands referred to above;

invites the CCIR

to carry out these studies;

recommends administrations

to participate actively in these studies;

recommends further

- a) that a future competent world administrative radio conference review the allocations of these bands, taking into account the results of the CCIR studies and the work of the VGE;
- b) that a future competent world administrative radio conference consider the requirement for a single service definition encompassing mobile-satellite service and fixed-satellite service applications, and the possible need for additional frequency spectrum to accommodate the growth of these services;

invites the Administrative Council

to place this matter on the agenda of the next competent world administrative radio conference.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 348-E
29 February 1992MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

R.6

PLENARY MEETINGSIXTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for second reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 6	326/B.11	Article 8
	310/B.9	Article 8
	327/B.12	Article 8
	312/B.10	Article 11
		Article 12
		Article 13
	326/B.11	Article 29
		Resolution GT-PLN/3
		Resolution GT-PLN/4

P. ABOUDARHAM
Chairman of Committee 6Annex: 17 pages

ARTICLE 8

MOD

GHz
19.7 - 20.2

Allocation to Services		
Region 1	Region 2	Region 3
19.7 - 20.1 FIXED-SATELLITE (space-to-Earth) Mobile-Satellite (space-to-Earth) 873	19.7 - 20.1 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 873 873A 873B 873C 873D 873E	19.7 - 20.1 FIXED-SATELLITE (space-to-Earth) Mobile-Satellite (space-to-Earth) 873
20.1 - 20.2 FIXED-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 873 873A 873B 873C 873D		

MOD

873

Additional allocation: in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Brazil, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Tanzania, Chad, Thailand, Togo, Tunisia and Zaire, the band 19.7 - 21.2 GHz is also allocated to the fixed and mobile services on a primary basis. This additional use shall not impose any limitation on the power flux-density of space stations in the fixed-satellite service in the band 19.7 - 21.2 GHz and of space stations in the mobile-satellite service in the band 19.7 - 20.2 GHz where such allocation to the mobile-satellite service is on a primary basis in the latter band.

ADD

873A

In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz.

ADD

873B

In the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz in Region 2, and in the bands 20.1 - 20.2 GHz and 29.9 - 30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.

- ADD 873C** In the bands 19.7 - 20.2 GHz and 29.5 - 30 GHz, the provisions of No. 953 do not apply with respect to the mobile-satellite service.
- ADD 873D** The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7 - 20.1 GHz in Region 2 and in the band 20.1 - 20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. 873.
- ADD 873E** The use of the bands 19.7 - 20.1 GHz and 29.5 - 29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the fixed-satellite service and in the mobile-satellite service as described in No. 873B.

- MOD 596** Different category of service: in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, China, Cuba, the United Arab Emirates, India, Indonesia, Iran, Iraq, Malaysia, Oman, Pakistan, Philippines, Qatar, Singapore, Sri Lanka and Thailand, the band 137 - 138 MHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis (see No. 425).
- MOD 604** Additional allocation: in Ethiopia, Finland, Kenya, Malta, Somalia, Sudan, Tanzania and Yugoslavia, the band 138 - 144 MHz is also allocated to the fixed service on a primary basis.
- SUP 614**
- MOD 621**
Mob-87 Additional allocation: in the Federal Republic of Germany, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Malta, Monaco, Norway, the Netherlands, the United Kingdom, Sweden and Switzerland, the band 174 - 223 MHz is also allocated to the land mobile service on a permitted basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.
- MOD 622** Different category of service: in the Federal Republic of Germany, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Luxembourg, Malta, Monaco, Norway, the Netherlands, Portugal, the United Kingdom, Sweden and Switzerland, the band 223 - 230 MHz is allocated to the land mobile service on a permitted basis (see No. 425). However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.
- MOD 627** In Region 2, no new stations in the radiolocation service may be authorized in the band 216 - 225 MHz. Stations authorized prior to 1 January 1990 may continue to operate on a secondary basis.
- SUP 633**
- SUP 634**
- MOD 635** Alternative allocation: in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the bands 223 - 238 MHz and 246 - 254 MHz are allocated to the broadcasting service on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.

- MOD 658** Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burkina Faso, Burundi, Egypt, the United Arab Emirates, Ecuador, Ethiopia, Greece, Guinea, India, Indonesia, Iran, Iraq, Israel, Italy, Jordan, Kenya, Kuwait, the Lebanon, Libya, Liechtenstein, Malaysia, Malta, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Singapore, Somalia, Switzerland, Tanzania, Thailand, Togo, Turkey and Yemen, the band 430 - 440 MHz is also allocated to the fixed service on a primary basis and the bands 430 - 435 MHz and 438 - 440 MHz are also allocated to the mobile, except aeronautical mobile, service on a primary basis.
- MOD 659** Additional allocation: in Angola, Bulgaria, Cameroon, the Congo, Djibouti, Gabon, Hungary, Malawi, Mali, Mongolia, Niger, Pakistan, Poland, the German Democratic Republic, Dem. People's Rep. of Korea, Romania, Rwanda, Chad, Czechoslovakia and the U.S.S.R., the band 430 - 440 MHz is also allocated to the fixed service on a primary basis.
- MOD 663** Additional allocation: in the French Overseas Departments in Region 2 and India, the band 433.75 - 434.25 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis. In France and in Brazil, the band is allocated to the same service on a secondary basis.
- MOD 672** Different category of service: in Afghanistan, Bulgaria, China, Cuba, Japan, Mongolia, Poland, Czechoslovakia and the U.S.S.R., the allocation of the band 460 - 470 MHz to the meteorological-satellite service (space-to-Earth) is on a primary basis (see No. 425) and is subject to agreement obtained under the procedure set forth in Article 14.
- MOD 675** Different category of service: in Chile, Colombia, Cuba, Ecuador, the United States, Guyana, Jamaica, Mexico and Panama, the allocation of the bands 470 - 512 MHz and 614 - 806 MHz to the fixed and mobile services is on a primary basis (see No. 425), subject to agreement obtained under the procedure set forth in Article 14.
- MOD 676** Additional allocation: in Burundi, Cameroon, the Congo, Ethiopia, Israel, Kenya, Lebanon, Libya, Malawi, Senegal, Sudan, Syria and Yemen, the band 470 - 582 MHz is also allocated to the fixed service on a secondary basis.
- MOD 678** Additional allocation: in Costa Rica, Cuba, El Salvador, Ecuador, the United States, Guatemala, Guyana, Honduras, Jamaica, Mexico and Venezuela, the band 512 - 608 MHz is also allocated to the fixed and mobile services on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.
- SUP 682**

- MOD 697 Mob-87** Additional allocation: in the Federal Republic of Germany, Burkina Faso, Cameroon, Côte d'Ivoire, Denmark, Egypt, Finland, Israel, Kenya, Libya, Liechtenstein, Monaco, Norway, the Netherlands, Sweden, Switzerland and Yugoslavia, the band 790 - 830 MHz, and in these same countries and in Spain, France, Malta, the Gabonese Republic and Syria, the band 830 - 862 MHz, are also allocated to the mobile, except aeronautical mobile, service on a primary basis. However, stations of the mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, stations of services operating in accordance with the Table in countries other than those mentioned in connection with the band.
- MOD 703** In Region 1, in the band 862 - 960 MHz, stations of the broadcasting service shall be operated only in the African Broadcasting Area (see Nos. 400 to 403) excluding Algeria, Egypt, Spain, Libya and Morocco, subject to agreement obtained under the procedure set forth in Article 14.
- MOD 719** In Bulgaria, Mongolia, Poland, the German Democratic Republic, Romania, Czechoslovakia and the U.S.S.R., the existing installations of the radionavigation service may continue to operate in the band 1 350 - 1 400 MHz.
- ADD 723B** Additional allocation: in Belarus, the Russian Federation and Ukraine, the band 1 429 - 1 535 MHz is also allocated to the aeronautical mobile service on a primary basis exclusively for the purposes of aeronautical telemetry within the national territory.
- MOD 724** Different category of service: in Afghanistan, Saudi Arabia, Bahrain, Bulgaria, Cameroon, Egypt, the United Arab Emirates, France, Iran, Iraq, Israel, Kuwait, the Lebanon, Morocco, Mongolia, Oman, Poland, Qatar, Syria, the German Democratic Republic, Romania, Czechoslovakia, the U.S.S.R., Yemen and Yugoslavia, the allocation of the band 1 525 - 1 530 MHz to the mobile, except aeronautical mobile, service is on a primary basis (see No. 425).
- MOD 746** Additional allocation: in Bulgaria, Cuba, Mali, Mongolia, Poland, the German Democratic Republic, Romania, Czechoslovakia and the U.S.S.R., the band 1 770 - 1 790 MHz is also allocated to the meteorological-satellite service on a primary basis, subject to agreement obtained under the procedure set forth in Article 14.
- MOD 769** Additional allocation: in Afghanistan, Saudi Arabia, Bahrain, Bulgaria, Cameroon, the Central African Republic, the Congo, Cote d'Ivoire, Cuba, Egypt, the United Arab Emirates, Ethiopia, Gabon, Guinea, Guinea-Bissau, Iran, Iraq, Israel, the Lebanon, Malaysia, Malawi, Mali, Morocco, Mauritania, Mongolia, Nigeria, Oman, Pakistan, the Philippines, Poland, Qatar, Syria, the German Democratic Republic, Romania, Singapore, Somalia, Sri Lanka, Czechoslovakia, Thailand, Tunisia, the U.S.S.R., Yemen, Yugoslavia, Zaire and Zambia, the band 2 690 - 2 700 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. Such use is limited to equipment in operation by 1 January 1985.

**RECAPITULATION OF THE CHANGES TO BE INTRODUCED
IN CERTAIN FOOTNOTES OF ARTICLE 8**

Note by the Editorial Committee:

During the examination of Document 284 (R.2) at the eighth Plenary Meeting (Thursday, 27 February 1992), a number of delegations requested changes to the footnotes of Article 8 of the Radio Regulations. These changes, which the Secretary-General is instructed to introduce in the definitive version of the Final Acts of WARC-92, are recapitulated below:

ADD/SUP	SYMBOL	FOOTNOTE
SUP	AUT	475*
ADD	COG	826, 857 and 866
ADD	JOR	647, 769, 779, 819, 834, 857, 866, 868, 883 and 894
SUP	JOR	860
ADD	LIE	797B
ADD	MLI	518
SUP	MLT	803, 857 and 866
ADD	MLT	608Z and 797B
ADD	OMA	826, 857, 866 and 830
SUP	POL	804, 850, 855, 885 and 889
ADD	POR	621 (Mob-87), 697 (Mob-87)** and 608Z
SUP	S	866
ADD	SWZ	803, 819 and 866
ADD	TZA	730
ADD	YEM	779, 819 and 834
ADD	YUG	596
SUP	YUG	598

* Footnote 475 is to be deleted.

** In the first group of countries.

ARTICLE 11

(MOD) Orb-88

**Coordination of Frequency Assignments to Stations
in a Space Radiocommunication Service Except Stations
in the Broadcasting-Satellite Service and to
Appropriate Terrestrial Stations^{1, 2, 3, 5}**

NOC

**Section I. Procedures for the Advance Publication
of Information on Planned Satellite Networks⁴**

ADD

**A.11.5
WARC-92**

⁵ See Resolution COM5/8.

ARTICLE 12

(MOD) Orb-85 **Notification and Recording in the Master International
Frequency Register of Frequency Assignments¹ to Terrestrial
Radiocommunication Stations^{2, 3, 4, 5}**

NOC **Section I. Notification of Frequency Assignments**

ADD **A.12.5** ⁵ See Resolution COM5/8.
 WARC-92

ARTICLE 13

**(MOD) Orb-88 Notification and Recording in the Master International
Frequency Register of Frequency Assignments¹ to Radio
Astronomy and Space Radiocommunication Stations Except
Stations in the Broadcasting-Satellite Service^{2, 3, 4, 5}**

NOC Section I. Notification of Frequency Assignments

ADD A.13.5 ⁵ See Resolution COM5/8.
WARC-92

ARTICLE 29

ADD **2613A** Whenever the emissions from geostationary satellites in the inter-satellite service are directed towards space stations at distances from Earth greater than that of the geostationary-satellite orbit, the boresight of the antenna mainbeam of the geostationary satellite shall not be pointed within 15° of any point on the geostationary-satellite orbit.

RESOLUTION GT-PLEN/3

**Review of Resolutions and Recommendations of the
World Administrative Radio Conferences**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has reviewed a number of Resolutions and Recommendations of the following Conferences: WARC-79, Mob-83, HFBC-87, Mob-87 and Orb-88;
- b) the action taken under Resolution GT-PLEN/4 adopted by this Conference;

further considering

the need to continue to review the Resolutions and Recommendations of the above Conferences and of this Conference;

invites the CCIR and the IFRB**and instructs the Secretary-General**

to report to the future competent conferences referred to in **resolves** on the action taken in response to the relevant Resolutions and Recommendations;

resolves

that the Administrative Council should include in the agenda of future competent conferences the review of the relevant Resolutions and Recommendations with a view to their possible revision, replacement or abrogation.

RESOLUTION GT-PLEN/4

Review of Certain Resolutions and Recommendations of the World Administrative Radio Conference (Geneva, 1979) (WARC-79); the World Administrative Radio Conference for the Mobile Services (Geneva, 1983) (Mob-83); the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) (HFBC-87); the World Administrative Radio Conference for the Mobile Services (Geneva, 1987) (Mob-87), and the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It (Second Session - Geneva, 1988) (Orb-88)

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

that owing to the action taken at this Conference and that resulting from decisions adopted at the above-mentioned Conferences, there is a need to review the existing Resolutions and Recommendations to ensure their appropriate consistency;

further considering

a) that the following Resolutions and Recommendations of the above-mentioned Conferences have been revised as indicated:

RESOLUTION No. 703 (Rev.WARC-92)

**Calculation Methods and Interference Criteria Recommended
by the CCIR for Sharing Frequency Bands Between Space
Radiocommunication and Terrestrial Radiocommunication Services
or Between Space Radiocommunication Services**

RECOMMENDATION No. 66 (Rev.WARC-92)

**Studies of the Maximum
Permitted Levels of Spurious Emissions**

[COM4 ?]

- b) that the following Resolutions and Recommendations of the above-mentioned Conferences either have been implemented or do not require any further action:

RESOLUTION No. 6 (WARC-79)

**Relating to the Preparation of a Handbook to Explain
and Illustrate the Procedures of the Radio Regulations**

RESOLUTION No. 9 (WARC-79)

**Relating to the Revision of Entries in the
Master International Frequency Register in the Bands
Allocated to the Fixed Service Between 3 000 kHz and 27 500 kHz**

RESOLUTION No. 36 (WARC-79)

**Relating to the Preparation of Explanatory Information by the
International Frequency Registration Board on the Application
of the New Method for Designating Emissions in Notification
Procedures and the Consequential Revision of the Master
International Frequency Register**

RESOLUTION No. 62 (WARC-79)

**Relating to the Experimental Use of Radio Waves
by Ionospheric Research Satellites¹**

RESOLUTION No. 64 (WARC-79)

Relating to CCIR Study of Lightning Protection of Radio Equipment

RESOLUTION No. 66 (WARC-79)

**Relating to the Division of the World into Regions for the
Purposes of Allocating Frequency Bands**

RESOLUTION No. 67 (WARC-79)

**Relating to Improvements in the Design
and Use of Radio Equipment**

RESOLUTION No. 68 (WARC-79)

**Relating to the Redefinition of Certain Terms
Contained in Annex 2 to the International Telecommunication
Convention (Malaga-Torremolinos, 1973)
and Applicable to the Radio Regulations**

RESOLUTION No. 90 (Mob-83)

**Relating to the Revision, Replacement and Abrogation
of Resolutions and Recommendations of the World
Administrative Radio Conference, Geneva, 1979**

RESOLUTION No. 91 (HFBC-87)

**Revision, Replacement and Abrogation of Resolutions and
Recommendations of the World Administrative Radio Conference
(Geneva, 1979)**

RESOLUTION No. 92 (Orb-88)

**Revision, Replacement and Cancellation of Resolutions
of the World Administrative Radio Conference, Geneva, 1979, and the
World Administrative Radio Conference on the Use of the
Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It
(First Session - Geneva, 1985) (Orb-85)**

RESOLUTION No. 108 (Orb-88)

**Use of the Bands 4 500 - 4 800 MHz, 6 725 - 7 025 MHz, 10.70 - 10.95 GHz,
11.2 - 11.45 GHz and 12.75 - 13.25 GHz Prior to the
Date of Entry into Force of Appendix 30B**

RESOLUTION No. 324 (Mob-87)

**Procedures to be Applied for the
Coordination of the Use of the Frequency 518 kHz
for the International NAVTEX System**

RESOLUTION No. 337 (Mob-87)

**Resolutions and Recommendations Which Remain in Effect
Until the Provisions of the Radio Regulations
as Partially Revised by WARC Mob-87 Take Effect**

RESOLUTION No. 501 (WARC-79)

**Relating to Examination by the IFRB of the Notices Referring
to Stations in the Broadcasting Service in Region 2 in the
Band 535 - 1 605 kHz During the Period Preceding
the Entry into Force of the Final Acts of the
Regional Administrative MF Broadcasting Conference (Region 2)**

RESOLUTION No. 509 (WARC-79)

**Relating to the Convening of a Regional Broadcasting Conference
to Review and Revise the Provisions of the Final Acts of the
African VHF/UHF Broadcasting Conference, Geneva, 1963**

RESOLUTION No. 510 (WARC-79)

**Relating to the Convening of a Planning Conference
for Sound Broadcasting in the Band 87.5 - 108 MHz
for Region 1 and Certain Countries Concerned in Region 3**

RESOLUTION No. 709 (Orb-88)

**Coordination Between Feeder-Link Earth Stations
and Stations of other Services in the Bands
14.5 - 14.8 GHz and 17.7 - 18.1 GHz in Regions 1 and 3**

RECOMMENDATION No. 3 (WARC-79)

**Relating to the Transmission of Electric Power
by Radio Frequencies from a Spacecraft**

RECOMMENDATION No. 12 (WARC-79)

**Relating to the Convening of Future Administrative Radio
Conferences to Deal with Specific Services**

RECOMMENDATION No. 67 (WARC-79)

Relating to the Definitions of "Service Area" and "Coverage Area"

RECOMMENDATION No. 70 (WARC-79)

**Relating to Studies
of the Technical Characteristics of Equipment¹**

RECOMMENDATION No. 101 (WARC-79)

**Relating to Feeder Links for the
Broadcasting-Satellite Service¹**

RECOMMENDATION No. 102 (WARC-79)

**Relating to the Study of Modulation Methods
for Radio-Relay Systems in Relation to Sharing
with Fixed-Satellite Service Systems¹**

RECOMMENDATION No. 104 (Mob-87)

**Provision of Frequency Bands for Feeder Links in the
Fixed-Satellite Service for the Mobile-Satellite Service or for the
Aeronautical, Land, or Maritime Mobile-Satellite Services
in the Bands 1 530 - 1 559 MHz and 1 626.5 - 1 660.5 MHz**

RECOMMENDATION No. 504 (WARC-79)

**Relating to the Preparation of a Broadcasting Plan
in the Band 1 605 - 1 705 kHz in Region 2**

RECOMMENDATION No. 602 (Rev.Mob-83)

**Relating to the Planning of Frequencies in the Band 283.5 - 315 kHz Used
by Maritime Radiobeacons in the European Maritime Area**

RECOMMENDATION No. 708 (WARC-79)

**Relating to Frequency Bands Shared Between Space
Radiocommunication Services and Between Space and
Terrestrial Radiocommunication Services¹**

resolves

that the Resolutions and Recommendations of WARC-79, Mob-83, HFBC-87, Mob-87 and Orb-88 listed under a) above shall apply as revised by this Conference and that those listed under b) above shall be abrogated.

PLENARY MEETING

China, Republic of Korea, Japan, Pakistan, Singapore, Thailand

PROPOSALS FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND)

In the event that the WARC-92 decides to allocate spectrum to the broadcasting-satellite service (sound) in the part of the band 1 429 - 1 525 MHz, the following proposal is submitted:

CHN/KOR/J/PAK/SNG/THA/349/1

ADD

757A

Additional allocation: in China, Republic of Korea, Japan, Pakistan, Singapore and Thailand the band 2 535 - 2 655 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis.

PLENARY MEETING

China, Republic of Korea, Japan, Singapore, Thailand

PROPOSALS FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND)

In the event that the WARC-92 decides to allocate spectrum to the broadcasting-satellite service (sound) in the part of the band 1 429 - 1 525 MHz, the following proposal is submitted:

CHN/KOR/J/SNG/THA/349/1

ADD 757A

Additional allocation: in China, Republic of Korea, Japan, Singapore and Thailand the band 2 535 - 2 655 MHz is also allocated to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis.

No. 350 – Not allocated

PLENARY MEETING

China, the Republic of Korea, Japan, Pakistan, Singapore, Sri Lanka, Thailand

PROPOSAL FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND)

In the event that the WARC-92 decides to allocate spectrum for the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service in the band [1 450 - 1 490] MHz, the following proposal is submitted:

CHN/KOR/J/PAK/SNG/CLN/THA/351/1

ADD 722A

In China, the Republic of Korea, Japan, Pakistan, Singapore, Sri Lanka and Thailand, in the band [1 450 - 1 490] MHz the power flux-density at the surface of the Earth from space stations operating in the broadcasting-satellite service (sound) shall not exceed -154 dB(W/m²/4 kHz), unless otherwise agreed by affected administrations.

Complementary terrestrial broadcast transmitters shall not cause a power flux-density in excess of -154 dB(W/m²/4 kHz) outside national boundaries unless agreed by affected administrations.

Reasons: The 1 429 - 1 525 MHz band is already allocated to the terrestrial fixed and mobile services.

If the broadcasting-satellite service (sound) is introduced in this band, unacceptable interference may occur to the terrestrial fixed and mobile stations existing in a number of countries.

In order to protect the fixed and mobile services from harmful interference caused by the broadcasting-satellite service (sound), it is absolutely necessary to apply a power flux-density limit of -154 dB(W/m²/4 kHz).

PLENARY MEETING

China, the Republic of Korea, Japan, Pakistan, Singapore, Thailand

PROPOSAL FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND)

In the event that the WARC-92 decides to allocate spectrum for the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service in the band [1 450 - 1 490] MHz, the following proposal is submitted:

CHN/KOR/J/PAK/SNG/THA/351/1

ADD 722A

In China, the Republic of Korea, Japan, Pakistan, Singapore and Thailand, in the band [1 450 - 1 490] MHz the power flux-density at the surface of the Earth from space stations operating in the broadcasting-satellite service (sound) shall not exceed -154 dB(W/m²/4 kHz), unless otherwise agreed by affected administrations.

Complementary terrestrial broadcast transmitters shall not cause a power flux-density in excess of -154 dB(W/m²/4 kHz) outside national boundaries unless agreed by affected administrations.

Reasons: The 1 429 - 1 525 MHz band is already allocated to the terrestrial fixed and mobile services.

If the broadcasting-satellite service (sound) is introduced in this band, unacceptable interference may occur to the terrestrial fixed and mobile stations existing in a number of countries.

In order to protect the fixed and mobile services from harmful interference caused by the broadcasting-satellite service (sound), it is absolutely necessary to apply a power flux-density limit of -154 dB(W/m²/4 kHz).

PLENARY MEETING

China, Republic of Korea, Japan, Singapore, Thailand

PROPOSALS FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND)

In the event that the WARC-92 decides to allocate spectrum for the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service in the band [1 450 - 1 490] MHz, the following proposal is submitted:

CHN/KOR/J/SNG/THA/351/1

ADD 722A

In China, Republic of Korea, Japan, Singapore and Thailand in the band [1 450 - 1 490] MHz, the power flux-density at the surface of the Earth from space stations operating in the broadcasting-satellite service (sound) shall not exceed -154 dB(W/m²)/4 kHz, unless otherwise agreed by affected administrations.

Complementary terrestrial broadcast transmitters shall not cause a power flux-density in excess of -154 dB(W/m²)/4 kHz outside national boundaries unless agreed by affected administrations.

[Reasons:] The 1 429 - 1 525 MHz band is already allocated to the terrestrial fixed and mobile services.

If the broadcasting-satellite service (sound) is introduced in this band, unacceptable interference may occur to the terrestrial fixed and mobile stations existing in a number of countries.

In order to protect the fixed and mobile services from harmful interference caused by the broadcasting-satellite service (sound), it is absolutely necessary to apply a power flux-density limit of -154 dB(W/m²)/4 kHz.



PLENARY MEETING

China

PROPOSAL FOR THE WORK OF THE CONFERENCE

Item 2.2.7

The consideration of footnotes relating to the radiodetermination-satellite service in the frequency range 1.6 - 2.5 GHz with the view to harmonizing them and allowing administrations to revise the status of their respective allocations to the service and to review the sharing criteria.

It is proposed to use the band 1 610 - 1 626.5 MHz in the Earth-to-space direction and 2 483.5 - 2 500 MHz in the space-to-Earth direction in China. Having regard to current Footnotes 733B and 753C, this proposal takes the form of an amendment to that provision as follows:

CHN/352/1

MOD

733B

Mob-87

Different category of service: in Angola, Australia, Burundi, China, Côte d'Ivoire, Ethiopia, India, the Islamic Republic of Iran, Israel, Italy, Jordan, Kenya, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Senegal, Sudan, Swaziland, Syria, Tanzania, Thailand, Togo, Zaire and Zambia, the allocation of the band 1 610 - 1 626.5 MHz to the radiodetermination-satellite service (Earth-to-space) is on a primary basis (see No. 425) subject to agreement obtained under the procedure set forth in Article 14 with other countries not listed in this provision.

CHN/352/2

MOD

753C

Mob-87

Different category of service: in Angola, Australia, Burundi, China, Côte d'Ivoire, Ethiopia, India, the Islamic Republic of Iran, Israel, Italy, Jordan, Kenya, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Senegal, Sudan, Swaziland, Syria, Tanzania, Thailand, Togo, Zaire and Zambia, the allocation of the band 2 483.5 - 2 500 MHz to the radiodetermination-satellite service (space-to-Earth) is on a primary basis (see No. 425) subject to agreement obtained under the procedure of Article 14 with other countries not listed in this provision.

PLENARY MEETING

United States of America. [..... and]

PROPOSAL FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND)

The following proposal is submitted:

USA/353/1

ADD

750A

Additional allocation: in the United States, [....., and], the band 2 310 - 2 360 MHz is allocated to the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service on a primary basis.

PLENARY MEETING

United States of America

PROPOSAL FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND)

In the event that the WARC-92 decides to allocate spectrum for the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service in the band [around 2 500] MHz, the following proposal is submitted:

USA/354/1

ADD 753F

In the United States, in the bands [around 2 500] MHz, the power flux-density at the surface of the Earth from space stations operating in the broadcasting-satellite service (sound) shall not exceed -152 dB(W/m²)/4 kHz, unless otherwise agreed by affected administrations. Complementary terrestrial sound broadcast transmitters will not cause a power flux-density in excess of -152 dB(W/m²)/4 kHz outside of national boundaries unless agreed by affected administrations. The provisions of No. 757 apply. The broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service are not allocated in the band [around 2 500] MHz in the United States.

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

PLENARY MEETINGFrance

PROPOSALS FOR THE WORK OF THE CONFERENCE

In view of the amendments to Article 8 of the Radio Regulations adopted or being adopted by this Conference, the French Administration requests that the following amendments should be made in the footnotes indicated:

F/355/1**MOD 598**

Different category of service: in Austria, Bulgaria, Egypt, Finland, France, Greece, Hungary, Lebanon, Mongolia, Poland, the German Democratic Republic, Romania, Czechoslovakia, the U.S.S.R. and Yugoslavia, the allocation of the band 137 - 138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. 425).

F/355/2**MOD 730**

Additional allocation: in the Federal Republic of Germany, Austria, Bulgaria, Cameroon, France, Guinea, Hungary, Indonesia, Libya, Mali, Mongolia, Nigeria, Poland, the German Democratic Republic, Romania, Senegal, Czechoslovakia and the U.S.S.R., the bands 1 550 - 1 645.5 MHz and 1 646.5 - 1 660 MHz are also allocated to the fixed service on a primary basis.

F/355/2A**ADD 751A**

In France, the use of the band 2 310 - 2 360 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service.

F/355/3**MOD 753**

~~Alternative allocation~~ Different category of service: in France, the bands ~~2 450 - 2 483.5 MHz and 2 500 - 2 550 MHz are~~ the band 2 450 - 2 500 MHz is allocated on a primary basis to the radiolocation service ~~and on a secondary basis to the fixed and mobile services (see Nos. 424 and 425).~~ Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

F/355/4**SUP 753E****F/355/5****ADD 754B**

Additional allocation: in France, the band 2 500 - 2 550 MHz is also allocated to the radiolocation service on a primary basis. Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

PLENARY MEETINGFrance

PROPOSALS FOR THE WORK OF THE CONFERENCE

In view of the amendments to Article 8 of the Radio Regulations adopted or being adopted by this Conference, the French Administration requests that the following amendments should be made in the footnotes indicated:

F/355/1

MOD

598

Different category of service: in Austria, Bulgaria, Egypt, Finland, France, Greece, Hungary, Lebanon, Mongolia, Poland, the German Democratic Republic, Romania, Czechoslovakia, the U.S.S.R. and Yugoslavia, the allocation of the band 137 - 138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. 425).

F/355/2

MOD

730

Additional allocation: in the Federal Republic of Germany, Austria, Bulgaria, Cameroon, France, Guinea, Hungary, Indonesia, Libya, Mali, Mongolia, Nigeria, Poland, the German Democratic Republic, Romania, Senegal, Czechoslovakia and the U.S.S.R., the bands 1 550 - 1 645.5 MHz and 1 646.5 - 1 660 MHz are also allocated to the fixed service on a primary basis.

F/355/3

MOD

753

~~Alternative allocation~~ Different category of service: in France, the bands 2 450 - 2 483.5 MHz and 2 500 - 2 550 MHz are the band 2 450 - 2 500 MHz is allocated on a primary basis to the radiolocation service ~~and on a secondary basis to the fixed and mobile services~~ (see Nos. 424 and 425). Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

F/355/4

SUP

753E

F/355/5

ADD

754B

Additional allocation: in France, the band 2 500 - 2 550 MHz is also allocated to the radiolocation service on a primary basis. Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

PLENARY MEETING

France

PROPOSALS FOR THE WORK OF THE CONFERENCE

MOBILE-SATELLITE SERVICE

If WARC-92 decides to allocate part of the spectrum to the mobile-satellite service (space-to-Earth) in the band 1 427 - 2 690 MHz, France requests that the following footnote should be added in the bands in question:

F/356/1

ADD

722A

In France and in French overseas departments and territories, in the bands 1 427 - 1 530 MHz and 1 559 - 2 690 MHz, the power flux-density at the Earth's surface produced by space stations in the mobile-satellite service (space-to-Earth) shall not exceed the values specified in No. 2557, except where there are provisions to the contrary resulting from an agreement between the administrations concerned. The provisions of Nos. 754 and 757 remain applicable.

Source: Document 328

COMMITTEE 6

RESOLUTION COM4/... (SPACE)

**Consideration by a Future Competent World Administrative Radio Conference
of Issues Dealing with Allocations to Space Services
which were not placed on the Agenda of WARC-92**

considering

- a) that the agenda of WARC-92 calls for the development of new Recommendations and Resolutions in relation to allocations to space services which were not placed on this agenda;
- b) that the allocation to the earth exploration-satellite service at 8.025 - 8.4 GHz is complex and not uniform worldwide;
- c) Resolution COM4/1 [Document 283] relative to the allocation to the fixed-satellite service in the band 13.75 - 14 GHz which has potential for impact on compatibility with the space research and the earth exploration-satellite services;
- d) that the earth exploration-satellite service is secondary in Regions 1 and 3 and in the 18.6 - 18.8 GHz band, and that this band is vital for sensing ecologically important data, and is being implemented in an increasing number of earth exploration-satellites;
- e) that the current allocation at 23 GHz for the intersatellite service is insufficient to provide full interoperability between data-relay satellite forward link channels;
- f) that future active earth sensing requirements for monitoring environmental data in the range 35 GHz have been identified;
- g) that certain important technical parameters required for the Appendix 28 coordination of the space science services have been agreed in CCIR,

resolves

that the next competent world administrative radio conference should consider the following matters:

- examination of the use of existing EES and SR allocations of frequency bands in the range of 8.025 - 18.8 GHz, with a view to establishing common worldwide primary allocations to the earth exploration-satellite and space research services in these bands;
- additional intersatellite service requirements of up to 50 MHz near 23 GHz;
- provision of up to 1 GHz of frequency spectrum around 35 GHz for use by space-based active earth sensors;
- inclusion of CCIR approved technical coordination parameters in Appendix 28 of the Radio Regulations,

invites the CCIR

to carry out the necessary studies with a view to presenting, at the appropriate time, the technical information likely to be required as a basis for the work of the Conference,

instructs the Secretary-General

to bring this Resolution to the next Administrative Council with a view to including this subject in the agenda of the next competent conference.

COMMITTEE 6

NINTH SERIES OF TEXTS FROM COMMITTEE 4
TO THE EDITORIAL COMMITTEE

At its nineteenth meeting, Committee 4 approved the following texts:

- 1) Modifications to Article 8 of the Radio Regulations, as contained in Document 339, with amendments (Annex 1 to this document); proposals in Documents 338 and 342 were also approved.
- 2) Four Resolutions, as contained in Documents DT/105, DT/113, 318 and 328*, with amendments (Annex 2 to this document).

The following delegations maintained reservations with respect to the approved texts:

- United Arab Emirates, with respect to the allocations in 2 483.5 - 2 500 MHz;
- United States, with respect to the allocations in 1 710 - 2 200 MHz;
- United Kingdom, with respect to Resolution (Document 318).

I. HUTCHINGS
Chairman

* To be provided later.

ANNEX 1

Modifications to Article 8 of the Radio Regulations

MHz
137 - 137.175

Allocation to Services		
Region 1	Region 2	Region 3
137 - 138137.025	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) <u>MOBILE-SATELLITE (space-to-Earth) 599B</u> Fixed Mobile except aeronautical mobile (R) 596 597 598 599 <u>599A</u>	
137137.025 - 138137.175	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) <u>Mobile-Satellite (space-to-Earth) 599B</u> Fixed Mobile except aeronautical mobile (R) 596 597 598 599 <u>599A</u>	

ADD 599A Coordination of mobile satellite systems in the frequency band 137 - 138 MHz will be in accordance with the provisions of Resolution COM5/8; however, coordination of the space stations with respect to terrestrial services is required only if the power flux-density of the mobile-satellite service does exceed -125 dB(W/m²/4 kHz) at the surface of the Earth, unless otherwise agreed by the affected administrations. The above power flux-density limit shall apply until such time as a competent world administrative radio conference revises it. In making assignments to the space stations in the mobile-satellite service in the above band administrations shall take all practicable steps to protect the radio astronomy service in the 150.05 - 153 MHz band from harmful interference from unwanted emissions (RR 2904 applies).

ADD 599B The use of the bands 137 - 138 MHz, 148 - 149.9 MHz and 400.15 - 401 MHz by the mobile-satellite service and the band 149.9 - 150.05 MHz by the land mobile-satellite service is limited to non-geostationary-satellite systems.

MHz
137.175 - 138

Allocation to Services		
Region 1	Region 2	Region 3
137 <u>137.175</u> - 138 <u>137.825</u>	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) <u>MOBILE-SATELLITE (space-to-Earth) 599B</u> Fixed Mobile except aeronautical mobile (R) 596 597 598 599 <u>599A</u>	
137 <u>137.825</u> - 138	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) <u>Mobile-Satellite (space-to-Earth) 599B</u> Fixed Mobile except aeronautical mobile (R) 596 597 598 599 <u>599A</u>	

MHz
148 - 150.05

Allocation to Services		
Region 1	Region 2	Region 3
148 - 149.9 FIXED MOBILE except aeronautical mobile (R) <u>MOBILE-SATELLITE</u> (Earth-to-space) 599B 608 <u>608X</u> <u>608Z</u>	148 - 149.9 FIXED MOBILE <u>MOBILE-SATELLITE (Earth-to-space) 599B</u> 608 <u>608X</u> <u>608Z</u>	
149.9 - 150.05	RADIONAVIGATION-SATELLITE <u>LAND MOBILE-SATELLITE (Earth-to-space) 599B</u> <u>608Y</u> 609 609A <u>609B</u>	

ADD

608X

Coordination of the mobile-satellite systems in the frequency band 148 - 149.9 MHz will be in accordance with the provisions of Resolution COM5/8. The mobile-satellite service shall not constrain the development and use of fixed, mobile and space operations services in the band 148 - 149.9 MHz. MSS mobile earth station transmitters will not cause a power flux-density in excess of -150 dB(W/m²/4 kHz) outside of national boundaries.

- ADD 608Y** Coordination of the land mobile-satellite systems in the frequency band 149.9 - 150.05 MHz will be in accordance with the provisions of Resolution COM5/8. The land mobile-satellite service shall not constrain the development and use of the band 149.9 - 150.05 MHz by the radionavigation-satellite service. The power flux-density of the land mobile-satellite service will not exceed the limit of -150 dB(W/m²/4 kHz) outside of national boundaries.
- ADD 609B** The land mobile-satellite service shall be secondary in this allocation until 1 January 1997.
- ADD 608Z** Stations of the mobile-satellite service in the band 148 - 149.9 MHz shall not cause harmful interference to, or claim protection from, fixed or mobile stations in the following countries: Algeria, the Federal Republic of Germany, Saudi Arabia, Austria, Bangladesh, Belgium, Brunei Darussalam, Cameroon, Canada, Colombia, Congo, Cuba, Denmark, the United Arab Emirates, Ecuador, Spain, Ethiopia, Finland, France, Ghana, Greece, Hungary, Iran, Ireland, Israel, Kenya, Luxembourg, Malaysia, Mali, Mozambique, New Zealand, Oman, Pakistan, Papua New Guinea, the Netherlands, Poland, Portugal, Qatar, Syria, the United Kingdom, Singapore, Sri Lanka, Sweden, the Czech and Slovak Federal Republic, Thailand, Turkey and Yugoslavia, that operate in accordance with the Table.

MHz
273 - 322

Allocation to Services		
	Region 1	Region 2
MOD	273 - 322312	FIXED
		MOBILE
		MOD 641
MOD	273312 - 322315	FIXED
		MOBILE
		<u>Mobile-Satellite (Earth-to-space) 641A</u>
MOD	273315 - 322	FIXED
		MOBILE
		MOD 641

MHz
335.4 - 399.9

Allocation to Services			
	Region 1	Region 2	Region 3
MOD	335.4 - 399.9387	FIXED MOBILE MOD 641	
MOD	335.4387 - 399.9390	FIXED MOBILE <u>Mobile-Satellite (space-to-Earth) 641A</u>	
MOD	335.4390 - 399.9	FIXED MOBILE MOD 641	

MOD 641 Subject to agreement obtained under the procedure set forth in Article 14, the bands 235 - 312 MHz, 315 - 322 MHz and 335.4 - 387 MHz and 390 - 399.9 MHz may be used by the mobile-satellite service, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table.

ADD 641A The frequency bands 312 - 315 MHz (Earth-to-space) and 387 - 390 MHz (space-to-Earth) in mobile-satellite service may also be used by non-geostationary-satellite systems, subject to the coordination procedure set forth in Resolution COM5/8.

MHz
400.15 - 401

Allocation to Services			
	Region 1	Region 2	Region 3
	400.15 - 401	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Space Operation (space-to-Earth) <u>MOBILE-SATELLITE (space-to-Earth) 599B</u> 647 <u>647X</u>	

- ADD 647X** Coordination of mobile satellite systems in the frequency band 400.15 - 401 MHz will be in accordance with the provisions of Resolution COM5/8; however, coordination of the space stations with respect to terrestrial services is required only if the power flux-density of the mobile-satellite service does exceed -125 dB(W/m²/4 kHz) at the surface of the Earth, unless otherwise agreed by the affected administrations. The above power flux-density limit shall apply until such time as a competent world administrative radio conference revises it. In making assignments to the space stations in the mobile-satellite service in the above band, administrations shall take all practicable steps to protect the radio astronomy service in the 406.1 - 410 MHz band from harmful interference from unwanted emissions (RR 2904 applies.)
- ADD 700A** Alternative allocation: in Canada, the United States and Mexico, the bands 849 - 851 MHz and 894 - 896 MHz are allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The band 849 - 851 MHz is limited to transmissions from aeronautical stations and the use of the band 894 - 896 MHz is limited to transmissions from aircraft stations.
- [Administrations operating systems for public correspondence with aircraft in these frequency bands shall ensure that the frequencies actually assigned to their stations shall not cause harmful interference and shall coordinate such use accordingly.]
- ADD 700B** Additional allocation: in Belarus, the Russian Federation and Ukraine, the bands 806 - 840 MHz (Earth-to-space) and 856 - 890 MHz (space-to-Earth) are also allocated to the mobile satellite, except aeronautical mobile-satellite (R) service. The use of this service is subject to special agreements between administrations concerned.

BANDS BELOW 1 525 MHz: NOC

MHz 1 525 - 1 530			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 525 - 1 530 SPACE OPERATION (space-to-Earth) <u>MARITIME</u> <u>MOBILE-SATELLITE</u> (space-to-Earth) <u>Land Mobile-Satellite</u> (space-to-Earth) 726B FIXED Earth Exploration-Satellite Mobile except aeronautical mobile 724 722 725 <u>726A 726X</u>	1 525 - 1 530 SPACE OPERATION (space-to-Earth) <u>MARITIME</u> <u>MOBILE-SATELLITE</u> (space-to-Earth) <u>Land Mobile-Satellite</u> (space-to-Earth) 726B <u>MOBILE-SATELLITE</u> (space-to-Earth) [726B] Earth Exploration-Satellite Fixed Mobile 723 722 723A <u>726A 726X</u>	1 525 - 1 530 SPACE OPERATION (space-to-Earth) <u>MARITIME</u> <u>MOBILE-SATELLITE</u> (space-to-Earth) <u>Land Mobile-Satellite</u> (space-to-Earth) 726B <u>MOBILE-SATELLITE</u> (space-to-Earth) [726B] FIXED Earth Exploration-Satellite Mobile 723 724 722 <u>726A 726X</u>

MOD 726A The bands ~~1 530~~ 1 525 - 1 544 MHz, 1 545 - 1 559 MHz,
Mob-87 1 626.5 - 1 645.5 MHz and 1 646.5 - 1 660.5 MHz shall not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands.

MOD 726B The use of the bands 1 525 - 1 530 MHz, 1 533 - 1 544 MHz,
Mob-87 1 626.5 - 1 631.5 MHz and 1 634.5 - 1 645.5 MHz by the land mobile-satellite service is limited to non-speech low bit-rate data transmissions.

ADD 726X The use of the bands 1 525 - 1 544 MHz, 1 555 - 1 559 MHz, 1 626.5 - 1 646.5 MHz and 1 656.5 - 1 660.5 MHz by the mobile-satellite service shall be subject to the application of the procedures for coordination and notification set forth in Resolution COM5/8. However, coordination of the space stations with respect to terrestrial services is required only if the power flux-density of the mobile-satellite service does exceed the limit set forth in No. [2562] [2557].

MHz
1 530 - 1 533

Allocation to Services			
Region 1		Region 2	Region 3
MOD	1 530 - 1 533 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) LAND MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile except aeronautical mobile 722 726A	1 530 - 1 533 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) LAND MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile 723 722 726A <u>726C 726X</u>	

SUP 726

ADD 726C Additional allocation: in Australia, Brazil, Canada, Malaysia, Mexico and the United States, the band 1 530 - 1 544 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 626.5 - 1 645.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: Maritime mobile-satellite distress and safety communications shall have priority access and immediate availability over all other mobile-satellite communications operating under this provision. Mobile-satellite systems providing maritime mobile-satellite distress and safety communications shall be interoperable with the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

MHz 1 533 - 1 559			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 533 - 1 535 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile except aeronautical mobile Land Mobile-Satellite (space-to-Earth) 726B 722 726A	1 533 - 1 535 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile 723 Land Mobile Satellite (space-to-Earth) 726B 722 726A 726C 726X	
MOD	1 535 - 1 544	MARITIME MOBILE-SATELLITE (space-to-Earth) Land Mobile-Satellite (space-to-Earth) 726B 722 726A 727 <u>726C 726X</u>	
<u>NOC</u>	1 544 - 1 545	MOBILE-SATELLITE (space-to-Earth) 722 727 727A	
NOC	1 545 - 1 555	AERONAUTICAL MOBILE-SATELLITE (R) (space-to-Earth) 722 726A 727 729 729A 730	
MOD	1 555 - 1 559	LAND MOBILE-SATELLITE (space-to-Earth) 722 726A 727 730 730A <u>730B 726X</u>	

ADD 730B Additional allocation: in Australia, Canada, Mexico and the United States, the band 1 555 - 1 559 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 656.5 - 1 660.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: The aeronautical mobile-satellite (R) service shall have priority access and immediate availability over all other mobile-satellite communications within a network operating under this provision. Mobile-satellite systems shall be interoperable with the aeronautical mobile-satellite (R) service. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

BANDS 1 559 - 1 610 MHz: NOC

MHz 1 610 - 1 626.5			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	<p>1 610 - 1 626.5 <u>1 610.6</u></p> <p>AERONAUTICAL RADIONAVIGATION</p> <p><u>MOBILE-SATELLITE 731X</u> (Earth-to-space)</p> <p>722 727 730 731 731A 731B 731D-732 733 733A 733B 733E-733F 734</p>	<p>1 610 - 1 626.5 <u>1 610.6</u></p> <p>AERONAUTICAL RADIONAVIGATION</p> <p>RADIODETERMINATION- SATELLITE (Earth-to-space) 733A 733E</p> <p><u>MOBILE-SATELLITE 731X</u> (Earth-to-space)</p> <p>722 731B 731C-732 733 733C 733D 734</p>	<p>1 610 - 1 626.5 <u>1 610.6</u></p> <p>AERONAUTICAL RADIONAVIGATION</p> <p>Radiodetermination-Satellite (Earth-to-space) 733A 733E</p> <p><u>MOBILE-SATELLITE 731X</u> (Earth-to-space)</p> <p>722 727 730 731B 731C-732 733 733B 734</p>
MOD	<p>1 610 <u>1 610.6 -</u> 1 626.5 <u>1 613.8</u></p> <p>AERONAUTICAL RADIONAVIGATION</p> <p><u>MOBILE-SATELLITE 731X</u> (Earth-to-space)</p> <p><u>RADIO ASTRONOMY</u></p> <p>722 727 730 731 731A 731B 731D-732 733 733A 733B 733E 733F 734</p>	<p>1 610 <u>1 610.6 -</u> 1 626.5 <u>1 613.8</u></p> <p>AERONAUTICAL RADIONAVIGATION</p> <p>RADIODETERMINATION- SATELLITE (Earth-to-space) 733A 733E</p> <p><u>MOBILE-SATELLITE 731X</u> (Earth-to-space)</p> <p><u>RADIO ASTRONOMY</u></p> <p>722 731B 731C-732 733 733C 733D <u>733E</u> 734</p>	<p>1 610 <u>1 610.6 -</u> 1 626.5 <u>1 613.8</u></p> <p>AERONAUTICAL RADIONAVIGATION</p> <p>Radiodetermination-Satellite (Earth-to-space) 733A 733E</p> <p><u>MOBILE-SATELLITE 731X</u> (Earth-to-space)</p> <p><u>RADIO ASTRONOMY</u></p> <p>722 727 730 731B 731C-732 733 733B <u>733E</u> 734</p>

MHz
1 610 - 1 626.5 (continued)

Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1-610 <u>1 613.8 - 1 626.5</u> AERONAUTICAL RADIONAVIGATION <u>MOBILE-SATELLITE 731X</u> (Earth-to-space) <u>Mobile-Satellite 731X</u> (space-to-Earth) 722 727 730 731 731A-731B 731D-732 733 733A 733B 733E-733F 734	1-610 <u>1 613.8 - 1 626.5</u> AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) 733A 733E <u>MOBILE-SATELLITE 731X</u> (Earth-to-space) <u>Mobile-satellite</u> (space-to-Earth) 722 731B-731G-732 733 733C 733D 734	1-610 <u>1 613.8 - 1 626.5</u> AERONAUTICAL RADIONAVIGATION Radiodetermination-Satellite (Earth-to-space) 733A 733E <u>MOBILE-SATELLITE 731X</u> (Earth-to-space) <u>Mobile-Satellite</u> (space-to-Earth) 722 727 730 731B-731G-732 733 733B 734

SUP 731A
SUP 731B
SUP 731C
SUP 731D
ADD 731X

The use of the frequency band 1 610 - 1 626.5 MHz by the mobile-satellite service is subject to the application of the procedure for coordination and notification set forth in Resolution COM5/8. Mobile earth stations in the mobile-satellite service shall not use e.i.r.p. density limit in excess of -3 dB(W/4 kHz) until such time as a competent world administrative radio conference revises this limit. Stations of the mobile-satellite service shall not cause harmful interference to, or claim protection from stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. 732, and stations in the fixed service operating in accordance with the provisions of No. 730.

MOD 733E ~~In Regions 1 and 3 harmful interference shall not be caused to stations~~
Mob-87 of the radio astronomy service using the band 1 610.6 - 1 613.8 MHz by stations of the radiodetermination-satellite and mobile-satellite service. (RR 2904 applies.)

MOD 733A In respect of the radiodetermination-satellite and mobile-satellite service
Mob-87 the provisions of No. 953 do not apply in the frequency band 1 610 - 1 626.5 MHz.

MOD 734 ~~The band 1 610.6 - 1 613.8 MHz is also allocated to the radio astronomy service on a secondary basis for spectral line observations. In making assignments to stations of other services to which the band is allocated, administrations are urged to take all practicable steps to protect the radio astronomy service in the band 1 610.6 - 1 613.8 MHz from harmful interference. Emissions from space or air-borne stations can be particularly serious sources of interference to the radio astronomy service (see Nos. 343 and 344 and Article 36).~~

MHz 1 626.5 - 1 660			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 626.5 - 1 631.5	MARITIME MOBILE-SATELLITE (Earth-to-space) Land Mobile-Satellite (Earth-to-space) 726B 722 726A 727 730 <u>726C 726X</u>	
MOD	1 631.5 - 1 634.5	MARITIME MOBILE-SATELLITE (Earth-to-space) LAND MOBILE-SATELLITE (Earth-to-space) 722 726A 727 730 734A <u>726C 726X</u>	
MOD	1 634.5 - 1 645.5	MARITIME MOBILE-SATELLITE (Earth-to-space) Land Mobile-Satellite (Earth-to-space) 726B 722 726A 727 730 <u>726C 726X</u>	
<u>NOC</u>	1 645.5 - 1 646.5	MOBILE-SATELLITE (Earth-to-space) 722 734B	
NOC	1 646.5 - 1 656.5	AERONAUTICAL MOBILE-SATELLITE (R) (Earth-to-space) 722 726A 727 729A 730 735	
MOD	1 656.5 - 1 660	LAND MOBILE-SATELLITE (Earth-to-space) 722 726A 727 730 730A 734A <u>730B 726X</u>	

MHz 1 660 - 1 660.5			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 660 - 1 660.5	RADIO ASTRONOMY LAND MOBILE-SATELLITE (Earth-to-space) 722 726A 730A 736 <u>730B 726X</u>	

MHz 1 670 - 1 700			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 670 - 1 690 <u>1 675</u>	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile <u>722 740A</u>	
MOD	1 670 <u>1 675</u> - 1 690	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile <u>722</u>	
	1 690 - 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 671 722 741	1 690 - 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) 671 722 740 742	

ADD **740A** The bands 1 670 - 1 675 MHz and 1 800 - 1 805 MHz are intended for use, on a worldwide basis, by administrations wishing to implement aeronautical public correspondence. The use of the band 1 670 - 1 675 MHz by stations in the systems for public correspondence with aircraft is limited to transmissions from aeronautical stations and the band 1 800 - 1 805 MHz is limited to transmissions from aircraft stations. [Administrations operating systems for public correspondence with aircraft in these frequency bands shall ensure that the frequencies actually assigned to their stations do not cause harmful interference and shall coordinate such use of frequencies accordingly]. [In Canada, the United States and Mexico public correspondence with aircraft is operating in accordance with the provisions of No. 700A].

MHz 1 700 - 2 025			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) <u>MOBILE except</u> <u>aeronautical mobile</u> Mobile except aeronautical mobile 671 722-743A	1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 671 722 743	
MOD	1 710 - 2 290 2 010 FIXED <u>MOBILE</u> Mobile 722 740A-743A 744 746 746A-747 748-750	1 710 - 2 290 2 010 FIXED MOBILE 722 740A 744 745 746 746A-747-748 749-750	
MOD	<u>2 010 - 2 025</u> FIXED <u>MOBILE</u> <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 746B</u> 722 744 <u>746A</u>	<u>2 010 - 2 025</u> FIXED MOBILE <u>MOBILE-SATELLITE (Earth-to-space) 746B</u> 722 744 745 <u>746A</u>	

ADD 746A The frequency bands 1 885 - 2 025 MHz and 2 110 - 2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement the future public land mobile telecommunication systems (FPLMTS). Such use does not preclude the use of these bands by other services to which these bands are allocated. [In the bands 2 010 - 2 025 MHz and 2 185 - 2 200 MHz a combination of terrestrial and space techniques may also be used.]

The frequency bands can be made available for FPLMTS in accordance with Resolution COM4/FPLMTS.

ADD 746B The allocation of the band 2 010 - 2 025 MHz to the mobile-satellite service (Earth-to-space) and of the band 2 185 - 2 200 MHz to the mobile-satellite service (space-to-Earth) shall be effective on 1 January 2010. The coordination of non-geostationary MSS systems in these bands will be in accordance with Resolution COM5/8. However, coordination of the space services with respect to terrestrial services is required only if the power flux-density of the mobile-satellite service does exceed the limits in No. [2562] [2557].

MHz 1 710 - 2 200			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	<u>1-7102 025 - 2-2902 110</u> FIXED <u>SPACE RESEARCH</u> (Earth-to-space, space-to-space) <u>SPACE OPERATION</u> (Earth-to-space, space-to-space) <u>EARTH EXPLORATION-SATELLITE</u> (Earth-to-space, space-to-space) <u>MOBILE 747A</u> Mobile 722 743A 744 746 747 748 750 750A	<u>1-7102 025 - 2-2902 110</u> FIXED <u>MOBILE 747A</u> <u>SPACE RESEARCH (Earth-to-space,</u> <u>space-to-space)</u> <u>SPACE OPERATION (Earth-to-space,</u> <u>space-to-space)</u> <u>EARTH EXPLORATION-SATELLITE</u> <u>(Earth-to-space, space-to-space)</u> 722 744 745 746 747 748 749 750 750A	
MOD	<u>1-7102 110 - 2-2902 120</u> FIXED <u>MOBILE</u> <u>SPACE RESEARCH</u> (deep space) (Earth-to-space) Mobile 722 743A 744 746 746A 747 748 750	<u>1-7102 110 - 2-2902 120</u> FIXED MOBILE <u>SPACE RESEARCH</u> (deep space) (Earth-to-space) 722 744 745 746 746A 747 748 749 750	
MOD	<u>2 120 - 2 185</u> FIXED <u>MOBILE</u> Mobile 722 743A 744 746 746A 747 748 750	<u>2 120 - 2 185</u> FIXED MOBILE 722 744 745 746 746A 747 748 749 750	
MOD	<u>2 185 - 2 200</u> FIXED <u>MOBILE</u> <u>MOBILE-SATELLITE</u> (space-to-Earth) 746B <u>746A</u>	<u>2 185 - 2 200</u> FIXED MOBILE <u>MOBILE-SATELLITE (space-to-Earth) 746B</u> <u>746A</u>	

MHz 2 483.5 - 2 500			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	2 483.5 - 2 500 FIXED MOBILE Radiolocation <u>MOBILE-SATELLITE 753F</u> <u>(space-to-Earth)</u> 733F 752 753A 753B 753C 753E	2 483.5 - 2 500 FIXED MOBILE RADIODETERMINATION- SATELLITE (space-to-Earth) 753A RADIOLOCATION <u>MOBILE-SATELLITE 753F</u> <u>(space-to-Earth)</u> 752 753D	2 483.5 - 2 500 FIXED MOBILE RADIOLOCATION <u>MOBILE-SATELLITE 753F</u> <u>(space-to-Earth)</u> Radiodetermination-Satellite (space-to-Earth) 753A 752 753C

ADD **753F** The use of the frequency band 2 483.5 - 2 500 MHz by the mobile-satellite service is subject to the application of the procedure for coordination and notification set forth in Resolution COM5/8. However, coordination of the space stations with respect to terrestrial services is required only if the power flux-density of the mobile-satellite service does exceed the limits in No. [2562] [2557].

ANNEX 2

RESOLUTION COM4/[FPLMTS]

**Implementation of Future Public Land Mobile
Telecommunication Systems (FPLMTS)**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the CCIR has recommended that the 1 - 3 GHz range is the most suitable band for FPLMTS;
- b) that the CCIR has recommended approximately 60 MHz for use by the personal station and approximately 170 MHz for use by the mobile station;
- c) that the CCIR has recognized that space techniques are an integral part of FPLMTS;
- d) that this Conference has identified, in provision N 746A of the Radio Regulations, frequency bands to accommodate this future service;

considering further

- e) that the CCIR has not completed its studies regarding duplexing methods, modulation techniques, channelling arrangements, signalling or communication protocols;
- f) that no worldwide numbering plan currently exists that would facilitate worldwide roaming;

noting

- a) that the initial implementation of the terrestrial components FPLMTS is expected to commence by the year [2000];
- b) that the implementation of the satellite component FPLMTS [in the bands 2 010 - 2 025 MHz and 2 185 - 2 200 MHz] is expected to be required by the year [2010];

invites administrations

to give due consideration to the accommodation of other services currently operating in these bands when implementing FPLMTS;

invites the CCIR

to continue its studies for the development of suitable and acceptable technical characteristics for FPLMTS that will facilitate worldwide use and roaming, and ensure that FPLMTS can also meet the telecommunication needs of the developing countries and rural areas;

invites the CCITT

- a) to complete its studies of signalling and communication protocols;
- b) to develop a common worldwide numbering plan and associated network capabilities that will facilitate worldwide roaming;

resolves

that administrations who implement FPLMTS:

- a) should make the relevant frequencies available, as necessary, for system development;
- b) should use those frequencies when FPLMTS is implemented;
- c) should use the relevant international technical characteristics, as identified by the Recommendations of the CCIR and CCITT.

DRAFT RESOLUTION COM4/[MSS-1]

**Consideration of Feasibility of Allocations of the Mobile-Satellite
Service in the Band 1 670 - 1 710 Mhz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that agenda item 2.2.4 of this Conference requested the consideration of an allocation of frequency bands to the mobile and mobile-satellite service and associated feeder links;
- b) that spectrum adjacent to or near the existing mobile satellite allocations may offer opportunities for implementation;
- c) that the band 1 670 - 1 710 MHz is principally used by the meteorological-satellite and meteorological aids services;
- d) that the band 1 660 - 1 670 MHz is allocated to the radio astronomy service on a primary basis;
- e) that operational and technical means may be found that would allow sharing of the band 1 670 - 1 710 MHz between the meteorological-satellite/meteorological aids services and the mobile-satellite service;
- f) that the needs of the radio astronomy service in the adjacent band 1 660 - 1 670 MHz have to be met;
- g) that given the worldwide nature of the meteorological services, there is a need to determine the operational and technical means for preventing harmful interference to these services;

resolves

- 1. that studies be undertaken by the CCIR to examine the operational and technical measures that would facilitate sharing;
- 2. that the WMO be invited to participate in these sharing studies;

invites

the CCIR to study as a matter of urgency the technical and operational issues relating to the sharing of this band between the meteorological aids/meteorological-satellite services and the mobile-satellite service, and of the radio astronomy service in the adjacent band.

DRAFT RESOLUTION COM4/[FX-1]

**Relating to Adjustments to the Fixed Service as a Consequence of
Changes to the Frequency Allocations Within the Range 1 - 3 GHz**

considering

- [a] that the present Conference has allocated new frequency bands in the range 1 - 3 GHz for the mobile-satellite, broadcasting satellite (sound) and identified spectrum for the future public land mobile telecommunication systems (FPLMTS);]
- b) that the fixed service is allocated on a primary basis in various frequency bands in the range 1 - 3 GHz;
- c) that the fixed service in this range is extensively used and is likely to be used well into the future by many administrations;
- d) that the terrestrial components of FPLMTS can share with the fixed service where there is adequate geographic or frequency separation (see CCIR Report to WARC-92);
- e) that the fixed service has for many years shared satisfactorily with the space research, space operation and Earth exploration-satellite services frequency bands 2 025 - 2 120 MHz and 2 200 - 2 290 MHz;

recognizing

that although new techniques will allow some systems in the fixed service to be transferred to higher frequency bands or to use other means of telecommunications, there are technical and economic factors that will require continued operation of systems in the range 1 - 3 GHz;

noting

that item 2.9.1 of the agenda for the present Conference drew attention to the need to safeguard the interests of existing services that may be affected by changes to the Table of Frequency Allocations;

resolves

that when administrations implement new services in the range 1 - 3 GHz, to facilitate sharing they should take full account of the continuing needs of the fixed service by appropriate choice of geographical location, frequencies and timescales;

invites the CCIR

- 1. to continue its studies of the sharing criteria between the fixed service and other services;
- 2. to prepare new radio frequency channelling arrangements, if necessary, for the fixed service in the relevant frequency bands;

urges

administrations to continue to participate actively in these studies and to undertake the necessary adjustments to the fixed service within the timetable adopted by the present Conference for implementation of the new frequency allocations and designations in the range 1 - 3 GHz.

COMMITTEE 6

**TENTH AND LAST SERIES OF TEXTS
FROM COMMITTEE 4 TO THE EDITORIAL COMMITTEE**

The following texts were approved by Committee 4 and are submitted to the Editorial Committee for consideration and subsequently transmitted to the Plenary Meeting:

- 1) Resolution COM4 (HFBC).

Committee 4 also approved the proposals contained in Documents 316 and 317.

In view of the fact that action has been taken in response to Resolution 521 (Orb-88), Recommendation 511 (HFBC) and Recommendation 716 (Orb-88), these texts may be considered for suppression. Other Resolutions and Recommendations referred to in the agenda of the Conference would also require a review.

I. HUTCHINGS
Chairman

DRAFT RESOLUTION COM4/..

**Relating to the Convening of a World Administrative Radio Conference
for the Planning of HF Bands Allocated to
the Broadcasting Service**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made new allocations for the HF broadcasting service;
- b) that use of the new bands allocated, given in No. 521B of the Radio Regulations, will be governed by planning procedures to be established by a competent WARC;
- c) that use of these bands is limited to single-sideband transmissions;
- d) the decision by the ITU Administrative Council at its 46th session not to convene in 1993 the HFBC Conference scheduled under Resolution No. 1 of the Plenipotentiary Conference (Nice, 1989);
- e) that the Administrative Council's decision was based on an IFRB report stressing the difficulties encountered by administrations and the IFRB in implementing the improved HFBC planning system adopted by WARC HFBC-87,

noting

that the Council's decision was not accompanied by any guarantee that the planning conference would be held in the short or medium term,

resolves

- 1. that administrations are required to abide strictly by the provisions of No. 531 of the Radio Regulations adopted by WARC-79 and by those adopted by this Conference (Nos. 521C, 528A, 529B and 534D);
- 2. that administrations will not put broadcasting stations into service in the bands mentioned in the provisions referred to above until the planning process has been completed, in conformity with those provisions,

resolves further

that a WARC shall be convened as soon as possible to undertake the planning process,

recommends

that the next Plenipotentiary Conference take the necessary steps to include the convening of that planning conference in the Union's schedule of future conferences,

instructs the IFRB

to make a comprehensive report to the next competent WARC on the planning trials undertaken since WARC HFBC-84 and, on the basis of the experience it has acquired, to propose a flexible, simplified method of planning, which could be used for the subsequent development of a planning system,

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council.

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

PLENARY MEETING

Mexico and Venezuela

PROPOSAL FOR THE WORK OF THE CONFERENCE

MOBILE-SATELLITE SERVICE

Should WARC-92 decide to allocate a part of the spectrum to the mobile-satellite service (space-to-Earth) in the band 2 500 - 2 690 MHz, Mexico and Venezuela would wish the following footnote to be added with respect to the band concerned:

MEX/VEN/359/1
ADD 764A

Different category of service: in Mexico and Venezuela, the mobile-satellite service is allocated on a secondary basis. The power flux-density at the Earth's surface produced by space stations in the mobile-satellite service (space-to-Earth) in the band 2 500 - 2 690 MHz shall not exceed the values given in No. 2557.

Reasons: To give services already in operation due protection.

PLENARY MEETING

Mexico

PROPOSAL FOR THE WORK OF THE CONFERENCE

MOBILE-SATELLITE SERVICE

Should WARC-92 decide to allocate a part of the spectrum to the mobile-satellite service (space-to-Earth) in the band 2 500 - 2 690 MHz, Mexico would wish the following footnote to be added with respect to the band concerned:

MEX/359/1

ADD

764A

Different category of service: in Mexico, the mobile-satellite service is allocated on a secondary basis in the band 2 500 - 2 690 MHz.

PLENARY MEETING

Israel. Italy

PROPOSAL FOR THE WORK OF THE CONFERENCE

MOBILE-SATELLITE SERVICE AND
BROADCASTING-SATELLITE SERVICE (SOUND)

Israel and Italy wish to add the following footnote to Article 8 of the Radio Regulations.

ISR/I/360/1

ADD

755A

In Israel and Italy in the band 1 427 - 1 525 MHz and in the band 2 500 - 2 690 MHz, the power flux-density at the surface of the Earth from space stations operating in the broadcasting-satellite service (sound) and in the mobile-satellite (space-to-Earth) service shall not exceed -152 dB(W/m²/4 kHz), unless otherwise agreed by affected administrations. The provisions of No. 757 apply.

PLENARY MEETING

Note from the Chairman of Committee 4

The Committee has approved a number of texts relating to mobile satellite issues, but some areas remain to be resolved. The outstanding issues relating to allocations around 2 500 - 2 690 MHz and 1 900 - 2 200 MHz. Documents 277, DT/119, DT/120 and others refer.

The broadcasting satellite (for sound broadcasting) allocations are also unresolved. Whilst there was clear agreement for a single band solution there was no agreement on a broad frequency range or individual band limits. Document DT/118 and others refer.

Following debate on these issues during the nineteenth meeting, it seemed that a compromise overall solution may be possible. Accordingly, following a general outline of such a package to the Committee, I undertook to place a set of definitive proposals to the Plenary for its consideration. These are attached in the annexes to this document.

Whilst I have completed some informal discussions it will clearly be necessary for the Plenary to determine if the outline of allocations in Annex 2 are acceptable, in order that a detailed Table and footnotes can be developed and submitted via Committee 6.

I.R. HUTCHINGS
Chairman of Committee 4

ANNEX 1

2 500 - 2 690 MHz

1. New Table allocations (in addition to existing allocations) as follows:
2 500 - 2 520 MHz Mobile satellite (space-to-Earth), primary;
2 670 - 2 690 MHz Mobile satellite (Earth-to-space), secondary.
Both allocations are to be from a future date [2007].
2. A number of countries may require a footnote giving a different category of service for the new allocation (secondary). (Such countries should identify this to the Secretariat.)
3. A number of countries may also require a broadcasting satellite (sound) allocation by footnote. Secondary status initially, primary from [2007] (broadcasting to continue secondary), but the allocation would be subject to review prior to planning of the BSS (Sound) at a future conference. A bandwidth of 10 - 15 MHz would suffice, but the exact position in the overall band is not clear.
4. Consequential change as follows:
 - 1) Alter band limits in No. 758 to 2 520 - 2 670 MHz;
 - 2) Recognizing that existing BSS (Television) systems are able to accommodate the MSS 2 x 20 MHz allocation, an alteration of the BSS (Television) band limits to 2 520 - 2 670 MHz may be desirable

ANNEX 2

1 429 - 1 525 MHz

1. New Table allocations (in addition to existing allocations) as follows:

- 1 469 - 1 485 MHz Broadcasting satellite and
Broadcasting; both on a secondary basis. (Footnote provisions to limit to initial
systems, prior to consideration of planning of the service);
- 1 462 - 1 492 MHz Broadcasting satellite, primary
Broadcasting secondary, both from [2007].

Existing services are to remain with existing status. Footnote limitation to DAB.

2. A footnote or Resolution to require a review of allocations prior to planning of the bands by a competent conference, to ensure that the allocated band is adequately wide in the light of experience to that date with initial implementation of the system.

Planning by a future conference should avoid fixed and mobile systems where practicable, but eventual redeployment of existing services may be necessary where an administration wishes to implement the BSS (Sound) service.

3. Protection of existing systems by:

- 1) initial secondary status;
- 2) phased implementation;
- 3) footnotes to restrict power flux-density from BSS (Sound) space stations on countries as required. Note that power flux-density limits may vary from country to country depending upon types of services in use. (Countries are to advise the Secretariat of requirements.)

ANNEX 3

2 300 - 2 500 MHz

1. New Table allocations as follows:
2 483.5 - 2 500 MHz Mobile satellite (space-to-Earth), primary
(to pair with 1 610 MHz, etc.)
2. Footnote provision to allow broadcasting satellite (sound) and broadcasting in bands
2 310 - 2 360 MHz (exact bandwidth or position to be developed) for a number of countries. Secondary status
initially, primary from [2007] (broadcasting to continue secondary), but the allocation would be subject to
review prior to planning of the BSS (Sound) at a future date.
3. Mobile status change in R.1 as agreed.

ANNEX 4

1 800 - 2 300 MHz

1. Agreed changes to bands:

2 025 - 2 110 MHz;

2 200 - 2 290 MHz.

For space research, space operation, EES etc., as per other documentation.

2. New allocations as follows:

2 170 - 2 200 MHz Mobile satellite (space-to-Earth), primary;

1 980 - 2 010 MHz Mobile satellite (Earth-to-space), primary. (This would include up to 10 MHz identified in FPLMTS for space technologies and possibly additionally a broader allocation.);

2 160 - 2 170 MHz Mobile satellite (space-to-Earth), primary;

1 970 - 1 980 MHz Mobile satellite (Earth-to-space), primary, R.2 only (possible secondary in R.1 and R.3).

and:

2 110 - 2 160 MHz Mobile satellite (space-to-Earth), secondary

1 920 - 1 970 MHz Mobile satellite (Earth-to-space), secondary in some countries identified by the footnote.

With the allocations effective from 1997. All existing services would remain without change.

The Earth-to-space direction of transmission may be shifted some 15 MHz higher if desired, but this would lose the worldwide capability of actual operation. Note that whatever allocation is made may provide difficulties for one or more countries.

WORKING GROUP OF
THE PLENARY
COMMITTEES 5 AND 6

Note by the Chairman of the Working Group of the Plenary

TEXTS PREPARED BY THE WORKING GROUP OF THE PLENARY

1. Texts submitted to the Editorial Committee

Resolution GT-PLN/1 (Document 141)	Relating to Primary Service Requirements for the Meteorological-Satellite and Earth Exploration-Satellite Services in the Band 401 - 403 MHz
Resolution GT-PLN/2 (Document 222)	Relating to Further Work by the CCIR Concerning the Broadcasting-Satellite (Sound) Service
Resolution GT-PLN/3 (Document 313)	Relating to the Review of Resolutions and Recommendations of the World Administrative Radio Conference
Resolution GT-PLN/4 (Document 313)	Review of Certain Resolutions and Recommendations of the WARC-79, MOB-83, HFBC-87 and ORB-88
Resolution 703(Rev.WARC-92) (Document 222)	Relating to the Calculation Methods and Interference Criteria Recommended by the CCIR for Sharing Frequency Bands Between Space Radiocommunication and Terrestrial Radiocommunication Services or Between Space Radiocommunication Services
Recommendation GT-PLN/A (Document 158)	Relating to Implementation of Wind Profiler Radars at Frequencies Near 50 MHz, 400 MHz and 1 GHz
Recommendation GT-PLN/B (Document 331)	Relating to Sharing Criteria in Frequency Bands Shared by the Mobile-Satellite Service and the Fixed, Mobile and Other Radio Services
Recommendation 66(Rev.WARC-92) (Document 141)	Relating to Studies of the Maximum Permitted Levels of Spurious Emissions

2. Text submitted to Committees 4 and 5

2.1 Frequency sharing criteria

Document 157	Power flux-density limits of HDTV broadcasting satellites
Document 217	Power flux-density limits applicable to the band 37 - 37.5 GHz

Document 218(Rev.1)	Sharing criteria for the inter-satellite service above 20 GHz
Document 223 + Corr.1	Sharing criteria for low-Earth orbit satellites below 1 GHz
Document 229	e.i.r.p. limits of the terrestrial systems to protect the inter-satellite service above 20 GHz
Document 233	Power flux-density limits at 26 GHz
Document 254	Sharing criteria in Articles 27 and 28 (first reply)
Document 274	Trans-horizon radio-relay systems in the 2 025 - 2 110 MHz and 2 200 - 2 290 MHz bands
Document 314	e.i.r.p. limits for certain frequency bands referred to in Documents DT/107 and DT/115
Document 315	Sharing criteria in Articles 27 and 28 (second reply)
Document 330	Sharing criteria in Articles 27 and 28 (third and last reply)
Document 346	Additional sharing criteria in Articles 27 and 28
 2.2 Other technical characteristics	
Document 156	Definition of "geostationary satellites"
Document 219	The maximum allowable inclination angle of satellite networks using slightly inclined geostationary-satellite orbits
Document 232	Additional orbital characteristics to be provided with the data already listed in Appendices 3 and 4 to allow the evaluation of interference to and from non-geostationary satellite networks
Document 255	Generalized coordination distance for coordination between fixed stations and typical earth stations operating in non-geostationary-satellite networks
 2.3 Miscellaneous	
Document 171	Transmission of a request for study
 3. Text submitted to the Plenary Meeting	
Document 172	First progress report to the Plenary on the work of the Working Group of the Plenary

M. MUROTANI
Chairman, Working Group of the Plenary

COMMITTEE 5

SUMMARY RECORD
OF THE
FOURTEENTH AND FINAL MEETING OF
COMMITTEE 5
(REGULATORY)

Thursday, 27 February 1992, at 1500 hours

Chairman: Mr. E. GEORGE (Germany (Federal Republic of))

Subjects discussed

Documents

- | | | |
|----|---|---------------|
| 1. | Resolution COM5/10 (Terrestrial digital sound broadcasting)
(continued) | 192 (Annex 2) |
| 2. | Revision of Resolution COM5/12 (BSS (Sound) including
complementary uses) (continued) | 294 |
| 3. | Draft Resolution relating to the establishment of standards for the
operation of low-orbit systems | 285 |
| 4. | Closure of the work of Committee 5 | - |

1. Resolution COM5/10 (Terrestrial digital sound broadcasting) (continued) (Annex 2 to Document 192)

1.1 Returning to consideration of Annex 2 to Document 192, the Chairman proposed deleting **considering** d) and adding "VHF" to the title.

1.2 It was so decided.

1.3 The delegate of the United States, agreeing with the delegates of Saudi Arabia and Israel, who had already commented on the same subject, objected to the addition of the letter "s" after "band" and to inclusion of the word "broadcasting" in **resolves** 1. He would return to that point at a later stage.

2. Revision of Resolution COM5/12 (BSS (Sound) including complementary uses) (continued) (Document 294)

2.1 The Chairman said that Document 294 was simply a copy of the draft which had been considered the day before and that Committee 5 should wait for the conclusions of Committee 4.

2.2 The delegate of Australia asked for a comma to be inserted after the words "BSS (Sound)" in the English version of **considering** a).

2.3 The delegate of Canada, in **resolves** 3, proposed adding the words "BSS (Sound)" before "operational systems" to bring the wording into line with the utilization of Resolution No. 33. In **decides** 6, he also proposed adding the abbreviation TV in "existing and planned BSS systems", to read "existing and planned TV BSS systems", in order to take account of the fact that the systems of INSAT and ARABSAT were very different from the rest.

2.4 In reply to the delegate of Canada, the Chairman approved the wording "operational BSS (Sound) systems", also amending **resolves** 2 by adding ", for BSS (Sound) systems," before "the procedure". He thought it was perhaps not advisable to add the abbreviation TV in **resolves** 6, since the Table of Frequency Allocations was not restricted to television. It might be possible to insert "TV and/or sound".

2.5 The delegate of the United Kingdom commented that the new wording would mean that such systems could not be introduced before 1 January 2005, whereas the text was precisely intended to allow the introduction of experimental systems prior to that date.

2.6 The delegate of Canada agreed to withdraw his proposal if it was understood that the text was intended to protect systems. He did not want the addition of the abbreviation TV to suggest any kind of limit being imposed on BSS systems.

2.7 The delegate of Indonesia said that, considering the cost and the risk which such services represented for developing countries, he preferred deleting "of an experimental nature" in **considering** b) or putting the expression between square brackets.

2.8 The Chairman admitted that there was a risk, but it was one which the satellite supplier had to run. It should be remembered that broadcasting had to cease in the event of harmful interference. The notion of "experimental" was clearly defined in the Regulations and was therefore applicable in that context.

2.9 After further discussion, it was decided that the text should be left as it was.

3. Draft Resolution relating to the establishment of standards for the operation of low-orbit systems (Document 285)

3.1 The delegate of Colombia, introducing Document 285, said that the ITU was responsible for the timely establishment of technical and operational standards for telecommunications of all kinds, in order, in particular, to ensure rational use of the radio frequency spectrum. That was why the countries jointly

sponsoring the draft Resolution wanted technical, legal and operational studies to be carried out so as to ensure equitable and standard conditions of access for all ITU Members, while guaranteeing protection for existing services and systems at the world level.

3.2 The delegate of Spain recalled the fears aroused by the introduction of new services using worldwide LEO systems owing to the lack of technical criteria and methods of sharing and ensuring compatibility with other telecommunication systems, of effective coordination procedures guaranteeing the protection of other systems, and of legal and operational standards, not to mention other technical and economic aspects. The draft Resolution before the Committee was intended to remedy those shortcomings by inviting the ITU organs to undertake the necessary technical, legal and operational studies related to low-orbit satellite systems.

3.3 The delegate of the Netherlands asked for the IFRB Member to give his views on the draft Resolution.

3.4 The Member of the IFRB said that it concerned not only the Board, but all the organs of the Union, including the Secretary-General. If the Resolution, which was very general in its terms, was adopted, it would need to be considered by the Coordination Committee, who would decide how the approach was to be coordinated.

3.5 The delegate of the Netherlands suggested either putting the draft Resolution between square brackets or keeping it as a white document pending a decision by the Secretary-General.

3.6 As that proposal received no support, the draft Resolution in Document 285 was approved.

4. Closure of Committee 5's work

4.1 The Chairman thanked all those who had helped him complete the delicate task entrusted to him by the Conference, though it was certainly not as delicate as that assigned to Committee 4. There had been some differences of opinion, but they had been overcome thanks to the spirit of compromise which had prevailed throughout the meetings. In the last resort, nobody had won or lost, and some balanced results had been obtained. He wished, in particular, to thank the Chairmen of Working Groups 5A, 5B and 5C, as well as the Chairmen of the Sub-Working Groups, the Chairman of ad hoc Group 1, the Chairman of ad hoc Group 2 and the Chairman of the Select Group. The Member of the IFRB and the Committee Secretary had also been extremely helpful, and he wished to thank them and the Secretariat as a whole.

4.2 The delegate of Canada, on behalf of his delegation, thanked the Chairman for his competent and firm handling of the Committee's work.

4.3 The delegate of Mexico said she had worked with the Chairman at many previous conferences; she recognized his professional competence and his many personal qualities, and she particularly welcomed his friendly relations with all the delegations, thanks to which he had handled the Committee's affairs exceptionally well.

4.4 The delegate of Argentina praised the Chairman's competence, neutrality and all the other qualities he had displayed in chairing the Committee.

4.5 The delegates of the United Kingdom, Nigeria and the Islamic Republic of Iran endorsed the remarks of the previous speakers, recognizing that some difficult issues had been easily resolved thanks to the Chairman.

4.6 The Chairman once again thanked all those who had contributed to the Committee's work for their valuable help.

The meeting rose at 1615 hours.

The Secretary:
J. LEWIS

The Chairman:
E. GEORGE

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

Document 364-E

1 March 1992

Original: English

PLENARY MEETING

Sweden and Switzerland

PROPOSAL FOR THE WORK OF THE CONFERENCE

S/SUI/364/1

SUP 612

Reasons: Footnote 612 relating to the use of the frequency band 150.05 - 153 MHz in Sweden and Switzerland is superfluous.

PLENARY MEETING

Russian Federation

PROPOSALS FOR THE WORK OF THE CONFERENCE

URS/365/1

ADD

731E

In accordance with Footnote 732, in the Russian Federation, the frequency band 1 610.0 - 1 620.6 MHz is used for the aeronautical radionavigation-satellite service.

On the territory of the Russian Federation, power flux-density on the Earth's surface from the space and earth stations in the mobile-satellite service shall not exceed -170 dBW/m²/4 kHz unless otherwise agreed upon by the administrations concerned.

PLENARY MEETING

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND)
AND MOBILE-SATELLITE SERVICE

In the event that WARC-92 decides to allocate spectrum for the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service in the band [around 1 450] MHz, the following proposal is submitted:

USA/366/1

ADD 721A

In the design of systems in the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service in the [around 1 450] MHz band, administrations shall take all practicable steps to protect the radio astronomy service in the primary passive band 1 400 - 1 427 MHz taking into account Nos. 721 and 722.

In addition, the following proposals are submitted relative to the mobile-satellite service:

USA/366/2

ADD 729B

Additional allocation: in the United States, the bands 1 545 - 1 555 MHz and 1 646.5 - 1 656.5 MHz are also allocated on a secondary basis to the mobile-satellite (space-to-Earth) and (Earth-to-space) services, respectively.

USA/366/3

ADD 746B

Additional allocation: in the United States, the bands 1 910 - 1 990 MHz (Earth-to-space), 2 110 - 2 150 MHz (space-to-Earth) and 2 160 - 2 200 MHz (space-to-Earth) are also allocated on a secondary basis to the mobile-satellite service.

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

MINUTES

OF THE

TENTH PLENARY MEETING

Saturday, 29 February 1992, at 0940 hours

Chairman: Mr. J. BARRIONUEVO PEÑA (Spain)

Subjects discussed

Documents

- | | | |
|----|--|-----|
| 1. | Oral report by the Chairman of Committee 4 | - |
| 2. | Ninth series of texts submitted by the Editorial Committee for first reading (B.9) | 310 |
| 3. | Eleventh series of texts submitted by the Editorial Committee for first reading (B.11) | 326 |
| 4. | Twelfth series of texts submitted by the Editorial Committee for first reading (B.12) | 327 |

1. Oral report by the Chairman of Committee 4

1.1 The Chairman of Committee 4 said that although Committee 4 had no further meetings scheduled, it had unfortunately not been able to complete the work assigned to it. Some progress had been made the previous evening, for example on mobile-satellite services, with agreement being reached in respect of allocations in some parts of the spectrum, although in others there was still concern about the provisions and footnotes designed to protect existing services. Given the positive mood that prevailed in the Conference, further results might be obtained if time could be found to allow the discussions to continue.

1.2 The Chairman said that the time which remained available was very limited. He would consult the Steering Committee on the best course to follow.

**2. Ninth series of texts submitted by the Editorial Committee for first reading (B.9)
(Document 310)**

2.1 The Chairman of Committee 6 introduced Document 310, drawing attention to the reservations listed on the cover page.

Article 8

MOD Table 400.15 - 401 MHz. ADD 647A

2.2 The delegate of the United Kingdom said that a new MSS allocation had been added in the band concerned by Committee 4 the previous evening, with the result that the Table would have to remain in square brackets until a consolidated text giving the new MSS allocations had been produced.

2.3 It was agreed that discussion on this Table be deferred.

MOD Table 410 - 420 MHz. ADD 651A. MOD Table 942 - 960 MHz. SUP 708

2.4 Approved.

MOD Table 1 700 - 2 290 MHz. SUP 747. ADD 747A. SUP 748 - 750. ADD 750A.
MOD Table 2 290 - 2 450 MHz [SUP 743A]

2.5 At the suggestion of the delegate of the United Kingdom, it was agreed to defer consideration of those tables and footnotes, which did not reflect the most recent decisions of Committee 4.

MOD 596

2.6 Approved subject to the addition of Cuba to the list of countries.

MOD 604. SUP 614

2.7 Approved.

MOD 621. MOD 622

2.8 Approved subject to the inclusion of Malta in both footnotes.

MOD 627. SUP 633. SUP 634. MOD 635

2.9 Approved.

MOD 658

2.10 Approved subject to the addition of Burkina Faso and Yemen to the list of countries.

MOD 659

2.11 Approved subject to deletion of the square brackets around Malawi.

MOD 663. MOD 672. MOD 675

2.12 Approved.

MOD 676

2.13 Approved subject to deletion of the square brackets around Malawi.

MOD 678

2.14 Approved.

SUP 682

2.15 The delegate of Italy withdrew his reservation with regard to the suppression of this footnote.

MOD 697. MOD 87. MOD 703

2.16 Approved.

MOD 719

2.17 The delegate of Argentina having drawn attention to the fact that the name "German Democratic Republic" appeared in MOD 719 and other footnotes, the delegate of Germany said that the matter was covered to his delegation's satisfaction by the general statement it had made at the third Plenary Meeting.

2.18 MOD 719 was approved.

ADD 723B. MOD 724. MOD 746. MOD 769

2.19 Approved.

Resolution COM4/2

2.20 The delegate of Argentina explained the reasons which had prompted his delegation to enter a reservation with respect to the Resolution. In order not to delay the work of the Conference, and bearing in mind that the CCIR is invited to continue studying the problems in question, it was now prepared to withdraw its reservation.

2.21 Resolution COM4/2 was approved.

Resolution COM4/3

2.22 Approved subject to the substitution of "and" for "on" in the second line of "invites the CCIR" p.2., an editorial amendment to "invites the CCIR" p.3., and, if required, alteration of the "instructs the Secretary-General" paragraph to reflect standard ITU phraseology.

Resolution COM5/3

2.23 The delegate of Canada, recalling his delegation's earlier statement in Committee 5, said that although he understood the reasons for advocating that a world administrative conference be convened to revise the BSS Plans for Regions 1 and 3, he wished to point out that the BSS planning for Region 2 had been carried out at a regional conference which had transmitted the results to a world conference for incorporation in the Radio Regulations. The same approach might be followed in the present case by Regions 1 and 3. The possibility had been mentioned of holding a regional conference to be followed immediately by a one-week world conference; in his view, that would create problems for Region 2 administrations because of the very short time they would have to study what would certainly be a very complex plan.

2.24 The delegate of Brazil endorsed the views expressed by the delegate of Canada.

2.25 The Chairman of Committee 5 said that the relative merits of both options had been discussed at length in Committee 5 which, in order to overcome the problem, had agreed that it should be left to the next Plenipotentiary Conference to decide which type of conference to convene.

2.26 The delegates of the United Kingdom and the Islamic Republic of Iran endorsed the statement made by the Chairman of Committee 5.

2.27 The delegate of Morocco said that he saw considerable merit in the idea of a regional conference followed immediately by a world conference.

2.28 In reply to an enquiry by the Chairman, the delegate of Canada said that his delegation could accept the text of the Resolution as it stood and would revert to the matter at the 1994 Plenipotentiary Conference.

2.29 Resolution COM5/3 was approved on this understanding.

Resolution COM5/9

2.30 In reply to the delegate of Lebanon, who asked what financial resources would be available for implementing the Resolution, the Secretary-General said that the next world development conference would probably be held early in 1994. In the very short term, there was no specific budget heading for the activities contemplated in this Resolution; however, there were some general budget lines which permitted certain priorities to be identified. The 1989 Plenipotentiary Conference had set the ceilings for BDT expenditure in such a way that they increased year by year throughout the plenipotentiary period, so that there would be more scope in 1993 and 1994 than in earlier years.

2.31 Resolution COM5/9 was approved.

Recommendation COM4/B

2.32 An editorial amendment suggested by the delegate of Panama to the Spanish-language version of "considering a)" was noted for transmittal to the Editorial Committee.

2.33 The delegate of Burkina Faso considered that the wording of the "recommends" part could be improved.

2.34 The delegate of Morocco said that the operative part of the text should be in the form of a Resolution, not a Recommendation, since a more forceful text was called for in view of the significant number of Union Members still operating HF broadcasting stations in frequency bands not allocated to the broadcasting service. He suggested that the text of the "recommends" part should be replaced by: "resolves to request administrations to operate their stations in conformity with Article 35 of the Convention and to take practicable steps to eliminate HF broadcasting outside the HF bands allocated to the broadcasting service."

2.35 The delegate of Cuba agreed that a Resolution was preferable to a Recommendation.

2.36 Following a discussion in which the delegates of Morocco, Spain, Mexico and Italy and the Chairman of Committee 4 took part, it was agreed to retain the text as it stood, on the understanding that the views of the Moroccan and Cuban delegations would be reflected in the minutes of the meeting.

2.37 Recommendation COM4/B was approved.

Recommendation COM4/C

2.38 Approved subject to a minor editorial amendment.

2.39 With the exception of the tables and footnotes deferred for subsequent consideration, the ninth series of texts submitted by the Editorial Committee (B.9) (Document 310), as a whole, as amended, was approved on first reading.

3. Eleventh series of texts submitted by the Editorial Committee for first reading (B.11) (Document 326)

3.1 The Chairman of Committee 6 drew attention to the reservations made by certain delegations in respect of Article 8 and Resolution COM5/10, as noted on the cover page of Document 326.

Article 8

MOD Table 19.7 - 20.2 GHz

3.2 Approved subject to the deletion of the reference to Footnote 873A from the Region 1 and Region 3 boxes, the deletion of the square brackets from around "873E" in the Region 2 box, and the insertion of a reference to Footnote 873D in the Region 2 box.

MOD 873

3.3 Following comments by the delegates of the United States and the United Kingdom, it was agreed to add in the last sentence, after "in the fixed-satellite service", the words "in the band 19.7 - 21.2 GHz" and, after "in the mobile-satellite service", the words "in the band 19.7 - 20.2 GHz".

ADD 873A, 873B, 873C

3.4 Approved.

ADD 873D

3.5 The delegate of the United States withdrew his delegation's reservation with respect to ADD 873D.

3.6 ADD 873D was approved.

ADD 873E

3.7 Approved subject to deletion of the square brackets.

MOD Table 29.5 - 30 GHz

3.8 The delegate of Japan proposed inserting a reference to Footnote 882B in the boxes for Regions 1, 2 and 3 relative to the sub-band 29.5 - 29.9 GHz.

3.9 It was so agreed.

3.10 The Chairman of Committee 4 indicated that the reference to Footnote 873A should be deleted from the boxes for Regions 1 and 3 in the sub-band 29.5 - 29.9 GHz. Following the work on high-definition television, he proposed the addition of a new footnote, 882W, to read: "The band 27.5 - 30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service". That footnote's reference would be inserted in all four boxes of the Table, against the fixed-satellite service (Earth-to-space).

3.11 After a discussion in which the delegates of Morocco, France and Canada and the Chairman of Committee 4 took part, it was agreed that the new footnote was intended to be informative and in no way restrictive, and that the wording as proposed would be transmitted in writing to Committee 6.

ADD 882A, ADD 882B, ADD 882C, MOD 883

3.12 Approved.

Article 29

ADD 2613A

3.13 Approved.

Resolution GT-PLEN/3

3.14 Approved subject to deletion of the square brackets with its content in the title and of the square brackets in "**considering a)**".

Resolution GT-PLEN/4

3.15 Responding to a comment by the Chairman of the Working Group of the Plenary, the Chairman of Committee 4 said that further Resolutions and Recommendations might have to be added to the list as a result of work in his Committee. He suggested that a pair of square brackets containing no text should be inserted in an appropriate place in Resolution GT-PLEN/4, in order to serve as a reminder that subsequent additions might be necessary.

3.16 It was so agreed.

3.17 In reply to a comment by the Chairman of Committee 6 concerning the inclusion of Resolution No. 326 (Mob-87) in the list of Resolutions to be abrogated, the Chairman of the IFRB said that the Board was still considering certain aspects of that Resolution in relation to its work; at the present juncture, therefore, it would be preferable not to include the Resolution in the list.

3.18 It was so agreed.

3.19 Resolution GT-PLEN/3 was approved as it stood.

Resolution COM5/10

3.20 The delegate of Oman, supported by the delegates of Yemen, Morocco and Pakistan, proposed the insertion of an amendment instructing the BDT to include among its priorities the study of exceptional severe propagation phenomena, especially in developing countries where technical or financial capabilities were not available, together with an amendment requesting the CCIR to give all possible assistance to the BDT in that area.

3.21 The Chairman of Committee 5 and the delegates of Spain and the Netherlands expressed doubts as to whether it was the responsibility of the BDT to include such studies in its work.

3.22 The Secretary-General observed that the BDT was not intending to conduct any propagation studies; however, it could be requested to give higher priority to those questions. With appropriate editing, the amendment proposed by the delegate of Oman could no doubt be accommodated in the Resolution.

3.23 The Director of the CCIR confirmed that the BDT had not carried out propagation studies itself; it had, however, provided the CCIR with technical guidance and coordination, and the countries themselves had then made use of data from the CCIR studies.

3.24 The delegate of the United States, referring to the reservation expressed by his delegation regarding the replacement of the text "in the VHF broadcasting bands" by the text "in the VHF band", considered that "resolves 1)" should be aligned with "considering f)" by inserting, after "in the VHF band", the phrase "allocated to the broadcasting service".

3.25 The delegates of Saudi Arabia, Morocco, Israel, Pakistan and Spain supported that proposal, whereas the delegates of Italy and the Netherlands said that they preferred the text as it stood.

3.26 The Chairman of Committee 5, recalling the lengthy discussion which had taken place in the Committee and the divergent views which had been expressed on the issue, said that the wording "in the VHF band" had been the result of compromise, which had led to reservations being expressed by some delegations. With a view to avoiding any limitation of the CCIR studies, while nevertheless suggesting some focus, he proposed inserting after "in the VHF band" the phrase "focusing primarily on the VHF broadcasting bands".

3.27 The delegates of the United States, Spain and Australia supported that proposal.

3.28 The delegate of Mali said that he could not accept such an amendment, since the text in Document 326 already represented a compromise.

3.29 The delegate of Saudi Arabia did not consider that the amendment represented a compromise; however, he was willing to accept it in order to facilitate the work of the meeting. That did not mean that the Saudi Arabian Administration would be committed in any way to the results of the studies of those bands not allocated to broadcasting services.

3.30 After some discussion among the delegates of Morocco, Israel, Mexico, the United States, Spain, France, Italy and Canada as to the exact wording of the proposed amendment, in particular whether to use the phrase "sound broadcasting in the VHF band", it was decided to retain the amendment as proposed by the Chairman of Committee 5.

3.31 The delegate of Morocco, supported by the delegate of Pakistan, said that his acceptance of the amendment was subject to the clear understanding that it did not imply the acceptance by any delegation of the possible use, for terrestrial sound broadcasting, of VHF bands used at present for television broadcasting.

3.32 The delegates of Italy and Mali said that they accepted the amendment proposed by the Chairman of Committee 5, in a spirit of compromise.

3.33 Resolution COM5/10, as amended, was approved.

Resolution COM5/11

3.34 At the request of the delegate of the United States and the Director of the CCIR, it was agreed to defer consideration of Resolution COM5/11 pending the outcome of informal consultations.

Recommendation COM4/D

3.35 Approved.

3.36 With the exception of Resolution COM5/11, the eleventh series of texts submitted by the Editorial Committee (B.11) (Document 326), as a whole, as amended, was approved on first reading.

4. Twelfth series of texts submitted by the Editorial Committee for first reading (B.12) (Document 327)

4.1 The delegate of Austria said that, in the Table on page 1 of Document 327, Footnote 475 related to Austria (AUT) and not Australia (AUS). He confirmed that the footnote should be suppressed.

4.2 It was so agreed.

4.3 The twelfth series of texts submitted by the Editorial Committee (B.12) (Document 327), as a whole, as amended, was approved on first reading.

The meeting rose at 1310 hours.

The Secretary-General:

P. TARJANNE

The Chairman:

J. BARRIONUEVO PEÑA

PLENARY MEETING

MINUTES

OF THE

ELEVENTH PLENARY MEETING

Sunday, 1 March 1992, at 0940 hours

Chairman: Mr. J. BARRIONUEVO PEÑA (Spain)

Subjects discussed

Documents

- | | | |
|----|--|----------|
| 1. | Report by the Chairman of Committee 4 | - |
| 2. | Appendix 26/Article 12 of the Radio Regulations | 239, 333 |
| 3. | Thirteenth series of texts submitted by the Editorial Committee for first reading (B.13) | 344 |
| 4. | Fourth series of texts submitted by the Editorial Committee for second reading (R.4) | 329 |

1. Report by the Chairman of Committee 4

1.1 The Chairman of Committee 4 said that although the Committee had made good progress in its work in the additional time made available to it, some issues remained unresolved. However, a consensus on a compromise was emerging and he would submit a document containing the Committee's proposals later that day.

2. Appendix 26/Article 12 of the Radio Regulations (Documents 239 and 333)

2.1 The Chairman of Committee 5, speaking as the Chairman of ad hoc Group 1 of the Plenary, recalled that at the seventh Plenary meeting the concern had been expressed that the approach in Document 239 might entail scrapping the work done so far by the IFRB on an arrangement for the allotment of frequencies for the aeronautical mobile (OR) service and starting again from scratch, with the consequent financial implications. It had therefore been decided to postpone further consideration of the issue and the Chairman of the Conference had been requested to hold discussions with interested delegations. He had been asked to conduct those negotiations on behalf of the Chairman of the Conference.

2.2 At an informal meeting with those administrations having expressed concern as well as others interested in the matter, a compromise supported by a broad majority had been reached, to the effect that the work to be done on developing the allotment arrangement should be based on the work already done by the IFRB.

2.3 A revised text of draft Resolution [PLEN/AH-1] was annexed to Document 333; it replaced the draft Resolution in Annex 1 to Document 239, the other annexes of which remained unchanged. Under "resolves 1" of the new text, the final allotment arrangement would be based on the report of the IFRB to the Conference as modified during the Conference. To the IFRB's initial arrangement would be added further allotments as specified in "resolves 1". While preserving the principle of equitable access, the new compromise approach would minimize the additional costs incurred in developing the arrangement.

2.4 The delegate of Morocco said that his delegation was prepared to accept the proposals of ad hoc Group 1 in Document 333 and he thanked the Group's Chairman for his efforts in finding a solution to the problem. In order to correct the inconsistencies that existed in the IFRB report with regard to Morocco, he requested that, when Part III of Appendix 26 was established, all his country's allotments, with or without assignments, should be transferred to the nearest channel of the same band. Furthermore, he proposed that the words "as modified during the Conference" in "resolves 1" of the draft Resolution in Document 333 should be replaced by "to be modified to take account of comments made during the Conference". Finally, he wished to withdraw any part of his previous statement on the procedure followed for implementing Nice Resolution No. 9 that might be interpreted as an expression of lack of confidence on the part of his delegation in the IFRB, its Secretariat or its work, and to apologize to Members of the Board and its Secretariat if during the discussions he had used any words that had been interpreted in a sense which he had not intended to convey.

2.5 The delegate of the Netherlands approved the proposals in Document 333.

2.6 The delegates of Turkey, Côte d'Ivoire and the Islamic Republic of Iran approved the text of the draft Resolution in Document 333 but could not accept the amendment proposed by the delegate of Morocco.

2.7 The delegate of Cuba made the following statement:

"The Plenary Meeting's discussion of Committee 5's work in connection with Appendix 26 having been concluded, and the IFRB having been instructed to complete, after the Conference, the work relating to Part III of the appendix on the basis of the channelling arrangement contained in its report to the Conference, the administration of Cuba wishes the following to be placed on the record:

In the allotment arrangement submitted by the IFRB (Documents 5 and 147 of the Conference), allotments to the United States with the codes CUB (USA) appear in Cuba's allotment area (CUB), without coordination ever having been effected with our Administration.

Consequently, the Administration of Cuba again requests the IFRB to see to it that all allotments in Appendix 26(Rev.) bearing the code CUB are allotments submitted by the Cuban Administration, and that, for the purposes of entries in the Master Register the provisions of Resolution No. 1 of the Radio Regulations are strictly applied, on the clear understanding that the Union has not been notified of any special arrangement between the two administrations in that respect."

2.8 The delegate of Zambia said that during the informal consultations with the IFRB, his delegation had indicated that it had no notifications to make. In the existing Appendix 26 there were no specific allotments to Zambia, the allotments being in the name of Rhodesia, implying Northern and Southern Rhodesia. There was a need for coordination between the two Administrations concerned. He believed, however, that there would be no obstacle for his Administration to secure allotments under "**resolves 1c**)" of the draft Resolution annexed to Document 333.

2.9 The delegate of Swaziland supported the text of the Resolution [PLEN/AH-1] in Document 333 as a replacement for the one in Document 239 and requested the IFRB to extend as much assistance as possible to Swaziland under "**resolves 1c**)".

2.10 The delegate of Argentina, after supporting the draft Resolution in Document 333, drew attention to an editorial amendment which affected only the Spanish-language version of the text.

2.11 The delegate of the United Arab Emirates said that at present his Administration had no allotment in the channelling arrangement and wished the IFRB to note that it was applying for one.

2.12 The Chairman of the IFRB assured the delegate of Morocco that that country's allotments and assignments would be transferred to the nearest possible channels of the same band in the new arrangement. There was room for error in any automated plan, but many of the problems that had arisen at the Conference with respect to the new arrangement had been due to a fairly low level of response from administrations. The Board was aware of the importance of Appendix 26 to administrations from both the practical and the political standpoints, and it had always been very conscious of the need to endeavour to cover all their requirements.

2.13 After thanking the delegate of Morocco for his expression of confidence in the Board, he said that the questions raised by the delegate of the United Arab Emirates and others would be covered under the new draft Resolution, and assured the meeting that the Board would, as always, endeavour to do its best for all administrations.

2.14 The delegate of Benin requested the IFRB to note that his country's allotments should henceforth be entered under the name of Benin and not Dahomey as in the present Appendix 26.

2.15 The President noted that there was general agreement on the text of the draft Resolution in Document 333, and that it only remained to take a decision on the Moroccan amendment.

2.16 The Chairman of Committee 5 said that the wording of "**resolves 1**" had been very carefully chosen. He suggested that it should be maintained, on the understanding that it was made clear in the minutes of the meeting that the contents of Document 147 were to be used for the further development of the allotment arrangement.

2.17 The delegate of Morocco said that he was prepared to withdraw his amendment in the light of the assurances he had received from the Chairman of the IFRB.

2.18 The delegate of the United States joined other speakers in commending the Chairman of Committee 5 for his excellent work both on Document 333 and for the Conference in general. With reference to the statement made by the delegate of Cuba, he pointed out that the United States presence in Guantanamo was by virtue of a treaty in force. The United States reserved its right to meet its radiocommunication requirements as in the past.

2.19 Following some further discussion involving the delegates of Burkina Faso, Morocco, Mexico, and Italy and the Chairman of Committee 5, the Chairman said that if he heard no objection he would take it that the meeting agree to approve Resolution [PLEN/AH-1] as it stood in Document 333.

2.20 It was so decided.

**3. Thirteenth series of texts submitted by the Editorial Committee for first reading (B.13)
(Document 344)**

Article 8

MOD Table 17.3 - 18.1 GHz, ADD 868A, 869A, 869B, 869C

3.1 Approved subject to the following amendments:

- sub-band 17.3 - 17.7 GHz, Region 2 box: the reference to Footnote 869A be moved to the bottom of the box instead of against the BSS;
- sub-band 17.7 - 17.8 GHz, Region 2 box: as above, together with deletion of the reference to Footnote 869B against the BSS.
- ADD 869A and ADD 869B on page B.13/1 to be deleted and replaced by ADD 869A on page B.13/2 with an editorial amendment and the square brackets retained pending the second reading;
- ADD 869C to be renumbered 869B and corrected also in the sub-band 17.7 - 17.8 GHz for Region 2 where it appears against "Mobile".

MOD Table 18.1 - 18.6 GHz, ADD 870A, ADD 870B

3.2 Approved subject to deletion of the reference to Footnote 870 in the sub-band 18.4 - 18.6 GHz and inclusion of the Federal Republic of Germany in the list of countries in ADD 870B.

MOD Table 21.4 - 22 GHz, ADD 873AA, ADD 873AB;

MOD Table 22.5 - 23 GHz, SUP 877, 878;

MOD Table 24.25 - 25.25 GHz, ADD 882X, ADD 882Y, ADD 882Z;

MOD Table 27 - 29.5 GHz, ADD 881B

3.3 Approved.

MOD Table 29.5 - 30 GHz, ADD 882A, 882B, 882C, 882W, MOD 883

3.4 There were no comments on the Table.

3.5 With regard to ADD 882A, the delegate of Japan, supported by the delegate of Canada, proposed that the reference to the band 27.500 - 27.501 GHz should be deleted from the first sentence and that the second sentence should be amended to read: "... shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. In the band 27.500 - 27.501 GHz, such space-to-Earth transmissions shall not produce a power flux-density in excess of the values specified in No. 2578 on the Earth's surface".

3.6 Subject to possible redrafting by the Chairman of Committee 4, in liaison with the Chairman of Committee 6, in order to make the sense of the footnote quite clear, the Japanese amendment was approved.

3.7 There were no comments on ADD 882B, ADD 882C, ADD 882W or MOD 883 which have been already examined in B.11 (326).

Recommendation GT-PLN/B

3.8 Approved, subject to deletion of the square brackets around "considering b)".

3.9 The thirteenth series of texts submitted by the Editorial Committee (B.13) (Document 344), as a whole, as amended, was approved on first reading.

**4. Fourth series of texts submitted by the Editorial Committee for second reading (R.4)
(Document 329)**

Preamble

- 4.1 The delegate of Spain drew attention to the square brackets remaining in the text.
- 4.2 The Secretary-General observed that all the square brackets remaining in the text related to a date that was still to be decided. In response to a request by the delegate of Morocco, he suggested that delegates might wish to reflect on 12 October 1993 as a suitable date for entry into force of the revised Radio Regulations as adopted by the Conference.
- 4.3 It was so agreed.

Article 1

- 4.4 NOC 181 and MOD 182 were approved.

Article 8

MOD Table 13.75 - 14 GHz, ADD 855A, ADD 855B

- 4.5 Approved.

[MOD 404]

- 4.6 The delegate of Lithuania suggested replacing the words "the western part of the USSR" by "the western part of the Russian Federation".
- 4.7 The delegate of the Russian Federation having pointed out that an overall solution was being sought for dealing with the references to the USSR throughout the Radio Regulations, the Secretary-General said that the matter was under discussion and that a solution seemed to be in sight. If delegates were prepared to accept his assurance that the issue would be settled in due course, the square brackets could perhaps be removed from around MOD 404.
- 4.8 It was so agreed.

Resolution COM4/1

- 4.9 Approved.

Resolution COM5/5

- 4.10 Following a discussion on the applicability or non-applicability of the Resolution to Region 2 as well as to Regions 1 and 3, for which it had originally and primarily been intended, in which the delegates of the United States, Canada, Colombia and Mexico and the Chairmen of Committees 4 and 5 and of ad hoc Group 1 of Committee 4 took part, it was suggested to amend the end of the title to read: "... in the bands 17.3 - 17.8 GHz in Region 2 and 21.4 - 22.0 GHz in Regions 1 and 3", and to make the necessary consequential changes in the body of the text.
- 4.11 At the suggestion of the Chairman of Committee 4, it was agreed to replace the date "[1 April 2005]" by "1 April 2007" throughout the text.

4.12 Following comments by the delegate of Spain and the Chairman of Committees 4 and 5, it was agreed to delete both the part of the text of "**considering a**)" which followed the date and, as a consequence, the phrase "but only on the basis of [No. 873A] of the Radio Regulations" in Section I, paragraph 1 of the Annex.

4.13 The Chairman of Committee 5, supported by the delegate of Australia, said that as a consequence of the inclusion in Resolution COM5/5 of the frequency band for Region 2, it would be necessary to include a reference to that Resolution in the appropriate footnote to the Table of Frequency Allocations.

4.14 Following further discussion, the Chairman suggested that the Region 2 delegates concerned should consult with the Chairman of Committee 5 and, if necessary, the IFRB with a view to submitting to the Plenary a definitive proposal concerning the relevant references. The Resolution would be held in abeyance for final adoption until such time as that question had been settled.

4.15 It was so agreed.

Resolution COM5/6

4.16 The Chairman said that the parts of the text in square brackets would be considered at a later stage.

4.17 The Resolution was approved on that understanding.

Resolution COM5/7

4.18 Approved.

4.19 With the exception of the matters deferred for subsequent consideration, the fourth series of texts submitted by the Editorial Committee (R.4) (Document 329), as a whole, as amended, was approved on second reading.

The meeting rose at 1250 hours.

The Secretary-General:
P. TARJANNE

The Chairman:
J. BARRIONUEVO PEÑA

PLENARY MEETING

MINUTES

OF THE

TWELFTH PLENARY MEETING

Sunday, 1 March 1992, at 1515 hours

Chairman: Mr. J. BARRIONUEVO PEÑA (Spain)

Subjects discussed

Documents

- | | | |
|----|--|---|
| 1. | Fifth series of texts submitted by the Editorial Committee for second reading (R.5) | 347 |
| 2. | Sixth series of texts submitted by the Editorial Committee for second reading (R.6) | 348 |
| 3. | Second series of texts submitted by the Editorial Committee for second reading (R.2) (continued) | 284 |
| 4. | Revision of Resolution GT-PLN/2 | 345 |
| 5. | Report by the Chairman of Committee 5 | 311, 340 |
| 6. | Report by the Chairman of Committee 4 and proposals by delegations | 361, 334, 335, 337,
343, 349, 351(Rev.1),
352, 353, 354, 355,
356, 359+Corr.1,
360, 364, 371, 374 |

1. Fifth series of texts submitted by the Editorial Committee for second reading (R.5)
(Document 347)

Resolutions COM4/2, COM4/3, COM5/3

1.1 Approved.

Resolution COM5/8 and Annex

Title

1.2 In reply to a query by the delegate of Cuba, the Chairman of Committee 4 suggested that the words in square brackets in Footnote 1 to the title could be replaced by the phrase "which specifically refer to the Resolution in the footnotes to the Table of Frequency Allocations". A general reference along those lines might be preferable to including a lengthy list of the frequency bands concerned. At the request of the delegate of Morocco, he indicated by way of information that the bands concerned were mostly those contained in Document 357. Generally speaking, it was the mobile-satellite bands that invoked the procedures, more specifically those around 157, 149, 312 and 401 MHz and in the general area of 1.5, 1.6, 2 and 2.5 GHz. However, it should be noted that some of those bands had still to be approved.

1.3 The Chairman of Committee 5 strongly supported the wording proposed by the Chairman of Committee 4.

1.4 The delegate of the United Kingdom, while agreeing that a general statement was perfectly adequate in the footnote, requested the Chairmen of Committees 4 and 5 to scrutinize carefully all the cases where the procedures would apply.

1.5 On that understanding, the title and the text of the footnote, as amended, were approved.

"Considering, considering also, considering further"

1.6 Approved.

["confirming"]

1.7 The delegate of Morocco said that his Administration was ready to accept the word "recognizing" as proposed previously by another administrations. However, legal experts had drawn his attention to a difficulty arising in connection with the reference to national regulatory requirements in subparagraph b). Morocco committed itself to applying only those regulatory requirements which were consistent with the international treaties it had ratified.

1.8 The delegate of the United States said that a similar problem might arise for other countries and proposed the insertion of the phrase "in accordance with international law" in subparagraph b) after the words "Member of the Union".

1.9 The delegate of Mexico said she had difficulties with the United States amendment since it was not clear what precisely was meant by the expression "international law".

1.10 The Secretary-General said he had been advised that the addition of the words proposed by the delegate of the United States posed no legal problem.

1.11 Speaking at the request of the Chairman, the assistant to the ITU Legal Adviser agreed with the delegate of Mexico that "international law" was a rather broad term covering not only international treaties but also the rules of jus cogens and customary law. However, he saw no reason why a general reference of that kind should give rise to difficulties, since it appeared frequently in resolutions adopted by the United Nations and the specialized agencies.

1.12 The delegate of the Russian Federation said he could accept the wording of subparagraph b) but would prefer to see the phrase "in whose territory these services are authorized" deleted.

1.13 The Secretary-General reminded delegates that they were engaged in a second reading intended to deal only with expressions in square brackets and errors in the text.

1.14 After the delegates of Cuba, Mexico and Algeria had endorsed the Secretary-General's observation, the delegate of the United States said that he too would defer to the Secretary-General's judgment although he found it surprising that an expression which appeared routinely in legal texts should give rise to such difficulty.

1.15 The Chairman said he understood it was the Plenary's wish to replace ["confirming"] by "recognizing", to delete the square brackets and to leave the text as it stood.

1.16 It was so agreed.

"Resolves", "invites", "instructs the IFRB", "invites the CCIR", "instructs the Secretary-General"

1.17 Approved.

Annex to Resolution COM5/8

1.18 Approved.

1.19 Resolution COM5/8, as a whole, as amended, and its annex were approved.

Resolution COM5/9

1.20 Approved.

Resolution COM5/10

Considering "title"

1.21 Approved.

"Resolves to invite the CCIR"

1.22 The Chairman of Committee 5 recalled that the delegate of Oman had proposed an amendment to the text of **resolves to invite the CCIR** which the Conference had adopted in principle, subject to editorial changes. Meanwhile, paragraph 2 had been placed in square brackets.

1.23 The delegate of Oman proposed the following new wording to be added after paragraph 2:

"3. to give particular attention to **resolves to invite the BDT** below;

resolves to invite the BDT

to include among its priorities the definition of a project relating to the study by the CCIR of exceptional severe propagation phenomena in the regions of concern to developing countries;"

1.24 The Chairman of Committee 6 said that it might be sufficient simply to add a paragraph inviting the BDT to take the action proposed by the delegate of Oman.

1.25 After a procedural discussion between the delegates of Morocco and Spain and the Chairman, it was decided to delete the square brackets around paragraph 2 and to submit the new text to a subsequent Plenary Meeting for approval.

"Instructs the Secretary-General", "invites administrations"

1.26 Approved.

1.27 With the exception of the new paragraph, Resolution COM5/10 as a whole, as amended, was approved.

Recommendations COM4/B, COM4/C, COM4/D

1.28 Approved.

1.29 With the exception referred to in paragraph 1.27 above, the fifth series of texts submitted by the Editorial Committee (R.5) (Document 347), as a whole, as amended, was approved on second reading.

2. Sixth series of texts submitted by the Editorial Committee for second reading (R.6) (Document 348)

Article 8

MOD Table 19.7 - 20.2 GHz

2.1 Approved.

MOD 873

2.2 The Chairman of Committee 6 pointed out that the words "in the latter band" at the end of the footnote had been omitted from the French and Spanish texts.

2.3 The delegate of the United States, after recalling his remarks during the first reading, said that the final sentence of MOD 873 appeared to impose a constraint on services above 20.2 GHz that had been in operation for many years and had always adequately protected the countries mentioned. He therefore proposed that the final sentence should be replaced by that contained in Document 326 (B.11/1).

2.4 The Chairman of Committee 4 stated that Committee 4 had not wished to alter in any way the conditions in the band 20.2 - 21 GHz. Footnote 873, however, referred to the 19.7 - 21.2 GHz band, part of which had been changed and another part left unchanged. The modification involved the addition of the mobile-satellite service, but it applied only below 20.2 GHz where it was on a primary basis. So the present text in fact maintained the status quo and should meet the concerns of the United States delegate.

2.5 The delegate of the United States said that, while he appreciated the remarks of the Chairman of Committee 4, he would still prefer the wording of Document 326, which was better adapted to a very complex situation.

2.6 The Secretary-General suggested that, in the absence of any square brackets in the text and in the light of the assurances given by the Chairman of Committee 4, it might be sufficient to record the concerns of the delegate of the United States in the minutes of the meeting.

2.7 The delegate of the United States, after recalling that he had indicated during the first reading that he wished to return to the text of Footnote 873, acceded to the Secretary-General's suggestion.

2.8 MOD 873 was approved as it stood.

ADD 873A, 873B, 873C, 873D, 873E,

MOD 596, 604,

SUP 614,

MOD 621 (Mob-87), 622, 627,

SUP 633, 634,

MOD 635, 658, 659, 663, 672, 675, 676, 678,

SUP 682,

MOD 697, 703, 719

2.9 Approved.

ADD 723B

2.10 Following a discussion in which the delegates of France, the United States, the Russian Federation and the Chairman of Committee 4 took part, it was agreed to take up ADD 723B with other Committee 4 documents at one of the subsequent Plenary Meetings.

MOD 724, 746, 769

2.11 Approved.

Recapitulation of the changes to be introduced in certain footnotes of Article 8 of the
Radio Regulations (R.6/6)

2.12 The Chairman of Committee 4, replying to a question by the delegate of Poland, confirmed that an amended version of Footnote 608Z would be submitted to the Plenary, with the names of all the countries which had requested inclusion. Since the last meeting of Committee 4, certain countries had made such requests, in particular Honduras in respect of Footnote 675 and Brunei Darussalam in respect of Footnote 854.

2.13 The delegate of Morocco, pointing out that the request of a country for inclusion in a footnote could have an impact on other countries, proposed that the recapitulatory table should be deleted and replaced by the full text of all the footnotes concerned.

2.14 It was agreed to reproduce the full texts of all the footnotes concerned in documents to be published.

Articles 11, 12, 13 and 29

2.15 Approved.

Resolution GT-PLN/3

2.16 Approved subject to the alignment of the Spanish-language version of the "**resolves**" paragraph.

Resolution GT-PLN/4

2.17 The Chairman of Committee 4 said that there were still a number of Resolutions which could probably be deleted as a result of Committee 4's work. However, it would be inappropriate to include the corresponding references in the text of Resolution GT-PLN/4 until the Plenary had given its agreement to those deletions.

2.18 Resolution GT-PLN/4 was approved on the understanding that editorial amendment would be needed at a later stage to insert references to Resolutions which the Plenary agreed to delete.

2.19 The sixth series of texts submitted by the Editorial Committee (R.6) (Document 348), as a whole, as amended, was approved.

**3. Second series of texts submitted by the Editorial Committee to the Plenary Meeting
(Document 284) (R.2) (continued)**

3.1 The Chairman of Committee 4 recalled that the square brackets subsisting on pages 2 and 6 of the document, which had been considered by the eighth Plenary Meeting, related only to the name of the former USSR. He suggested that the Plenary should adopt the same course of action with regard to the footnotes in question as it had previously done in respect of other similar footnotes.

3.2 It was so agreed.

3.3 The Chairman said that with the deletion of the square brackets on pages 2 and 6, the Plenary had completed consideration of Document 284.

3.4 The second series of texts submitted by the Editorial Committee (R.2) (Document 284), as a whole, as amended, was approved on second reading.

4. Revision of Resolution GT-PLN/2 (Document 345)

4.1 The Chairman of the Working Group of the Plenary said that Resolution GT-PLN/2 had been re-examined in order to take account of the points raised by the delegates of Morocco and the Islamic Republic of Iran at the ninth Plenary Meeting. It had not been possible to find a suitable text to cover the comments made by the latter delegate.

4.2 The Chairman of Committee 4 said that neither the square brackets around the word "bands" in "**considering**" a) and b) nor the "s" in that word itself should be deleted until the proposals in Document 361 had been examined by the Plenary.

4.3 It was so agreed.

4.4 There were no comments on either "**considering**" c) and d) or "**noting**".

4.5 The delegate of the Islamic Republic of Iran, referring to the **resolves** part of the text, said that although he considered that there was a need to define the terms HEO and LEO in Article 1, section VIII, he was prepared to accept the revised text of Resolution GT-PLN/2 as it stood in Document 345, and to consider deferring the definition of the said terms until a future conference.

4.6 The delegate of Morocco suggested amending paragraph 2i) of **resolves** to add after "systems" the words "compatible with No. 2674 of the Radio Regulations". That would have the effect of limiting the use of non-geostationary satellites to national territories.

4.7 It was so agreed.

4.8 There were no comments on "**invites the Administrative Council**" or "**instructs the Secretary-General**".

4.9 The revised version of Resolution GT-PLN/2 in Document 345, as amended, was approved on the understanding that the square brackets in "**considering**" a) and b) would be dealt with after Document 361 had been examined.

5. Report by the Chairman of Committee 5 (Documents 311 and 340)

Document 311

5.1 The Chairman of Committee 5 introduced Document 311 containing editorial amendments to Article 69 consequential upon decisions taken elsewhere.

MOD 5187 (Orb-88), NOC 5188 to 5194

5.2 Approved.

MOD 5195 (Mob-87)

5.3 Approved, subject to the verb "commence" being placed in the past tense.

NOC 5196 (Orb-88), 5196.1 (Orb-88)

5.4 Approved.

ADD 5197

5.5 The Chairman of Committee 5 said that the proposed date of entry into force was 12 October 1993, and also indicated that the French text needed to be aligned with the English.

5.6 The delegate of Morocco suggested that the square brackets should be maintained, so that the decision on the date of entry into force could be taken in due course.

5.7 It was so agreed.

ADD 5197.1

5.8 On a proposal by the delegate of Spain, to which the assistant to the ITU Legal Adviser signified his agreement, it was decided to delete ADD 5197.1.

5.9 Replying to a question by the delegate of Canada, the assistant to the ITU Legal Adviser said that there was no need to include a reference to Resolution COM5/8 in Article 69 in order for that Resolution to come into effect. The Resolution was free-standing; it was not part of the treaty as such, since it was not specifically mentioned therein. Accordingly, it would come into effect on the date specified in its own provisions.

Document 340

5.10 The Chairman of Committee 5, introducing the document, said that the modifications made to Annex 4 of Appendix 30A entailed a consequential amendment to the title of Article 7 of Appendix 30A: after the words "in the band 17.7 - 17.8 GHz", the phrase "and to stations in the broadcasting-satellite service Region 2 in the band 17.3 - 17.8 GHz" should be added.

5.11 It was so decided.

5.12 Following an observation by the delegate of Spain concerning the Spanish version of the document, it was decided to leave the Chairman of the Editorial Committee the task of ensuring that the various texts were aligned.

5.13 The text proposed in Document 340 was approved.

The meeting was suspended at 1715 hours and resumed at 1825 hours.

**6. Report by the Chairman of Committee 4 and proposals by delegations
(Documents 361, 334, 335, 337, 343, 349, 351(Rev.1), 352, 353, 354, 355, 356, 359+Corr.1, 360, 364, 371, 374)**

6.1 The Chairman said that he would first of all invite the Chairman of Committee 4 to present his report (Document 361); he would then invite delegations to submit briefly the proposals contained in the other documents before the Plenary, following which an exchange of views could be held.

6.2 The Chairman of Committee 4 stressed that Document 361 was his and in no way intended to represent the opinion of the majority of the members of the Committee. He had tried to hear all points of view and the various suggestions, with a view to drawing up what he had felt was a form of balanced compromise. The unresolved issues related to the broadcasting-satellite (sound) and mobile-satellite services. Annex 1 presented the viewpoints of the Working Groups, as expressed in various documents, while Annex 2 presented his own views on the bandwidth to be allocated and on allocations in the band 1 429 - 1 525 MHz. Due to the absence of space services in that band, he suggested that the broadcasting-satellite service (sound) be introduced in the lower part of the band to begin with, on a secondary basis, with movement, in time, to primary status; he would be in favour of a future conference to consider the redeployment of existing services in the band. Any proposals relating to services which had wide support would be welcome. The proposals contained in Annex 3 had not given rise to any particular controversy; that was not so in the case of

those covered by Annex 4, where the problem was to find a band that would allow a worldwide operation of satellite systems in the Earth-to-space direction. Utilization currently differed according to region; for that reason, he had suggested differing allocations with differing categories, in order to take the needs of each country into account. He recalled that the document dealt with parts of the spectrum not yet covered by other texts, and should be viewed as a starting point in the search for a solution.

6.3 The delegate of the United States said that Document 334 reflected the United States' reservations with regard to the allocation of the band 1 435 - 1 525 MHz to the mobile-satellite service and broadcasting-satellite service (sound), on the grounds that, in the absence of sharing criteria clearly defined by the CCIR, there was a risk that those services could hamper the operation of the aeronautical mobile telemetry service.

6.4 The delegate of France presented the draft Recommendation contained in Document 335 for the purpose of identifying, preferably below 20 GHz, a frequency band suitable for allocation to the earth exploration-satellite service.

6.5 The delegate of Brazil, referring to Document 337, pointed out that the first proposal concerned only Region 2, while the second was intended to protect the many existing fixed and mobile services in the band concerned, and the third was to protect Brazil's meteorological-satellite service. The aim of the draft Resolution annexed to Document 337 was that the CCIR should study, in collaboration with all Region 2 administrations, the possibility of having all systems operating on a primary basis with equal rights.

6.6 The delegate of the United States said that the proposal contained in Document 343 was intended to provide adequate protection for existing services, including the various types of links for video distribution in the bands concerned.

6.7 The delegate of Japan, presenting Document 349, said that its purpose was to protect the fixed and mobile terrestrial services operating in that band. The purpose of the proposals contained in Document 351(Rev.1) was likewise to protect the fixed and mobile services operating in that band vis-à-vis the broadcasting-satellite service (sound) to be introduced.

6.8 The delegate of China said that Document 352 was put forward with the aim of inserting the name of China in a number of footnotes, since the radiodetermination service in China was a primary service.

6.9 The delegate of the United States said that Document 353 related to a possible additional allocation for the BSS (sound) in the United States and perhaps in some other countries. The proposal contained in Document 354 was intended to protect video distribution services in the case of an allocation from the band in question.

6.10 The delegate of France, referring to Document 355, said that it was essentially a question of aligning the Radio Regulations with the current use of the bands. The purpose of the proposal in Document 356 was to protect existing services in that band in France and in French overseas territories and départements.

6.11 The delegate of Mexico, referring to Document 359, said that Corrigendum 1 had been added to include Venezuela, which likewise wished to protect the services currently operating in that band.

6.12 The delegate of Italy said that Document 360 should be interpreted as a reservation by the Israeli and Italian delegations, with the aim of protecting existing services pending final decisions by the Conference.

6.13 The delegate of Sweden said that his country and Switzerland had put forward Document 364, the purpose of which was to delete Footnote 612, which was no longer needed.

6.14 The delegate of Hungary presented, on behalf of Bulgaria, the Czech and Slovak Republic, Poland and his own country, Document 371, which contained a proposal to add Footnote 722A to Article 8 of the Radio Regulations.

6.15 The delegate of Morocco presented, on behalf of 15 countries including his own, a proposal which reflected the main conclusions of Committee 4's deliberations on the broadcasting-satellite service (sound) and complementary terrestrial broadcasting. The proposal was contained in Document 374, shortly to be circulated. The proposal in that document consisted of identifying the band 1 450 - 1 490 MHz and indicating, in a footnote, that its use by the broadcasting-satellite service (sound) was subject to the provisions of Resolution COM 4/[], set forth in that document. He stressed the three stages contained in the "**decides**" of that Resolution: the entry into force of the Final Acts of the current Conference and the use by administrations

of the allocation for the broadcasting-satellite service (sound) on a primary basis, in accordance with Resolution 33, such use being limited to a 25 MHz bandwidth; the convening of a planning conference no later than 1998 to review the criteria for sharing with existing services, the time schedule and the need for an appropriate coordination procedure; and, following the said conference, the planning of the band.

6.16 Speaking on behalf of the Moroccan delegation, he noted that many points had not been discussed in Committee 4, such as a power flux-density limit, proposed for the broadcasting-satellite service (sound), which exceeded by several dB the power flux-density required for the service. He could agree to allocation of the band 2 500 - 2 690 MHz to the broadcasting-satellite service (sound), under the conditions specified in No. 2562, Resolution 33 and Article 14. He sympathized with those countries which experienced difficulty in using the band 1.5 GHz for satellite sound broadcasting.

6.17 The delegate of Syria said that he was in favour of the Moroccan proposal. He felt that, before envisaging the allocation of frequency bands to the mobile-satellite service, it had to be made clear what band would be allocated to the broadcasting-satellite service (sound). Certain proposals for an allocation around 2.6 GHz had not been favoured, but in fact his Administration could support the choice that had been made in the band around 1.5 GHz.

6.18 The delegate of Australia said that the procedure relating to allocations to the broadcasting-satellite service (sound) had been studied by the Conference and that the Chairman of Committee 4 had referred, in his report, to Document DT/118. A compromise solution should be sought, including the allocation of frequencies in the band 1.5 GHz, and he recommended that the Plenary should revert to consideration of Document DT/118, which contained, inter alia, a proposal by his country.

6.19 The delegate of Canada said that he was worried about the procedure being followed. In his view, the allocation of frequencies to the mobile-satellite service in the band 1 429 - 1 525 MHz had not been studied as carefully as it should, since it was an important issue. Document 361 contained many points which had not been discussed either in Committee 4 or in the Working and ad hoc Groups. He noted that the Conference was tending towards the allocation of frequencies in the band 1.5 GHz to the broadcasting-satellite service (sound), which seemed to him unacceptable.

6.20 The delegate of the United Arab Emirates felt that a decision should be taken with regard to the mobile-satellite service and the broadcasting-satellite service (sound); but such a decision should be based on a balance between protection of existing services and the introduction of new services. He was not clear about the Committee 4 Chairman's conclusions; he proposed defining of a procedure to clarify the bandwidth required for the mobile-satellite service, since otherwise there was likely to be a large number of footnotes and reservations, and avoiding allocations to the mobile-satellite service in the band 2.5 GHz. Once the bandwidth to be allocated to the mobile-satellite service had been established, the Conference could first of all decide on an allocation to the mobile-satellite service around 2 GHz and then decide upon another for the broadcasting-satellite service (sound).

6.21 The delegate of Cuba said he found the situation disturbing. He had certain difficulties in regard to the broadcasting-satellite service (sound), in particular the existence of more than two proposals on frequency allocation. With regard to the mobile-satellite service, the frequency spectrum allocated exceeded that discussed in Committee 4 and the sharing conditions were disquieting. Even more worrying was the series of proposals, footnotes and Recommendations which restricted the scope of existing services. In his view, it was essential to reach a reasonable solution.

6.22 The delegate of Bangladesh said that, despite all the discussions, no solution had been found. His country attached great importance to the 1.5 GHz band, since it had an ambitious programme in that band to cover rural areas. His delegation was not opposed to the inclusion of new services, but wanted existing services to be protected. He fully endorsed the proposal contained in Document 351 and asked for the name of Bangladesh to be included in Footnote 733B.

6.23 The delegate of Indonesia proposed the establishment of a small group to consider in detail the proposal just made by the delegate of Morocco. The group could be chaired by the Chairman of Working Group 5C.

6.24 The delegate of Zimbabwe supported the previous speakers, but noted that the report by the Chairman of Committee 4 did not respect that Committee's findings. If Committee 4 had studied Document DT/118, it might have been able to reach a reasonable solution. The proposal made by Morocco should help toward reaching an agreement.

6.25 The delegate of Pakistan said that Documents DT/118, DT/119 and 339 had been thoroughly considered; if they were compared with the report by the Chairman of Committee 4, the frequency bands earmarked for the allocations did not correspond to what had been proposed for the mobile-satellite service, except for the band 2 170 - 2 200 MHz. He also noted that a number of proposals made by his delegation had not been reflected in the document presented by the Chairman of Committee 4.

6.26 The delegate of Japan, referring to Document 361, first mentioned the allocation of the 2.6 GHz band to the mobile-satellite service. In Annex 1 of the document, the proposed allocation was 2 x 20 MHz. He then drew attention to the Footnotes 754 and 766 of the Radio Regulations, which allocated 2 x 35 MHz to Region 3 for the same service. He demanded that those allocations should be maintained, whatever the Conference might decide in regard to the 2.5 GHz band for that service. With regard to the broadcasting-satellite service (sound), a bandwidth of 10 - 15 MHz was envisaged in Annex 1, whereas Japan had proposed a fairly broad allocation for the broadcasting-satellite service (sound), feeling that it was up to a future conference to decide on the exact frequencies, taking into account not only each country's requirements but also the congestion in the 2.5 GHz band. Suitable coordination procedures would be required in order to ensure that the terrestrial services and satellite services already in place could coexist with the new services. He hoped that the outstanding issues could be resolved in a spirit of compromise.

6.27 The delegate of Nigeria pointed out that the broadcasting-satellite service (sound) was of the utmost importance in his country, especially for education, health and agriculture. It was not a luxury but an essential requirement. Some countries had less need of it, since they could make use of other services. Document DT/118 represented a highly useful compromise which his country had broadly supported, whereas Document 361 did not meet its expectations. The former document contained two clauses essential for Nigeria: protection of existing services and allocations in the 1.5 GHz band. If the values indicated in No. 2562 of the Radio Regulations were adopted, Nigeria would have the protection it needed.

6.28 The delegate of Argentina informed the meeting that he had submitted, in Document 370 to be circulated later, a proposal concerning additional footnotes. Argentina had taken that step because all developing country administrations were affected. Other South American delegations were worried about the question of converting services. Morocco was submitting proposals, for the broadcasting-satellite service (sound), which caused difficulties for the Argentine Administration. As for the date between square brackets in paragraph 1 of Annex 1 to Document 361, his delegation could envisage a modification of what was stated in Document 370 in the light of the date finally chosen.

6.29 The delegate of India said that he was very interested in the proposal presented by Morocco but would need to study it thoroughly. He fully endorsed that country's position on the broadcasting-satellite service (sound) and on power flux-density limits. The matter could be resolved by means of coordination arrangements. With regard to Document 349, presented by Japan, he was satisfied that the countries concerned were prepared to implement the necessary coordination procedures specified in Resolution 33 and in other provisions of the Radio Regulations. A compromise could be achieved on the basis of the proposals contained in Document 361 and Document DT/118. Such a compromise was needed in order to ensure efficient spectrum use, speed up technological advances and provide cheap receivers; it would likewise facilitate the planning of broadcasting-satellite (sound) services. He requested the Chairman to explore the possibility of narrowing further the difference in views and arriving at a system of worldwide allocation, which India was ready to support.

6.30 The delegate of Mexico, referring to Annex 4 of Document 361, said that he was worried about the date indicated in it. In his view, allocations should not be effective before the year 2000 and should be introduced progressively. He also voiced his concern about Annex 2, which had been discussed at length in ad hoc Group 4, Mexico having accepted a reduction in its spectrum for its services. Document 361 did not, however, take up the options that had been upheld in the Committee. There had been a possibility of compromise in regard to the 1.5 GHz band. The Chairman of Committee 4 had said that if a proposal had

attracted enough support it should have been taken up. In that case, the 1.5 GHz band should be retained. An effort should be made to iron out the difficulties among delegations - in other words, to find a compromise solution, even if no one was entirely satisfied.

6.31 The delegate of Sri Lanka supported Documents 349 and 351(Rev.1) submitted by Japan and some other countries. He asked for his country to be included in Footnote 722A.

6.32 The delegate of Algeria said that he, too, regarded Document 361 as solely a Chairman's report and not a report by Committee 4, since it by no means contained the conclusions the Committee had reached. Algeria had come to the Conference in a spirit of compromise, prepared to accept even two bands for the broadcasting-satellite service (sound) (Document DT/118). It was also a co-signatory of Document 277 which proposed solutions for all services (mobile-satellite service and all other services around 1 - 3 GHz). Document 361 should not be studied or even discussed. The views noted during the discussions had revealed unanimity about the suitability of designating a single band for the broadcasting-satellite service (sound); as for the possible allocation of a second band, the majority of delegates had expressed preference for the 2.6 GHz band. For the broadcasting-satellite service (sound) either a compromise or a single-band solution would have to be sought.

6.33 The delegate of the Russian Federation recalled that in Committee 4 there had been a majority in favour of a single band for the broadcasting-satellite service (sound). His delegation had voiced reservations about that solution, feeling that two bands ought to be adopted, the second of which would be 1.6 GHz. Due to lack of time, Committee 4 had opted for the single band of 1.5 GHz. The delegation of the Russian Federation had proposed 2 500 - 2 655 MHz for the broadcasting-satellite service (sound). In Document 349, presented by Japan and some other countries, a Footnote 757A was proposed, which mentioned 2 535 - 2 655 MHz for that service. The Russian Federation supported the adoption of that footnote, since it corresponded to its own view. Another document, presented by his delegation and to be circulated shortly (Document 365), contained a proposed Footnote 731E for the band 1 610.0 - 1 620.6 MHz.

6.34 The delegate of Senegal voiced his disquiet concerning the course the work was taking. He was disturbed by the large number of footnotes, which would enable each country to do as it wished. He suggested that the Chairman should form a group consisting of no more than 10 delegates, to take up Document DT/118 in order to find a genuine compromise without an avalanche of footnotes.

6.35 The delegate of Qatar said that in his view the Chairman of Committee 4 had maintained a laudably neutral stance. The three critical spheres were the broadcasting-satellite service (sound), the FPLMTS and the mobile-satellite service. The solution to the problems which each of these presented should be sought in the proposals made by Morocco and cosponsored by some other countries.

6.36 The delegate of Norway, supported by the delegate of the United Kingdom, speaking on a point of order, requested a postponement of the debate. Since, in his view, the current discussion could lead nowhere, he proposed an informal meeting in order to decide what course to follow.

6.37 It was so decided.

The meeting was suspended at 2050 hours and resumed at 2240 hours.

6.38 The Chairman said that during the suspension he had met with the Vice-Chairmen of the Conference as well as the Chairmen of Committees 4 and 5 and they had unanimously agreed to propose the following course in order to expedite the work of the Conference: to continue discussion on the basis of Document 361, and to allow specific points to be raised from the floor. Participants had the right to express their views fully and he apologized if he had seemed to limit that right. He was sure that the outstanding problems could be resolved and he called on participants to facilitate progress by raising points succinctly and avoiding repetition.

6.39 The delegate of Morocco said that he was sure he was speaking on behalf of all delegates in accepting the Chairman's apology. He wished to raise a point of order under Nos. 515 and 516 of the Nairobi Convention. While the coordinating role of the Steering Committee was recognized by No. 469 of the Nairobi Convention, the Chairman of the Conference could not act in bad faith. In effect, the Steering Committee was suggesting that an earlier unsupported proposal by the Chairman of Committee 4 was the procedure to be followed, while ignoring a proposal supported by some 20 countries. He called on the Chairman to adjourn the

meeting in order to allow time for the document to be circulated so that discussion could continue on the basis of a written text. He stressed that the work of the Conference should proceed in accordance with the terms of the Convention.

6.40 The Chairman noted that the motion had been seconded and said that he would give the floor to two speakers to oppose the adjournment.

6.41 The delegate of the United Kingdom said that the motion for adjournment threatened the prospects of the Conference for reaching a viable conclusion. The Chairman's proposal would have allowed decisions to be reached on major items and would not have contravened No. 491 of the Nairobi Convention.

6.42 The delegate of Germany supported the comments by the delegate of the United Kingdom. The Conference had reached a crucial stage and every effort should be made to reach conclusions. Specific concerns could be raised during the discussion of Document 361.

6.43 The Chairman put to the vote the motion for adjournment of the meeting, requesting participants to use the small country cards which indicated that the delegation concerned had the right to vote.

6.44 In reply to a query by the delegate of Morocco, the Secretary-General explained that, although the provisions of the Convention did not determine what type of card should be used for voting, the practice of the Union had been to use the small country cards, which were distributed only to delegations having the right to vote.

6.45 The delegate of Algeria requested a secret ballot under No. 551 of the Nairobi Convention.

6.46 The delegate of Germany, speaking on a point of order, said that the voting procedure had begun and that such requests had to be made before the beginning of the vote.

6.47 The motion for adjournment of the meeting was adopted by 45 votes to 41, with 7 abstentions.

6.48 The Secretary-General, seriously concerned about the outcome of the Conference, expressed the hope that after the close of the meeting delegates would continue to help the Chairman to work out a viable solution to propose to the next Plenary meeting.

6.49 The delegate of Mexico said that he hoped account would be taken of Document DT/118.

The meeting rose at 2315 hours.

The Secretary-General:

P. TARJANNE

The Chairman:

J. BARRIONUEVO PEÑA

PLENARY MEETING

Argentine Republic

PROPOSALS FOR THE WORK OF THE CONFERENCE

The Administration of Argentina proposes that Footnote RR 700x should be added and that Argentina should be included in Footnotes RR 726C, 730B and 755A.

ARG/370/1

ADD 700xA

Additional allocation: in Argentina, the bands 849 - 851 MHz and 894 - 896 MHz are allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The use of the band 894 - 896 MHz is limited to transmissions from aircraft stations.

Administrations operating systems for public correspondence with aircraft in these frequency bands shall ensure that the frequencies actually assigned to their stations shall not cause harmful interference, shall not seek protection against interference from stations in the fixed service and shall coordinate such use accordingly.

ARG/370/2

ADD 726C

Additional allocation: in Argentina, Australia, Brazil, Canada, the United States, Malaysia and Mexico, the band 1 530 - 1 544 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 626.5 - 1 645.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: maritime mobile-satellite distress and safety communications [established with any other network operating in conformity with this provision, or any other network in the mobile-satellite service], including those of the GMDSS shall have priority access and immediate availability over all other mobile-satellite communications within a network operating under this provision. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

ARG/370/3

ADD 730B

Additional allocation: in Argentina, Australia, Canada, the United States, Malaysia and Mexico, the band 1 555 - 1 559 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 656.5 - 1 660.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service on a primary basis subject to the following conditions: the aeronautical mobile-satellite (R) service shall have priority access and immediate availability over all other mobile-satellite communications within a network operating under this provision. Mobile-satellite systems shall be interoperable with the aeronautical mobile-satellite (R) service. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

ARG/370/4
ADD 755A

In Argentina, in the band 2 500 - 2 690 MHz, the power flux-density at the surface of the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed -152 dB(W/m²/4 kHz), unless otherwise agreed by affected administrations. The provisions of No. 757 apply.

PLENARY MEETING

Bulgaria, Hungary, Poland, Czech and Slovak Federal Republic

PROPOSAL FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND)

Hungary, Poland, Czech and Slovak Federal Republic and Bulgaria wish to add the following footnote to Article 8 of the Radio Regulations.

ADD

722A

In the band 1 427 - 1 525 MHz, the power flux-density at the surface of the Earth from space stations operating in the broadcasting-satellite service (sound) shall not exceed -152 dB(W/m²/4 kHz), unless otherwise agreed by affected administrations.

PLENARY MEETING

Mexico

PROPOSAL FOR THE WORK OF THE CONFERENCE

BROADCASTING SERVICE AND BROADCASTING-
SATELLITE SERVICE (SOUND)

Should WARC-92 decide to allocate part of the spectrum to the broadcasting-satellite service (sound) and the complementary terrestrial sound broadcasting service in the band 2 300 - 2 450 MHz, Mexico would wish the following footnote to be added with reference to the band in question:

MEX/372/1

ADD 743B

Different category of service: in Mexico, in the band 2 300 - 2 450 MHz, the broadcasting-satellite service (sound) and the complementary terrestrial broadcasting service are allocated on a secondary basis. The power flux-density at the Earth's surface produced by space stations in the broadcasting-satellite service (sound) in the band 2 300 - 2 450 MHz shall not exceed -154 dB(W/m²/4 kHz). Terrestrial broadcasting transmitters shall not produce a flux-density greater than -154 dB(W/m²/4 kHz) outside national frontiers.

Reasons: To give services already in operation due protection.

PLENARY MEETING

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

After reflection on the Committee 4 Chairman's Report contained in Document 357, and coordination with the administrations concerning the proposal in Document 319, pertaining to ADD 726C, it is recommended that the text of ADD 726C be modified as follows:

USA/373/1

ADD

726C

Additional allocation: in Australia, Brazil, Canada, Malaysia, Mexico and the United States, the band 1 530 - 1 544 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 626.5 - 1 645.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: maritime mobile-satellite distress and safety communications shall have priority access and immediate availability over all other mobile-satellite communications operating under this provision. Communications of mobile-satellite system stations not participating in the GMDSS shall operate on a secondary basis to distress and safety communications of stations operating in the GMDSS. Account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

Document 374-E

1 March 1992

Original: English

PLENARY MEETING

Algeria, Australia, Brazil, Canada, Côte d'Ivoire, Finland, Indonesia, Lebanon,
Malaysia, Mali, Mexico, Morocco, Nigeria, Syria and Zimbabwe

PROPOSALS FOR THE WORK OF THE CONFERENCE

THE BROADCASTING-SATELLITE SERVICE (SOUND) AND
COMPLEMENTARY TERRESTRIAL BROADCASTING

The above-mentioned countries wish to submit the attached proposals to reflect the principal conclusions of the deliberations of Committee 4 regarding the broadcasting-satellite service (sound) and complementary terrestrial broadcasting.

BSS (Sound) Proposal

ARTICLE 8

Frequency Allocations

Section IV. Table of Frequency Allocations

MHz 1 429 - 1 525			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	<u>1 429 - 1 525 1 450</u> FIXED MOBILE except aeronautical mobile 722	<u>1 429 - 1 525 1 450</u> FIXED MOBILE 723 722	
MOD	<u>1 429 1 450 - 1 525 1 490</u> <u>BROADCASTING-</u> <u>SATELLITE 722A</u> <u>BROADCASTING 722A</u> FIXED MOBILE except aeronautical mobile 722	<u>1 429 1 450 - 1 525 1 490</u> <u>BROADCASTING-SATELLITE 722A</u> <u>BROADCASTING 722A</u> FIXED MOBILE 723 722	
MOD	<u>1 429 1 490 - 1 525</u> FIXED MOBILE except aeronautical mobile 722	<u>1 429 1 490 - 1 525</u> FIXED MOBILE 723 722	

ADD 722A Use of the band 1 450 - 1 490 MHz by the broadcasting satellite, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution COM4/[].

RESOLUTION COM4/[]

**Introduction of Systems in the Broadcasting-Satellite
Service (Sound) and Complementary Terrestrial
Broadcasting in the Band 1 450 - 1 490 MHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made frequency allocations to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting [, and for the associated feeder links];
- b) that it is necessary to ensure that the introduction of the broadcasting-satellite service (sound) and complementary terrestrial broadcasting proceeds in a flexible and equitable manner;
- c) that efficient use of the spectrum will be enhanced by a worldwide allocation;
- d) that a worldwide allocation may cause difficulties to some countries in relation to their existing services;
- e) that future planning may limit the effect on other services;

resolves

- 1. that a competent conference should be convened not later than [1998] in order to review sharing criteria with existing services, to review the time schedule and band segmentations, the requirement for planning and an appropriate coordination procedure;
- 2. that in the interim period, BSS systems may be introduced in the band 1 465 - 1 490 MHz in accordance with Resolution 33. The complementary terrestrial service may be introduced during this interim period subject to coordination with administrations that may be affected;
- 3. that the calculation methods and the interference criteria to be employed in evaluating the interference should be based upon relevant CCIR Recommendations agreed by the administrations affected as a result of Resolution 703;

invites the CCIR

to conduct the necessary studies prior to the Conference;

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council to consider including in the agenda of an administrative radio conference to be held not later than the year [1998] the matters addressed above.

PLENARY MEETING

Ecuador

PROPOSAL FOR THE WORK OF THE CONFERENCE

MOBILE-SATELLITE SERVICE AND
BROADCASTING-SATELLITE SERVICE (SOUND)

Ecuador wishes to add the following footnote to Article 8 of the Radio Regulations.

EQA/375/1

ADD

722A

In Ecuador in the band 1 427 - 1 525 MHz and in the band
2 500 - 2 690 MHz, the power flux-density at the surface of the Earth from space
stations operating in the broadcasting-satellite service (sound) and in the mobile-
satellite (space-to-Earth) service shall not exceed -152 dB(W/m²/4 kHz), unless
otherwise agreed by affected administrations.

PLENARY MEETING

Ecuador

PROPOSAL FOR THE WORK OF THE CONFERENCE

MOBILE-SATELLITE SERVICE AND
BROADCASTING-SATELLITE SERVICE (SOUND)

Ecuador wishes to add the following footnote to Article 8 of the Radio Regulations.

EQA/375/1

ADD

722A

In Ecuador in the band 1 427 - 1 525 MHz and in the band
1 700 - 2 690 MHz, the power flux-density at the surface of the Earth from space
stations operating in the broadcasting-satellite service (sound) and in the mobile-
satellite (space-to-Earth) service shall not exceed -152 dB(W/m²/4 kHz), unless
otherwise agreed by affected administrations.

PLENARY MEETING

Benin. Burkina Faso. Guinea

PROPOSALS FOR THE WORK OF THE CONFERENCE

If WARC-92 decides to allocate part of the spectrum in the band 1 425 - 1 525 MHz:

- to the mobile-satellite service (space-to-Earth), or;
- to the broadcasting-satellite service (sound) and the complementary terrestrial broadcasting service,

our Administrations propose that the following footnote should be included in the Radio Regulations:

BEN/BFA/GUI/376/1

ADD 722A

In the band 1 425 - 1 525 MHz, the power flux-density at the Earth's surface produced by space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed -172 dB(W/m²/4 kHz), unless there are provisions to the contrary resulting from an agreement between the administrations concerned.

BEN/BFA/GUI/376/2

ADD 722B

The power flux-density at the Earth's surface produced by space stations in the broadcasting-satellite service (sound) in the band 1 425 - 1 525 MHz shall not exceed -172 dB(W/m²/4 kHz), unless there are provisions to the contrary resulting from an agreement between the administrations concerned.

Transmitters in the complementary terrestrial broadcasting service shall not produce a power flux-density greater than -172 dB(W/m²/4 kHz) outside national frontiers, unless otherwise agreed by the administrations affected.

Administrations operating space stations in the broadcasting-satellite service (sound) and transmitters in the complementary terrestrial broadcasting service may not request protection from harmful interference by the fixed and mobile services.

Reasons: The band 1 425 - 1 525 MHz is already allocated to the fixed and mobile terrestrial services.

If the broadcasting-satellite service (sound) is introduced in this band, it could cause unacceptable interference for terrestrial stations in the fixed and mobile services already operating in our countries.

In order to protect the fixed and mobile services against harmful interference from the broadcasting-satellite service (sound), it is essential to observe the power flux-density limit of -172 dB(W/m²/4 kHz).

PLENARY MEETING

Burkina Faso

PROPOSALS FOR THE WORK OF THE CONFERENCE

If WARC-92 decides to allocate part of the spectrum in the band 1 425 - 1 525 MHz:

- to the mobile-satellite service (space-to-Earth), or;
- to the broadcasting-satellite service (sound) and the complementary terrestrial broadcasting service,

our Administration proposes that the following footnote should be included in the Radio Regulations:

BFA/376/1

ADD 722A

In Burkina Faso, in the band 1 425 - 1 525 MHz, the power flux-density at the Earth's surface produced by space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed -172 dB(W/m²/4 kHz), unless there are provisions to the contrary resulting from an agreement between the administrations concerned.

BFA/376/2

ADD 722B

The power flux-density at the Earth's surface produced by space stations in the broadcasting-satellite service (sound) in the band 1 425 - 1 525 MHz shall not exceed -172 dB(W/m²/4 kHz), unless otherwise agreed by the administrations affected.

Transmitters in the complementary terrestrial broadcasting service shall not produce a power flux-density greater than -172 dB(W/m²/4 kHz) outside national frontiers, unless otherwise agreed by the administrations affected.

Reasons: The band 1 425 - 1 525 MHz is already allocated to the fixed and mobile terrestrial services.

If the broadcasting-satellite service (sound) is introduced in this band, it could cause unacceptable interference for terrestrial stations in the fixed and mobile services already operating in our countries.

In order to protect the fixed and mobile services against harmful interference from the broadcasting-satellite service (sound), it is essential to observe the power flux-density limit of -172 dB(W/m²/4 kHz).

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

Corrigendum 1 to
Document 377-E
2 March 1992

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

B.14(Corr.1)

PLENARY MEETING

FOURTEENTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

Please replace page B.14/8 by the following.

P. ABOUDARHAM
Chairman of Committee 6

Annex: 1 page

MHz
1 525 - 1 530

	Allocation to Services		
	Region 1	Region 2	Region 3
MOD	1 525 - 1 530 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Land Mobile-Satellite (space-to-Earth) 726B FIXED Earth Exploration-Satellite Mobile except aeronautical mobile 724 722 725 726A 726X	1 525 - 1 530 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Land Mobile-Satellite (space-to-Earth) 726B MOBILE-SATELLITE (space-to-Earth) [726B] Earth Exploration-Satellite Fixed Mobile 723 722 723A 726A 726X	1 525 - 1 530 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Land Mobile-Satellite (space-to-Earth) 726B MOBILE-SATELLITE (space-to-Earth) [726B] FIXED Earth Exploration-Satellite Mobile 723 724 722 726A 726X

MOD **726A** The bands 1 525 - 1 544 MHz, 1 545 - 1 559 MHz, 1 626.5 - 1 645.5 MHz
Mob-87 and 1 646.5 - 1 660.5 MHz shall not be used for feeder links of any service. In
exceptional circumstances, however, an earth station at a specified fixed point in any
of the mobile-satellite services may be authorized by an administration to
communicate via space stations using these bands.

MOD **726B** The use of the bands 1 525 - 1 530 MHz, 1 533 - 1 544 MHz,
Mob-87 1 626.5 - 1 631.5 MHz and 1 634.5 - 1 645.5 MHz by the land mobile-satellite service
is limited to non-speech low bit-rate data transmissions.

ADD **726X** The use of the bands 1 525 - 1 544 MHz, 1 555 - 1 559 MHz,
1 626.5 - 1 646.5 MHz and 1 656.5 - 1 660.5 MHz by the mobile-satellite service shall
be subject to the application of the coordination and notification procedures set forth in
Resolution COM5/8. However, coordination of a space station of the mobile-satellite
service with respect to terrestrial services is required only if the power flux-density
produced by the station exceeds the limits set forth in No. [2562] [2557].

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 377-E

1 March 1992

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

B.14

PLENARY MEETINGFOURTEENTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 5	308	Article 1
COM 4	357	Article 8

Note by Committee 4:

The following delegations maintained reservations with respect to the approved texts:

- the United Arab Emirates, with respect to the allocations in 2 483.5 - 2 500 MHz;
- the United States, with respect to the allocations in 1 710 - 2 200 MHz.

P. ABOUDARHAM
Chairman of Committee 6Annex: 22 pages

CHAPTER I

Terminology

ARTICLE 1

Terms and Definitions

Section III. Radio Services

ADD	46A	3.27A	Radiolocation-Satellite Service: A radiodetermination-satellite service used for the purpose of radiolocation. This service may also include the feeder links necessary for its operation.
------------	------------	--------------	--

ARTICLE 8

MOD

MHz
137 - 137.175

Allocation to Services		
Region 1	Region 2	Region 3
137 - 137.025	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 599B Fixed Mobile except aeronautical mobile (R) 596 597 598 599 599A	
137.025 - 137.175	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-Satellite (space-to-Earth) 599B Fixed Mobile except aeronautical mobile (R) 596 597 598 599 599A	

ADD 599A The use of the band 137 - 138 MHz by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. However, coordination of a space station of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds -125 dB(W/m²/4 kHz) at the Earth's surface, unless otherwise agreed by the affected administrations. The above power flux-density limit shall apply until such time as a competent world administrative radio conference revises it. In making assignments to the space stations in the mobile-satellite service in the above band, administrations shall take all practicable steps to protect the radio astronomy service in the 150.05 - 153 MHz band from harmful interference from unwanted emissions. (No. 2904 applies.)

ADD 599B The use of the bands 137 - 138 MHz, 148 - 149.9 MHz and 400.15 - 401 MHz by the mobile-satellite service and the band 149.9 - 150.05 MHz by the land mobile-satellite service is limited to non-geostationary-satellite systems.

MOD

MHz
137.175 - 138

Allocation to Services		
Region 1	Region 2	Region 3
137.175 - 137.825	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 599B Fixed Mobile except aeronautical mobile (R) 596 597 598 599 599A	
137.825 - 138	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Mobile-Satellite (space-to-Earth) 599B Fixed Mobile except aeronautical mobile (R) 596 597 598 599 599A	

MOD

MHz
148 - 150.05

Allocation to Services		
Region 1	Region 2	Region 3
148 - 149.9 FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) 599B 608 608X 608Z	148 - 149.9 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 599B 608 608X 608Z	
149.9 - 150.05	RADIONAVIGATION-SATELLITE LAND MOBILE-SATELLITE (Earth-to-space) 599B 608Y 609 609A 609B	

ADD 608X The use of the band 148 - 149.9 MHz by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. The mobile-satellite service shall not constrain the development and use of fixed, mobile and space operation services in the band 148 - 149.9 MHz. Mobile earth stations in the mobile-satellite service shall not produce a power flux-density in excess of -150 dB(W/m²/4 kHz) outside national boundaries.

ADD 608Y The use of the band 149.9 - 150.05 MHz by the land mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. The land mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the band 149.9 - 150.05 MHz. Land mobile earth stations of the land mobile-satellite service shall not produce power flux-density in excess of -150 dB(W/m²/4 kHz) outside national boundaries.

ADD 608Z Stations of the mobile-satellite service in the band 148 - 149.9 MHz shall not cause harmful interference to, or claim protection from stations of the fixed or mobile services in the following countries: the Federal Republic of Germany, Algeria, Saudi Arabia, Austria, Bangladesh, Belgium, Brunei Darussalam, Cameroon, Canada, Colombia, Congo, Cuba, Denmark, the United Arab Emirates, Ecuador, Spain, Ethiopia, the Russian Federation, Finland, France, Ghana, Greece, Hungary, Iran, Ireland, Iceland, Israel, Italy, Kenya, Luxembourg, Malaysia, Mali, Mozambique, New Zealand, Oman, Pakistan, Papua New Guinea, the Netherlands, Poland, Portugal, Qatar, Syria, Romania, the United Kingdom, Singapore, Sri Lanka, Sweden, the Czech and Slovak Federal Republic, Thailand, Turkey and Yugoslavia, that operate in accordance with the Table.

ADD 609B In this band, the allocation to the land mobile-satellite service shall be on a secondary basis until 1 January 1997.

MOD

MHz
273 - 322

Allocation to Services		
Region 1	Region 2	Region 3
273 - 312	FIXED MOBILE 641	
312 - 315	FIXED MOBILE Mobile-Satellite (Earth-to-space) 641A	
315 - 322	FIXED MOBILE 641	

MOD

MHz
335.4 - 399.9

Allocation to Services		
Region 1	Region 2	Region 3
335.4 - 387	FIXED MOBILE 641	
387 - 390	FIXED MOBILE Mobile-Satellite (space-to-Earth) 641A	
390 - 399.9	FIXED MOBILE 641	

MOD

641

Subject to agreement obtained under the procedure set forth in Article 14, the bands 235 - 312 MHz, 315 - 322 MHz, 335.4 - 387 MHz and 390 - 399.9 MHz may be used by the mobile-satellite service, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table.

ADD

641A

The bands 312 - 315 MHz (Earth-to-space) and 387 - 390 MHz (space-to-Earth) in mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to the coordination and notification procedures set forth in Resolution COM5/8.

MOD

MHz
400.15 - 401

Allocation to Services		
Region 1	Region 2	Region 3
400.15 - 401	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) 599B Space Operation (space-to-Earth) 647 647X	

ADD

647X

The use of the band 400.15 - 401 MHz by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. However, coordination of a space station of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds -125 dB(W/m²/4 kHz) at the Earth's surface, unless otherwise agreed by the affected administrations. The above power flux-density limit shall apply until such time as a competent world administrative radio conference revises it. In making assignments to the space stations in the mobile-satellite service in the above band, administrations shall take all practicable steps to protect the radio astronomy service in the band 406.1 - 410 MHz from harmful interference from unwanted emissions. (No. 2904 applies.)

ADD

700A

Additional allocation: in Canada, the United States and Mexico, the bands 849 - 851 MHz and 894 - 896 MHz are also allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The use of the band 849 - 851 MHz is limited to transmissions from aeronautical stations and the use of the band 894 - 896 MHz is limited to transmissions from aircraft stations.

[Administrations operating systems for public correspondence with aircraft in these bands shall ensure that the use of the frequencies actually assigned to their stations do not cause harmful interference and shall coordinate such use accordingly.]

ADD

700B

Additional allocation: in Belarus, the Russian Federation and Ukraine, the bands 806 - 840 MHz (Earth-to-space) and 856 - 890 MHz (space-to-Earth) are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R) service. The use of these bands by this service is subject to special agreements between administrations concerned.

MOD

MHz
410 - 420

Allocation to Services		
Region 1	Region 2	Region 3
410 - 420	FIXED MOBILE except aeronautical mobile Space Research (space-to-space) 651A	

ADD

651A

Use of the band 410 - 420 MHz by the space research service is limited to communications within 5 km of an orbiting, manned space vehicle.

MOD

MHz
942 - 960

Allocation to Services		
Region 1	Region 2	Region 3
942 - 960 FIXED MOBILE except aeronautical mobile BROADCASTING 703 704	942 - 960 FIXED MOBILE	942 - 960 FIXED MOBILE BROADCASTING 701

SUP

708

MOD

MHz
1 525 - 1 530

Allocation to Services		
Region 1	Region 2	Region 3
1 525 - 1 530	1 525 - 1 530	1 525 - 1 530
SPACE OPERATION (space-to-Earth)	SPACE OPERATION (space-to-Earth)	SPACE OPERATION (space-to-Earth)
MARITIME MOBILE-SATELLITE (space-to-Earth)	MARITIME MOBILE-SATELLITE (space-to-Earth)	MARITIME MOBILE-SATELLITE (space-to-Earth)
FIXED	MOBILE-SATELLITE (space-to-Earth) [726B]	MOBILE-SATELLITE (space-to-Earth) [726B]
Land Mobile-Satellite (space-to-Earth) 726B	Land Mobile-Satellite (space-to-Earth) 726B	FIXED
Earth Exploration-Satellite	Earth Exploration-Satellite	Land Mobile-Satellite (space-to-Earth) 726B
Mobile except aeronautical mobile 724	Fixed	Earth Exploration-Satellite
	Mobile 723	Mobile 723 724
722 725 726A 726X	722 723A 726A 726X	722 726A 726X

MOD

726A**Mob-87**

The bands 1 525 - 1 544 MHz, 1 545 - 1 559 MHz, 1 626.5 - 1 645.5 MHz and 1 646.5 - 1 660.5 MHz shall not be used for feeder links of any service. In exceptional circumstances, however, an earth station at a specified fixed point in any of the mobile-satellite services may be authorized by an administration to communicate via space stations using these bands.

MOD

726B**Mob-87**

The use of the bands 1 525 - 1 530 MHz, 1 533 - 1 544 MHz, 1 626.5 - 1 631.5 MHz and 1 634.5 - 1 645.5 MHz by the land mobile-satellite service is limited to non-speech low bit-rate data transmissions.

ADD

726X

The use of the bands 1 525 - 1 544 MHz, 1 555 - 1 559 MHz, 1 626.5 - 1 646.5 MHz and 1 656.5 - 1 660.5 MHz by the mobile-satellite service shall be subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. However, coordination of a space station of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds the limits set forth in No. [2562] [2557].

MOD

MHz
1 530 - 1 533

Allocation to Services		
Region 1	Region 2	Region 3
1 530 - 1 533 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) LAND MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile except aeronautical mobile 722 726A 726X	1 530 - 1 533 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) LAND MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile 723 722 726A 726C 726X	

SUP 726

ADD 726C

Additional allocation: in Australia, Brazil, Canada, the United States, Malaysia and Mexico, the band 1 530 - 1 544 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 626.5 - 1 645.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: maritime mobile-satellite distress and safety communications shall have priority access and immediate availability over all other mobile-satellite communications operating under this provision; mobile-satellite systems providing maritime mobile-satellite distress and safety communications shall be interoperable with the Global Maritime Distress and Safety System (GMDSS); account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

MOD

MHz
1 533 - 1 559

Allocation to Services		
Region 1	Region 2	Region 3
1 533 - 1 535 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile except aeronautical mobile Land Mobile-Satellite (space-to-Earth) 726B 722 726A 726X	1 533 - 1 535 SPACE OPERATION (space-to-Earth) MARITIME MOBILE-SATELLITE (space-to-Earth) Earth Exploration-Satellite Fixed Mobile 723 Land Mobile-Satellite (space-to-Earth) 726B 722 726A 726C 726X	
MOD	1 535 - 1 544 MARITIME MOBILE-SATELLITE (space-to-Earth) Land Mobile-Satellite (space-to-Earth) 726B 722 726A 726C 726X 727	
<u>NOC</u>	1 544 - 1 545 MOBILE-SATELLITE (space-to-Earth) 722 727 727A	
<u>NOC</u>	1 545 - 1 555 AERONAUTICAL MOBILE-SATELLITE (R) (space-to-Earth) 722 726A 727 729 729A 730	
MOD	1 555 - 1 559 LAND MOBILE-SATELLITE (space-to-Earth) 722 726A 726X 727 730 730A 730B	

ADD

730B

Additional allocation: in Australia, Canada, the United States and Mexico, the band 1 555 - 1 559 MHz is also allocated to the mobile-satellite (space-to-Earth) service, and the band 1 656.5 - 1 660.5 MHz is also allocated to the mobile-satellite (Earth-to-space) service, on a primary basis subject to the following conditions: the aeronautical mobile-satellite (R) service shall have priority access and immediate availability over all other mobile-satellite communications within a network operating under this provision; mobile-satellite systems shall be interoperable with the aeronautical mobile-satellite (R) service; account shall be taken of the priority of safety-related communications in the other mobile-satellite services.

MOD

MHz
1 610 - 1 626.5

Allocation to Services		
Region 1	Region 2	Region 3
1 610 - 1 610.6 AERONAUTICAL RADIONAVIGATION MOBILE-SATELLITE (Earth-to-space) 731X 733E 722 727 730 731 732 733 733A 733B 733F	1 610 - 1 610.6 AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) 733A 733E MOBILE-SATELLITE (Earth-to-space) 731X 733E 722 732 733 733C 733D	1 610 - 1 610.6 AERONAUTICAL RADIONAVIGATION MOBILE-SATELLITE (Earth-to-space) 731X 733E Radiodetermination-Satellite (Earth-to-space) 733A 733E 722 727 730 732 733 733B
1 610.6 - 1 613.8 AERONAUTICAL RADIONAVIGATION MOBILE-SATELLITE (Earth-to-space) 731X 733E RADIO ASTRONOMY 722 727 730 731 732 733 733A 733B 733F 734	1 610.6 - 1 613.8 AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) 733A 733E MOBILE-SATELLITE (Earth-to-space) 731X 733E RADIO ASTRONOMY 722 732 733 733C 733D 734	1 610.6 - 1 613.8 AERONAUTICAL RADIONAVIGATION MOBILE-SATELLITE (Earth-to-space) 731X 733E RADIO ASTRONOMY Radiodetermination-Satellite (Earth-to-space) 733A 733E 722 727 730 732 733 733B 734

MOD

MHz
1 610 - 1 626.5 (continued)

Allocation to Services		
Region 1	Region 2	Region 3
1 613.8 - 1 626.5 AERONAUTICAL RADIONAVIGATION MOBILE-SATELLITE (Earth-to-space) 731X 733E Mobile-Satellite (space-to-Earth) 731Y 733E 722 727 730 731 732 733 733A 733B 733F	1 613.8 - 1 626.5 AERONAUTICAL RADIONAVIGATION RADIODETERMINATION- SATELLITE (Earth-to-space) 733A 733E MOBILE-SATELLITE (Earth-to-space) 731X 733E Mobile-satellite (space-to-Earth) 731Y 733E 722 732 733 733C 733D	1 613.8 - 1 626.5 AERONAUTICAL RADIONAVIGATION MOBILE-SATELLITE (Earth-to-space) 731X 733E Radiodetermination-Satellite (Earth-to-space) 733A 733E Mobile-Satellite (space-to-Earth) 731Y 733E 722 727 730 732 733 733B

SUP 731A

SUP 731B

SUP 731C

SUP 731D

ADD 731X

The use of the band 1 610 - 1 626.5 MHz by the mobile-satellite service (Earth-to-space) is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. Mobile earth stations in the mobile-satellite service shall not produce an e.i.r.p. density in excess of -3 dB(W/m²/4 kHz) until such time as a competent world administrative radio conference revises this limit. Stations of the mobile-satellite service shall not cause harmful interference to, or claim protection from, stations in the aeronautical radionavigation service, stations operating in accordance with the provisions of No. 732, and stations in the fixed service operating in accordance with the provisions of No. 730.

ADD 731Y

The use of the band 1 610 - 1 626.5 MHz by the mobile-satellite service (space-to-Earth) is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. Stations of the mobile-satellite service shall not cause harmful interference to, or claim protection from, stations in the fixed service operating in accordance with the provisions of No. 727.

- MOD 733A** With respect to the radiodetermination-satellite and mobile-satellite
Mob-87 services the provisions of No. 953 do not apply in the frequency band
1 610 - 1 626.5 MHz.
- MOD 733E** Harmful interference shall not be caused to stations of the radio
Mob-87 astronomy service using the band 1 610.6 - 1 613.8 MHz by stations of the
radiodetermination-satellite and mobile-satellite services. (No. 2904 applies.)
- MOD 734** In making assignments to stations of other services, administrations are
urged to take all practicable steps to protect the radio astronomy service in the band
1 610.6 - 1 613.8 MHz from harmful interference. Emissions from space or air-borne
stations can be particularly serious sources of interference to the radio astronomy
service (see Nos. 343 and 344 and Article 36).

MHz**1 626.5 - 1 660**

Allocation to Services		
Region 1	Region 2	Region 3
MOD	1 626.5 - 1 631.5	MARITIME MOBILE-SATELLITE (Earth-to-space) Land Mobile-Satellite (Earth-to-space) 726B 722 726A 726C 726X 727 730
MOD	1 631.5 - 1 634.5	MARITIME MOBILE-SATELLITE (Earth-to-space) LAND MOBILE-SATELLITE (Earth-to-space) 722 726A 726C 726X 727 730 734A
MOD	1 634.5 - 1 645.5	MARITIME MOBILE-SATELLITE (Earth-to-space) Land Mobile-Satellite (Earth-to-space) 726B 722 726A 726C 726X 727 730
<u>NOC</u>	1 645.5 - 1 646.5	MOBILE-SATELLITE (Earth-to-space) 722 734B
NOC	1 646.5 - 1 656.5	AERONAUTICAL MOBILE-SATELLITE (R) (Earth-to-space) 722 726A 727 729A 730 735
MOD	1 656.5 - 1 660	LAND MOBILE-SATELLITE (Earth-to-space) 722 726A 726X 727 730 730A 730B 734A

MOD**MHz****1 660 - 1 660.5**

Allocation to Services		
Region 1	Region 2	Region 3
1 660 - 1 660.5	RADIO ASTRONOMY LAND MOBILE-SATELLITE (Earth-to-space) 722 726A 726X 730A 730B 736	

MHz 1 670 - 1 700		
Allocation to Services		
	Region 1	Region 2 Region 3
MOD	1 670 - 1 675	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE 722 740A
MOD	1 675 - 1 690	METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 722
NOC	1 690 - 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 671 722 741	1 690 - 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) 671 722 740 742

ADD

740A

The bands 1 670 - 1 675 MHz and 1 800 - 1 805 MHz are intended for use, on a worldwide basis, by administrations wishing to implement aeronautical public correspondence. The use of the band 1 670 - 1 675 MHz by stations in the systems for public correspondence with aircraft is limited to transmissions from aeronautical stations and the use of the band 1 800 - 1 805 MHz is limited to transmissions from aircraft stations. [Administrations operating systems for public correspondence with aircraft in these bands shall ensure that the frequencies actually assigned to their stations do not cause harmful interference and shall coordinate such use of frequencies accordingly]. [In Canada, the United States and Mexico, public correspondence with aircraft shall operate in accordance with the provisions of No. 700A].

MOD

MHz 1 700 - 2 025		
Allocation to Services		
Region 1	Region 2	Region 3
1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 671 722	1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 671 722 743	
1 710 - 2 010 FIXED MOBILE 722 740A 744 746 746A	1 710 - 2 010 FIXED MOBILE 722 740A 744 745 746 746A	
2 010 - 2 025 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 746B 744 746A	2 010 - 2 025 FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) 746B 744 745 746A	

ADD 746A

The bands 1 885 - 2 025 MHz and 2 110 - 2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement the future public land mobile telecommunication systems (FPLMTS). Such use does not preclude the use of these bands by other services to which they are allocated. [In the bands 2 010 - 2 025 MHz and 2 185 - 2 200 MHz, a combination of terrestrial and space techniques may also be used.]

The bands can be made available for FPLMTS in accordance with Resolution COM4/4.

ADD 746B

The allocation of the band 2 010 - 2 025 MHz to the mobile-satellite service (Earth-to-space) and of the band 2 185 - 2 200 MHz to the mobile-satellite service (space-to-Earth) shall be effective on 1 January 2010. The use of these bands by non-geostationary-satellite systems of the mobile-satellite service is subject to the coordination and notification procedures set forth in Resolution COM5/8. However, coordination of a space station of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds the limits in No. [2562] [2557].

MOD

MHz
2 025 - 2 200

Allocation to Services		
Region 1	Region 2	Region 3
2 025 - 2 110	FIXED MOBILE 747A SPACE RESEARCH (Earth-to-space), (space-to-space) SPACE OPERATION (Earth-to-space), (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space), (space-to-space)	
	750A	
2 110 - 2 120	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space)	
	746A	
2 120 - 2 185	FIXED MOBILE	
	746A	
2 185 - 2 200	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 746B	
	746A	

MOD

MHz
2 200 - 2 290

Allocation to Services		
Region 1	Region 2	Region 3
2 025 - 2 290	FIXED SPACE RESEARCH (space-to-Earth) (space-to-space) SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) MOBILE 747A 750A	

SUP 747

ADD 747A In making assignments to the mobile service in the bands
2 025 - 2 110 MHz and 2 200 - 2 290 MHz, administrations shall take into account
Resolution COM4/2.

SUP 748

SUP 749

SUP 750

ADD 750A Administrations are urged to take all practicable measures to ensure that
space-to-space transmissions between two or more non-geostationary satellites, in the
space research, space operations and Earth exploration-satellite services in the bands
2 025 - 2 110 MHz and 2 200 - 2 290 MHz, shall not impose any constraints on
Earth-to-space, space-to-Earth and other space-to-space transmissions of those
services and in those bands between geostationary and non-geostationary satellites.

MOD

MHz
2 290 - 2 450

Allocation to Services		
Region 1	Region 2	Region 3
2 290 - 2 300	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	
2 300 - 2 450 FIXED MOBILE Amateur Radiolocation 664 752	2 300 - 2 450 FIXED MOBILE RADIOLOCATION Amateur 664 751 752	

[SUP 743A]

MOD

MHz 2 483.5 - 2 500		
Allocation to Services		
Region 1	Region 2	Region 3
2 483.5 - 2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 753F Radiolocation 733F 752 753A 753B 753C 753E	2 483.5 - 2 500 FIXED MOBILE RADIODETERMINATION- SATELLITE (space-to-Earth) 753A RADIOLOCATION MOBILE-SATELLITE (space-to-Earth) 753F 752 753D	2 483.5 - 2 500 FIXED MOBILE RADIOLOCATION MOBILE-SATELLITE (space-to-Earth) 753F Radiodetermination-Satellite (space-to-Earth) 753A 752 753C

ADD

753F

The use of the band 2 483.5 - 2 500 MHz by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. However, coordination of space stations of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds the limits in No. [2562] [2557].

- MOD 596** Different category of service: in Afghanistan, Saudi Arabia, Bahrain, Brunei Darussalam, China, the United Arab Emirates, India, Indonesia, Iran, Iraq, Kuwait, Malaysia, Oman, Pakistan, Qatar, Singapore, Thailand, Yemen A.R., Yemen (P.D.R. of), and Yugoslavia, the allocation of the band 137 - 138 MHz to the fixed and mobile, except aeronautical mobile (R), services is on a primary basis (see No. 425).
- MOD 598** Different category of service: in Austria, Bulgaria, Egypt, Finland, Greece, Hungary, the Lebanon, Mongolia, Poland, the German Democratic Republic, Romania, Czechoslovakia and the U.S.S.R., the allocation of the band 137 - 138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. 425).
- MOD 675** Different category of service: in Chile, Colombia, Ecuador, the United States, Guyana, Honduras and Jamaica, the allocation of the bands 470 - 512 MHz and 614 - 806 MHz to the fixed and mobile services is on a primary basis (see No. 425), subject to agreement obtained under the procedure set forth in Article 14.

**RECAPITULATION OF THE CHANGES TO BE INTRODUCED
IN CERTAIN FOOTNOTES OF ARTICLE 8**

Note by the Editorial Committee:

During the examination of Document 284 (R.2) at the eighth Plenary Meeting (Thursday, 27 February 1992), a number of delegations requested changes to the footnotes of Article 8 of the Radio Regulations. These changes, which the Secretary-General is instructed to introduce in the definitive version of the Final Acts of WARC-92, are recapitulated below:

ADD/SUP	SYMBOL	FOOTNOTE
SUP	AUT	475*
ADD	BRU	854
ADD	COG	826, 857 and 866
ADD	JOR	647, 769, 779, 819, 834, 857, 866, 868, 883 and 894
SUP	JOR	860
ADD	LIE	797B
ADD	MLI	518
SUP	MLT	803, 857 and 866
ADD	MLT	608Z and 797B
ADD	OMA	826, 857, 866 and 830
SUP	POL	446, 447, 587, 804, 850, 855, 885, 889, 891 and 896
ADD	POR	621 (Mob-87), 697 (Mob-87)** and 608Z
SUP	S	866
ADD	SWZ	803, 819 and 866
ADD	TZA	730
ADD	YEM	779, 819 and 834
ADD	YUG	596
SUP	YUG	598

* Footnote 475 is to be deleted.

** In the first group of countries.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 378-E
1 March 1992MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

B.15

PLENARY MEETINGFIFTEENTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM4	239	Article 12
		Appendix 26 (Rev.WARC-92)
PL	333	Resolution [PLEN/AH-1]
COM4	357	Resolution COM4/4
		Resolution COM4/5
		Resolution COM4/6
	357(Add.1)	Resolution COM4/7
	358	Resolution COM4/8
COM5	239	Resolution COM5/1
		Resolution COM5/2
	308	Resolution COM5/12

Note by Committee 4:

Reservation by the United Kingdom concerning Resolution COM4/8.

P. ABOUDARHAM
Chairman of Committee 6Annex: 23 pages

ARTICLE 12

NOC

**Sub-Section IIC. Procedure to Be Followed for Aeronautical Stations
Operating in the Bands Allocated Exclusively to the
Aeronautical Mobile Services Between 2 850 kHz and 22 000 kHz**

- NOC 1343** § 27. (1) Examination of Notices Concerning Frequency Assignments to Aeronautical Stations in the Aeronautical Mobile (OR) Service in the Bands Allocated Exclusively to that Service Between 3 025 kHz and 18 030 kHz (see No. 1239).
- NOC 1344** (2) The Board shall examine each notice covered by No. 1343 to determine whether:
- MOD 1344A Mob-87** (a) the notice is in conformity with the provisions of No. 1240 and those contained in Part II of Appendix 26(Rev.);
- MOD 1345** (b) the assignment is in conformity with an allotment contained in Part III of Appendix 26(Rev.);
- SUP 1346 - 1348**
- (MOD) 1348A Mob-87** (3) A notice which is not in conformity with the provisions of No. 1344A shall be examined with respect to Nos. 1267 and 1268. The date to be entered in Column 2b shall be determined in accordance with the relevant provisions of Section III of this Article.
- ADD 1348B** (4) Any frequency assignment for which the finding is favourable with respect to Nos. 1344A and 1345 shall be recorded in the Master Register. The date to be entered in Column 2a shall be determined in accordance with the relevant provisions of Section III of this Article.
- ADD 1348C** (5) A notice which is in conformity with the provisions of No. 1344A, but not with those of No. 1345, shall be examined with respect to the allotments in Part III of Appendix 26(Rev.). In so doing, the Board shall apply the technical criteria specified in Part IV of Appendix 26(Rev.). The date to be entered in Column 2a or 2b shall be determined in accordance with the relevant provisions of Section III of this Article.
- SUP 1349 Mob-87**

NOC

Section III

- NOC** **1406** § 45. (1) Frequency Bands Allocated Exclusively to the Aeronautical Mobile (OR) Service Between 3 025 kHz and 18 030 kHz.
- MOD** **1407** (2) If the finding is favourable with respect to Nos. 1344A and 1345, the date of 15 December 1992 shall be entered in Column 2a.
- MOD** **1408** (3) If the finding is favourable with respect to No. 1348C, the date of 15 December 1992 shall be entered in Column 2a.
- SUP** **1409**
- MOD** **1410** (4) In all other cases covered by No. 1343, the date of 16 December 1992 shall be entered in Column 2b.
- (MOD)** **1411** (5) For assignments to stations other than aeronautical stations in the aeronautical mobile (OR) service, the relevant date shall be entered in Column 2b (see Nos. 1271 and 1272).

APPENDIX 26 (Rev.WARC-92)
to the Radio Regulations

**Provisions and Associated Frequency Allotment Plan
for the Aeronautical Mobile (OR) Service
in the Bands Allocated Exclusively to that Service
Between 3 025 kHz and 18 030 kHz**

(see Article 50 of the Radio Regulations)

PART I: General Provisions, Definitions

26/1 The provisions of this Appendix shall apply to the aeronautical mobile (OR) service in the following frequency bands:

- 3 025 - 3 155 kHz
- 3 900 - 3 950 kHz (Region 1 only)
- 4 700 - 4 750 kHz
- 5 680 - 5 730 kHz
- 6 685 - 6 765 kHz
- 8 965 - 9 040 kHz
- 11 175 - 11 275 kHz
- 13 200 - 13 260 kHz
- 15 010 - 15 100 kHz
- 17 970 - 18 030 kHz

26/2 For the purpose of this Appendix, the terms used comprise the following:

26/2.1 Frequency Allotment Plan

The Plan for the aeronautical mobile (OR) service contained in Part III of this Appendix.

26/2.2 Allotment in the aeronautical mobile (OR) service

A frequency allotment in the aeronautical mobile (OR) service which comprises:

- a frequency channel from the channels appearing in the channelling arrangement in No. 26/3;
- a bandwidth of up to 2.8 kHz, situated wholly within the frequency channel concerned;
- a power within the limits laid down in No. 26/4.4 [and/or] specified against the allotted frequency channel;
- an allotment area which is the area in which the aeronautical station can be situated and which coincides with all or part of the territory of the country, or of the geographical area, as indicated against the frequency channel concerned in the Frequency Allotment Plan.

**PART II: Technical Bases Used for the Establishment of the
Frequency Allotment Plan for the Aeronautical Mobile (OR) Service
in the Bands Allocated Exclusively to that Service
Between 3 025 kHz and 18 030 kHz**

26/3 Channelling arrangement

26/3.1 The channelling arrangement for the frequencies to be used by aeronautical stations in the aeronautical mobile (OR) service in the bands allocated exclusively to that service between 3 025 kHz and 18 030 kHz is indicated in Table 1 below:

TABLE 1

Frequency band 3 025 - 3 155 kHz: 43 + 1 channels

3 023 ¹	3 026	3 029	3 032	3 035	3 038	3 041	3 044	3 047	3 050
3 053	3 056	3 059	3 062	3 065	3 068	3 071	3 074	3 077	3 080
3 083	3 086	3 089	3 092	3 095	3 098	3 101	3 104	3 107	3 110
3 113	3 116	3 119	3 122	3 125	3 128	3 131	3 134	3 137	3 140
3 143	3 146	3 149	3 152						

Frequency band 3 900 - 3 950 kHz (Region 1 only): 16 channels

3 900	3 903	3 906	3 909	3 912	3 915	3 918	3 921	3 924	3 927
3 930	3 933	3 936	3 939	3 942	3 945				

Frequency band 4 700 - 4 750 kHz: 16 channels

4 700	4 703	4 706	4 709	4 712	4 715	4 718	4 721	4 724	4 727
4 730	4 733	4 736	4 739	4 742	4 745				

Frequency band 5 680 - 5 730 kHz: 15 + 1 channels

5 680 ¹	5 684	5 687	5 690	5 693	5 696	5 699	5 702	5 705	5 708
5 711	5 714	5 717	5 720	5 723	5 726				

Frequency band 6 685 - 6 765 kHz: 26 channels

6 685	6 688	6 691	6 694	6 697	6 700	6 703	6 706	6 709	6 712
6 715	6 718	6 721	6 724	6 727	6 730	6 733	6 736	6 739	6 742
6 745	6 748	6 751	6 754	6 757	6 760				

Frequency band 8 965 - 9 040 kHz: 25 channels

8 965	8 968	8 97	8 974	8 977	8 980	8 983	8 986	8 989	8 992
8 995	8 998	9 001	9 004	9 007	9 010	9 013	9 016	9 019	9 022
9 025	9 028	9 031	9 034	9 037					

Frequency band 11 175 - 11 275 kHz: 33 channels

11 175	11 178	11 181	11 184	11 187	11 190	11 193	11 196	11 199	11 202
11 205	11 208	11 211	11 214	11 217	11 220	11 223	11 226	11 229	11 232
11 235	11 238	11 241	11 244	11 247	11 250	11 253	11 256	11 259	11 262
11 265	11 268	11 271							

¹ For use of the carrier (reference) frequencies 3 023 kHz and 5 680 kHz, see No. 26/3.4.

Frequency band 13 200 - 13 260 kHz: 20 channels

13 200	13 203	13 206	13 209	13 212	13 215	13 218	13 221	13 224	13 227
13 230	13 233	13 236	13 239	13 242	13 245	13 248	13 251	13 254	13 257

Frequency band 15 010 - 15 100 kHz: 30 channels

15 010	15 013	15 016	15 019	15 022	15 025	15 028	15 031	15 034	15 037
15 040	15 043	15 046	15 049	15 052	15 055	15 058	15 061	15 064	15 067
15 070	15 073	15 076	15 079	15 082	15 085	15 088	15 091	15 094	15 097

Frequency band 17 970 - 18 030 kHz: 20 channels

17 970	17 973	17 976	17 979	17 982	17 985	17 988	17 991	17 994	17 997
18 000	18 003	18 006	18 009	18 012	18 015	18 018	18 021	18 024	18 027

26/3.2 The frequencies indicated in No. 26/3.1 are the carrier (reference) frequencies.

26/3.3 With the exception of the carrier (reference) frequencies 3 023 kHz and 5 680 kHz (see 26/3.4 below), one or more frequencies from Table 1 may be assigned to any aeronautical station and/or aircraft station, in accordance with the Frequency Allotment Plan, as contained in Part III of this Appendix.

26/3.4 The carrier (reference) frequencies 3 023 kHz and 5 680 kHz are intended for worldwide common use (see also Appendix 27 Aer2 Nos. 27/208 to 27/214).

26/3.5 The aeronautical radiotelephone stations shall use only single-sideband emissions (J3E). The upper sideband shall be employed, and the assigned frequency (see No. 142 of the Radio Regulations) shall be 1 400 Hz higher than the carrier (reference) frequency.

26/3.6 The channelling arrangement specified in No. 26/3.1 does not prejudice the rights of Administrations to establish, and to notify assignments to stations in the aeronautical mobile (OR) service other than those using radiotelephony, provided that:

- the occupied bandwidth does not exceed 2 800 Hz and is situated wholly within one frequency channel (see also Resolution COM5/1);
- the limits of unwanted emission are met (see Appendix 27 Aer2 No. 27/66C).

26/4 Classes of emission and power

26/4.1 In the aeronautical mobile (OR) service, in the bands governed by this Appendix, the use of the emissions listed below is permissible; additionally, the use of other emissions is also permissible, subject to compliance with No. 26/3.6.

26/4.2 Telephony

- J3E (single-sideband, suppressed carrier).

26/4.3 Telegraphy (including automatic data transmission)

- A1A, A1B, F1B;
- (A,H)2(A,B);
- (R,J)2(A,B,D);
- J(7,9)(B,D,X).

26/4.4 Unless otherwise specified in Part II of this Appendix, the following transmitter power limits (i.e., power supplied to the antenna), shall be applied:

Class of emission	Power limit values (peak envelope power supplied to the antenna)	
	Aeronautical station	Aircraft station
J3E	36 dBW (PX)	23 dBW (PX)
A1A, A1B	30 dBW (PX)	17 dBW (PX)
F1B	30 dBW (PX)	17 dBW (PX)
A2A, A2B	32 dBW (PX)	19 dBW (PX)
H2A, H2B	33 dBW (PX)	20 dBW (PX)
(R,J)2(A,B,D)	36 dBW (PX)	23 dBW (PX)
J(7,9)(B,D,X)	36 dBW (PX)	23 dBW (PX)

26/4.5 On the assumption that no antenna gain is involved, the transmitter powers specified in No. 26/4.4 above will result in a mean effective radiated power of 1 kW (for the aeronautical stations) and 50 W (for the aircraft stations), used as the basis for the establishment of the Plan contained in Part II of this Appendix.

**PART III: Arrangement for the Allotment of Frequencies for the
Aeronautical Mobile (OR) Service in the Exclusive Bands
Between 3 025 kHz and 18 030 kHz**

**(to be developed by the IFRB in accordance
with Resolution [PLEN/AH-1])**

PART IV: Criteria for Compatibility Assessment

26/6 For assessment of the possibilities of sharing between the allotments contained in Part III of this Appendix, and any new assignment which is not covered by an appropriate allotment, the following criteria shall be used:

26/6.1 A new station, not covered by an allotment, which uses the standardized transmission characteristics (J3E, 36 dBW PX) shall be considered compatible with the Plan, if it fulfils the criterion of being separated from any point of any allotment area, indicated in the Plan on the given channel, by the repetition half-distance, determined for the given conditions of operation (frequency band used, geographical position of the station, direction of propagation), which are given below:

Frequency band (kHz)	Repetition half-distance (in km)			
	Northern hemisphere		Southern hemisphere	
	North-South	East-West	North-South	East-West
3 025 - 3 155	550	600	550	600
3 900 - 3 950	650	650	650	650
4 700 - 4 750	725	775	725	775
5 680 - 5 730	1 175	1 325	1 150	1 300
6 685 - 6 765	1 350	1 600	1 225	1 425
8 965 - 9 040	2 525	3 525	2 225	3 075
11 175 - 11 275	3 375	5 575	2 675	3 925
13 200 - 13 260	4 550	6 650	3 475	5 625
15 010 - 15 100	5 050	7 450	4 800	7 100
17 970 - 18 030	5 750	8 250	5 675	7 475

26/6.2 The relevant value of the repetition half-distance for paths which are situated partly in the northern hemisphere and partly in the southern hemisphere shall be corrected using the linear interpolation procedure. This procedure shall be used to calculate the correction due to the azimuth of the propagation path with respect to true North.

26/6.3 The relevant value of the repetition half-distance, obtained in accordance with No. 26/6.2, shall be corrected, where necessary, to take into account the difference in the radiated power of the assignment with respect to the reference radiated power (30 dBW, mean radiated power) on the basis that a variation of 1 dB in the radiated power corresponds to a variation of 4% in the repetition distance.

PART V: Procedure for Modification and Maintenance of Part III

26/7 Part III will be updated by the Board in accordance with the following procedure:

26/7.1 a) when a country which has no allotment in Part III requests an allotment, the Board shall select an appropriate allotment on a priority basis and shall enter it in Part III;

26/7.2 b) when a request is submitted for an additional allotment, the Board shall apply the criteria of Part IV, and, where appropriate, enter the corresponding allotment in Part III;

26/7.3 c) when an administration informs the Board that it renounces the use of an allotment, the Board shall cancel the allotment concerned from Part III;

26/8 The Board shall maintain an up-to-date master copy of Part III, and shall periodically, but no less frequently than once a year, prepare recapitulative documents listing all amendments made to Part III.

26/9 The Secretary-General shall publish an up-to-date version of Part III in an appropriate form at least once every four years.

RESOLUTION [PLEN/AH-1]

**Development of an Arrangement for the Allotment of
Frequencies for the Aeronautical Mobile (OR) Service in
the Exclusive Bands Between 3 025 kHz and 18 030 kHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that Resolution No. 9 of the Plenipotentiary Conference, (Nice, 1989) instructed the IFRB to undertake actions with a view to improving use by the aeronautical mobile (OR) service of the frequency bands governed by Appendix 26 to the Radio Regulations;
- b) that the IFRB prepared, following consultation with administrations, a draft channelling arrangement;
- c) that a revision of Article 12 and consequential amendments to Appendix 26 have been adopted by this Conference;
- d) that the allotment arrangement submitted by the IFRB to this Conference will need to be further developed in accordance with this Resolution;

appreciating

the efforts made by the IFRB despite the limited resources available;

resolves

1. that the IFRB shall, in the development of Part III of Appendix 26(Rev.), immediately after the Conference, add to the allotment arrangement contained in its Report to the Conference and as modified during the Conference the following allotments:
 - a) one 3 kHz allotment, on the nearest possible channel within the same band, for each allotment contained in Appendix 26 (Part IV) which is not covered by an assignment in the Master Register;
 - b) one 3 kHz allotment, on the nearest possible channel within the same band, for each requirement submitted to the Conference or for which an assignment notice is received by the Board by 1 May 1992;
 - c) one 3 kHz allotment, on an appropriate channel in each band, for those administrations not having an allotment in the new allotment arrangement as a result of the above actions, except for those administrations which have explicitly stated that they do not require an allotment;
2. that the IFRB shall communicate the results of its above actions to administrations by 15 December 1992;
3. that in applying the above process, the IFRB shall endeavour to resolve any difficulties that may arise from the sharing of a channel by two or more allotments, in consultation with the administrations concerned;

4. that the IFRB shall distribute Part III of Appendix 26(Rev.) to all administrations as soon as possible and in any case not later than [date of entry into force of the Final Acts];

instructs the Secretary-General

to publish Part III of Appendix 26(Rev.) after the IFRB has completed its tasks under **resolves 1 to 4** above.

RESOLUTION COM4/4

**Implementation of Future Public Land Mobile
Telecommunication Systems (FPLMTS)**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the CCIR has recommended the 1 - 3 GHz band as the most suitable for FPLMTS;
- b) that the CCIR has recommended approximately 60 MHz for use by personal stations and approximately 170 MHz for use by mobile stations;
- c) that the CCIR has recognized that space techniques are an integral part of FPLMTS;
- d) that, in No. 746A of the Radio Regulations, this Conference has identified bands to accommodate this future service;

considering further

- e) that the CCIR has not completed its studies regarding duplexing methods, modulation techniques, channelling arrangements, signalling or communication protocols;
- f) that no worldwide numbering plan currently exists that would facilitate worldwide roaming;

noting

- a) that the initial implementation of the terrestrial components of FPLMTS is expected to commence by the year [2000];
- b) that the implementation of the satellite component of FPLMTS [in the bands 2 010 - 2 025 MHz and 2 185 - 2 200 MHz] is expected to be necessary by the year [2010];

invites administrations

to give due consideration to the accommodation of other services currently operating in these bands when implementing FPLMTS;

invites the CCIR

to continue its studies with a view to developing suitable and acceptable technical characteristics for FPLMTS that will facilitate worldwide use and roaming, and ensure that FPLMTS can also meet the telecommunication needs of the developing countries and rural areas;

invites the CCITT

- a) to complete its studies of signalling and communication protocols;
- b) to develop a common worldwide numbering plan and associated network capabilities that will facilitate worldwide roaming;

resolves

that administrations which implement FPLMTS:

- a) should make the necessary frequencies available for system development;
- b) should use those frequencies when FPLMTS are implemented;
- c) should use the relevant international technical characteristics, as identified by the Recommendations of the CCIR and CCITT.

RESOLUTION COM4/5

Consideration of Feasibility of Allocations to the Mobile-Satellite Service in the Band 1 670 - 1 710 MHz

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that, under item 2.2.4 of its agenda, this Conference was requested to consider an allocation of frequency bands to the mobile and mobile-satellite services and associated feeder links;
- b) that the parts of the spectrum adjacent to or near the existing mobile satellite allocations may offer opportunities for implementation;
- c) that the band 1 670 - 1 710 MHz is used principally by the meteorological-satellite and meteorological aids services;
- d) that the band 1 660 - 1 670 MHz is allocated to the radio astronomy service on a primary basis;
- e) that operational and technical means may be found that would allow sharing of the band 1 670 - 1 710 MHz between the meteorological-satellite and meteorological aids services and the mobile-satellite service;
- f) that the needs of the radio astronomy service in the adjacent band 1 660 - 1 670 MHz have to be met;
- g) that, given the worldwide nature of the meteorological services, there is a need to determine the operational and technical means of preventing harmful interference to these services;

resolves

- 1. that studies be undertaken by the CCIR on the operational and technical measures that would facilitate sharing;
- 2. that the World Meteorological Organization (WMO) be invited to participate in these sharing studies;

invites the CCIR

as a matter of urgency, to study the technical and operational issues relating to the sharing of this band between the meteorological aids and meteorological-satellite services and the mobile-satellite service, taking into account the needs of the radio astronomy service in the adjacent band;

instructs the Secretary-General

to communicate this Resolution to the WMO.

RESOLUTION COM4/6

**Adjustments to the Fixed Service as a Consequence of Changes
to the Frequency Allocations Within the Range 1 - 3 GHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- [a] that the present Conference has allocated new frequency bands in the range 1 - 3 GHz for the mobile, mobile-satellite, broadcasting-satellite (sound) services and has identified spectrum for the future public land mobile telecommunication systems (FPLMTS);]
- b) that various frequency bands in the range 1 - 3 GHz are allocated to the fixed service on a primary basis;
- c) that the fixed service in this range is extensively used and is likely to be used well into the future by many administrations;
- d) that the terrestrial components of FPLMTS can share with the fixed service where there is adequate geographical or frequency separation (see CCIR Report to WARC-92);
- e) that the fixed service has for many years satisfactorily shared the frequency bands 2 025 - 2 120 MHz and 2 200 - 2 290 MHz with the space research, space operation and Earth exploration-satellite services;

recognizing

that, although new techniques will make it possible to transfer some systems in the fixed service to higher frequency bands or to use other means of telecommunications, there are technical and economic factors that will require continued operation of systems in the range 1 - 3 GHz;

noting

that item 2.9.1 of the agenda of this Conference drew attention to the need to safeguard the interests of existing services that may be affected by changes to the Table of Frequency Allocations;

resolves

that, when administrations implement new services in the range 1 - 3 GHz, they should, to facilitate sharing, take full account of the continuing needs of the fixed service by the appropriate choice of geographical location, frequencies and timescales;

invites the CCIR

1. to continue its studies of the criteria for sharing between the fixed service and other services;
2. to prepare new radio frequency channelling arrangements, if necessary, for the fixed service in the relevant frequency bands;

urges Administrations

to continue to participate actively in these studies and to make the necessary adjustments to the fixed service within the timetable adopted by this Conference for the implementation of the new frequency allocations and designations in the range 1 - 3 GHz.

RESOLUTION COM4/7

**Consideration by a Future Competent World Administrative Radio Conference
of Issues Dealing with Allocations to Space Services
Which Were not Placed on the Agenda of WARC-92**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the agenda of this Conference called for the development of new Recommendations and Resolutions relating to allocations to space services which were not placed on this agenda;
- b) that the allocation to the Earth exploration-satellite service at 8.025 - 8.4 GHz is complex and not uniform worldwide;
- c) that Resolution COM4/1 relating to the allocation to the fixed-satellite service in the band 13.75 - 14 GHz is liable to raise problems of compatibility with the space research and the Earth exploration-satellite services;
- d) that the Earth exploration-satellite service has a secondary status in Regions 1 and 3 in the band 18.6 - 18.8 GHz, that this band is vital for sensing ecologically important data, and that it is being implemented on an increasing number of Earth-exploration satellites;
- e) that the current allocation to the inter-satellite service at 23 GHz is insufficient to ensure full inter-operability between data-relay satellite systems;
- f) that future active Earth sensing requirements for monitoring environmental data in the 35 GHz range have been identified;
- g) that the CCIR has agreed to certain important technical parameters required for coordination of the space science services under Appendix 28;

resolves

that the next competent world administrative radio conference should consider the following matters:

- use of existing allocations in the 8.025 - 18.8 GHz range to the Earth-exploration and space research services, with a view to establishing common worldwide primary allocations to these services in appropriate bands;
- additional inter-satellite service requirements up to 50 MHz near 23 GHz;
- provision of up to 1 GHz of frequency spectrum around 35 GHz for use by space-based active Earth sensors;
- inclusion of CCIR-approved technical coordination parameters in Appendix 28 of the Radio Regulations;

invites the CCIR

to carry out the necessary studies with a view to presenting, at the appropriate time, the technical information likely to be required as a basis for the work of the Conference;

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council at its next session with a view to including these matters in the agenda of the next competent conference.

RESOLUTION COM4/8

**Convening of a World Administrative Radio Conference
for the Planning of HF Bands Allocated to
the Broadcasting Service**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made new allocations to the HF broadcasting service;
- b) that the use of the new bands allocated, contained in No. 521B of the Radio Regulations, will be governed by planning procedures to be established by a competent world administrative radio conference (WARC);
- c) that the use of these bands is limited to single-sideband transmissions;
- d) the decision by the ITU Administrative Council at its 46th session not to convene in 1993 the HFBC Conference scheduled under Resolution No. 1 of the Plenipotentiary Conference (Nice, 1989);
- e) that the Administrative Council's decision was based on an IFRB report stressing the difficulties encountered by administrations and the IFRB in implementing the improved HFBC planning system adopted by WARC HFBC-87;

noting

that the Administrative Council's decision was not accompanied by any guarantee that the planning conference would be held in the short or medium term;

resolves

- 1. that administrations are required to abide strictly by the provisions of No. 531 of the Radio Regulations adopted by WARC HFBC-87 and by those adopted by this Conference (Nos. 521C, 528A, 529B and 534A of the Radio Regulations);
- 2. that administrations will not bring broadcasting stations into service in the bands referred to in the above-mentioned footnotes until the planning process has been completed, in conformity with those footnotes;

resolves further

that a WARC shall be convened as soon as possible to undertake the planning process;

recommends

that the next Plenipotentiary Conference should take the necessary steps to include the convening of that planning conference in the schedule of future ITU conferences;

instructs the IFRB

to make a comprehensive report to the next competent WARC on the planning trials undertaken since WARC HFBC-84 and, on the basis of the experience acquired, to propose a flexible, simplified planning method, which could be used for the subsequent development of a planning system;

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council.

RESOLUTION COM5/1

**Implementation of the New Provisions
Applicable in the Frequency Bands Allocated Exclusively to
the Aeronautical Mobile (OR) Service Between
3 025 kHz and 18 030 kHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the conditions for use of each of the frequency bands between 3 025 kHz and 18 030 kHz allocated exclusively to the aeronautical mobile (OR) service were modified by this Conference so as to enable a more efficient usage of the available frequency spectrum;
- b) that the implementation of the modified conditions of use will entail a considerable workload for administrations, since a large number of frequency assignments to both aircraft and aeronautical stations will have to be transferred from existing frequencies to the new frequencies and channels designated by this Conference;
- c) that the full implementation of the modified provisions for the frequency usage may require considerable investment for the replacement of the existing equipment;
- d) that, nevertheless, the modified provisions for frequency usage should be implemented fully and as soon as possible so that the advantages of the new arrangement may be realized at the earliest opportunity;
- e) that the changeover to the new conditions of operation should be effected with the least possible disruption to the service rendered by each station;

recognizing

- a) that the implementation of the decisions made by the present Conference relating to the new arrangement of the frequency bands allocated exclusively to the aeronautical mobile (OR) service between 3 025 kHz and 18 030 kHz should follow an orderly procedure for the transfer of existing services from the old to the new conditions of operation;
- b) that the procedures for the transfer of the existing frequency assignments in the aeronautical mobile (OR) service, in the bands allocated exclusively to that service between 3 025 kHz and 18 030 kHz, are specified in Resolution COM5/2 adopted by this Conference;

resolves

- 1. that the provisions of Appendix 26(Rev.), as well as the relevant provisions of Article 12 of the Radio Regulations, as modified by this Conference, shall apply to any new frequency assignment, as from 0001 UTC on [the date of entry into force of the Final Acts of this present Conference];

2. that administrations shall take all the necessary measures to comply with the new conditions of use of the bands governed by Appendix 26(Rev.) by not permitting the installation of new equipment whose emissions occupy a necessary bandwidth exceeding 2 800 Hz;
3. that, until 15 December 1995, administrations may continue to use their existing assignments in accordance with the characteristics recorded in the Master International Frequency Register. After that date administrations shall take all necessary measures to modify the characteristics of their assignments so as to ensure their conformity with the provisions of Appendix 26(Rev.);
4. that, not later than 15 December 1997, administrations shall discontinue all emissions whose bandwidth exceeds 2 800 Hz;

invites Administrations

to make every effort to eliminate incompatibilities which may occur in the transition period.

RESOLUTION COM5/2

**Transfer of Frequency Assignments of Aeronautical Stations
Operating in the Frequency Bands Allocated Exclusively to
the Aeronautical Mobile (OR) Service Between
3 025 kHz and 18 030 kHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the conditions for use of each of the frequency bands between 3 025 kHz and 18 030 kHz allocated exclusively to the aeronautical mobile (OR) service were modified by this Conference so as to enable a more efficient usage of the frequency spectrum available;
- b) that administrations will need to change the frequencies of their aeronautical and aircraft stations to bring them into conformity with the new Frequency Allotment Plan, as contained in Appendix 26(Rev.), and to notify such transfers, where appropriate, to the Board;

resolves

- 1. that, at an appropriate date, the Board shall send each Administration a list of assignments to stations of the aeronautical mobile (OR) service entered on its behalf in the Master Register in the bands allocated exclusively to that service between 3 025 kHz and 18 030 kHz;
- 2. that, in the above list, the Board shall indicate, for each frequency assignment, a replacement frequency(-ies) which fulfil(s) the provisions of Appendix 26(Rev.) and which is(are) intended to replace the frequency of the assignment concerned;
- 3. that, after receipt of the above list, administrations shall take all the necessary measures to modify the characteristics of their assignments, so as to bring them into conformity with the provisions of Appendix 26(Rev.), as early as possible and in any event, not later than 15 December 1997; any modification which has been implemented shall be notified to the Board in accordance with No. 1214 of the Radio Regulations;
- 4. that the frequency assignments notified by administrations under paragraph 3 above shall be examined by the Board under the relevant provisions of Sub-Section IIC and Section III of Article 12 of the Radio Regulations, as modified by this Conference;
- 5. that the assignments existing in the Master Register on 15 December 1997 which are not in conformity with the provisions of Appendix 26(Rev.) shall be treated as follows:
 - 5.1 within 60 days from 15 December 1997, the Board shall send relevant extracts of the Master Register to the administrations concerned advising them that, under this Resolution, the assignments in question are to be modified, within a period of 90 days, so as to meet the provisions of Appendix 26(Rev.);
 - 5.2 if an administration fails to notify the Board of the modifications within the prescribed period, the original entry will be retained in the Master Register for information only, without a date in Column 2, without a finding in Column 13A and with a suitable remark in the Remarks column. The administration will be advised of this action.

RESOLUTION COM5/[12]

**Introduction of Systems in the Broadcasting-Satellite Service (Sound)
(BSS (Sound)) in the Band [], Including the Complementary
Terrestrial Sound Broadcasting Uses**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made frequency allocations to the BSS (Sound), to the complementary terrestrial broadcasting and to the associated feeder links [that will become available for use from 1 January 2005];
- b) that some administrations or groups of administrations may wish to take a lead in an early introduction of BSS (Sound) systems of an experimental nature without affecting the continued operation of existing services in other countries prior to [the date referred to in **considering** a)];
- c) that it will be necessary to ensure that the introduction of BSS (Sound) systems in this band proceeds in a flexible and equitable manner;

resolves

- 1. that, although the frequency band [] will not be available for general use by the BSS (Sound) service before [1 January 2005], some countries may make available all or part of the band for BSS (Sound) systems, including the complementary terrestrial uses, before [1 January 2005];
- 2. that systems brought into use before [1 January 2005] shall operate in accordance with [Article 34] of the Radio Regulations, and for BSS (Sound) systems the procedure contained in Resolution 33 shall also be applied;
- 3. that for operational BSS (Sound) systems brought into use after [1 January 2005] the procedure in Resolution 33 shall be applied;
- 4. that existing services in the above-mentioned bands shall retain their primary status until [1 January 2005] or until the introduction of operational BSS (Sound) systems, whichever is later, and after this event their allocation shall become secondary;
- 5. to urge administrations to ensure, to the maximum extent possible, that operational systems of the BSS (Sound) service introduced in the band [] have technical characteristics which take into account the relevant studies of the CCIR, on the understanding that these characteristics shall not limit a future conference in establishing a flexible plan and associated procedures;
- [6. that existing and planned BSS systems in the band 2 500 - 2 690 MHz may continue to operate after [1 January 2005]. Any BSS (Sound) systems introduced in accordance with the provisions of this Resolution in the band [] shall be coordinated with the existing and planned BSS systems in the band 2 500 -2 690 MHz.]

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 379-E
1 March 1992MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

R.7

PLENARY MEETINGSEVENTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for second reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 6	344/B.13	Article 8
	237/B.5	
WG PL	345	Resolution GT-PLEN/2
COM 6	326/B.11	Resolution COM5/11
	344/B.13	Recommendation GT-PLEN/B

P. ABOUDARHAM
Chairman of Committee 6Annex: 11 pages

ARTICLE 8

MOD

GHz
17.3 - 18.1

Allocation to Services		
Region 1	Region 2	Region 3
17.3 - 17.7 FIXED-SATELLITE (Earth-to-space) 869 Radiolocation 868	17.3 - 17.7 FIXED-SATELLITE (Earth-to-space) 869 BROADCASTING-SATELLITE Radiolocation 868 868A 869A	17.3 - 17.7 FIXED-SATELLITE (Earth-to-space) 869 Radiolocation 868
17.7 - 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE	17.7 - 17.8 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 BROADCASTING-SATELLITE Mobile 869B 868A 869A	17.7 - 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE
	17.8 - 18.1 FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 869 MOBILE	

- ADD 868A** In the band 17.3 - 17.8 GHz, sharing between the fixed-satellite service (Earth-to-space) and the broadcasting-satellite service shall also be in accordance with the provisions of section 1 of Annex 4 of Appendix 30A.
- ADD 869A** In Region 2, the allocation of the band 17.7 - 17.8 GHz to the mobile service is on a primary basis until 31 March 2007.
- ADD 869B** In Region 2, the allocation to the broadcasting-satellite service in the band 17.3 - 17.8 GHz shall come into effect on 1 April 2007. After that date, use of the [fixed and] fixed-satellite (space-to-Earth) service[s] in the band 17.7 - 17.8 GHz shall not claim protection from and shall not cause harmful interference to operating systems in the broadcasting-satellite service.

MOD

GHz
18.1 - 18.6

Allocation to Services		
Region 1	Region 2	Region 3
18.1 - 18.4	FIXED FIXED-SATELLITE (space-to-Earth) (Earth-to-space) 870A MOBILE 870 870B	
18.4 - 18.6	FIXED FIXED-SATELLITE (space-to-Earth) MOBILE	

ADD 870A The use of the band 18.1 - 18.4 GHz by the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service.

ADD 870B Alternative allocation: in the Federal Republic of Germany, Denmark, the United Arab Emirates, Greece, Poland, the Czech and Slovak Federal Republic and the United Kingdom, the band 18.1 - 18.4 GHz is allocated to the fixed, fixed-satellite (space-to-Earth) and mobile services on a primary basis. The provisions of No. 870 also apply.

MOD

GHz
21.4 - 22

Allocation to Services		
Region 1	Region 2	Region 3
21.4 - 22 FIXED MOBILE BROADCASTING-SATELLITE 873AA	21.4 - 22 FIXED MOBILE	21.4 - 22 FIXED MOBILE BROADCASTING-SATELLITE 873AA 873AB

ADD

873AA

In Regions 1 and 3, the allocation to the broadcasting-satellite service in the band 21.4 - 22 GHz shall come into effect on 1 April 2007. The use of this band by the broadcasting-satellite service after that date and on an interim basis prior to that date is subject to the provisions of Resolution COM5/5.

ADD

873AB

Additional allocation: in Japan, the band 21.4 - 22 GHz is also allocated to the broadcasting service on a primary basis.

MOD

GHz
22.5 - 23

Allocation to Services		
Region 1	Region 2	Region 3
22.5 - 22.55	FIXED MOBILE	
22.55 - 23	FIXED INTER-SATELLITE MOBILE 879	

SUP

877, 878

MOD

GHz 24.25 - 25.25		
Allocation to Services		
Region 1	Region 2	Region 3
24.25 - 24.45 FIXED	24.25 - 24.45 RADIONAVIGATION	24.25 - 24.45 RADIONAVIGATION FIXED MOBILE
24.45 - 24.65 FIXED INTER-SATELLITE	24.45 - 24.65 RADIONAVIGATION INTER-SATELLITE 882X	24.45 - 24.65 RADIONAVIGATION FIXED INTER-SATELLITE MOBILE 882X
24.65 - 24.75 FIXED INTER-SATELLITE	24.65 - 24.75 INTER-SATELLITE RADIOLOCATION-SATELLITE (Earth-to-space)	24.65 - 24.75 FIXED INTER-SATELLITE MOBILE 882X 882Y
24.75 - 25.25 FIXED	24.75 - 25.25 FIXED-SATELLITE (Earth-to-space) 882Z	24.75 - 25.25 FIXED FIXED-SATELLITE (Earth-to-space) 882Z MOBILE 882Y

ADD 882X The inter-satellite service shall not claim protection from harmful interference from airport surface detection equipment stations of the radionavigation service.

ADD 882Y Additional allocation: in Japan, the band 24.65 - 25.25 GHz is also allocated to the radionavigation service on a primary basis until 2008.

ADD 882Z In the band 24.75 - 25.25 GHz, feeder links to stations of the broadcasting-satellite service shall have priority over other uses in the fixed-satellite service (Earth-to-space). Such other uses shall protect and shall not claim protection from existing and future operating feeder-link networks to such broadcasting satellite stations.

MOD

GHz 25.25 - 29.5		
Allocation to Services		
Region 1	Region 2	Region 3
25.25 - 25.5	FIXED MOBILE INTER-SATELLITE 881A Standard Frequency and Time Signal-Satellite (Earth-to-space)	
25.5 - 27	FIXED MOBILE INTER-SATELLITE 881A Earth Exploration-Satellite (space-to-Earth) Standard Frequency and Time Signal-Satellite (Earth-to-space)	
27 - 27.5 FIXED MOBILE INTER-SATELLITE 881A	27 - 27.5 FIXED FIXED-SATELLITE (Earth-to-space) MOBILE INTER-SATELLITE 881A 881B	
27.5 - 28.5	FIXED FIXED-SATELLITE (Earth-to-space) 882W MOBILE 882A 882B	
28.5 - 29.5	FIXED FIXED-SATELLITE (Earth-to-space) 882W MOBILE Earth Exploration-Satellite (Earth-to-space) 882C 882B	

ADD 881A Use of the 25.25 - 27.5 GHz band by the inter-satellite service is limited to space research and earth exploration-satellite applications, and also transmissions of data originating from industrial and medical activities in space.

ADD 881B Space services using non-geostationary satellites operating in the inter-satellite service in the band 27 - 27.5 GHz are exempt from the provisions of No. 2613.

MOD

GHz
29.5 - 30

Allocation to Services		
Region 1	Region 2	Region 3
29.5 - 29.9 FIXED-SATELLITE (Earth-to-space) 882W Mobile-Satellite (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 882B 883	29.5 - 29.9 FIXED-SATELLITE (Earth-to-space) 882W MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 873A 873B 873C 873E 882B 883	29.5 - 29.9 FIXED-SATELLITE (Earth-to-space) 882W Mobile-Satellite (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 882B 883
29.9 - 30	FIXED-SATELLITE (Earth-to-space) 882W MOBILE-SATELLITE (Earth-to-space) Earth Exploration-Satellite (Earth-to-space) 882C 873A 873B 873C 882 882A 882B 883	

ADD

882A

Additional allocation: the bands 27.500 - 27.501 GHz and 29.999 - 30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up link power control.

Such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. In the band 27.500 - 27.501 GHz, such space-to-Earth transmissions shall not produce a power flux-density in excess of the values specified in No. 2578 on the Earth's surface.

ADD

882B

Additional allocation: the band 27.501 - 29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up link power control.

ADD

882C

In the band 28.5 - 30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

ADD

882W

The band 27.5 - 30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.

MOD 883

Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Egypt, the United Arab Emirates, Ethiopia, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Pakistan, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Chad and Thailand, the band 29.5 - 31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. 2505 and 2508 shall apply.

RESOLUTION GT-PLN/2

**Further Work by the CCIR Concerning the
Broadcasting-Satellite Service (Sound)**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made frequency allocations for the broadcasting-satellite service (sound) (BSS (sound)) down links and the complementary terrestrial service in the [bands] (as specified in Article 8), with an interim procedure to govern the introduction of this service;
- b) that further technical development is necessary for the introduction of BSS (sound) in the aforementioned frequency [bands];
- c) that BSS (sound) systems could employ satellites in the geostationary-satellite orbit (GSO) or in non-geostationary-satellite orbits (non-GSO);
- d) that the most urgent guidance required will relate to the means to be employed for coordinating and avoiding mutual harmful interference between non-GSO systems, between GSO and non-GSO systems of the broadcasting-satellite service (sound), and between BSS (sound) systems and the systems of other services;

noting

the provisions of No. 2674 of the Radio Regulations;

resolves

- 1. that the CCIR should study this subject as a matter of urgency;
- 2. that CCIR studies should focus in particular on:
 - i) the characteristics of GSO and non-GSO BSS (sound) systems compatible with No. 2674 of the Radio Regulations,
 - ii) the appropriate sharing criteria;
- 3. to invite administrations and the IFRB to participate in the work of the CCIR on this subject;
- 4. to invite administrations which introduce BSS (sound) systems to publish reports on their experience of such systems;

invites the Administrative Council

to take account of the urgent need for regulatory provisions including measures to ensure frequency sharing between the BSS (sound) and other services in the same frequency bands, and to place this matter on the agenda of the next competent administrative radio conference,

instructs the Secretary-General

to bring this Resolution to the notice of the Administrative Council.

RESOLUTION COM5/11

**Establishment of Standards for the
Operation of Low-Orbit Satellite Systems**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that the radio-frequency spectrum is a limited natural resource, to which all ITU Members should have access on equitable conditions;
- b) that the ITU is required to coordinate efforts to harmonize the development of telecommunication facilities, notably those using space techniques, with a view to taking the utmost advantage of their possibilities;
- c) that one of the purposes of the ITU is to foster collaboration among its Members with a view to the establishment of rates at levels as low as possible consistent with an efficient service and with the independent and sound financial administration of telecommunications;
- d) that, in the performance of its studies, each International Consultative Committee is required to pay due attention to the study of questions and to the formulation of recommendations directly connected with the establishment, development and improvement of telecommunications in developing countries at both the regional and international level;
- e) that the Telecommunications Development Bureau is required to carry out studies, as necessary, on technical, economic, financial, managerial, regulatory and general policy issues in the field of telecommunications;
- f) that Resolution No. 15 of the Plenipotentiary Conference (Nice, 1989), relating to the role of the ITU in the development of world telecommunications, establishes that the ITU should ensure that all its work reflects the position of the ITU as the authority responsible within the United Nations system for establishing in a timely manner technical and operational standards for all forms of telecommunication and for effecting the rational use of the radio-frequency spectrum;
- g) that CCITT Recommendations provide for the apportionment of accounting revenues on international traffic between terminal countries, in principle on an equitable basis;
- h) that CCITT and CCIR Recommendations provide technical bases for a signalling and operational interface between terrestrial and satellite radio systems and public telecommunication networks;
- i) that the Radio Regulations provide for the coordination of frequency assignments utilized by mobile satellite networks and that the CCIR has been invited [Resolution] to study frequency sharing and coordination for the mobile-satellite service, with particular attention to low-orbit satellite systems;

recognizing

that current technological developments allow for the provision of telecommunication services through low-orbit satellite systems offering worldwide coverage, and that there are no standards governing the coordination, sharing and operation of such systems within the world telecommunication network;

bearing in mind

that only a very limited number of low-orbit satellite systems offering worldwide coverage could coexist in any given frequency band;

resolves

1. to invite the organs of the ITU within their fields of competence to carry out, as a matter of priority, technical, regulatory and operational studies to permit the establishment of standards governing the operation of low-orbit satellite systems so as to ensure equitable and standard conditions of access for all countries and to guarantee proper worldwide protection for existing services and systems in the telecommunication network;
2. to invite administrations interested in, or affected by, the introduction and operation of low-orbit satellite systems to participate in such work as the organs of the ITU may undertake in that connection.

RECOMMENDATION GT-PLN/B

**Sharing Criteria in Frequency Bands Shared by the
Mobile-Satellite Service and the Fixed, Mobile
and Other Radio Services**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made frequency allocations for the mobile-satellite service shared with other radio services;
- b) that provisional sharing criteria have been adopted in the bands allocated by this Conference to the mobile-satellite service;
- c) that both geostationary and non-geostationary satellites may be operated in the mobile-satellite service;

recommends that the CCIR

- 1. study, as a matter of urgency, the appropriate criteria for sharing between the mobile-satellite service and other services in the same frequency bands, including power limits and power flux-density limits as indicated in Articles 27 and 28 of the Radio Regulations, while placing minimum restrictions on the services operating in these bands;
- 2. issue, as a matter of urgency, Recommendations on the subject;

recommends that administrations

send, as a matter of urgency, their contributions relating to these studies to the CCIR.

PLENARY SESSION

Canada

PROPOSAL FOR THE WORK OF THE CONFERENCE

In the event that the Conference were to approve footnotes for the allocation of the broadcasting-satellite (sound) service and the complementary terrestrial sound broadcasting in the band [2 300 - 2 483.5] MHz in certain countries, Canada proposes an additional footnote:

CAN/380/1

ADD

751X

In the band [2 300 - 2 483.5] MHz, the power flux-density within the territory of Canada from space stations operating in the broadcasting-satellite service or from stations of the complementary terrestrial sound broadcasting service operating in accordance with provision [Footnote ...] shall not exceed -154 dB(W/m²/4 kHz) unless otherwise agreed.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

Document 381-E

1 March 1992

Original: English

Source: Document 340

COMMITTEE 6

Note by the Chairman of Committee 5

SERIES OF TEXTS ADOPTED BY THE PLENARY MEETING
AND SUBMITTED TO THE EDITORIAL COMMITTEE

Following discussion of Document 340 at the twelfth Plenary Meeting, the Chairman of Committee 5, after consultation with the IFRB, has inserted additional text in provision 7.1 of Article 7 of Appendix 30A to correctly represent the changes required to that Article. This new text is shown in square brackets. The correction to the text proposed by the delegation of Spain has also been included in the second paragraph of section 1 of Annex 4 of Appendix 30A.

Annex: 1

ANNEX

APPENDIX 30A

ARTICLE 7

MOD **Procedure Concerning Coordination, Notification and Recording in the Master International Frequency Register of Frequency Assignments to Stations in the Fixed-Satellite Service (Space-to-Earth) in Regions 1 and 3 in the Band 17.7 - 18.1 GHz and in Region 2 in the Band 17.7 - 17.8 GHz, and to Stations in the Broadcasting-Satellite Service in Region 2 in the Band 17.3 - 17.8 GHz When Frequency Assignments to Feeder Links for Broadcasting-Satellite Stations Appearing in the Regions 1 and 3 Plan or the Region 2 Plan are Involved**

MOD 7.1 The provisions of Articles 11 and 13 and Appendix 29 of the Radio Regulations are applicable to transmitting space stations in the fixed-satellite service in the band 17.7 - 18.1 GHz, [and the provisions of Resolution 33 of the Radio Regulations are applicable to space stations in the broadcasting-satellite service in Region 2 in the band 17.3 - 17.8 GHz] together with the provisions of Annex 4 to this Appendix, except that in relation to feeder-link stations, the relevant criteria mentioned in Appendix 29 to the Radio Regulations are replaced by those given in Section 1 of Annex 4 to this Appendix.

ANNEX 4

Criteria for Sharing Between Services

MOD

1. Threshold values for determining when coordination is required between ~~a~~ transmitting space stations in the fixed-satellite service or the broadcasting-satellite service and a receiving space station in the feeder-link Plans in the frequency bands ~~17.7~~ 17.3 - 18.1 GHz (Regions 1 and 3) and ~~17.7~~ 17.3 - 17.8 GHz (Region 2)

With respect to paragraph 7.1, Article 7 of this Appendix, coordination of a transmitting space station in the fixed-satellite service or in the broadcasting-satellite service with a receiving space station in a broadcasting-satellite feeder link in the Regions 1 and 3 Plan or the Region 2 Plan is required, for inter-satellite geocentric angular separations of less than 3° or greater than 150°, when the power flux-density arriving at the receiving space station of a broadcasting-satellite feeder-link station of another administration would cause an increase in the noise temperature of the feeder-link space station which exceeds a threshold value of $\Delta T_s/T_s$ corresponding to 4%. $\Delta T_s/T_s$ is calculated in accordance with Case II of the method given in Appendix 29.

The above provision does not apply when the geocentric angular separation, between a transmitting space station in the fixed-satellite service or in the broadcasting-satellite service and a receiving space station in the feeder-link Plan, exceeds 150° of arc and the free-space power flux-density of the transmitting space station in the fixed-satellite service does not exceed a value of -137 dB(W/m²/MHz) on the Earth's surface at the equatorial Earth limb.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 382-E
2 March 1992MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

R.8

PLENARY MEETINGEIGHTH SERIES OF TEXTS SUBMITTED BY THE EDITORIAL
COMMITTEE TO THE PLENARY MEETINGThe following texts are submitted to the Plenary Meeting for second reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 6	-	Recapitulation of questions left pending

P. ABOUDARHAM
Chairman of Committee 6Annex: 4 pages

ANNEX

Recapitulation of Questions Left PendingDoc. 348 p. R.6/5**ADD 723B**

Additional allocation: in Belarus, the Russian Federation and Ukraine, the band 1 429 - 1 535 MHz is also allocated to the aeronautical mobile service on a primary basis exclusively for the purposes of aeronautical telemetry within the national territory.

Doc. 348 p. R.6/12**PROPOSAL BY COMMITTEE 4****RESOLUTION GT-PLN/4**

Review of Certain Resolutions and Recommendations of the World Administrative Radio Conference (Geneva, 1979) (WARC-79); the World Administrative Radio Conference for the Mobile Services (Geneva, 1983) (Mob-83); the World Administrative Radio Conference for the Planning of the HF Bands Allocated to the Broadcasting Service (Geneva, 1987) (HFBC-87); the World Administrative Radio Conference for the Mobile Services (Geneva, 1987) (Mob-87), and the World Administrative Radio Conference on the Use of the Geostationary-Satellite Orbit and the Planning of Space Services Utilizing It (Second Session - Geneva, 1988) (Orb-88)

considering further

- b) that the following Resolutions and Recommendations of the above-mentioned Conferences either have been implemented or do not require any further action:

ADD

RESOLUTION No. 521 (Orb-88)

**Selection of a Frequency Band for Use by the Broadcasting-Satellite Service
and Intended for Wide RF-Band High Definition Television¹,
and of an Associated Frequency Band for HDTV Feeder Links,
and the Adoption of Related Provisions by a
Future Competent Conference**

ADD

RECOMMENDATION No. 511 (HFBC-87)

**Possibility of Extending the Frequency Spectrum
Allocated Exclusively to HF Broadcasting
at a Future Competent
World Administrative Radio Conference**

ADD

RECOMMENDATION No. 716 (Orb-88)

**Use of Certain Frequency Bands Below 3 000 MHz by the
Space Research and Space Operation Services**

[Res. 208(Mob-87)]*

[Res. 520(Orb-88)]*

[Res. 708(Mob-87)]*

[Rec. 205(Mob-87)]*

[Rec. 408(Mob-87)]*

* Note by Committee 4:

May be deleted if so decided by the Plenary Meeting.

Doc. 347 p. R.5/21

RESOLUTION COM5/10

Terrestrial VHF Digital Sound Broadcasting

ADD before instructs the Secretary-General

invites the BDT

to include among its priorities the definition of a project relating to the study by the CCIR of exceptional severe propagation phenomena in the regions of concern to developing countries.

Doc. 329 p. R.4/1 + R.4/2

FINAL ACTS

**of the
World Administrative Radio Conference for Dealing with Frequency Allocations
in Certain Parts of the Spectrum (WARC-92)
Malaga-Torremolinos 1992**

PREAMBLE

The partial revision of the Radio Regulations, as adopted by the Conference, shall form an integral part of those Regulations and shall enter into force on [12 October 1993 at 0001 hours UTC], [except for those elements of the partial revision for which a different date of entry into force is specifically stipulated therein].

Done at Malaga-Torremolinos, [3] March 1992

Doc. 329 p. R.4/8 to R.4/11

RESOLUTION COM5/5

+

RESOLUTION COM5/6

to be reviewed on the basis of
Doc. 329 with regard to square brackets

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUMDocument 383-E

2 March 1992

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

B.16

PLENARY MEETINGSIXTEENTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING. The following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
COM 5	311	Article 69
PL	381	Appendix 30A

P. ABOUDARHAM
Chairman of Committee 6Annex: 3 pages

ARTICLE 69

Entry into Force of the Radio Regulations

MOD	5187 Orb-88	§ 1. These Regulations, which are annexed to the International Telecommunication Convention, shall enter into force on 1 January 1982, except as specified in Nos. 5188, 5189, 5193, 5194, 5195, 5196 and 5197.
NOC	5188 to 5194	
MOD	5195 Mob-87	(2) The use of the frequency bands 12 230 - 12 330 kHz, 16 360 - 16 460 kHz, 17 360 - 17 410 kHz, 18 780 - 18 900 kHz, 19 680 - 19 800 kHz, 22 720 - 22 855 kHz, 25 110 - 25 210 kHz and 26 100 - 26 175 kHz by the maritime mobile service commenced on 1 July 1991 at 0001 hours UTC under the conditions specified in Resolution 325 (Mob-87).
NOC	5196 Orb-88	
NOC	5196.1 Orb-88	
ADD	5197	§ 10. The partial revision of the Radio Regulations contained in the Final Acts of WARC-92 shall enter into force on [12 October 1993] at 0001 hours UTC.

APPENDIX 30A

ARTICLE 7

MOD

Procedures for the Coordination, Notification and Recording in the Master International Frequency Register of Frequency Assignments to Stations in the Fixed-Satellite Service (Space-to-Earth) in Regions 1 and 3 in the Band 17.7 - 18.1 GHz and in Region 2 in the Band 17.7 - 17.8 GHz, and to Stations in the Broadcasting-Satellite Service in Region 2 in the Band 17.3 - 17.8 GHz When Frequency Assignments to Feeder Links for Broadcasting-Satellite Stations Appearing in the Regions 1 and 3 Plan or the Region 2 Plan are Involved

MOD

7.1 The provisions of Articles 11 and 13 and Appendix 29 of the Radio Regulations are applicable to transmitting space stations in the fixed-satellite service in the band 17.7 - 18.1 GHz, [and the provisions of Resolution 33 of the Radio Regulations are applicable to space stations in the broadcasting-satellite service in Region 2 in the band 17.3 - 17.8 GHz] together with the provisions of Annex 4 to this Appendix, except that, in relation to feeder-link stations, the relevant criteria mentioned in Appendix 29 to the Radio Regulations are replaced by those given in Section 1 of Annex 4 to this Appendix.

ANNEX 4

Criteria for Sharing Between Services

MOD

1. Threshold values for determining when coordination is required between transmitting space stations in the fixed-satellite service or the broadcasting-satellite service and a receiving space station in the feeder-link Plans in the frequency bands 17.3 - 18.1 GHz (Regions 1 and 3) and 17.3 - 17.8 GHz (Region 2).

With respect to paragraph 7.1, Article 7 of this Appendix, coordination of a transmitting space station in the fixed-satellite service or in the broadcasting-satellite service with a receiving space station in a broadcasting-satellite feeder link in the Regions 1 and 3 Plan or the Region 2 Plan is required, for inter-satellite geocentric angular separations of less than 3° or greater than 150°, when the power flux-density arriving at the receiving space station of a broadcasting-satellite feeder-link station of another administration would cause an increase in the noise temperature of the feeder-link space station which exceeds a threshold value of $\Delta T_s/T_s$ corresponding to 4%. $\Delta T_s/T_s$ is calculated in accordance with Case II of the method given in Appendix 29.

The above provision does not apply when the geocentric angular separation between a transmitting space station in the fixed-satellite service or in the broadcasting-satellite service and a receiving space station in the feeder-link Plan exceeds 150° of arc and the free-space power flux-density of the transmitting space station in the fixed-satellite service does not exceed a value of -137 dB(W/m²/MHz) on the Earth's surface at the equatorial Earth limb.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

Document 384-E

1 March 1992

Original: English

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

PLENARY MEETING

Note by the Chairman of the Conference

Attached are consolidated suggestions for modifications to Article 8 of the Radio Regulations in the frequency bands between 1 429 MHz and 2 690 MHz.

J. BARRIONUEVO PEÑA
Chairman

MHz 1 429 - 1 525			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1 429 - 1 525 <u>[1 462] [1 450]</u> FIXED MOBILE except aeronautical mobile 722 <u>755A 723B</u>	1 429 - 1 525 <u>[1 462] [1 450]</u> FIXED MOBILE 723 722	
MOD	<u>[1 462] - [1 492]</u> <u>[1 450] - [1 490]</u> FIXED MOBILE except aeronautical mobile <u>BROADCASTING-SATELLITE 722A</u> <u>BROADCASTING 722A</u> 722 <u>723B 755A</u>	<u>[1 462] - [1 492]</u> <u>[1 450] - [1 490]</u> FIXED MOBILE 723 <u>BROADCASTING-SATELLITE 722A</u> <u>BROADCASTING 722A</u> 722 <u>722B</u>	
MOD	<u>[1 492] - 1 525</u> <u>[1 490]</u> FIXED MOBILE except aeronautical mobile 722 <u>723B 755A</u>	<u>[1 490]</u> <u>[1 492] - 1 525</u> FIXED MOBILE 723 <u>MOBILE-SATELLITE 723C</u> <u>723D</u> 722	<u>[1 492] - 1 525</u> <u>[1 490]</u> FIXED MOBILE 723 722

ADD 722A Use of the band 1 450 - 1 490 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution COM4/[W] (Annex 1).

USA/334/2

ADD 722B In the United States, in the band [1 462 - 1 492] [1 450 - 1 490] MHz, the power flux-density at the surface of the Earth from space stations operating in the broadcasting-satellite service (sound) shall not exceed -172 dB(W/m²/4 kHz), unless otherwise agreed by affected administrations. Complementary terrestrial broadcast transmitters will not cause a power flux-density in excess of -172 dB(W/m²/4 kHz) outside of national boundaries unless agreed by affected administrations. The provisions of No. 723 apply. The broadcasting-satellite service (sound) and complementary terrestrial broadcasting service are not allocated in the United States.

- ADD 723B** Additional allocation: in Belarus, the Russian Federation and Ukraine, the band [1 429 - 1 535] MHz is also allocated to the aeronautical mobile service on a primary basis exclusively for the purposes of aeronautical telemetry within the national territory.
- B/337/2
ADD 723C** The use of the band 1 490 - 1 525 MHz by the mobile-satellite service in Region 2 shall not cause harmful interference to stations of the fixed and mobile services operating in this band. The power flux-density at the Earth's surface from space stations of the mobile-satellite service shall not exceed -137 dB(W/m²/4 kHz), unless otherwise agreed by the affected administrations.
- USA/334/1
ADD 723D** In the United States, in the band [1 435 - 1 525] MHz, the power flux-density at the surface of the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed -172 dB(W/m²/4 kHz), unless otherwise agreed by affected administrations. The provisions of No. 723 apply. The mobile-satellite service is not allocated in the United States.
- ISR/1/360/1
ADD 755A** In Israel and Italy in the band [1 427 - 1 525] MHz and in the band [2 500 - 2 690] MHz, the power flux-density at the surface of the Earth from space stations operating in the broadcasting-satellite service (sound) and in the mobile-satellite (space-to-Earth) service shall not exceed -152 dB(W/m²/4 kHz), unless otherwise agreed by affected administrations. The provisions of No. 757 apply.

1 525 - 1 660.5 MHz

(See Document 357, pages 7-13.)

MOD

MHz 1 670 - 1 700			
Allocation to Services			
Region 1		Region 2	Region 3
1 670 - 1 690 1 675		METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 722 <u>740A</u>	
1 670 1 675 - 1 690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 722		1 670 1 675 - 1 690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile <u>MOBILE-SATELLITE (Earth-to-space) 735A</u> 722	1 670 1 675 - 1 690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 722
1 690 - 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile 671 722 741		1 690 - 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) <u>MOBILE-SATELLITE 735A (Earth-to-space)</u> 671 722 740 742	1 690 - 1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) 671 722 740 742

**B/337/4
ADD**

735A

In making assignments to stations of the mobile-satellite service to which the band 1 675 - 1 710 MHz is allocated in Region 2, administrations are urged to take all practicable steps to protect the meteorological-satellite service from harmful interference in that band. The use of this band by the mobile-satellite service shall not impose constraints to the development of the meteorological-satellite service. (See Resolution COM4/X - Annex 2.)

MHz
1 700 - 1 970

Allocation to Services		
Region 1	Region 2	Region 3
1 700 - 1 710 FIXED METEOROLOGICAL- SATELLITE (space-to-Earth) [<u>MOBILE except</u> <u>aeronautical mobile</u>] Mobile except aeronautical mobile 671 722-743A	1 700 - 1 710 FIXED METEOROLOGICAL- SATELLITE (space-to-Earth) MOBILE except aeronautical mobile <u>MOBILE-SATELLITE 735A</u> (Earth-to-space) 671 722 743	1 700 - 1 710 FIXED METEOROLOGICAL- SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 671 722 743
1 710 - 2-2901 930 FIXED <u>MOBILE</u> Mobile 722 740A-743A 744 746 746A-747 748-750 722A	1 710 - 2-2901 930 FIXED MOBILE 722-740A 744 745 746 746A-747-748 749-750 722A	
1-7401 930 - 2-2901 970 FIXED MOBILE 740A 746A 722F	1-7401 930 - 2-2901 970 FIXED MOBILE <u>Mobile-Satellite</u> (Earth-to-space) 722F	1-7401 930 - 2-2901 970 FIXED MOBILE 740A 744 745 746 746A 722F

ADD

722F

In France and in French overseas departments and territories, in the bands [1 427 - 1530] MHz and [1 559 - 2 690] MHz, the power flux-density at the Earth's surface produced by space stations in the mobile-satellite service (space-to-Earth) shall not exceed the values specified in No. 2557, except where there are provisions to the contrary resulting from an agreement between administrations concerned. The provisions of Nos. 754 and 757 remain applicable.

MHz
1 970 - 2 010

Allocation to Services		
Region 1	Region 2	Region 3
1-7101 970 - 2-2901 980 FIXED MOBILE 722-744-746 746A	1-7101 970 - 2-2901 980 FIXED MOBILE <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 746T</u> 722-744-745-746 746A	1-7101 970 - 2-2901 980 FIXED MOBILE 722-744-745-746 746A
1-7101 980 - 2-2902 010 FIXED <u>MOBILE</u> <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 746T</u> Mobile 722-743A-744 746 746A-747 748-750	1-7101 980 - 2-2902 010 FIXED MOBILE <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 746T</u> 722 744-745-746 746A-747-748 749-750	

ADD 746T The use of the bands 1 970 - 2 010 MHz and 2 160 - 2 200 MHz by the mobile-satellite service shall be subject to the application of the coordination and notification procedures set forth in Resolution COM5/8.

ADD 746A The frequency bands [...] MHz and [...] MHz are intended for use, on a worldwide basis, by administrations wishing to implement the future public land mobile telecommunication systems (FPLMTS). Such use does not preclude the use of these bands by other services to which these bands are allocated. [In the bands [...] MHz and [...] MHz a combination of terrestrial and space techniques may also be used.]

The frequency bands can be made available for FPLMTS in accordance with Resolution COM4/FPLMTS.

MOD

1-7102 010 - 2-2902 025 FIXED <u>MOBILE</u> Mobile 722-743A 744 746-747 748-750	1-7102 010 - 2-2902 025 FIXED MOBILE 722 744 745 746 747-748 749-750
--	--

1-7102 025 - 2-2902 110	FIXED MOBILE 747A SPACE RESEARCH (Earth-to-space) (space-to-space) SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) 750A	
1-7102 110 - 2-2902 120	FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) <u>Mobile-Satellite</u> (space-to-Earth)	
1-7102 120 - 2-2902 160 FIXED MOBILE	2 120 - 2 160 FIXED MOBILE <u>Mobile-Satellite</u> (space-to-Earth)	2 120 - 2 160 FIXED MOBILE
1-7102 160 - 2-2902 170 FIXED MOBILE	2 160 - 2 170 FIXED MOBILE <u>MOBILE-SATELLITE</u> (space-to-Earth) 746T	2 160 - 2 170 FIXED MOBILE
1-7102 170 - 2-2902 200	FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) <u>746T</u>	

MOD

MHz
1 700 - 2 290 (continued)

Allocation to Services		
Region 1	Region 2	Region 3
2 200 - 2 290	FIXED SPACE RESEARCH (space-to-Earth) (space-to-space) SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) MOBILE 747A 750A	

SUP 747

ADD 747A In making assignments to the mobile service in the bands
2 025 - 2 110 MHz and 2 200 - 2 290 MHz, administrations shall take into account
Resolution COM4/2.

SUP 748

SUP 749

SUP 750

ADD 750A Administrations are urged to take all practicable measures to ensure that
space-to-space transmissions between two or more non-geostationary satellites, in the
space research, space operations and Earth exploration-satellite services in the bands
2 025 - 2 110 MHz and 2 200 - 2 290 MHz, shall not impose any constraints on
Earth-to-space, space-to-Earth and other space-to-space transmissions of those
services and in those bands between geostationary and non-geostationary satellites.

MHz 2 290 - 2 450			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	2 290 - 2 300 FIXED SPACE RESEARCH (deep space) (space-to-Earth) Mobile MOBILE except aeronautical mobile 743A	2 290 - 2 300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	
MOD	2 300 - 2 450 FIXED Amateur Mobile MOBILE Radiolocation 664 743A 752	2 300 - 2 450 FIXED MOBILE RADIOLOCATION Amateur 664 751 752 <u>750B 751X</u>	

[SUP 743A]

USA/353/1

ADD 750B

Additional allocation: in the United States, the band 2 310 - 2 360 MHz is allocated to the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service on a primary basis. The use of this band by the broadcasting-satellite service shall be subject to the application of the relevant provisions of Resolution No. (Document 374). Provisions of 751X also apply.

CAN/.../1

ADD 751X

In the band [2 300 - 2 483.5] MHz, the power flux-density within the territory of Canada from space stations operating in the broadcasting-satellite service or from stations of the complementary terrestrial sound broadcasting service operating in accordance with provision [Footnote 750B] shall not exceed -154 dB(W/m²/4 kHz) unless otherwise agreed.

MHz
2 450 - 2 655

Allocation to Services		
Region 1	Region 2	Region 3
2 450 - 2 483.5 FIXED MOBILE Radiolocation 752 753 [722F]	2 450 - 2 483.5 FIXED MOBILE RADIOLOCATION 752 [722F]	

MOD	MHz 2 483.5 - 2 500		
	Allocation to Services		
	Region 1	Region 2	Region 3
	2 483.5 - 2 500 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) 753F 733F 752 753A 753B 753C <u>722F 753F</u> 753	2 483.5 - 2 500 FIXED MOBILE RADIODETERMINATION- SATELLITE (space-to-Earth) 753A RADIOLOCATION MOBILE-SATELLITE (space-to-Earth) 753F 752 753D <u>722F</u>	2 483.5 - 2 500 FIXED MOBILE RADIOLOCATION MOBILE-SATELLITE (space- to-Earth) 753F Radiodetermination-Satellite (space-to-Earth) 753A 752 753C <u>722F</u>

ADD 753F The use of the band 2 483.5 - 2 500 MHz by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. However, coordination of space stations of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds the limits in No. 2557.

**F/356/1
ADD 722F** In France and in French overseas departments and territories, in the bands 1 427 - 1 530 MHz and 1 559 - 2 690 MHz, the power flux-density at the Earth's surface produced by space stations in the mobile-satellite service (space-to-Earth) shall not exceed the values specified in No. 2557, except where there are provisions to the contrary resulting from an agreement between the administrations concerned. The provisions of Nos. 754 and 757 remain applicable

**F/355/3
MOD 753** ~~Alternative allocation~~ Different category of service: in France, the bands ~~2 250 - 2 483.5 MHz and 2 500 - 2 550 MHz~~ are the band 2 450 - 2 500 MHz is allocated on a primary basis to the radiolocation service and on a secondary basis to the fixed and mobile services (see Nos. 424 and 425). Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

**MOD 753C
Mob-87** Different category of service: in Angola, Australia, Burundi, China, Côte d'Ivoire, Ethiopia, India, the Islamic Republic of Iran, Israel, Italy, Jordan, Kenya, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Senegal, Sudan, Swaziland, Syria, Tanzania, Thailand, Togo, Zaire and Zambia, the allocation of the band 2 483.5 - 2 500 MHz to the radiodetermination-satellite service (space-to-Earth) is on a primary basis (see No. 425) subject to agreement obtained under the procedure of Article 14 with other countries not listed in this provision.

MHz
2 500 - 2 655

Allocation to Services			
	Region 1	Region 2	Region 3
MOD	<u>2 500 - 2-6552 520</u> FIXED 762 763 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757-760 <u>MOBILE-SATELLITE 760A</u> (space-to-Earth) 720-753-756 758- 759 755A 757A 754B	<u>2 500 - 2-6552 520</u> FIXED 762 764 FIXED SATELLITE (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757-760 <u>MOBILE-SATELLITE 760A</u> (space-to-Earth) 720-755 755A 764A	<u>2 500 - 2-5352 520</u> FIXED 762 764 FIXED SATELLITE (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757-760 <u>MOBILE-SATELLITE 760A</u> (space-to-Earth) 754-757A

SUP **753E**
ADD **760A**

The allocation of the frequency band 2 500 - 2 520 MHz to the mobile-satellite service (space-to-Earth) shall be effective on 1 January 2005. The use of this band after 1 January 2005 by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. However, coordination of space stations of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds the limits in No. 2562.

MEX/359/1
ADD **764A**

Different category of service: in Mexico, the mobile-satellite service is allocated on a secondary basis.

CHN/KOR/J/SNG/THA/349/1
ADD **757A**

Additional allocation: in China, the Russian Federation, the Republic of Korea, Japan, Pakistan, Singapore and Thailand the band 2 535 - 2 655 MHz is allocated to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis.

USA/343/1
ADD **755A**

In Israel, Italy, the United States, in the band 2 500 - 2 690 MHz, the power flux-density at the surface of the Earth from space stations operating in the mobile-satellite (space-to-Earth) service shall not exceed -152 dB(W/m²/4 kHz), unless otherwise agreed by affected administrations. The provisions of No. 757 apply. The mobile-satellite service is not allocated in the United States.

Allocation to Services		
Region 1	Region 2	Region 3
2-500 <u>2 520</u> - 2 655 FIXED 762 763 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760	2-500 <u>2 520</u> - 2 655 FIXED 762 764 FIXED SATELLITE (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760	2-500 <u>2 520</u> - 2 535 FIXED 762 764 FIXED SATELLITE (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 754 754A <u>757A</u> <u>764A</u>
720 750-755A 756 <u>757A</u> 758 759 <u>754B</u>	720 755 <u>757A</u> <u>755A</u>	2 535 - 2 655 FIXED 762 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 720 <u>757A</u>

- MOD 758** Alternative allocation: in the Federal Republic of Germany and Greece, the band ~~2-500~~2 520 - 2 690 MHz is allocated to the fixed service on a primary basis.
- MOD 757** The use of the band ~~2-500~~2 520 - ~~2-690~~2 670 MHz by the broadcasting-satellite service is limited to national and regional systems for community reception and such use shall be subject to agreement obtained under the procedure set forth in Article 14. The power flux-density at the Earth's surface shall not exceed the values given in Nos. 2561 to 2564.
- MOD 754** Subject to agreement obtained under the procedure set forth in Article 14, the band ~~2-500~~2 520 - 2 535 MHz (until 1 January 2005 in the band 2 500 - 2 535 MHz) may also be used in Region 3 for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries.
- F/355/5
ADD 754B** Additional allocation: in France, the band 2 500 - 2 550 MHz is also allocated to the radiolocation service on a primary basis. Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

MHz
2 655 - 3 300

Allocation to Services		
Region 1	Region 2	Region 3
<u>2 655 - 2 690</u> <u>2 670</u> FIXED 762 763 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 758 759 765	<u>2 655 - 2 690</u> <u>2 670</u> FIXED 762 764 FIXED SATELLITE (Earth-to-space) (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive)	<u>2 655 - 2 690</u> <u>2 670</u> FIXED 762 764 FIXED SATELLITE (Earth-to-space) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive)

Allocation to Services		
Region 1	Region 2	Region 3
<u>2 655</u> <u>2 670</u> - 2 690 FIXED 762 763 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 764A</u>	<u>2 655</u> <u>2 670</u> - 2 690 FIXED 762 764 FIXED SATELLITE (Earth-to-space) (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 764A</u> <u>755A</u>	<u>2 655</u> <u>2 670</u> - 2 690 FIXED 762 764 FIXED SATELLITE (Earth-to-space) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 764A</u> 766

- ADD 764A** The allocation of the frequency band 2 670 - 2 690 MHz to the mobile-satellite service shall be effective on 1 January 2005. When introducing MSS systems in these bands administrations shall take all necessary steps to protect the satellite systems operating in these bands prior to 3 March 1992. The coordination of MSS systems in the bands will be in accordance with Resolution COM5/8.
- MOD 766** Subject to agreement obtained under the procedure set forth in Article 14, the band 2 655 - ~~2 690~~ 2 670 MHz (until 1 January 2005 in the band 2 655 - 2 690 MHz) may also be used in Region 3 for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries.

ANNEX 1

RESOLUTION COM4/[W]

**Introduction of Systems In the Broadcasting-Satellite
Service (Sound) and Complementary Terrestrial
Broadcasting in the Band [1 450 - 1 490] MHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made frequency allocations to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting [, and for the associated feeder links];
- b) that it is necessary to ensure that the introduction of the broadcasting-satellite service (sound) and complementary terrestrial broadcasting proceeds in a flexible and equitable manner;
- c) that efficient use of the spectrum will be enhanced by a worldwide allocation;
- d) that a worldwide allocation may cause difficulties to some countries in relation to their existing services;
- e) that future planning may limit the effect on other services;

resolves

- 1. that a competent conference should be convened not later than [1998] in order to review sharing criteria with existing services, to review the time schedule and band segmentations, the requirement for planning and an appropriate coordination procedure;
- 2. that in the interim period, BSS systems may be introduced in the band [1 465 - 1 490] MHz in accordance with Resolution 33. The complementary terrestrial service may be introduced during this interim period subject to coordination with administrations that may be affected;
- 3. that the calculation methods and the interference criteria to be employed in evaluating the interference should be based upon relevant CCIR Recommendations agreed by the administrations affected as a result of Resolution 703;

invites the CCIR

to conduct the necessary studies prior to the Conference;

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council to consider including in the agenda of an administrative radio conference to be held not later than the year [1998] the matters addressed above.

B/337/5
ADD

ANNEX 2

Draft Resolution COM4[X]

**Sharing Studies Concerning the Use of the Bands [1 490] - 1 525 MHz and
1 675 - 1 710 MHz [in Region 2] by the Mobile-Satellite Service**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that agenda item 2.2.4 of this Conference requested the consideration, i.e., of an allocation of frequency bands to the mobile-satellite service;
- b) that spectrum adjacent to or near the existing mobile satellite allocations may offer opportunities for implementation;
- c) that the band 1 490 - 1 525 MHz is used by the aeronautical mobile service in the countries listed in Footnote 723 and by other terrestrial services;
- d) that the band 1 675 - 1 710 MHz is principally used by the meteorological-satellite and meteorological aids services;
- e) that operational and technical means may be found that would allow sharing of the band 1 490 - 1 525 MHz between the services mentioned in c) above and the mobile-satellite service;
- f) that operational and technical means may be found that would allow sharing of the band 1 675 - 1 710 MHz between the services mentioned in d) above and the mobile-satellite service;
- g) that there is a need to determine the operational and technical means for preventing harmful interference to the services mentioned in c) and d) above,

resolves

- 1. that studies be undertaken by the CCIR to examine the operational and technical measures that would facilitate sharing;
- 2. that the WMO be invited to participate in these sharing studies,

invites

- 1. the CCIR to study as a matter of urgency the technical and operational issues relating to the sharing of these bands between the services mentioned in c) and d) above and the mobile-satellite service;
- 2. administrations to actively participate in such studies by sending contributions to the CCIR relating to the aforementioned studies.

PLENARY MEETING

Spain

PROPOSALS FOR THE WORK OF THE CONFERENCE

E/385/1

ADD

722C

In Spain, in the band [1 462 - 1 492 MHz] [1 450 - 1 490 MHz], the power flux-density produced at the Earth's surface by space stations of the broadcasting-satellite service (sound) shall not exceed [-154 dB(W/m²/4 kHz)] unless agreed otherwise with the administrations affected.

E/385/2

ADD

722D

In Spain, in the band [1 559 - 2 690 MHz], the power flux-density produced at the Earth's surface by space stations of the mobile-satellite service (space-to-Earth), shall not exceed the values specified in No. 2557, unless agreed otherwise with the administrations affected.

PLENARY MEETING

Canada

PROPOSAL FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND) AT [2 300 - 2 483.5] MHz

CAN/386/1

ADD

751X

In Canada, the band [2 300 - 2 483.5] MHz is not allocated for the broadcasting-satellite (sound) and broadcasting services. Space stations of the broadcasting-satellite service that may affect the services to which the above band is allocated in Canada shall be coordinated and notified in accordance with Resolution 33. Stations of the broadcasting service in neighbouring countries shall be subject to bilateral coordination with Canada prior to their bringing into use.

(Replace 751X in Document 384.)

PLENARY MEETING

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

BROADCASTING-SATELLITE SERVICE (SOUND)

AT [1 462 - 1 492] [1 450 - 1 490] MHz

USA/387/1

ADD 722B

In the United States, the band [1 462 - 1 492] [1 450 - 1 490] MHz is not allocated for the broadcasting-satellite (sound) and broadcasting services. Space stations of the broadcasting-satellite service that may affect the services to which the above band is allocated in the United States shall be coordinated and notified in accordance with Resolution 33. Stations of the broadcasting service in neighbouring countries shall be subject to bilateral coordination with the United States prior to their bringing into use. In both cases, No. 723 applies.

(Replace 722B in Document 384.)

Mobile-satellite service at [1 490 - 1 525] MHz.

USA/387/2

ADD 723D

Different category of service: in the United States, the band [1 490 - 1 525] MHz is not allocated for the mobile-satellite service.

(Replace 723D in Document 384.)

USA/387/3

ADD 723E

Assignments to stations of the mobile-satellite service shall be subjected to the successful application of the procedures set forth in Resolution COM5/8 taking account of No. 723. In respect to assignments operating in this band, the provisions of section II, paragraph 2.2, of Resolution COM5/8 shall also be applied to transmitting space stations with respect to terrestrial stations.

PLENARY MEETING

New Zealand

PROPOSAL FOR THE WORK OF THE CONFERENCE

In the event that the Conference were to approve an allocation to the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting within the band 1 427 - 1 525 MHz, then New Zealand proposes the additional footnote:

NZL/388/1

ADD

722A

Alternative allocation: in New Zealand the broadcasting-satellite service (sound) and broadcasting service (sound) are allocated on a secondary basis in the bands [- 1 464] MHz and [1 489 -] MHz. Furthermore, in these bands, the power flux-density at the surface of the Earth from space stations operating in the broadcasting-satellite service (sound) shall not exceed -152 dB(W/m²/4 kHz) unless otherwise agreed with the Administration.

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

PLENARY MEETING

DECLARATIONS

At the time of signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the undersigned delegates take note of the following statements made by signatory delegations:

1

Original: English

For the United Arab Emirates:

1. Further to the reservations expressed by the Delegation of the United Arab Emirates concerning frequency of operation about 50 MHz of wind profile radar, notably at first and second reading (Document 210-E, Recommendation GT-PLN/A "**considering e**") such reservation being minuted (3.2) in the fifth Plenary Meeting (Document 224-E);
2. the United Arab Emirates hereby declares that it maintains its reservation and objects to the operation of such wind profile radar at any frequency in the vicinity of 50 MHz.

2

Original: English

For Malaysia:

In signing these Final Acts, the Delegation of Malaysia hereby:

1. reserves for its Government the right to take such action as it may deem necessary to safeguard its interests should certain Members fail in any way to comply with the requirements of these Final Acts, or should the reservations by other Members jeopardize its telecommunication service;
2. declares that the signature, and possible subsequent ratification by the Government of Malaysia of the said Final Acts, is not valid with respect to the Member appearing under the name of Israel, and in no way implies its recognition.

3

Original: English

For Papua New Guinea:

In signing the Final Acts of the ITU World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), and in the light of declarations and reservations deposited, the Delegation of Papua New Guinea is obliged to reserve for its Government the right to take such action as it may consider necessary to safeguard its interests should any Member fail to observe the provisions adopted by the Conference and in so doing cause harmful interference to radiocommunications systems under the jurisdiction of the Government of Papua New Guinea.

4

Original: French

For the Republic of Guinea:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Republic of Guinea reserves for its Government the right to take such action as it may deem necessary to safeguard its interests should other Members of the Union fail to comply with the provisions of the Final Acts of this Conference or its Annexes, or should reservations entered by another Member country jeopardize the normal operation of its telecommunication services.

5

Original: French

For the Gabonese Republic:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Gabonese Republic reserves for its Government the right:

1. to take such action as it may deem necessary to safeguard its interests should other Members fail to comply in any way whatever with the decisions taken by this Conference, or should reservations entered by any other Members be such as to jeopardize the operation of its telecommunication services;
2. to accept or reject the consequences of decisions which might directly jeopardize its sovereignty, in particular any relating to the increased use of the mobile-satellite service in the bands between 1 - 3 GHz.

6

Original: French

For the Republic of Senegal:

In signing these Final Acts subject to ratification by its Government, the Delegation of the Republic of Senegal declares that its country reserves the right to take such action as it may deem necessary to safeguard its interests should other Members fail to comply with the provisions of these Final Acts or should reservations entered by other Members jeopardize the operation of its telecommunication services.

7

Original: French

For the Republic of Cape Verde:

The Republic of Cape Verde reserves the right to take such action as it may deem necessary to safeguard its interests should other Members fail to comply with the provisions of these Final Acts or should reservations entered by other Members jeopardize the operation of its telecommunication services.

8

Original: English

For the Republic of Kenya:

The Delegation of the Republic of Kenya herewith declares on behalf of its Government and in accordance with the powers conferred on it:

1. that it reserves the right of its Government to take any action it may consider necessary to safeguard and protect its interests should any Member fail to comply as required with the provisions contained in the Final Acts and the Annexes thereto as adopted by this Conference;
2. that the Government of the Republic of Kenya does not accept responsibility for consequences arising out of the reservations made by Members of the Union.

9

Original: French

For the Republic of Mali:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Republic of Mali reserves for its Government the right to take any action it may consider necessary to protect its interests if:

- a) reservations and declarations made by other administrations should jeopardize the efficient operation of its telecommunication installations;
- b) other Members should fail in any way to comply with the provisions of the Convention and the Radio Regulations.

10

Original: French

For the Kingdom of Morocco:

The Delegation of the Kingdom of Morocco reserves for its Administration the right to take any action it considers necessary to protect its interests if Members of the Union should fail in any way whatever to comply with the provisions of the Radio Regulations, or if reservations made by other Members should jeopardize the efficient operation of its radiocommunication services.

11

Original: English

For the Republic of Uganda:

The Delegation of the Republic of Uganda to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), declares that its Administration reserves the right to take such action it may consider necessary to protect its interests in the case where a Member of the Union fails to comply with the provisions of the Radio Regulations as modified by this Conference or makes reservations that jeopardize the operations of its radiocommunication services.

12

Original: French

For the Republic of Côte d'Ivoire:

In signing the Final Acts of the Conference, the Delegation of the Republic of Côte d'Ivoire reserves for its Government the right:

- a) to take any action it considers necessary to safeguard its interests if Members fail in any way to comply with the provisions of the Final Acts of the Conference;
- b) to refuse the consequences of any reservations formulated by other governments which jeopardize the harmonious operation of its radiocommunication services;
- c) further to refuse any provisions contrary to the Constitution and Convention of the International Telecommunication Union which directly or indirectly affect the sovereign right of the Republic of Côte d'Ivoire to regulate its own telecommunications.

13

Original: English

For the Republic of Zimbabwe:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Republic of Zimbabwe states the intention of its Administration to comply with the provisions of the Final Acts of the Conference without prejudice to the Republic of Zimbabwe's sovereign right to take any measures that the Government deems necessary to safeguard and protect its telecommunication and other services in the event of harmful interference caused to the said services by any Member of the Union failing to comply with the provisions of the Radio Regulations as revised by this Conference, particularly new allocations made by this Conference on the condition of causing no harmful interference to existing services.

14

Original: English

For Brunei Darussalam:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of Brunei Darussalam reserves for its Government the right to take any action that it deems necessary to safeguard its interests should any Member fail in any way to comply with the provisions of the Final Acts of the aforesaid Conference or its Annexes or the Protocol attached thereto or should any reservation by other Members which might have adverse effect to the interest of Brunei Darussalam or jeopardize the operation of its telecommunication services.

15

Original: English

For the Republic of Zambia:

In accordance with the powers conferred upon it, the Delegation of the Republic of Zambia wishes to declare as follows:

that in signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation reserves the right of its Government to take any action it may consider necessary to safeguard its interests should any Member fail to comply with the provisions of this Conference.

16

Original: French

For the Central African Republic:

The Delegation of the Central African Republic reserves for its Administration the right to take any action it may consider necessary to safeguard its interests, should certain Members of the Union fail to observe the provisions of the current Radio Regulations or should reservations entered by other Members jeopardize the operation of its radiocommunication services.

17

Original: English

For the Sultanate of Oman:

The Delegation of the Sultanate of Oman to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), declares that its Administration reserves the right to take such action it may consider necessary to protect its interests in cases where a Member of the Union fails to comply with the provisions of the Radio Regulations as modified by this Conference or make reservations that jeopardize the operation of its radiocommunication services.

18

Original: English

For the Republic of Yemen:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Republic of Yemen to this Conference, on behalf of its Government, reserves the right to take any action it deems necessary to safeguard its interests should they be affected or should any Member fail to comply with the provisions of the Convention or its Annexes, or should reservations by any other country jeopardize its telecommunication services.

19

Original: English

For the Kingdom of Swaziland:

The Delegation of the Kingdom of Swaziland reserves the right of its Government to take any action it deems necessary to safeguard its interests in the event of Members failing in any way to comply with the provisions of the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), or should reservations by other countries jeopardize its telecommunication services.

20

Original: French/
English/
Spanish

For Belgium, Denmark, the Federal Republic of Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, the Kingdom of the Netherlands, Portugal and the United Kingdom of Great Britain and Northern Ireland:

The Delegations of the Member States of the European Community declare that the Member States of the European Community will apply the partial revision of the Radio Regulations adopted at this Conference in accordance with their obligations under the Treaty establishing the European Economic Community.

21

Original: French

For the Republic of Burundi:

The Delegation of the Republic of Burundi reserves for its Government the right to take any action it may consider necessary to protect its interests should certain Members fail in any way whatever to observe the provisions of the Radio Regulations and the Final Acts of this Conference.

22

Original: English

For the Socialist People's Libyan Arab Jamahiriya:

The Socialist People's Libyan Arab Jamahiriya reserves its rights to accept or refuse to accept the consequences of any reservation made by other countries.

It also reserves its right to take any measures it deems necessary to safeguard its interests and telecommunication services should any Member fail in any way to observe the provisions of the International Telecommunication Convention or of its related Regulations.

23

Original: English

For the Kingdom of Saudi Arabia:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Kingdom of Saudi Arabia to this Conference reserves its Government's right to take any measures it considers necessary to safeguard its interests should any other country fail in any way to observe the provisions laid down in the Final Acts, or should the reservations made by any other country jeopardize the radio services of the Kingdom of Saudi Arabia.

24

Original: English

For the Republic of Syria:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Republic of Syria reserves for its Government the right to take any action it may deem necessary to safeguard its existing and planned fixed and mobile systems operating in the band 137 MHz - 3 GHz according to the Radio Regulations from interference caused by mobile-satellite services and in particular those using non-geostationary satellites, and not to accept any claim made in order to protect the above-mentioned services unless mutual agreement is set before.

25

Original: English

For the Hashemite Kingdom of Jordan:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Hashemite Kingdom of Jordan reserves for its Government the right to take any action it may deem necessary to safeguard its existing and planned fixed and mobile systems operating in the band 137 MHz to 3 GHz according to the Radio Regulations from interference caused by mobile-satellite services and in particular those using non-geostationary-satellites, and not to accept any claim made in order to protect the above-mentioned services unless mutual agreement is set before.

26

Original: French

For the Vatican City State:

The Delegation of the Vatican City State to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), reserves for its Administration the right to take such measures as may be necessary to meet the needs of its broadcasting service.

27

Original: French

For Tunisia:

The Delegation of Tunisia reserves for its Government the right to take any action it considers necessary to protect its interests should Members of the Union fail, in any way whatever, to comply with the provisions of the Radio Regulations or should reservations by other Members jeopardize the efficient operation of its radiocommunication services.

28

Original: French

For the Republic of Niger:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Republic of Niger reserves for its Government the right to take any action it considers necessary to safeguard its interests should any decisions taken at the Conference affect them or should any other country or administration fail in any way to comply with the provisions of the Final Acts or enter reservations that might affect or jeopardize the proper operation of its telecommunication services or the full exercise of its sovereign rights.

29

Original: French

For the Democratic Republic of Madagascar:

The Delegation of the Democratic Republic of Madagascar reserves for its Government the right to take any action it considers necessary to safeguard its interests should Members of the Union fail in any way to comply with the provisions of the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992) or should reservations entered by other countries jeopardize the proper operation of its own telecommunication services.

30

Original: French

For the Togolese Republic:

In signing the Final Acts for the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Togolese delegation reserves for its Government the right to take any action it considers necessary for safeguarding its interests should any Member like his country fail in any way to comply with the provisions, Resolutions or Recommendations contained in the Final Acts of the Conference or should reservations entered by other countries jeopardize the proper operation of its telecommunication services.

31

Original: English

For the Republic of Malta:

The Delegation of the Republic of Malta to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), reserves for its Government the right to take such action as it considers necessary to safeguard its interests should any Member fail in any way to abide by the provisions of the Final Acts of the Conference.

32

Original: French

For the Republic of Benin:

The Delegation of the Republic of Benin to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992) recognizes the important conclusions reached in its work. Nevertheless, it reserves for its Government the right to take any action it considers necessary to protect its interests should the interpretation and application by certain Members of the Union of the relevant decisions and provisions emerging from the Conference jeopardize Benin's radiocommunication services.

33

Original: French

For Burkina Faso:

The Delegation of Burkina Faso declares that its Government reserves the right to take any action it considers necessary in accordance with its national legislation and international law to protect its interests should Members fail in any way whatever to comply with the provisions of the Final Acts of the Conference or should reservations by Members jeopardize the efficient operation of Burkina Faso's telecommunication services.

34

Original: English

IN THE NAME OF GOD

For the Islamic Republic of Iran:

The Delegation of the Islamic Republic of Iran reserves for its Government the right to take any action as it may consider necessary to safeguard its interests should they be affected by decisions taken at this Conference, or by failure on the part of any other country or administration in any way to comply with the requirements of the International Telecommunication Convention (Nairobi, 1982) or its Annexes or the Protocols or the Regulations attached thereto, or these Final Acts, or should reservations or declarations by other countries or administrations jeopardize the proper and efficient operation of its telecommunication services, or infringe the full exercise of the sovereign rights of the Islamic Republic of Iran.

35

Original: English

For Thailand:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of Thailand reserves the right of its Government to take any action that it deems necessary to safeguard its interests should any Member or Members of the International Telecommunication Union fail, in any way, to comply with the Final Acts of this Conference and the Annexes thereto, or should any of the declarations by other Members jeopardize its telecommunication services or threaten its national sovereignty.

Original: English

For the Islamic Republic of Pakistan:

1. The Delegation of the Islamic Republic of Pakistan reserves its Administration's right to take effective steps to protect its interests if any administration operates any satellite, broadcasting and telecommunication services in violation of the Radio Regulations in force or of the decisions taken by the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992). It further reserves the right of its Administration to take steps if reservations or declarations made by any other country or administration jeopardize the proper and efficient operation of its satellite, broadcasting and telecommunication services/systems.

2. The Administration of Pakistan cannot undertake to accept any transmission to or infringement of its territory by any means of radio transmissions of any other administration and reserves its right to take such steps as necessary should this happen.

3. The Delegation of the Islamic Republic of Pakistan declares that the decisions of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992) regarding areas falling within the territory of the disputed States of Jammu and Kashmir are without prejudice to the position recognized by the relevant Resolutions of the United Nations on the question.

Original: French

For the Republic of Chad:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Republic of Chad reserves for its Government the right to take any action it considers necessary to protect its interests should another country or administration fail in any way whatever to comply with the provisions of the Final Acts of this Conference or should reservations by other Members jeopardize the efficient operation of its telecommunication services.

38

Original: French

For the Republic of the Congo:

The Delegation of the Republic of the Congo to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992) reserves for its Government the right:

1. to accede to all or part of the provisions contained in the Final Acts of WARC-92 and in the Annexes to those Acts;
2. to take any measures it may consider necessary and consistent with the protection of its national interests.

39

Original: English

For the United Arab Emirates:

1. In accordance with the International Telecommunication Convention (Nairobi, 1982) item 582, the United Arab Emirates reserve its position for the time being regarding the following bands:

- i) allocation for BSS (Sound) around the 1.5 GHz frequency band;
- ii) allocation for MSS within the 2.4835 - 2.5 GHz frequency band,

and should any administration implement any of the above allocations, the power flux-density at the surface of the Earth from space stations shall not exceed values mentioned in Radio Regulation No. 2566 and subsequent revision, unless otherwise agreed by us with affected administrations.

2. The United Arab Emirates also reserves its position regarding the implementation dates for the change of present allocations at the above-mentioned bands.

Original: English

For the United Republic of Tanzania:

The Delegation of the United Republic of Tanzania signed the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), on the understanding that all Parties to the Agreement will abide with all issues agreed at the Conference including all Resolutions, Recommendations and the revised parts of the Radio Regulations; in particular, regarding the following:

- that all administrations operating equipment/systems in the HF frequency bands below 30 MHz and in the 1 GHz to 3 GHz bands shall use frequencies which are in accordance with the agreed plan, or plans to be made in the future, and that operation of such equipment/systems shall not cause interference to equipment/systems installed within Tanzania's borders;
- that administrations operating terrestrial radiocommunication systems, geostationary-satellite systems, non-geostationary-satellite systems, LEO satellite systems and broadcasting-satellite (sound) systems in the agreed frequency bands shall ensure that their frequencies will not cause interference to equipment/systems installed within Tanzania's borders. Tanzania expects to join other States in the Region to have a regional satellite system. Therefore, Tanzania expects that some of the agreed BSS frequency bands, the other satellite frequency bands and appropriate space locations will be available for the regional satellite project;
- that Tanzania will continue to broadcast on double-sideband (DSB) up to the agreed date of 2015. Subject to availability of cheap SSB receivers, Tanzania will replace its DSB transmitters with SSB transmitters in 2015.

In the event that some Members will not execute the Final Acts of WARC-92, the Tanzanian Government will take necessary measures to ensure proper operation of its equipment/systems within its borders and realization of their regional satellite project.

41

Original: French

For the Republic of Cameroon:

The Delegation of the Republic of Cameroon to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), in signing the Final Acts of the Conference, declares that it is the practice of the Government of its country to fulfill all commitments entered into on its behalf.

Nevertheless, the Republic of Cameroon reserves the right to take any appropriate action should the failure of certain countries to comply with the decisions of the Conference interfere with the efficient operation of its radiocommunication network.

42

Original: English

For the Republic of Hungary:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum, (Malaga-Torremolinos, 1992), the Delegation of the Republic of Hungary reserves the right for its Government to take such action as it may consider necessary to safeguard its interest should any Member States of the Union fail in any way to observe or comply with the provisions of these Final Acts or should reservations by other countries jeopardize the proper operation of its radiocommunication services.

43

Original: Spanish

For the Republic of Colombia:

In the absence of specific international rules governing the operation, running and licensing of telecommunication services provided by low orbit-satellite systems, the Colombian State reserves the sovereign right to regulate the legal, technical and economic conditions governing the system of classification, licensing, operation, running and interconnection throughout the national territory, including its island territories, in accordance with its internal legal system.

The Colombian State will apply ITU Recommendations in charging for traffic from or into the national territory via such media, on the basis of an equitable distribution of the accounting rate among connecting administrations.

44

Original: English

For the State of Qatar:

In accordance with the ITU Convention, Nairobi 1982, Item 582, the State of Qatar reserves its position for the time being regarding the following bands:

- i) allocation for BSS (Sound) around the frequency 1.5 GHz;
- ii) allocation for MSS within the band 2.4835 - 2.5 GHz.

and should any administration implement any of the above allocations, the power flux-density at the surface of the Earth from space stations shall not exceed values mentioned in RR 2566 and subsequent revisions, unless otherwise agreed by the State of Qatar.

We also reserve our position regarding the implementation dates.

45

Original: English

For the People's Democratic Republic of Algeria, the Kingdom of Saudi Arabia, the State of Bahrain, the United Arab Emirates, the Hashemite Kingdom of Jordan, the State of Kuwait, the Socialist People's Libyan Arab Jamahiriya, the Islamic Republic of Mauritania, the Kingdom of Morocco, the Sultanate of Oman, the Islamic Republic of Iran, the Islamic Republic of Pakistan, the State of Qatar, the Syrian Arab Republic, Tunisia, the Yemen Republic:

The above-mentioned Delegations to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), declare that the signature and possible ratification of their respective Governments of the Final Acts of the Conference, are not valid with respect to the Zionist-Entity appearing in the International Telecommunication Constitution and Convention (Nice, 1989) under the name of the so-called "Israel" and in no way whatsoever imply its recognition.

46

Original: Spanish

For Ecuador:

In signing the Final Acts, the Delegation of Ecuador reserves for its Government the right to take whatever measures it considers necessary should Ecuador's telecommunication services suffer interference from stations or be jeopardized in any way by any action of other countries.

Similarly, until the International Telecommunication Union establishes the technical and operational rules for low-orbit satellite systems in pursuance of Resolution COM5/11 of this Conference, it reserves the right to allow the operation of these systems in its territory under such conditions as it considers appropriate and expedient. In charging for such traffic it will apply ITU Recommendations on the basis of an equitable distribution of the accounting rate among connecting administrations.

47

Original: English

For the Federal Republic of Nigeria:

The Delegation of the Federal Republic of Nigeria to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), reserves the right for the Government of the Federal Republic of Nigeria to take any action considered necessary to safeguard its interest in the event of action(s) taken by any other administration(s) in the application of the Articles of the Radio Regulations which is/are deemed detrimental to the sovereign rights of the Nigerian nation. Furthermore, the provisions of the Final Acts and Protocols of this Conference should under no circumstances be applied by any administration(s) in any way to endanger the telecommunication services of the Federal Republic of Nigeria.

48

Original: French

For the People's Democratic Republic of Algeria:

The Delegation of the People's Democratic Republic of Algeria to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992) reserves for its Government the right:

1. to take any action it may deem necessary to safeguard its interests in the event that certain Members should fail, in whatever manner, to comply with the provisions of these Final Acts, or that the reservations expressed by other countries should compromise the efficient operation of its telecommunication services or entail an increase in its contribution to the expenditure of the Union;

2. to take any measures in conformity with the Constitution and laws of the People's Democratic Republic of Algeria.

49

Original: English

For Austria, Belgium, Finland, Greece, Republic of Hungary, Iceland,
Republic of Malta, Republic of Poland, the United Kingdom, Sweden,
Czech and Slovak Federal Republic

The Delegations of the above-mentioned countries note that the inadequacy of the spectrum allocated to high frequency broadcasting has been proved by the unacceptable results of the HFBC Planning System, improved and tested in accordance with the decisions of the WARC HFBC-87.

The Delegations are concerned that the additional spectrum for high frequency broadcasting, made available by the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), will be insufficient to lead to a successful planning conference and declare that their Administrations reserve the right to take such action as may be necessary, consistent with the Radio Regulations, to meet the needs of their high-frequency broadcasting services.

50

Original: English

For the Republic of Singapore:

The Delegation of the Republic of Singapore reserves on behalf of its Government the right to take such action as it may consider necessary to safeguard its interest should any country fail in any way to comply with the requirements of the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992) or should any reservation by any country jeopardize its radiocommunication services.

The Delegation of the Republic of Singapore further reserves on behalf of its Government the right to make such additional reservations as may be necessary up to and including the time of ratification by the Republic of Singapore of the above-mentioned Final Acts.

51

Original: Spanish

For Mexico:

On behalf of its Government, the Delegation of Mexico declares that, in signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos), it reserves the right to take the action it deems appropriate to safeguard its interests in the event that any prejudice may be caused to its telecommunication systems and services as a result of the declarations or reservations formulated by other Members of the Union, or that they fail to comply with the decisions of the Conference.

52

Original: Spanish

For Cuba:

The Delegation of the Republic of Cuba to the World Administrative Radio Conference for Dealing with Frequency Allocation in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), in signing the Final Acts, reaffirms on behalf of its Government that this does not constitute a recognition of the use of radio frequencies by the Government of the United States of America at the naval base which it occupies, against the will of the Cuban Government and people, in part of the territory of our country in the Province of Guantanamo, as already stated in Declaration No. 9 of the Final Protocol of WARC-79 (Geneva, 1979) and Declaration No. 44 of the Final Protocol of WARC Mob-87 (Geneva, 1987).

As is evident from the declaration made by the Cuban Delegation in this connection at the XIth Plenary Meeting of the Conference, the allotments bearing the symbol CUB which have not been coordinated with the Cuban Administration are to be deleted from Part III of Appendix 26(Rev.), which this Conference instructed the IFRB to conclude. Under Resolution No. 1 of the Radio Regulations, the IFRB must not enter in the Master Register any frequency which has not been requested by the Cuban Administration.

The use of frequencies by the United States of America at the base which it occupies in the Province of Guantanamo obstructs Cuba's radio services and encroaches upon our country's sovereignty over the radio frequency spectrum, which is a limited resource.

The Cuban Government reserves the right to take all the necessary steps to safeguard its legitimate interests.

53

Original: Spanish

For the Argentine Republic:

The Delegation of the Argentine Republic reserves for its Government the right to take any action it may deem necessary to safeguard its interests, should any measure adopted by this Conference, reservation deposited on the failure by other countries to comply with this agreement jeopardize the efficient operation of its telecommunication services.

54

Original: English

For the People's Republic of Bangladesh:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of Bangladesh declares that it reserves the right to take any necessary steps to protect its rights and interests should any country operate any telecommunications and broadcast services in violation of the decisions taken at the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Radio Regulations in force or the Convention.

55

Original: English

For the People's Democratic Republic of Ethiopia:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of Ethiopia reserves the right of its Government to take any action that it may deem necessary to safeguard its interests should any country jeopardize the operation of the telecommunication network in Ethiopia due to reservations made or as a consequence of failure to comply with the Final Acts.

56

Original: English

For the Republic of India:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Republic of India reserves for its Government the right to take such actions, as may be considered necessary, to safeguard its interests should any administration make reservations and/or not accept the provisions of the Final Acts or fail to comply with one or more provisions of the Final Acts, including those which form a part of the Radio Regulations.

57

Original: English

For Turkey:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of Turkey reserves for its Government the right to take whatever action it may deem necessary to safeguard its interests on the decisions taken by the Conference in modifying, amending, deleting and adding provisions, footnotes, tables, Resolutions and Recommendations in the Radio Regulations, should any Member fail in any way to comply with the Final Acts, Annexes and the Radio Regulations thereto, in using its existing services and introducing new services for space, terrestrial and other applications or should any reservation entered by other countries jeopardize the proper operation of its telecommunication services.

Furthermore, regarding its statement made during the Conference, the Delegation of Turkey for its Government shall consider its responsibilities as binding only for the decisions of past regional broadcasting conferences on the basis of equal rights, within the provisions of the International Telecommunication Convention and the Radio Regulations.

58

Original: English

For the Republic of Indonesia:

The Delegation of the Republic of Indonesia to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992):

1. reserves the right of its Government to take any action and preservation measures it deems necessary to safeguard its national interests should the Final Acts drawn up in this Conference directly or indirectly affect its sovereignty or be in contravention with the Constitution, Laws and Regulations of the Republic of Indonesia as well as with the rights of the Republic of Indonesia which exist and may result from any principles of international law. In this regard the Government of the Republic of Indonesia will recognize the legitimate interests of other countries with a view to improve the use made of the geostationary and/or non-geostationary-satellite orbit for telecommunication and broadcast services for the benefit of mankind;

2. further reserves the right of its Government to take any action and preservation measures it deems necessary to safeguard its national interests should any administration in any way fail to comply with the provisions and the requirements in the Final Acts of the Conference or should the consequences of reservations by any administration jeopardize the rights of the Republic of Indonesia under the Final Acts.

59

Original: Russian

For the Russian Federation:

In connection with the additional allocation of the band 1 610 - 1 626.5 MHz to the mobile-satellite service, adopted by the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Russian Federation, in signing the Final Acts of the Conference, declares on behalf of its Government that:

According to No. 732, the band 1 610 - 1 620.6 MHz is used by the operating and planned aeronautical radionavigation satellite system, GLONASS. Since this system is a safety system, and taking account of the fact that ICAO has recommended the GLONASS system for worldwide use, telecommunication administrations must take all measures to eliminate any possible interference in the GLONASS system.

With reference to No. 953 of the Radio Regulations, the Administration of the Russian Federation reserves the right to take any action to ensure the proper operation of the GLONASS system.

60

Original: Russian

For Belarus, the Russian Federation and Ukraine:

The Delegations of Belarus, the Russian Federation and Ukraine make the following declaration:

Sovereign States, including Belarus, the Russian Federation and Ukraine have been established on the territory of the former USSR. These Delegations declare that, wherever it appears in the footnotes of the Radio Regulations, the designation USSR shall refer to Belarus, the Russian Federation and Ukraine.

Furthermore, in accordance with the mandate entrusted to the Delegation of the Russian Federation by the telecommunication Administrations of the Republic of Azerbaijan, the Republic of Armenia, the Republic of Kazakhstan, the Republic of Kyrgyzstan, the Republic of Tajikistan, the Republic of Uzbekistan, and Turkmenistan, this designation applies likewise to the territories of these States.

61

Original: English

For the Republic of Bulgaria:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Republic of Bulgaria reserves the right for its Government to take such actions as it may consider necessary to safeguard its national interests, if another country should in any way fail to respect the conditions specified in these Final Acts, or if the reservations made by any country should be prejudicial to the telecommunication services of the Republic of Bulgaria.

62

Original: English

For the People's Republic of China:

Allocation by the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992) of certain frequency bands for the mobile-satellite service may affect the use by China of the existing services in these bands. Therefore, the Chinese Delegation declares that it reserves its right to continue the operation of the existing services in these bands without harmful interference.

Original: English

For Canada:

The Delegation of Canada formally declares that Canada does not, by signature of these Final Acts on its behalf, accept certain decisions taken by this Conference in regard to the Table of Frequency Allocations and the associated footnotes and, therefore, Canada:

In view of the fact that the Conference had not provided the required flexibility by means of an allocation on a primary basis to the mobile-satellite service in the bands 1 545 - 1 555 MHz and 1 646.5 - 1 656.5 MHz, states its intention to utilize these bands in the way most appropriate to satisfy its particular mobile-satellite service requirements recognizing the priority of the aeronautical mobile-satellite service communications.

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of Canada reserves for its Government the right to take any measures it might deem necessary to safeguard its interests if another country should in any way fail to respect the conditions specified in these Final Acts or if the reservations made by any country should be prejudicial to the radiocommunication services of Canada.

Original: English

For the Federative Republic of Brazil:

The Delegation of the Federative Republic of Brazil formally declares that Brazil does not, in signing these Final Acts, accept certain decisions taken by this Conference in regard to the Table of Frequency Allocations and associated footnotes and, therefore, Brazil reserves the right to utilize the following frequency bands allocated to the mobile-satellite services in the way that is most appropriate to satisfy its particular mobile-satellite service requirements, recognizing the priority of AMSS (R) and maritime safety communication:

- a) 1 492 - 1 559 MHz;
- b) 1 626.5 - 1 660.5 MHz;
- c) 1 675 - 1 710 MHz.

65

Original: English

For the Federative Republic of Brazil:

The Delegation of the Federative Republic of Brazil formally declares that Brazil does not, in signing these Final Acts, accept certain decisions taken by this Conference in regard to the Table of Frequency Allocations and associated footnotes and, therefore, in view of the fact that the Conference has unduly restricted allocations to the broadcasting-satellite service (sound) in the frequency band 1 452 - 1 492 MHz, Brazil states its intention to utilize this band in the way that is most appropriate to satisfy its particular requirements of that service for the transmission of sound programmes and other technically compatible signals.

66

Original: English

For the Socialist Federal Republic of Yugoslavia:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the Delegation of the Socialist Federal Republic of Yugoslavia reserves the right for its Government to take such actions as it may consider necessary to safeguard its interests should any station under the jurisdiction of other Member States of the Union jeopardize its existing radiocommunication services.

This is especially valid for:

- the frequency bands below 10 MHz allocated to the fixed and land mobile services;
- the frequency bands between 1 700 - 2 300 MHz allocated to the fixed service;
- the frequency band between 1 452 - 1 464.5 MHz allocated to the fixed service.

Original: English

For the United States of America:

1. In the view of the United States of America, this Conference failed to make adequate provision for the HF needs of the broadcasting service, particularly below 10 MHz, despite an earnest effort to do so. The IFRB's Report to the Conference shows that broadcasters' requirements far outnumber the channels available in the bands between 6 and 11 MHz (where spectrum is urgently needed) and that planning will not work effectively without additional and adequate HF spectrum. Therefore, the United States of America reserves the right to take the necessary steps to meet the HF needs of its broadcasting service.

2. The United States of America, while welcoming the cessation by some administrations of willful harmful interference to HF broadcasting, remains concerned that the United States' broadcasting service continues to be subject to willful harmful interference in contravention of Article 35 of the Convention. Such interference is incompatible with the rational and equitable use of these bands. The United States of America declares that as long as any such interference exists, it reserves the right with respect to such interference to take necessary and appropriate actions to protect its broadcasting interests. In doing so, it will respect, to the maximum extent possible, the rights of administrations operating in accordance with the Convention and the Radio Regulations.

3. The United States of America declares that, in view of the fact that the Conference has unduly restricted allocations for mobile-satellite services in the bands 1 530 - 1 559 MHz and 1631.5 - 1 660.5 MHz, it will utilize these bands in the way most appropriate to satisfy its particular mobile-satellite service requirements recognizing the priority of AMSS (R) and maritime safety communications.

4. In the view of the United States of America, this Conference has unduly delayed the availability of sufficient spectrum for the mobile-satellite service in the range 1 - 3 GHz on an international and regional basis. Therefore, the United States of America reserves its right to take any necessary steps to meet the needs of the mobile-satellite service in this band.

5. With regard to Resolution COM5/8, the United States of America understands that nothing in the fourth preambular paragraph and any reference to the Resolution in the Radio Regulations shall be interpreted to constitute any recognition of new rights of Members of the Union beyond those specified in the International Telecommunication Convention and the Administrative Regulations in force. In particular, sub-paragraph b) shall not be interpreted to constitute a recognition of claims of sovereignty over any part of outer space. Such claims, in violation of international law, cannot be recognized by this Conference.

6. The United States of America understands that nothing in Resolution COM5/11 shall alter the category of any allocation made at this Conference and that any studies by organs of the Union on this matter shall be conducted and implemented in accordance with the International Telecommunication Convention and the Administrative Regulations.

68

Original: English

For New Zealand:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the New Zealand Delegation reserves for its Government the right to take such measures as it might deem necessary to safeguard its interests if another country should in any way fail to respect the conditions specified in these Final Acts or if the reservations made by any country should be prejudicial or detrimental to radiocommunication services in New Zealand.

69

Original: French

For France:

In signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), the French Delegation expresses reservations should the number and complexity of the texts adopted within a very limited time give rise to interpretations which are not in conformity with the final consensus of the Conference.

PLENARY MEETING

Source: Document DT/116

Note by Chairman of Committee 5 to the Plenary

REVISION OF ARTICLES 27 AND 28 FOLLOWING PROPOSALS TO
AND DECISIONS OF THE CONFERENCE

A number of proposals were made by administrations for changes to Articles 27 and 28 which were consequent to their allocation proposals. These have been reviewed in the light of decisions made by the Conference on allocation matters. The review commenced as part of the work of Committee 5 and has continued since the end of the formal committee work in conjunction with the Chairman of Committee 4, the Chairman of the Working Group of the Plenary and the Secretariat. This review included those allocation decisions for which no proposals were made in regard to Articles 27 and 28.

The changes to Article 27 include those relating to modifications to existing bands and services as well as the introduction of new bands and services for allocations in the Earth-to-space and space-to-space directions. Similarly, changes to Article 28 cover bands and services for allocations in the space-to-Earth and space-to-space directions.

The changes shown concern, in almost all cases, power or power flux-density limits that were either:

- confirmed by the Working Group of the Plenary as applicable on a definitive or provisional basis; or
- drawn from the relevant footnotes to the Table of Frequency Allocations, as revised.

Notes 1 and 3 are included in the annexed revisions to the two Articles to indicate the source of the relevant information. Note 2 is included to indicate cases where the limiting values proposed still need to be confirmed by the Conference.

The texts of the Notes are as follows:

Note 1 - The relevant text or the information on the definitive or provisional applicability of the relevant power or power flux-density limits appears in Documents 229, 254, 314, 315, 330 or 346 provided to Committee 5 by the Working Group of the Plenary.

Note 2 - Confirmation on the applicability of the power limits in Nos. 2502, 2505, 2506 and 2507 in this band is required.

Note 3 - Power flux-density limits are in accordance with those given in Nos. 726X, 731Y, 746T, 753F and 760A. See Document 391.

A number of frequency bands concerning mobile-satellite services in the range 1 500 - 2 700 MHz are shown in square brackets. This is because the final decision on the choice of these bands has not yet been made. In addition, some of these bands appear twice in the proposed text for Article 28 as the power flux-density limits to apply have still to be chosen, these appearing in the relevant footnotes to the Table of Frequency Allocations. Once decisions are made on frequency bands and footnotes, these proposed texts for Articles 27 and 28 can be readily aligned with Article 8.

The bands concerned are those having a reference to Note 2 or Note 3 as well as the band 1 610 - 1 645.5 MHz (in Article 27).

E. GEORGE
Chairman

Annex: 1

ANNEX

ARTICLE 27

**Terrestrial Radiocommunication Services Sharing
Frequency Bands with Space Radiocommunication
Services Above 1 GHz**

Section I. Choice of Sites and Frequencies

NOC **2501
to
2503**

MOD **2504** (3) In the frequency bands above 15 GHz there shall be no restriction¹ as to the direction of maximum radiation for stations in the fixed or mobile service, except as noted in 2504A.
(Note 1)

ADD **2504A** As far as practicable, sites for transmitting stations, in the fixed or mobile service, employing maximum values or equivalent isotropic radiated power (e.i.r.p.) density exceeding 24 dBW in any 1 MHz band in the frequency band 25.25 - 27.5 GHz should be selected so that the direction of maximum radiation of any antenna will be at least 1.5° away from the geostationary-satellite orbit, taking into account the effect of atmospheric refraction¹.
(Note 1)

ADD **2504A.1** ¹ The provisions of No. 2504A shall apply until such time as the CCIR has made a recommendation on the e.i.r.p. density limits which should apply in the band.
(Note 1)

Section II. Power Limits

MOD **2509** (5) The limits given in Nos. 2502, 2505, 2506 and 2507 apply in the following frequency bands allocated to the fixed-satellite service, the meteorological-satellite service, the space research service, the space operation service, the earth exploration-satellite service or the mobile-satellite service for reception by space stations, where these bands are shared with equal rights with the fixed or mobile service:

<u>[1 626.51 610 - 1 645.5 MHz]</u>	(for countries mentioned in No. 730) (Note 1)
1 646.5 - 1 660 MHz	(for countries mentioned in No. 730)
<u>[1 675 - 1 690 MHz]</u>	<u>(for Region 2)</u> (Note 2)
<u>[1 700 - 1 710 MHz]</u>	(Note 2)
<u>[1 970 - 1 980 MHz]</u>	<u>(for Region 2)</u> (Note 2)

<u>[1 980 - 2 010 MHz]</u>	(Note 2)
<u>2 025 - 2 110 MHz</u>	(Note 1)
<u>2 200 - 2 290 MHz</u>	(Note 1)
<u>[2 655 - 2 690 2 670 MHz¹]</u>	(for Regions 2 and 3)
<u>[2 670 - 2 690 MHz]</u>	(Note 2)
5 725 - 5 755 MHz ¹	(for countries of Region 1 mentioned in Nos. 803 and 805)
5 755 - 5 850 MHz ¹	(for countries of Region 1 mentioned in Nos. 803, 805 and 807)
5 850 - 7 075 MHz	
7 900 - 8 400 MHz	

ADD 2509A Trans-horizon systems in the [2 010 - 2 025 MHz,] 2 025 - 2 110 MHz and 2 200 - 2 290 MHz bands may exceed the limits given in Nos. 2505 and 2507, but the provisions of Nos. 2502 and 2506 should be observed. Considering the difficult sharing conditions with other services and keeping in mind the provisions of Recommendation 100, administrations are urged to keep the number of trans-horizon systems in these bands to a minimum.

(Note 1)

MOD 2511 (7) The limits given in Nos. 2505 and 2508 apply in the following frequency
Orb-88 bands allocated to the fixed-satellite service or the inter-satellite service for reception by space stations, where these bands are shared with equal rights with the fixed or mobile service:

17.7 - 18.1 <u>18.4</u> GHz	(Note 1)
<u>24.45 - 24.75 GHz</u>	(Note 1)
<u>24.75 - 25.25 GHz</u>	(for Region 3) (Note 1)
<u>25.25 - 29.5 GHz</u>	(Note 1)
27.0 - 27.5 GHz²	(for Regions 2 and 3)
27.5 - 29.5 GHz	

SUP 2511-2

Space Radiocommunication Services Sharing Frequency Bands with Terrestrial Radiocommunication Services Above 1 GHz

NOC

NOC

NOC

NOC

NOC

NOC

NOC

NOC

NOC

NOC

MOD

- H:\CONF\WARC-92\DOC\390E.DOC

- earth exploration-satellite service (space-to-Earth) (space-to-space):
- mobile-satellite service (space-to-Earth):
- maritime mobile-satellite service (space-to-Earth):
- land mobile-satellite service (space-to-Earth):

for transmission by space stations where these bands are shared with equal rights with the fixed or mobile service, and to the

- radiodetermination-satellite service (space-to-Earth)

MOD	2559 Mob-87	1 525 - 1 530 MHz ¹	(for Regions 1 and 3)
		1 530 - 1 535 MHz¹	(for Regions 1 and 3, up to 1 January 1990)
		<u>[1 555 - 1 559 MHz]</u>	<u>(on the territory of the countries mentioned in No. 730)] (Note 3)</u>
		<u>[1 613.8 - 1 626.5 MHz]</u>	<u>(on the territory of the countries mentioned in No. 727)] (Note 3)</u>
		1 670 - 1 690 MHz	
		1 690 - 1 700 MHz	(on the territory of the countries mentioned in Nos. 740 and 741)
		1 700 - 1 710 MHz	
		<u>2 025 - 2 110 MHz</u>	(Note 1)
		<u>[2 160 - 2 170 MHz]</u>	(for Region 2)] (Note 3)
		<u>[2 170 - 2 200 MHz]</u>	(Note 3)
		<u>2 200-290 - 2 300 MHz</u>	(Note 1)
		<u>[2 483.5 - 2 500 MHz]</u>	(Note 3)

MOD 2561 (3) Power flux-density limits between ~~[2 500 - 1 525]~~ MHz and 2 690 MHz.

MOD 2562 Mob-87 a) The power flux-density at the Earth's surface produced by emissions from a space station in the broadcasting-satellite service ~~or, the fixed-satellite service or, the radiodetermination-satellite service, the mobile-satellite service, the maritime mobile-satellite service or the land mobile-satellite service~~ for all conditions and for all methods of modulation shall not exceed the following values:

-152 dB(W/m²) in any 4 kHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;

-152 + 0.75(δ - 5) dB(W/m²) in any 4 kHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;

-137 dB(W/m²) in any 4 kHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

2563
Mob-87

- b) The limits given in No. 2562 apply in the frequency band:
2 500 - 2 690 MHz

which is shared by the broadcasting-satellite service or the fixed-satellite service with the fixed or mobile service; and in the frequency band 2 500 - 2 516.5 MHz (in the countries mentioned in No. 754A) allocated to the radiodetermination-satellite service.

ADD 2563A

- c) The limits given in No. 2562 apply in the frequency bands:
- | | |
|-------------------------|--|
| [1 525 - 1 530 MHz] | (Note 3) |
| [1 555 - 1 559 MHz] | (on the territory of the countries mentioned in No. 730)] (Note 3) |
| [1 613.8 - 1 626.5 MHz] | (on the territory of the countries mentioned in No. 727)] (Note 3) |
| [2 160 - 2 170 MHz] | (for Region 2)] (Note 3) |
| [2 170 - 2 200 MHz] | (Note 3) |
| [2 483.5 - 2 500 MHz] | (Note 3) |
| [2 500 - 2 520 MHz] | (Note 3) |

which are shared with equal rights by the mobile-satellite service, the maritime mobile-satellite service or the land mobile-satellite service with the fixed or mobile service.

MOD 2564

- c) The power flux-density values given in No. 2562 are derived on the basis of protecting the fixed service using line-of-sight techniques. Where a fixed service using tropospheric scatter operates in the bands mentioned in No. 2563 or in No. 2563A, and where there is insufficient frequency separation, there must be sufficient angular separation between the direction to the space station and the direction of maximum radiation of the antenna of the receiving station of the fixed service using tropospheric scatter to ensure that the interference power at the receiver input of the station of the fixed service does not exceed -168 dBW in any 4 kHz band.

MOD 2577

- (7) Power flux-density limits between 17.7 GHz and ~~19.7~~ 27.5 GHz.

NOC 2578

- a) The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed the following values:

- 115 dB(W/m²) in any 1 MHz band for angles of arrival between 0 and 5 degrees above the horizontal plane;
- $115 + 0.5(\delta - 5)$ dB(W/m²) in any 1 MHz band for angles of arrival δ (in degrees) between 5 and 25 degrees above the horizontal plane;
- 105 dB(W/m²) in any 1 MHz band for angles of arrival between 25 and 90 degrees above the horizontal plane.

These limits relate to the power flux-density which would be obtained under assumed free-space propagation conditions.

- MOD 2579** b) The limits given in No. 2578 apply in the frequency bands listed in No. 2580 which are allocated to the following space radiocommunication services:
- fixed-satellite service (space-to-Earth);
 - earth exploration-satellite including meteorological-satellite service (space-to-Earth);
 - inter-satellite service.
- for transmission by space stations where this band is shared with equal rights with the fixed or mobile service.
-
- MOD 2580** 17.7 - 19.7 GHz¹
- 22.55 - 23.55 GHz (Note 1)
- 24.45 - 24.75 GHz (Note 1)
- 25.25 - 27.5 GHz (Note 1)
-
- NOC 2581** (8) Power flux-density limits between 31.0 GHz and 40.5 GHz.
-
- NOC 2582** a) The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed the values given in No. 2578².
-
- NOC 2583** b) The limits given in No. 2582 apply in the frequency bands given in No. 2584 which are allocated to the fixed-satellite service, the mobile-satellite service and the space research service for transmission by space stations where these bands are shared with equal rights with the fixed or mobile service.
-
- MOD 2584** 31.0 - 31.3 GHz
- ~~34.2~~34.7 - 35.2 GHz (for space-to-Earth transmissions under Nos. ~~895 and~~ 896 on the territory of countries mentioned in No. 894)
- ~~37.5~~37.0 - 40.5 GHz (Note 1)
-
- NOC 2585** (9) The limits given in Nos. 2553, 2557, 2562, 2566, 2570, 2574, 2578, 2582, and 2582.1 may be exceeded on the territory of any country the administration of which has so agreed.

INTERNATIONAL TELECOMMUNICATION UNION

WARC-92

WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

Document 391-E
2 March 1992

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

B.17

PLENARY MEETING

SEVENTEENTH SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for first reading:

<u>Source</u>	<u>Document</u>	<u>Title</u>
PL	384	Article 8
		Resolution COM4/[W]
		Resolution COM4/[X]

P. ABOUDARHAM
Chairman of Committee 6

Annex: 17 pages

MHz 1 429 - 1 525			
Allocation to Services			
	Region 1	Region 2	Region 3
MOD	<u>1 429 - 1 525 1 452</u> FIXED MOBILE except aeronautical mobile 722 <u>723B</u>	<u>1 429 - 1 525 1 452</u> FIXED MOBILE 723 722	
MOD	<u>1 452 - 1 492</u> FIXED MOBILE except aeronautical mobile <u>BROADCASTING-SATELLITE</u> <u>722A 722AAA</u> <u>BROADCASTING</u> <u>722A 722AAA</u> 722 <u>723B</u>	<u>1 452 - 1 492</u> FIXED MOBILE 723 <u>BROADCASTING-SATELLITE 722A 722AAA</u> <u>BROADCASTING 722A 722AAA</u> 722 <u>722B</u>	
MOD	1 492 - 1 525 FIXED MOBILE except aeronautical mobile 722 <u>723B</u>	1 492 - 1 525 FIXED MOBILE 723 <u>MOBILE-SATELLITE</u> <u>(space-to-Earth)</u> <u>723C 723D</u> 722	1 492 - 1 525 FIXED MOBILE 723 722

- ADD 722A** Use of the band 1 452 - 1 492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution COM4/[W] (Annex 1).
- ADD 722AAA** Different category of service: in the Federal Republic of Germany, the United Kingdom and Spain the allocation of the band 1 452 - 1 492 MHz of the broadcasting-satellite service and the broadcasting service is on a secondary basis until 1 April 2007.
- ADD 722B** In the United States, the band 1 452 - 1 492 MHz is allocated to the fixed and mobile services on a primary basis including No. 723. Space stations of the broadcasting-satellite service that may affect the services to which the above band is allocated in the United States shall be coordinated and notified in accordance with Resolution 33. Complementary terrestrial broadcasting stations in neighbouring countries shall be subject to bilateral coordination with the United States prior to their bringing into use.
- ADD 723B** Additional allocation: in Belarus, the Russian Federation and Ukraine, the band 1 429 - 1 535 MHz is also allocated to the aeronautical mobile service on a primary basis exclusively for the purposes of aeronautical telemetry within the national territory. [As of 1 April 2007 this allocation in the band shall be on a secondary basis.]
- B/337/2**
ADD 723C The use of the band 1 492 - 1 525 MHz by the mobile-satellite service in Region 2 shall not cause harmful interference to stations of the fixed and mobile services operating in this band. This use shall be subject to the provisions of RR 2557 and of Resolution COM5/8.
- USA/387/3**
ADD 723E Assignments to stations of the mobile-satellite service shall be subjected to the successful application of the procedures set forth in Resolution COM5/8 taking into account of No. 723. In respect to assignments operating in this band, the provisions of section II, paragraph 2.2, of Resolution COM5/8 shall not be applied to transmitting space stations with respect to terrestrial stations
- ISR/I/360/1**
ADD 755A
- USA/387/2**
ADD 723D Different category of service: in the United States, the band 1 492 - 1 525 MHz is not allocated for the mobile-satellite service.

[1 525 - 1 660.5 MHz

(See RR 740A in Document 377.)

MHz 1 670 - 1 700			
Allocation to Services			
Region 1		Region 2	Region 3
MOD	1 670 - 1 690 <u>1 675</u>		
	METEOROLOGICAL AIDS		
	FIXED		
	METEOROLOGICAL-SATELLITE (space-to-Earth)		
MOBILE except aeronautical mobile			
722 <u>740A</u>			
1 670 <u>1 675</u> - 1 690		1 670 <u>1 675</u> - 1 690	1 670 <u>1 675</u> - 1 690
METEOROLOGICAL AIDS		METEOROLOGICAL AIDS	METEOROLOGICAL AIDS
FIXED		FIXED	FIXED
METEOROLOGICAL-SATELLITE (space-to-Earth)		METEOROLOGICAL-SATELLITE (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)
MOBILE except aeronautical mobile		MOBILE except aeronautical mobile	MOBILE except aeronautical mobile
		<u>MOBILE-SATELLITE (Earth-to-space)</u>	
722		722 <u>735A</u> <u>735B</u>	722
1 690 - 1 700		1 690 - 1 700	1 690 - 1 700
METEOROLOGICAL AIDS		METEOROLOGICAL AIDS	METEOROLOGICAL AIDS
METEOROLOGICAL-SATELLITE (space-to-Earth)		METEOROLOGICAL-SATELLITE (space-to-Earth)	METEOROLOGICAL-SATELLITE (space-to-Earth)
Fixed		<u>MOBILE-SATELLITE (Earth-to-space)</u>	
Mobile except aeronautical mobile			
671 722 741		671 722 740 742 <u>735A</u> <u>735B</u>	671 722 740 742

B/337/4**ADD 735A**

In making assignments to stations of the mobile-satellite service to which the band 1 675 - 1 710 MHz is allocated in Region 2, administrations are urged to take all practicable steps to protect the meteorological-satellite service from harmful interference in that band. The use of this band by the mobile-satellite service shall not impose constraints to the development of the meteorological-satellite service, (see Resolution COM4/X - Annex 2) and shall be subject to the provisions of Resolution COM5/8.

ADD USA/B 735B

The mobile-satellite service allocation in the band 1 675 - 1 710 MHz shall not become effective until 1 January Stations in the mobile-satellite service shall not cause interference to, nor constrain the development of, the meteorological-satellite and meteorological aids services.

MHz 1 700 - 1 970		
Allocation to Services		
Region 1	Region 2	Region 3
1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) <u>MOBILE except</u> <u>aeronautical mobile</u> Mobile except aeronautical mobile 671 722 743A <u>722F</u>	1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile <u>MOBILE-SATELLITE 735A</u> <u>(Earth-to-space)</u> 671 722 743 <u>722F 735A</u> <u>735B</u>	1 700 - 1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile 671 722 743 <u>722F</u>
1 710 - 2 290 <u>930</u> FIXED <u>MOBILE</u> Mobile 722 <u>740A</u> 743A 744 746 <u>746A</u> 747 748 750 <u>722A 722F</u>	1 710 - 2 290 <u>930</u> FIXED MOBILE 722 740A 744 745 746 <u>746A</u> 747 748 749 750 <u>722A 722F</u>	
1 710 <u>930</u> - 2 290 <u>970</u> FIXED MOBILE 740A 746A 722F	1 710 <u>930</u> - 2 290 <u>970</u> FIXED MOBILE <u>Mobile-Satellite</u> <u>(Earth-to-space)</u> 722F	1 710 <u>930</u> - 2 290 <u>970</u> FIXED MOBILE 740A 744 745 746 746A 722F

ADD

722F

In France and in French overseas departments and territories, in the bands 1 427 - 1 530 MHz and 1 559 - 2 690 MHz, the power flux-density at the Earth's surface produced by space stations in the mobile-satellite service (space-to-Earth) shall not exceed the values specified in No. 2557, except where there are provisions to the contrary resulting from an agreement between administrations concerned. The provisions of Nos. 754 and 757 remain applicable.

MHz 1 970 - 2 010		
Allocation to Services		
Region 1	Region 2	Region 3
1-7101 970 - 2-2901 980 FIXED MOBILE 722-744-746 746A	1-7101 970 - 2-2901 980 FIXED MOBILE <u>MOBILE-SATELLITE</u> <u>(Earth-to-space)</u> 722-744-745-746 746A 746B 746T	1-7101 970 - 2-2901 980 FIXED MOBILE 722-744-745-746 746A
1-7101 980 - 2-2902 010 FIXED <u>MOBILE</u> <u>MOBILE-SATELLITE</u> <u>(Earth-to-space)</u> Mobile 722-743A-744 746 746A-747 748-750 746T	1-7101 980 - 2-2902 010 FIXED MOBILE <u>MOBILE-SATELLITE</u> <u>(Earth-to-space)</u> 722 744-745-746 746A-747-748 749-750 746B 746T	

ADD 746T The use of the bands 1 970 - 2 010 MHz and 2 160 - 2 200 MHz by the mobile-satellite service shall not commence before 1 January 2000 and shall be subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. RR 2557 applies.

ADD 746A The frequency bands 1 885 - 2 025 MHz and 2 110 - 2 200 MHz are intended for use, on a worldwide basis, by administrations wishing to implement the future public land mobile telecommunication systems (FPLMTS). Such use does not preclude the use of these bands by other services to which these bands are allocated.

The frequency bands should be made available for FPLMTS in accordance with Resolution COM4/FPLMTS.

USA/366/3

ADD 746B Additional allocation: in the United States of America, the bands 1 910 - 1 990 MHz (Earth-to-space), 2 110 - 2 150 MHz (space-to-Earth) and 2 160 - 2 200 MHz (space-to-Earth) are also allocated on a secondary basis to the mobile-satellite service.

MOD

1-7102 010 - 2-2902 025 FIXED <u>MOBILE</u> Mobile 722-743A 744 746-747 748-750	1-7102 010 - 2-2902 025 FIXED MOBILE 722 744 745 746 747-748 749-750
--	--

1-7102 025 - 2-2902 110 FIXED MOBILE 747A SPACE RESEARCH (Earth-to-space) (space-to-space) SPACE OPERATION (Earth-to-space) (space-to-space) EARTH EXPLORATION-SATELLITE (Earth-to-space) (space-to-space) 750A		
1-7102 110 - 2-2902 120 FIXED MOBILE SPACE RESEARCH (deep space) (Earth-to-space) <u>746B</u>		
1-7102 120 - 2-2902 160 FIXED MOBILE <u>746A</u>	2 120 - 2 160 FIXED MOBILE <u>Mobile-Satellite</u> <u>(space-to-Earth)</u> <u>746A 746B</u>	2 120 - 2 160 FIXED MOBILE <u>746A</u>
1-7102 160 - 2-2902 170 FIXED MOBILE <u>746A</u>	2 160 - 2 170 FIXED MOBILE <u>MOBILE-SATELLITE</u> <u>(space-to-Earth) 746B</u> <u>746A 746T</u>	2 160 - 2 170 FIXED MOBILE <u>746A</u>
1-7102 170 - 2-2902 200 FIXED MOBILE MOBILE-SATELLITE (space-to-Earth) <u>746B 746T</u>		

MHz

1 700 - 2 290 (continued)

Allocation to Services		
Region 1	Region 2	Region 3
2 200 - 2 290	FIXED SPACE RESEARCH (space-to-Earth) (space-to-space) SPACE OPERATION (space-to-Earth) (space-to-space) EARTH EXPLORATION-SATELLITE (space-to-Earth) (space-to-space) MOBILE 747A 750A	

ADD 747A

ADD 750A

H:\CONF\WARC-92\DOC\391E.DOC

MHz
2 290 - 2 450

Allocation to Services			
	Region 1	Region 2	Region 3
MOD	2 290 - 2 300 FIXED SPACE RESEARCH (deep space) (space-to-Earth) Mobile <u>MOBILE</u> except aeronautical mobile 743A	2 290 - 2 300 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (deep space) (space-to-Earth)	
MOD	2 300 - 2 450 FIXED Amateur Mobile <u>MOBILE</u> Radiolocation 664 743A 752	2 300 - 2 450 FIXED MOBILE RADIOLOCATION Amateur 664 751 752 <u>750B 751X</u>	

[SUP 743A]

USA/353/1

ADD 750B

Additional allocation: in the United States of America [and India], the band 2 310 - 2 360 MHz is allocated to the broadcasting-satellite service (sound) and complementary terrestrial sound broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to the provisions of Resolution COM4/[W].

ADD 751X

Space stations of the broadcasting-satellite service in the band 2 310 - 2 360 MHz operating in accordance with No. 750B that may affect the services to which this band is allocated in other countries shall be coordinated and notified in accordance with Resolution 33. Complimentary terrestrial broadcasting stations shall be subject to bilateral coordination with neighbouring countries prior to their bringing into use.

MOD

MHz
2 483.5 - 2 500

Allocation to Services		
Region 1	Region 2	Region 3
2 483.5 - 2 500 FIXED MOBILE <u>MOBILE-SATELLITE</u> (space-to-Earth) Radiolocation 733F 752 753A 753B 753C <u>722F 753F</u> 753 753F	2 483.5 - 2 500 FIXED MOBILE RADIODETERMINATION- SATELLITE (space-to-Earth) 753A RADIOLOCATION <u>MOBILE-SATELLITE</u> (space-to-Earth) 752 753D <u>722F</u> 753F	2 483.5 - 2 500 FIXED MOBILE RADIOLOCATION <u>MOBILE-SATELLITE</u> (space-to-Earth) Radiodetermination-Satellite (space-to-Earth) 753A 752 753C <u>722F</u> 753F

ADD

753F

The use of the band 2 483.5 - 2 500 MHz by the mobile-satellite and the radiodetermination-satellite services are subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. However, coordination of space stations of the mobile-satellite and the radiodetermination-satellite services with respect to terrestrial services is required only if the power flux-density produced by the station exceeds the limits in No. 2557.

F/356/1

ADD

722F

In France and in French overseas departments and territories, in the bands 1 427 - 1 530 MHz and 1 559 - 2 690 MHz, the power flux-density at the Earth's surface produced by space stations in the mobile-satellite service (space-to-Earth) shall not exceed the values specified in No. 2557, except where there are provisions to the contrary resulting from an agreement between the administrations concerned. The provisions of Nos. 754 and 757 remain applicable.

F/355/3

MOD

753

~~Alternative allocation~~ Different category of service: in France, the bands ~~2 250 - 2 483.5 MHz and 2 500 - 2 550 MHz~~ are the band 2 450 - 2 500 MHz is allocated on a primary basis to the radiolocation service and on a secondary basis to the fixed and mobile services (see Nos. ~~424 and 425~~). Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

MOD 753C Different category of service: in Angola, Australia, Burundi, China,
Mob-87 Côte d'Ivoire, Ethiopia, India, the Islamic Republic of Iran, Israel, Italy, Jordan, Kenya, Lebanon, Liberia, Libya, Madagascar, Mali, Pakistan, Papua New Guinea, Senegal, Sudan, Swaziland, Syria, Tanzania, Thailand, Togo, Zaire and Zambia, the allocation of the band 2 483.5 - 2 500 MHz to the radiodetermination-satellite service (space-to-Earth) is on a primary basis (see No. 425) subject to agreement obtained under the procedure of Article 14 with other countries not listed in this provision.

MHz
2 500 - 2 655

Allocation to Services			
	Region 1	Region 2	Region 3
MOD	<u>2 500 - 2-6552 520</u> FIXED 762 763 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757-760 <u>MOBILE-SATELLITE 760A</u> (space-to-Earth) 720-753-756 758- 759 755A 757A 754B	<u>2 500 - 2-6552 520</u> FIXED 762 764 FIXED SATELLITE (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757-760 <u>MOBILE-SATELLITE 760A</u> (space-to-Earth) 720-755 <u>755A</u> <u>764A</u>	<u>2 500 - 2-5352 520</u> FIXED 762 764 FIXED SATELLITE (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757-760 <u>MOBILE-SATELLITE 760A</u> (space-to-Earth) 754-757A

SUP 753E

ADD 760A

The allocation of the frequency band 2 500 - 2 520 MHz to the mobile-satellite service (space-to-Earth) shall be effective on 1 January 2005. The use of this band after 1 January 2005 by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. However, coordination of space stations of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds the limits in No. 2562.

ADD 764A

CHN/KOR/J/SNG/THA/349/1

ADD 757A

Additional allocation: in China, the Russian Federation, the Republic of Korea, India, Japan, Pakistan, Singapore, Sri Lanka and Thailand the band 2 535 - 2 655 MHz is allocated to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting service on a primary basis. Such use is limited to digital audio broadcasting and is subject to provisions of Resolution COM4/W. The provisions of Nos. 757 and 2561-2564 do not apply to this additional allocation.

Allocation to Services		
Region 1	Region 2	Region 3
2-5002 <u>520</u> - 2 655	2-5002 <u>520</u> - 2 655	2-5002 <u>520</u> - 2 535
FIXED 762 763 764	FIXED 762 764	FIXED 762 764
MOBILE except aeronautical mobile	FIXED SATELLITE (space-to-Earth) 761	FIXED SATELLITE (space-to-Earth) 761
BROADCASTING- SATELLITE 757 760	MOBILE except aeronautical mobile	MOBILE except aeronautical mobile
	BROADCASTING- SATELLITE 757 760	BROADCASTING- SATELLITE 757 760
		<u>754</u> <u>754A</u> <u>757A</u> <u>764A</u>
		2 535 - 2 655
		FIXED 762 764
		MOBILE except aeronautical mobile
		BROADCASTING- SATELLITE 757 760
720 753-755A 756 <u>757A</u>		
758 759 <u>754B</u>	720 755 <u>757A</u> <u>755A</u>	720 <u>757A</u>

- MOD 758** Alternative allocation: in the Federal Republic of Germany and Greece, the band ~~2-500~~2 520 - ~~2-690~~2 670 MHz is allocated to the fixed service on a primary basis.
- MOD 757** The use of the band ~~2-500~~2 520 - ~~2-690~~2 670 MHz by the broadcasting-satellite service is limited to national and regional systems for community reception and such use shall be subject to agreement obtained under the procedure set forth in Article 14. The power flux-density at the Earth's surface shall not exceed the values given in Nos. 2561 to 2564.
- MOD 754** Subject to agreement obtained under the procedure set forth in Article 14, the band ~~2-500~~2 520 - 2 535 MHz (until 1 January 2005 in the band 2 500 - 2 535 MHz) may also be used in ~~Region 3~~ for the mobile-satellite (space-to-Earth), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The coordination and notification procedures set forth in Resolution COM5/8 apply. However, coordination of space stations of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced by the station exceeds the limits in No. 2567.
- F/355/5
ADD 754B** Additional allocation: in France, the band 2 500 - 2 550 MHz is also allocated to the radiolocation service on a primary basis. Such use is subject to agreement with the administrations having services operating or planned to operate in accordance with the Table which may be affected.

MHz
2 655 - 3 300

Allocation to Services		
Region 1	Region 2	Region 3
<u>2 655 - 2 690 2 670</u> FIXED 762 763 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 758 759 765	<u>2 655 - 2 690 2 670</u> FIXED 762 764 FIXED SATELLITE (Earth-to-space) (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 765	<u>2 655 - 2 690 2 670</u> FIXED 762 764 FIXED SATELLITE (Earth-to-space) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) 765 766

Allocation to Services		
Region 1	Region 2	Region 3
<u>2-6552 670 - 2 690</u> FIXED 762 763 764 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 764A</u>	<u>2-6552 670 - 2 690</u> FIXED 762 764 FIXED SATELLITE (Earth-to-space) (space-to-Earth) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 764A</u> <u>755A</u>	<u>2-6552 670 - 2 690</u> FIXED 762 764 FIXED SATELLITE (Earth-to-space) 761 MOBILE except aeronautical mobile BROADCASTING- SATELLITE 757 760 Earth Exploration-Satellite (passive) Radio Astronomy Space Research (passive) <u>MOBILE-SATELLITE</u> <u>(Earth-to-space) 764A</u> 766

- ADD 764A** The allocation of the frequency band 2 670 - 2 690 MHz to the mobile-satellite service shall be effective on 1 January 2005. When introducing MSS systems in these bands administrations shall take all necessary steps to protect the satellite systems operating in these bands prior to 3 March 1992. The coordination of MSS systems in the bands will be in accordance with Resolution COM5/8.
- MOD 766** Subject to agreement obtained under the procedure set forth in Article 14, the band 2 655 - ~~2 690~~ 2 670 MHz (until 1 January 2005 in the band 2 655 - 2 690 MHz) may also be used ~~in Region 3~~ for the mobile-satellite (Earth-to-space), except aeronautical mobile-satellite, service for operation limited to within national boundaries. The coordination and notification procedures set forth in Resolution COM5/8 apply.

ANNEX 1

RESOLUTION COM4/[W]

**Introduction of the Broadcasting-Satellite Service (Sound)
Systems and Complementary Terrestrial Broadcasting in the
Bands Allocated to these Services Within the Range 1 - 3 GHz**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that this Conference has made frequency allocations to the broadcasting-satellite service (sound) and complementary terrestrial broadcasting;
- b) that it is necessary to ensure that the introduction of the broadcasting-satellite service (sound) and complementary terrestrial broadcasting proceeds in a flexible and equitable manner;
- c) that efficient use of the spectrum will be enhanced by a worldwide allocation;
- d) that a worldwide allocation may cause difficulties to some countries in relation to their existing services;
- e) that future planning may limit the effect on other services;

resolves

- 1. that a competent conference should be convened, preferably not later than 1998, for the planning of the broadcasting-satellite service (sound) in the bands allocated to this service in the range 1 - 3 GHz; and the development of procedures for the coordinated use of complementary terrestrial broadcasting;
- 2. that this Conference should review criteria for sharing with other services;
- 3. that in the interim period, BSS systems may only be introduced within the upper 25 MHz of the appropriate band in accordance with Resolution 33. The complementary terrestrial service may be introduced during this interim period subject to coordination with administrations that may be affected;
- 4. that the calculation methods and the interference criteria to be employed in evaluating the interference should be based upon relevant CCIR Recommendations agreed by the administrations concerned as a result of Resolution 703 or otherwise;

invites the CCIR

to conduct the necessary studies prior to the Conference;

instructs the Secretary-General

to bring this Resolution to the attention of the Administrative Council to consider including in the agenda of an administrative radio conference to be held preferably not later than the year 1998 the matters addressed above.

B/337/5
ADD

ANNEX 2

DRAFT RESOLUTION COM4/[X]

**Sharing Studies Concerning the Use of the Bands 1 492 - 1 525 MHz and
1 675 - 1 710 MHz [in Region 2] by the Mobile-Satellite Service**

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992),

considering

- a) that agenda item 2.2.4 of this Conference requested the consideration, i.e., of an allocation of frequency bands to the mobile-satellite service;
- b) that spectrum adjacent to or near the existing mobile satellite allocations may offer opportunities for implementation;
- c) that the band 1 490 - 1 525 MHz is used by the aeronautical mobile service in the countries listed in Footnote 723 and by other terrestrial services;
- d) that the band 1 675 - 1 710 MHz is principally used by the meteorological-satellite and meteorological aids services;
- e) that operational and technical means may be found that would allow sharing of the band 1 490 - 1 525 MHz between the services mentioned in c) above and the mobile-satellite service;
- f) that operational and technical means may be found that would allow sharing of the band 1 675 - 1 710 MHz between the services mentioned in d) above and the mobile-satellite service;
- g) that there is a need to determine the operational and technical means for preventing harmful interference to the services mentioned in c) and d) above;

resolves

- 1. that studies be undertaken by the CCIR to examine the operational and technical measures that would facilitate sharing;
- 2. that the WMO be invited to participate in these sharing studies;

invites

- 1. the CCIR to study as a matter of urgency the technical and operational issues relating to the sharing of these bands between the services mentioned in c) and d) above and the mobile-satellite service;
- 2. administrations to actively participate in such studies by sending contributions to the CCIR relating to the aforementioned studies.

PLENARY MEETING

Note by the Chairman of the Conference

The following Administrations have submitted written requests to be included in the footnote No. 608Z, as defined in the Document 377 (B.14/4) :

LBY, HND, NOR, MTN, TUN, YEM, PHL, AUS, ISR, JOR,
SWZ, TZA, TCD, SUR, BUL, LIE, SUI, PNR, EGY, NMB

J. BARRIONUEVO PEÑA

Chairman

PLENARY MEETING

REPORT TO THE PLENARY FROM THE WORKING GROUP OF THE PLENARY
ON THE POWER FLUX-DENSITY AND COORDINATION PROCEDURES

The Working Group of the Plenary held an extraordinary meeting from 1830 - 2015 hours on 2 March 1992 in order to examine various proposals for power flux-density limits in Document 384.

As a result, the Working Group agreed to the provisional use of the following power flux-density values as a trigger for the MSS and BSS throughout the entire frequency bands between approximately 1.5 GHz and 2.7 GHz except for certain specific bands.

- | | |
|----------------------------------|----------------------------|
| -152 dB(W/m ² /4 kHz) | for angles of arrival <5° |
| -142 dB(W/m ² /4 kHz) | for angles of arrival >25° |

The above limits are found in No. 2566 and have been chosen as a compromise.

The CCIR should be invited to urgently develop Recommendations on this issue (see Recommendation GT-PLN/B).

The proposed text for the footnotes to be included in Document 384 are presented in the Annex.

M. MUROTANI
Chairman

Annex: 1

ANNEX

Protection of terrestrial services where new allocations to the MSS are contemplated:

ADD 7XX The use of the bands [.....] MHz by the mobile-satellite service is subject to the application of the coordination and notification procedures set forth in Resolution COM5/8. However, with the exception of those countries referred to in No. 723, on a provisional basis, coordination of space stations of the mobile-satellite service with respect to terrestrial services is required only if the power flux-density produced at the Earth's surface exceeds the limits in No. 2566.

In respect to assignments operating in this band, the provisions of Section II, paragraph 2.2 of Resolution COM5/8 shall also be applied to geostationary transmitting space stations with respect to terrestrial stations.

Protection of terrestrial services where new allocations to the BSS (Sound) are contemplated:

ADD 7YY The use of the bands [.....] by the broadcasting-satellite service (sound) is subject to the application of Resolution COM4/[W]. However, with the exception of those countries referred to in Nos. 723, 751 and Canada, on a provisional basis, coordination of space stations of the broadcasting-satellite service (sound) with respect to terrestrial services in accordance with Section A of Resolution 33 is required only if the power flux-density at the Earth's surface exceeds the limits in No. 2566.

PLENARY MEETING

The Syrian Arab Republic

PROPOSAL FOR THE WORK OF THE CONFERENCE

Syria wishes to add the following footnote:

SYR/394/1

ADD

647Y

In Syria the power flux-density in the band 400.15 - 401 MHz should not exceed $-145 \text{ dB(W/m}^2\text{/4 kHz)}$ at the Earth's surface produced by the mobile-satellite service.

MALAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

PLENARY MEETING

ADDITIONAL DECLARATIONS

70

Original: English

For the State of Israel:

1. The Declaration made by certain Delegations in No. 45 of the Final Acts being in flagrant contradiction with the principles and purposes of the International Telecommunication Union and, therefore, devoid of any legal validity, the Government of Israel wishes to put on record that it rejects these Declarations outright and will proceed on the assumption that they can have no validity with respect to the rights and duties of any Member State of the International Telecommunication Union.

Furthermore, in view of the fact that Israel and the Arab States are currently in the midst of negotiations aimed at achieving a peaceful solution of the Arab-Israeli conflict, the Delegation of the State of Israel finds these Declarations counter-productive and damaging to the cause of peace in the Middle East.

The Government of the State of Israel will, in so far as concerns the substance of the matter, adopt towards the Members whose Delegations have made the above-mentioned Declaration, an attitude of complete reciprocity.

The Delegation of the State of Israel further notes that Declaration No. 45 does not refer to the State of Israel by its full and correct name. As such it is totally inadmissible and must be repudiated as a violation of recognized rules of international behaviour.

2. Furthermore, after noting various other declarations already deposited, the Delegation of the State of Israel reserves for its Government the right to take any action it deems necessary to protect its interests and to safeguard the operation of its telecommunication services should they be affected by the decisions of this Conference or by the reservations made by other delegations.

71

Original: English

For the Republic of India:

The Delegation of the Republic of India has the honour to refer to paragraph 3 of Declaration No. 36 (Document 389) made by the Delegation of the Islamic Republic of Pakistan. The Delegation of the Republic of India notes with regret this reference to the States of Jammu and Kashmir. The Delegation of India reiterates that the States of Jammu and Kashmir are an integral part of the sovereign Republic of India. The Delegation of the Republic of India, therefore, reserves the right for its Government to take appropriate measures to safeguard its interests as a result of any action on the part of the Islamic Republic of Pakistan, as a result of Declaration No. 36.

72

Original: Spanish

For Cuba:

In noting Document 389 containing the statements of the Delegations signing the Final Acts, the Delegation of Cuba reserves the right to take any measures it considers appropriate to safeguard its communication services.

Specifically, having regard to section I of Statement No. 67, Cuba reserves the right to use the bands below 10 MHz in its own best interests should its services other than broadcasting in those bands be affected by the broadcasting services of the Administration in question.

73

Original: English

For the Commonwealth of the Bahamas:

On behalf of its Government, the Delegation of the Commonwealth of the Bahamas declares that in signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), it reserves the right to take the action it deems appropriate to safeguard its interests in the event that any prejudice may be caused to its telecommunications systems and services as a result of the declarations or reservations formulated by other Members of the Union in Document 389 or that they fail to comply with the decisions of the Conference.

74

Original: English

For Belize:

On behalf of the Government of Belize the Delegation of the Commonwealth of the Bahamas declares that in signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992) it reserves for the Government of Belize the right to take the action it deems appropriate to safeguard its interests in the event that any prejudice may be caused to its telecommunications systems and services as a result of the declarations or reservations formulated by other Members of the Union in Document 389 or that they fail to comply with the decisions of the Conference.

75

Original: English

For the United Arab Emirates:

We refer to Declaration No. 39, and inform that the intent of paragraph 1, item 1(i) regarding allocation for BSS (Sound) was around the 1.5 GHz and 2.3 GHz frequency bands.

It may be noted in our reservation.

76

Original: Spanish

For the Republics of Guatemala, Honduras and Nicaragua:

In light of the statements made by some Delegations to this Conference, the Delegations of the Republics of Guatemala, Honduras and Nicaragua, in signing the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992), reserve for their Governments the right to take any measures they consider necessary to safeguard their interests, should any other country fail to comply with the provisions laid down in the Final Acts or should reservations entered by other countries jeopardize the proper operation of their country's telecommunication services.

77

Original: Spanish

For the Republic of Panama:

The Delegation of Panama to the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992) hereby reserves for its Government the right to take any measures it considers necessary to protect its telecommunication services and to safeguard its interests should any reservations by other Member countries in Document 389 jeopardize the proper operation of its own services and fail to comply with the decisions of the Conference.

78

Original: English

For Portugal:

The Delegation of Portugal, taking note of Declaration No. 49 in Document 389, declares that it wishes to include the name of Portugal in the mentioned declaration.

79

Original: English

For the United Kingdom of Great Britain and Northern Ireland
and the United States of America:

Referring to statements relating to the frequency range below 3 GHz concerning mobile-satellite services, it is necessary to highlight an oversight in drafting and reading texts which could lead to a new and unnecessary burden of coordination between geostationary space stations and terrestrial services in certain frequency bands. Accordingly, the above Administrations will not accept any commitments for this form of coordination arising from omission of the term "non-geostationary" in the text of certain footnotes, e.g. Footnote Nos. 726x and 7xx, to the Table of Frequency Allocation in Article 8. This reservation is made on behalf of all national and international organizations for whose frequency assignments the two countries are the notifying Administrations.

80

For the United States of America:

I

With reference to Statement No. 52 of the Administration of Cuba, the United States of America notes that the United States presence in Guantanamo is by virtue of a treaty in force; the United States reserves the right to meet its radiocommunication requirements there as it has in the past.

II

With reference to Statement No. 60 of Belarus, the Russian Federation, and Ukraine, the United States of America notes that the other former Republics of the former USSR referred to in that Statement are independent States, not Members of the Union at this time, whose rights and obligations cannot be asserted by the Members that filed that Statement.

81

Original: English

IN THE NAME OF GOD

For the Islamic Republic of Iran:

With reference to the Declaration of Turkey in Document 389, and noting the implications of its last paragraph not consistent with the statement by the Delegation of Turkey in Committee 5 of this Conference, the Administration of the Islamic Republic of Iran is only obliged to the application of the modified RR 404 and opposes the implications of the said paragraph as far as the Islamic Republic of Iran is concerned.

MINUTES

OF THE

THIRTEENTH PLENARY MEETING

Monday, 2 March 1992, at 0930 hours, 1440 hours and 2015 hours

Chairman: Mr. J. BARRIONUEVO PEÑA (Spain)

Subjects discussed

Documents

1.	Statement by the Chairman of Committee 2	-
2.	Fourteenth series of texts submitted by the Editorial Committee for first reading (B.14)	377
3.	Fifteenth series of texts submitted by the Editorial Committee for first reading (B.15)	378
4.	Seventh series of texts submitted by the Editorial Committee for second reading (R.7)	379
5.	Eighth series of texts submitted by the Editorial Committee for second reading (R.8)	382
6.	Sixteenth series of texts submitted by the Editorial Committee for first reading (B.16)	383
7.	Texts submitted by the Editorial Committee for second reading	378
8.	Texts submitted by the Editorial Committee for second reading	377
9.	Texts submitted by the Editorial Committee for second reading	383
10.	Note by the Chairman of the Conference	384
11.	Organization of work	

1. Statement by the Chairman of Committee 2

- 1.1 The Chairman of Committee 2 reported that Bangladesh had now recovered its voting rights.
1.2 That statement was noted.

2. Fourteenth series of texts submitted by the Editorial Committee for first reading (B.14) (Document 377)

- 2.1 After urging the meeting to continue its work in the same spirit of constructive compromise evinced during informal consultations since the previous day, the Chairman suggested that pages B.14/8-B.14/22 of Document 377 should be considered later in conjunction with Document 384 and other related documents.
2.2 It was so agreed.

Article 1

ADD 46A

- 2.3 Approved.

Article 8

MOD Table 137 - 137.175 MHz

- 2.4 Approved.

ADD 599A

2.5 The Member of the IFRB said that the procedure for coordination was covered in Resolution COM5/8; he therefore suggested deletion of the phrase "unless otherwise agreed by the affected administrations" in the second sentence.

- 2.6 It was so agreed.

2.7 The delegate of the United States said that the reference to No. 2904, at the end of the footnote, which in turn referred to CCIR Recommendations, might be misleading as a number of other processes and techniques were used to protect radioastronomy services. He suggested, therefore, that the reference should be deleted.

- 2.8 It was so agreed.

- 2.9 ADD 599A, as amended, was approved.

ADD 599B

MOD Table 137.175 - 138 MHz

- 2.10 Approved.

MOD Table 148 - 150.05 MHz

2.11 The Chairman of Committee 4 said that the reference to 609B in the lower box applied only to the land-mobile satellite service and should therefore be moved up one line.

2.12 The Table was approved subject to that correction.

ADD 608X, ADD 608Y

2.13 Approved.

ADD 608Z

2.14 The Chairman requested delegations wishing to add their country's name to this footnote to notify the Secretariat in writing, in accordance with the procedure agreed at an earlier meeting.

2.15 ADD 608Z was approved on that understanding.

ADD 609B

2.16 Approved.

MOD Table 273 - 322 MHz

MOD Table 335.4 - 399.9 MHz

2.17 Approved, subject to the insertion of the reference to the FN 641 against "Mobile-satellite (Earth-to-space) in sub-band 312 - 315 MHz" and against "Mobile-satellite (space-to-Earth) in sub-band 387 - 390 MHz".

MOD 641

2.18 The delegate of France, supported by the delegates of Spain, India and Germany, proposed that Footnote 641 should be retained as it stood in the Radio Regulations.

2.19 It was agreed to delete the text of this footnote and replace MOD 641 with NOC 641.

ADD 641A

2.20 Approved, subject to the insertion "application of the" before the word "coordination and ..." in the third line.

MOD Table 400.15 - 401 MHz

2.21 Approved subject to the insertion of a reference to Footnote 647A against the "Space research (space-to-Earth)" together with the text of ADD 647A as reproduced on page B.9/1 of Document 310.

ADD 647X

2.22 The delegate of Syria said that the power flux-density limit of -140 dB(W/m²/4 kHz) given in the CCIR Report for meteorological services in the 400 MHz band was not reflected in Footnote 647X, which referred to a value of -125 dB.

2.23 The Chairman of Committee 4 replied that Committee 4 had relied on the Technical Working Group of the Plenary for advice about the power flux-density limit to be applied in any particular band. The content of Footnote 647X was consistent with that of Footnote 599A, which was associated with similar services. The figure initially given in the Conference documentation was -120 dB(W/m²/4 kHz), but the Working Group of the Plenary had decided in favour of an additional margin, in order to afford greater protection. Its recommendation of -125 dB(W/m²/4 kHz) had been adopted by Committee 4.

2.24 The Director of the CCIR recalled that the matter had been discussed by Committee 4 in connection with the 137 MHz band. In view of the fact that several meteorological systems had been operating to the -125 dBW limit without any difficulty, Committee 4 had finally decided to retain that figure.

2.25 The Chairman of the Working Group of the Plenary said that after very careful consideration of both the CCIR Report and the possible implications for all the services which might be affected, the Group had come to the unanimous conclusion that a limit of -125 dB(W/m²/4 kHz) was appropriate in the 400 MHz band.

2.26 The delegate of Syria said that his Administration was prepared to accept those explanations in order not to delay the work of the Plenary.

2.27 The delegate of France stated that he shared the concern expressed by the delegate of Syria.

2.28 ADD 647X was approved subject to deletion of the phrase "unless otherwise agreed by the affected administrations" in the second sentence, and of the reference to No. 2904 at the end of the text.

ADD 700A

2.29 The delegate of Argentina suggested that the second paragraph, contained in square brackets, should be replaced by the text proposed by his Administration in Document 370. If that were agreed, Argentina could be added to the first sentence of the first paragraph.

2.30 The delegate of the United States said that where an additional allocation was involved, as in the present case, the requirement for administrations to coordinate was implicit; the paragraph in square brackets was therefore redundant and, at least in so far as the United States was concerned, could be deleted altogether.

2.31 The delegate of Mexico agreed that the paragraph in square brackets could be deleted, whereas the delegate of Argentina said that he wished the text to be retained with the amendment he had suggested.

2.32 The delegate of Canada suggested that further discussion of ADD 700A should be deferred as it was connected with ADD 740A, still to be considered. His delegation could agree to the deletion of both the second paragraph of ADD 700A and the penultimate sentence of ADD 740A.

2.33 The delegate of the United States said that, as a result of informal discussions, his delegation could agree to either the retention or the deletion of the second paragraph of ADD 700A.

2.34 The delegates of France and Denmark said that they were in favour of deleting that paragraph, whereas the delegate of Cuba said that his Administration wished the square brackets to be removed and the text retained.

2.35 The Chairman suggested that the text of ADD 700A should be kept within square brackets pending further informal discussions among the delegations concerned, so that agreement could be reached on whether to retain or delete the paragraph in both footnotes, 700A and 740A.

2.36 It was so agreed.

ADD 700B

2.37 The delegate of Norway, supported by the delegates of Denmark and Romania, proposed that the second sentence should be amended to read: "The use of these bands by this service shall not cause harmful interference to, or claim protection from, services in other countries operating in accordance with the Table and is subject to ...".

2.38 The delegates of the Russian Federation, Belarus and Ukraine signified their acceptance of that proposal.

2.39 Following comments by the delegate of the Netherlands, the Chairman of Committee 4 said that a reference to Footnote 700B should be included in the appropriate box(es) of the relevant part of the Table.

2.40 ADD 700B, as amended, was approved.

MOD Table 410 - 420 MHz

ADD 651A

MOD Table 942 - 960 MHz, SUP 708

2.41 Approved.

2.42 Further to the decision taken earlier, the Chairman said that the remainder of Document 377 would be considered after the Plenary had disposed of Document 384.

2.43 The delegate of Cuba said that the somewhat piecemeal way in which documents and footnotes were being dealt with had already given rise to a number of errors and omissions. In order to avoid wasting precious meeting time, it was essential for the Secretariat to be fully in control of the situation.

2.44 The Chairman of Committee 6 considered that, at the present stage of the proceedings, the Editorial Committee was no longer competent to accept requests for inclusion the name of the countries in various footnotes; such requests, which would have to be subject to decisions by the Plenary, should therefore be addressed to the Conference Secretariat.

2.45 The Chairman confirmed that that was the procedure which should henceforth be followed by delegations.

2.46 The delegate of Ireland, referring to the general question of implementation by the IFRB of Resolution COM5/8 and the power flux-density limits in certain parts of the Table, said that, as he understood it, the values given in the Table would serve as trigger levels for coordination. However, some national footnotes seemed to entail much lower power flux-density limits than the normal ones given in the Table and it was not clear to him how the IFRB would handle the situation. His understanding was that a country wishing to implement a satellite system did not need to coordinate unless the limit given in Resolution COM5/8 was exceeded. However, if there were numerous national or multinational footnotes requiring much lower power flux-density limits, one of two situations would arise: either the power flux-density limit in Resolution COM5/8 would apply, in which case the footnotes concerned would be regarded as irrelevant, or the national footnotes would override the Resolution, an eventuality which caused his delegation some concern. What was important, at the end of the day, was to secure equitable treatment for all and to avoid a multiplicity of footnotes.

2.47 The Member of the IFRB said that the Irish delegate had raised a very valid question. The footnotes which the Plenary had just considered were indeed concerned with trigger levels for coordination of non-geostationary satellite systems with terrestrial systems. However, the types of footnote which would be considered in due course in Document 384 were in fact absolute limits and not trigger limits, and when they were examined it would be necessary to consider the possible implications in respect of the coordination procedures in Resolution COM5/8.

2.48 The delegate of France wished to draw attention once again to the fact that Resolution COM5/8 was to come into effect on 4 March 1992, whereas the frequency bands to which its provisions applied would be part of the Final Acts of the Conference, which were to enter into force only in twenty months' time. The legal means would have to be found of dealing with that situation.

2.49 In reply to the delegate of France, the Member of the IFRB made the following statement, prepared in consultation with the Legal Service:

"On reading **resolves** 3 of Resolution COM5/8 in conjunction with the footnote to the Resolution, it is clear that the intention of the Conference is for these interim procedures to apply as of 4 March 1992 to all the bands having footnotes referring to this Resolution. A more restrictive interpretation would not make any sense, considering the objective of the Resolution. As a consequence, the most simple solution from both the practical and the legal standpoints would be to record in the minutes of this meeting that such is the intention of the Conference."

2.50 It was so agreed.

**3. Fifteenth series of texts submitted by the Editorial Committee for first reading (B.15)
(Document 378)**

3.1 The Chairman of Committee 5 pointed out that the source of Document 239 was Committee 5, not Committee 4 as shown on the cover page of Document 378.

Article 12

NOC Title. 1343. 1344

MOD 1344A (Mob-87). 1345. SUP 1346-1348. (MOD) 1348A (Mob-87). ADD 1348B. 1348C. SUP 1349 (Mob-87). NOC Title. 1406. MOD 1407. 1408. SUP 1409. MOD 1410. (MOD) 1411

3.2 Approved.

Appendix 26(Rev. WARC-92)

3.3 The delegate of France requested that in the revised Appendix 26 the distinctive symbol for the former French Community be deleted.

Part I (B.15/3)

3.4 Approved subject to the deletion of the square brackets in the third indent of the paragraph 26/2.2.

Parts II, III, IV and V

3.5 Approved.

Resolution [PLEN/AH-1]

3.6 The Chairman of Committee 6 said that the square brackets could be removed from around "PLEN/AH-1"; the Resolution would be given its final number in due course.

3.7 The Chairman of Committee 5 said that the square brackets in **resolves** 4 were merely a reminder that the date of entry into force of the Final Acts would be inserted.

3.8 In the light of those comments, the Resolution was approved.

Resolution COM4/4

3.9 The Chairman of Committee 4 said that the square brackets around the frequencies mentioned in **noting** b) could not yet be removed, whereas those around the dates in both **noting** a) and b) were no longer necessary. It had also been agreed in Committee 4 to combine the paragraphs **invites the CCIR** and **invites the CCITT**, on the basis of a text which the delegation of Saudi Arabia would no doubt be able to provide to the Secretariat.

3.10 Replying to a point raised by the Chairman of Committee 6 concerning the difficulty of combining **invites the CCIR** and **invites the CCITT**, the Chairman of Committee 4 indicated that he would not press that point.

3.11 The delegate of the Islamic Republic of Iran observed that 32 administrations had requested a date later than the year 2000 given in **noting** a), and that four administrations had asked for the year 2020 instead of the year 2010 in **noting** b). The Chairman of Committee 4 said that the dates in the Resolution were indicative and not mandatory for administrations. The delegate of the Islamic Republic of Iran signified his acceptance of that explanation.

3.12 Resolution COM4/4 was approved subject to deletion of the square brackets around the dates in **noting** a) and b).

Resolution COM4/5

3.13 It was agreed to defer consideration of this Resolution at the later stage.

Resolution COM4/6

3.14 The Chairman of Committee 4 suggested the deletion of the square brackets around **considering** a).

3.15 The delegate of Algeria proposed to add at the end of **resolves** the words "in coordination with the administrations whose services may be affected".

3.16 Resolution COM4/6 was approved subject to those two amendments.

Resolution COM4/7

3.17 The Director of the CCIR said that the word "satellite" should be inserted after "Earth-exploration" in the first indent of the "**resolves**" part of the text.

3.18 It was so agreed.

3.19 The Chairman of Committee 4 observed that a draft Resolution submitted recently by the French delegation covered many of the same points as Resolution COM4/7, which might benefit from some slight changes in order to reflect fully the French proposal. If the meeting agreed, the matter could be discussed with the French delegation and a suitable text transmitted to the Editorial Committee.

3.20 Resolution COM4/7 was approved on that understanding.

Resolution COM4/8

3.21 The delegate of the United Kingdom, referring to the proposal in Resolution COM4/8 to convene an HFBC planning conference as soon as possible, pointed out that the draft Resolution had not been considered in detail in Committee 4 and that the United Kingdom delegation had reserved its position. The ITU had been attempting to plan the high-frequency broadcasting bands for decades, and the cost to the Union of the unsuccessful 1984 and 1987 Conferences and the associated work had been some 12 million Swiss francs. The United Kingdom was very concerned at the proposal that a further attempt should be made. The additions to the HFBC allocations adopted by the present Conference, while welcome, would be of limited use before the year 2007, and they were totally insufficient to meet the stated requirements of administrations. The ITU could not afford to commit substantial funds when the chance of success was so limited. In due course the situation should be eased with the introduction of SSB on a large scale. However, that would take place some considerable time in the future. His delegation suggested that the proposed planning conference should similarly be held in the far future, perhaps a few years before the date to be decided for the cessation of DSB, currently 2015. Since time did not permit a substantive debate on the subject, he would be satisfied if his statement was recorded in the minutes.

3.22 Resolution COM4/8 was approved.

Resolution COM5/1

3.23 The Chairman said that the square brackets in **resolves** 1 should remain as a reminder to enter the date of entry into force of the Final Acts of the Conference.

3.24 Resolution COM5/1 was approved.

Resolution COM5/2

3.25 Approved.

Resolution COM5/[12]

3.26 At the suggestion of the Chairman of Committee 5, it was agreed to defer consideration of the Resolution until Document 384, which was relevant, had been distributed.

3.27 With the exception of the matters deferred for further consideration, the fifteenth series of texts submitted by the Editorial Committee (B.15) (Document 378), as a whole, as amended, was approved on first reading.

The meeting was suspended at 1245 hours and resumed at 1440 hours.

4. Seventh series of texts submitted by the Editorial Committee for second reading (R.7) (Document 379)

Article 8

MOD Table 17.3 - 18.1 GHz

ADD 868A

4.1 Approved.

ADD 869A and ADD 869B

4.2 It was noted that the respective texts should be transposed.

4.3 The delegate of Mexico said that his delegation could now agree to the deletion of "[fixed and]" from the footnote to appear as 869A.

4.4 It was so decided.

MOD Table 18.1 - 18.6 GHz

ADD 870A. 870B

MOD Table 21.4 - 22 GHz. ADD 873AA. 873AB

MOD Table 22.5 - 23 GHz. SUP 877. 878

MOD Table 24.25 - 25.25 GHz. ADD 882X. 882Y. 882Z

MOD Table 25.25 - 29.5 GHz. ADD 881A. 881B

MOD Table 29.5 - 30 GHz. ADD 882A. 882B. 882C. 882W. MOD 883

4.5 Approved.

Resolution GT-PLN/2

4.6 Approved subject to deletion of the square brackets around the word "bands" in **considering** a) and the words "in the aforementioned frequency [bands]" in **considering** b).

Resolution COM5/11

4.7 Approved subject to deletion of the square brackets around the word "Resolution" in **considering i)** and insertion of the reference "COM5/8".

Recommendation GT-PLN/B

4.8 Approved.

4.9 The seventh series of texts submitted by the Editorial Committee (R.7) (Document 379), as a whole, as amended, was approved on second reading.

5. Eighth series of texts submitted by the Editorial Committee for second reading (R.8) (Document 382)

5.1 The Chairman of Committee 6 briefly reviewed the reasons for which certain questions, recapitulated in Document 382, had been left pending.

5.2 The Chairman invited the meeting to consider Document 382 item by item, approving each one for inclusion in the relevant text, which would then be regarded as having been considered on second reading.

ADD 723B

5.3 Following an observation by the delegate of France, it was agreed to defer consideration of Footnote 723B until Document 384 had been discussed.

Resolution GT-PLN/4 (Title and **considering further b))**

5.4 Approved.

ADD Resolution No. 521(Orb-88), ADD Recommendation No. 511(HFBC-87)

5.5 Approved.

ADD Recommendation No. 716(Orb-88)

5.6 Following observations by the Chairmen of the Working Group of the Plenary and Committee 4, it was agreed to keep the references to Resolutions and Recommendations in square brackets for the time being, and will consider it at a later stage.

Resolution COM5/10 (new paragraph invites the BDT)

5.7 Approved.

Final Acts: Preamble

5.8 The Chairman suggested that the square brackets around "12 October 1993 at 0001 hours UTC" should be deleted as well as the remainder of the sentence.

5.9 The delegate of Morocco proposed the deletion of the square brackets.

5.10 The delegate of Saudi Arabia, supported by the delegate of Oman, proposed that the text should be retained.

5.11 The representative of the ITU Legal Service, speaking at the invitation of the Chairman, said that the phrase in question was normally used in cases where some provisions of the Radio Regulations might have a different date of entry into force; since it is not the case in the present instance, the text was not required.

5.12 On that understanding, it was agreed to delete the square brackets around "12 October 1993 at 0001 hours", as well as the remainder of the sentence and the square brackets around the figure "3" in the final date.

Resolution COM5/5

5.13 The Chairman of Committee 5, referring to the fourth series of texts submitted for second reading (Document 329), said that a difficulty remained in respect of the annex to Resolution COM5/5, the text of which could imply, in practice, a downgrading to secondary status of the fixed-satellite service for the feeder-link, a result surely not intended.

5.14 The Chairman recalled that the question of amending the text to include a reference to the band 17.3 - 17.8 GHz had been discussed, and the matter left in abeyance pending consideration of the effect on Region 2, since that band would overlap with the feeder-link band (17.3 - 18.1 GHz) for HDTV in Region 2.

5.15 Following the discussion by the delegates of Mexico, the United States and Colombia, the delegate of Canada said that the Resolution did affect Region 2, since it dealt with interim procedures and did not rule out planning for the HDTV service.

5.16 The Chairman of Committee 5 proposed that he should forward to the Editorial Committee a series of consequential amendments to Resolution COM5/5, including the replacement of the date "[1 April 2005]" by "1 April 2007" and the deletion of references to No. 873A.

5.17 It was so agreed.

Resolution COM5/6

5.18 The Chairman of Committee 5, referring again to Document 329, said that since the provisions of Resolution COM5/6 applied to all three Regions, the square brackets would be deleted and the words "21.4 - 22 GHz for Regions 1 and 3 and 17.3 - 17.8 GHz for Region 2" inserted in both **considering a)** and **resolves to urge all administrations**, the word "band" being adjusted editorially; the date in **considering c)** would be aligned with that of Resolution COM5/5. He further suggested that the square brackets should be removed from the title.

5.19 It was so agreed.

5.20 With the exception of Footnote 723B and square brackets in Resolution GT-PLN/4, the pending items contained in Document 382 were approved for inclusion in the respective texts.

6. Sixteenth series of texts submitted by the Editorial Committee for first reading (B.16) (Document 383)

Article 69

MOD 5187 (Orb-88), NOC 5188 - 5194, MOD 5195 (Mob-87), NOC 5196 (Orb-88), NOC 5196.1 (Orb-88)

6.1 Approved.

ADD 5197

6.2 Approved subject to deletion of the square brackets in accordance with the Plenary's decision concerning the date of entry into force.

Appendix 30A

ARTICLE 7

MOD Title

6.3 Approved.

MOD 7.1

6.4 Approved subject to deletion of the square brackets.

Annex 4 (B.16/3)

6.5 Approved.

6.6 The sixteenth series of texts submitted by the Editorial Committee (B.16) (Document 383), as a whole, as amended, was approved on first reading.

7. Texts submitted by the Editorial Committee for second reading (Document 378)

7.1 The Chairman of Committee 6 drew attention to the amendments approved during the first reading, and to a number of editorial changes provided subsequently by the Chairman of Committee 4.

Article 12

NOC Title, 1343, 1344, MOD 1344A, 1345, SUP 1346 - 1348, (MOD) 1348A, ADD 1348B, 1348C, SUP 1349, NOC Title, NOC 1406, MOD 1407, 1408, SUP 1409, MOD 1410, (MOD) 1411

7.2 Approved.

Appendix 26(Rev. WARC-92)

Parts I, II, III, IV, V

7.3 Approved.

Resolution PLEN/AH-1

7.4 Approved.

Resolutions COM4/4, COM4/5, COM5/12

7.5 At the request of the delegate of Sweden, the second reading of Resolution COM4/4 was deferred pending examination of Document 384. Equally also deferred the second reading of Resolutions COM4/5 and COM5/12.

Resolutions COM4/6, COM4/7, COM4/8, COM5/1, COM5/2

7.6 Approved.

7.7 With the exception of Resolutions COM4/4, COM4/5 and COM5/12, the texts in Document 378 were approved on second reading.

8. Texts submitted by the Editorial Committee for second reading (Document 377)

8.1 The Chairman of Committee 6 drew attention to the amendments that had been approved during the first reading of this document.

Article 1

ADD 46A

8.2 Approved.

Article 8

MOD Table 137 - 137.175 MHz. ADD 599A. ADD 599B

MOD Table 137.175 - 138 MHz.

MOD Table 148 - 150.05 MHz. ADD 608X. ADD 609Y

8.3 Approved.

ADD 608Z

8.4 The Chairman of Committee 6 said that a list of countries having requested inclusion in ADD 608Z was being drawn up, to complete the footnote.

MOD Table 273 - 322 MHz

MOD Table 335.4 - 399.9 MHz

8.5 The Chairman of Committee 4 said that a reference to Footnote 641 should be inserted in the sub-boxes 312 - 315 MHz and 387 - 390 MHz.

8.6 It was so agreed.

NOC 641. ADD 641A

MOD Table 400.15 - 401 MHz. ADD 647A. ADD 647X

8.7 Approved.

ADD 700A

8.8 The Chairman reminded the meeting that the adoption of the footnote was deferred until agreement could be reached on the second paragraph. It should be considered together with Footnote 740A.

ADD 700B

MOD Table 410 - 420 MHz. ADD 651A

MOD Table 942 - 960 MHz. SUP 708

8.9 Approved.

8.10 The Chairman said that the remainder of Document 377 together with its Corrigendum would be considered at a later stage.

9. Texts submitted by the Editorial Committee for second reading (Document 383)

9.1 The Chairman of Committee 6 drew attention to the amendments that had been approved during the first reading of this document.

9.2 The texts in Document 383 (pages 1, 2 and 3) were approved on second reading.

10. Note by the Chairman of the Conference (Document 384)

10.1 The Chairman, introducing Document 384, said that it had been produced by the Secretariat, with advice from members of various delegations, with a view to expediting the work of the Conference on the most controversial issues facing it.

10.2 The Chairman of Committee 4 pointed out that Document 384 did not represent the views of Committee 4, but of the various delegations that had contributed to its preparation. A number of modifications, some mainly editorial, others more substantive, were required. On page 2, in the lower box under Region 2, the phrase "space-to-Earth" should be inserted after the "Mobile-Satellite service" allocation; in addition, a new footnote should be added (CHN/KOR/J/SNG/THA/351/1). On page 3, a further footnote should be added (USA/366/1). On page 6, (ADD 746T), the Plenary would have to decide whether there should be a power flux-density limit and a date. In addition, another footnote should be added (USA/366/3). On page 7, in the 2 110 - 2 120 MHz box, the secondary allocation to the mobile-satellite service (space-to-Earth) should be deleted. On page 11, ADD 753F and ADD 722F should be checked, while on page 12, Sri Lanka should be added to Footnote 757A and square brackets placed around the frequencies in ADD 755A. Finally, new Footnotes (722AA and 757A) should be inserted in the appropriate places.

10.3 The Chairman of the Working Group of the Plenary said that Document 384 contained many footnotes referring to power flux-density limits that had been presented at a late stage and had not been considered either by the Committees or the Working Group of the Plenary. He therefore suggested that a special ad hoc group should be set up to make a careful study of those values.

10.4 The delegate of Japan pointed out that Pakistan had cosigned Documents 349 and 351 and should therefore be included in the relevant footnotes. Furthermore, in the 2 500 - 2 655 MHz Table on page 12, Footnote 754 should be retained under Region 3.

10.5 The delegate of Morocco recalled that a large number of countries had done him the honour of asking him to represent them at various meetings and consultations held in the course of the Conference. He wished to assure them that he had done his utmost to defend their interests and thought they could be satisfied on the whole with the results achieved so far. The delegate of Mexico had earlier made a proposal to the effect that, instead of going through Document 384 item by item, it would be preferable to attempt to identify some salient features and use them as the basis for the preparation of a final document. He was himself in favour of that idea and had reflected deeply on the elements that might enter into a compromise solution acceptable to all concerned. He hoped that the countries which had placed their trust in him would allow him to put forward various suggestions on their behalf, although lack of time had prevented him from consulting them in detail in advance.

10.6 Throughout the Conference the developing countries had stressed the need for the BSS (sound) allocations to be such as to enable that service to begin operations as rapidly as possible. In that connection, he noted that a worldwide allocation was presently proposed in the 1 GHz band. He urged all participants to agree to make that allocation flexible, allowing countries to move into and out of the band as they wished. If they left the band, they should be able to choose another one, on condition, of course, that they did not interfere with any other country. He realized that, in order to achieve a worldwide allocation, some countries had made an enormous effort, and he wished to thank the CEPT countries for having accepted, despite the difficulties it created for them, the 1.5 GHz band.

10.7 A second element related to the unavoidable spillover in BSS operations, which prompted him to urge that the allocations should not be accompanied by power flux-density limits that would make it impossible to introduce the service. A further point related to planning: all agreed that the broadcasting-satellite service must be planned. Unfortunately, the developing countries were not all ready for such an exercise and needed an interim period during which to develop the service. In that context, two basic positions had emerged in the course of the Conference. From a 40 MHz range the developing countries had chosen a band reduced by 25 MHz that they could use during an interim period by applying the provisions of Resolution No. 33. Other countries preferred to establish for themselves a fairly rigid timetable. He therefore wished to suggest that both solutions should be adopted: in other words, for countries that could accept a strict timetable a footnote would be included indicating the time frame, while for the other countries Resolution No. 33 would apply on a narrower 25 MHz band.

10.8 The bandwidth needed for BSS had given rise to differences: some had proposed 30 MHz, others 40. Given the large number of countries in Region 1, he considered that 40 MHz would be sufficient to operate the service. Then, he could readily accept all the proposals contained in Document 384 concerning the mobile-satellite service. The problem still remained of defining the band to be allocated to BSS, for which two proposals were put forward in the Table on page 2 of Document 384. Some of his colleagues preferred one solution, others another.

10.9 In conclusion, he called upon delegates from Europe, America and Asia to view his suggestions favourably and not seek to impose conditions that the developing world could not accept. In that respect he wished to refer to LEO satellites that should enable the entire international community to benefit from the new technologies. However, proposals had been made that could prevent such systems being operational. In his view, sufficient bands had been allocated to MSS to allow several systems to function simultaneously. He therefore appealed for understanding and requested the Chairman, with the help of the Secretariat, to present a new document setting forth the main lines of the compromise solution he had just outlined.

10.10 The Chairman thanked the delegate of Morocco for his statement, which would open the way to a compromise. His initial reactions were very favourable; however, other speakers would no doubt wish to state their views briefly before a decision was taken.

10.11 The delegate of Senegal suggested that Document 384 be accepted as to its broad principles even though a few details still needed to be settled.

10.12 The delegate of Cuba said that the Moroccan proposal offered a solution and that decisions should now be taken.

10.13 The delegate of Ecuador recalled that Document 375 submitted by his country had a bearing on Document 384. If the Moroccan proposal were not accepted, the contents of Document 375 should be incorporated in Document 384.

10.14 The delegate of Algeria expressed renewed confidence in the Chairman for the steps taken to seek the broadest possible consensus on such important issues. Thanking all those who had contributed to the preparation of Document 384, he associated himself fully with the compromise solution proposed by the delegate of Morocco.

10.15 The delegate of Mexico said that Document 384 was unquestionably the outcome of considerable effort and could, in broad terms, be accepted. He welcomed the Moroccan proposal as a sound basis for negotiation, particularly with regard to the broadcasting-satellite service (sound).

10.16 The delegate of Nigeria associated himself with those delegations which had expressed gratitude to the delegate of Morocco for the efforts he had made. His delegation had been disappointed to discover on the previous day that such a rigid power flux-density limit was being proposed and had thought that the broadcasting-satellite (sound) needs of the countries of Region 1 were not going to be met. The proposal by the delegate of Morocco offered a way out of the dilemma which his delegation found reassuring.

10.17 The delegate of the United Kingdom congratulated all who had taken part in preparing Document 384 and paid a tribute to the efforts made by the Chairman of Committee 4. The allocation of frequencies to the broadcasting-satellite service (sound) around 1.5 GHz would have a potential impact on his country's existing services and might give rise to harmful interference. However, if a consensus were reached on the 1.5 GHz frequency range, he would be able to give his agreement, subject to restructuring of the existing services in that band. He would welcome an assurance that existing services would be protected before broadcasting-satellite (sound) systems were introduced; however, Document 384 offered no information about the date of implementation of allocations to BSS (sound). Furthermore, the Resolution in Annex 1 gave neither dates nor guarantees for the planning conference, nor even a date for the application of its results. It was stated under **resolves** that the planning conference should be convened to review, among other things, the time schedule, but it was not clear what time schedule was meant. The lack of precision was rather worrying.

10.18 The delegate of Saudi Arabia commended the Chairman of Committee 4 for his efforts, which had enabled many of the problems that had arisen in the Committee to be solved. Document 384 offered a compromise solution; however, the new services would affect existing services in the frequency band in question. His Administration had initially been opposed to most of the allocations made to new services, but the time had now come to accept a compromise solution. However, administrations should be given an opportunity to study the situation of existing services in order to determine whether they could co-exist with the new services. He fully endorsed the Moroccan delegate's comments, provided a time schedule was set for implementing those services.

10.19 The delegate of Tanzania thanked the Chairman of Committee 4 and said that Document 384 would certainly enable a compromise solution to be found. The Moroccan delegate's proposal was both interesting and crucially important for the Conference; it should be supported, even though it required some changes, mainly in respect of the footnotes. Issues such as sharing criteria and the power flux-density limit could be referred to the Working Group of the Plenary.

10.20 The delegate of Guinea, while appreciative of the efforts made by the Chairman of Committee 4 in preparing Document 384 and aware of the latter's significance, pointed out that the 1 GHz and 2 GHz bands were very congested in his country. It seemed, however, that no alternative solutions were available. Guinea belonged to a group of extremely poor countries which had many priorities and encountered difficulties in setting up a telecommunication network. The existing services operating in the bands concerned should be protected for the time being, and he hoped that the schedule would allow for such protection.

10.21 The delegate of India supported the Moroccan proposal and extended warm thanks to all those who helped to prepare Document 384, which should enable a compromise to be reached and a regulatory text to be developed. However, the plethora of footnotes made the document rather confusing. Like the Chairman of the Working Group of the Plenary, he considered that a consolidated text should be prepared on power flux-density values, in which either the number of footnotes was limited or a single footnote served for a large number of countries wishing to protect existing services with respect to the broadcasting-satellite service (sound).

10.22 The Chairman noted that the compromise proposal by the delegate of Morocco had the support of several delegations. When the meeting was suspended, the administrations concerned might perhaps meet with the Conference Secretariat to prepare a compromise document on the basis of the Moroccan proposals, for submission in the course of the evening. The Working Group of the Plenary could work on other outstanding problems at the same time.

10.23 It was so decided.

The meeting was suspended at 1750 hours and resumed at 2015 hours.

10.24 The Chairman of Committee 4 said that a representative group of administrations had met to settle the main outstanding issues relating to the mobile-satellite and broadcasting-satellite (sound) services.

10.25 In the case of the broadcasting-satellite service (sound), agreement had been reached on a bandwidth and its location, the divergence of roughly 7 MHz between the two earlier proposals in that connection having been of major significance for the protection of the fixed services. Under the time schedule drawn up, the service would be implemented gradually from the date of entry into force of the Final Acts until such time as it occupied an entire bandwidth with allocations on a primary basis as indicated in the Table. The other outstanding question related to the coordination of complementary terrestrial broadcasting, since Resolution 33 to which reference was made had not been designed to cater for coordination of terrestrial services. It had therefore been necessary to find some means of protecting existing services in respect of terrestrial broadcasting, through coordination between neighbouring administrations. Furthermore, the number of footnotes relating to power flux-density limits had posed a problem. The Working Group of the Plenary had therefore endeavoured to shift the emphasis away from the power flux-density limit and towards bilateral coordination. As a result, even those administrations which had submitted footnotes relating to power flux-density limits were now prepared to adopt another method. In short, most of the substantive issues had been settled and the small group expected to be able to submit a document to the Plenary a little later in the evening.

10.26 The work on the mobile-satellite service had been completed. However, Document 384 did not fully cover certain issues such as future public land mobile telecommunication services and identification of a part of the spectrum allocated to those services to which reference should be made in the relevant footnotes. In addition, steps had to be taken to ensure that the new coordination procedure in Resolution COM5/8, which could be used in different ways, was applied consistently; Committee 4 had found that in very many cases it could and even should be applied by means of a footnote. Resolution COM5/8 had therefore been used as a means of ensuring compatibility between the new allocations and existing services. The other matter relating to the mobile-satellite service concerned the insertion of precise references to power flux-density limits in the Radio Regulations. There again, use would be made of the work done by the Working Group of the Plenary. As to the time schedule for implementing the new services, the dates set for their introduction allowed for the time needed by administrations for a detailed study of the impact of the new satellite systems on the fixed services. The Secretariat was at present drawing up a document which took account of all the amendments made and which would be submitted to the Plenary later in the evening.

11. Organization of work

11.1 The Secretary-General said that once the substantive discussions had been concluded, administrations would have two hours in which to hand in their declarations. If the discussions were completed by 0200 hours, the closing ceremony could take place at about midnight on the following day, since the Secretariat needed some 22 hours to process the documents. Since it would be impossible to prepare the final version of all documents for the following day even if the substantive discussions were completed within the expected time-frame, and since the Editorial Committee could not continue to hold meetings, delegates might wish to entrust the ITU Secretariat with the task of making the final editorial amendments to the texts.

11.2 The Chairman said that the next meeting would be held when the text of the compromise proposals was ready.

The meeting rose at 2045 hours.

The Secretary-General:
P. TARJANNE

The Chairman:
J. BARRIONUEVO PEÑA

PLENARY MEETING

MINUTES
OF THE
FOURTEENTH PLENARY MEETING

Monday, 2 March 1992, at 2215 hours

Chairman: Mr. J. BARRIONUEVO PEÑA (Spain)

Subjects discussed

Documents

- | | | |
|-----|--|--------------|
| 1. | Fourteenth series of texts submitted by the Editorial Committee for first reading (B.14) (continued) | 377 + Corr.1 |
| 2. | Seventeenth series of texts submitted by the Editorial Committee for first reading (B.17) | 391 |
| 3. | Report by the Working Group of the Plenary on power flux-density values and coordination procedures | 393 |
| 4. | Seventeenth series of texts submitted by the Editorial Committee for first reading (B.17) (resumed) | 391 |
| 5. | Changes to be introduced in certain footnotes of Article 8 | - |
| 6. | Texts submitted by the Editorial Committee for second reading (continued) | 378 |
| 7. | Eighth series of texts submitted by the Editorial Committee for second reading (R.8) (continued) | 382 |
| 8. | Revision of Articles 27 and 28 | 390 |
| 9. | Texts submitted for second reading | 377 + Corr.1 |
| 10. | Last series of texts submitted for second reading | 391 |

1. Fourteenth series of texts submitted by the Editorial Committee for first reading (B.14) (continued) (Document 377 and Corrigendum 1)

1.1 The Chairman invited delegates to continue the first reading of Document 377, pages 8-22 of which had been deferred from the previous meeting. He drew attention to Corrigendum 1 replacing page B.14/8 of the main document.

Article 8

MOD Table 1 525 - 1 530 MHz

1.2 The Chairman of Committee 4 said that when the 1 525 - 1 530 MHz range had been discussed in Committee 4 there had been general agreement on the allocations proposed for Region 1. However, some of the Region 2 countries had sought a more flexible approach to the future use of the spectrum and had proposed that the Region 2 allocations for the maritime mobile-satellite service (space-to-Earth) and the land mobile-satellite service (space-to-Earth) should be deleted from the Table and replaced by a single allocation to the mobile-satellite service (space-to-Earth). No clear majority had emerged on the issue during the discussion. The same applied to the Region 3 allocations, the main issue being whether or not there was a need for worldwide uniformity among the Regions. Delegates should therefore be invited to state their preference between the allocations in the first and second sets of square brackets in the boxes for Region 2 and Region 3.

1.3 The delegate of the Russian Federation proposed the deletion, from both boxes, of the allocation to the mobile-satellite service, as well as the reference to Footnote 726B appearing in the second set of square brackets.

1.4 The delegate of Mexico proposed the deletion of the first set of square brackets and its contents, as well as the reference to Footnote 726B in the second set of square brackets. He was in favour of a single allocation to the mobile-satellite service; it was the ideal band for MSS generic operations, on the basis of which a future conference could determine a worldwide generic allocation to that service encompassing the bands currently allocated for specific use by the maritime, aeronautical and land mobile-satellite services. His country was particularly interested in the band on account of its national requirements.

1.5 The delegate of Canada endorsed the proposal by the delegate of Mexico, which was in line with the VGE trend towards the consolidation of services. He stressed the importance of deleting the reference to Footnote 726B which, if retained, would restrict the use of the band to low-bit-rate data transmission services.

1.6 The delegate of the United States supported the proposal by the delegate of Mexico and endorsed the comments by the delegate of Canada. The new band would provide additional flexibility in the Table for mobile-satellite services at both the regional and the international levels.

1.7 The delegates of Argentina, Brazil and India also expressed support for the Mexican proposal.

1.8 The observer for the International Chamber of Shipping drew attention to the fact that the part of Document 377 now under consideration contained certain proposals affecting the maritime mobile-satellite service and that the merchant shipping industry would be directly affected by the decisions taken on them. He appealed to the Conference to bear in mind the importance of maritime satellite communications when considering these proposals. The global maritime distress of safety system (GMDSS) had started its seven-year phasing-in programme and, by its very nature, would lead to a large increase in the number of vessels using satellite communications. Furthermore, and quite separate from distress and safety requirements, ships needed an efficient and reliable means of communication for their long-distance commercial radio traffic. That was one of the main reasons why the ITU had made primary allocations to the maritime mobile-satellite service at previous conferences.

1.9 The delegate of Australia said that he too endorsed the proposal by the delegate of Mexico. There appeared to be some misunderstanding concerning the use of the band 1 525 - 1 530 MHz, in that there were at present no entries in the Radio Regulations for either the maritime mobile-satellite or the land mobile-satellite service in that band, and there was no need to protect a service which did not currently have an allocation.

1.10 In response to a request by the Chairman, the delegate of the Russian Federation agreed to withdraw his proposal in favour of the one by the delegate of Mexico.

1.11 The delegate of China objected to the proposal by the delegate of Mexico. As the delegate of the Russian Federation had indicated earlier, the allocations to the maritime mobile-satellite service and the land mobile-satellite service should be retained on a primary and secondary basis respectively; they should not be replaced by a single allocation in Region 3.

1.12 The Chairman appealed to the delegate of China to go along with the majority view, particularly since the Mexican proposal had been supported by another Region 3 country and the Russian Federation had agreed to withdraw its original proposal.

1.13 The delegate of China observed that the situation in Region 2 was quite different from Region 3, where the fixed service had a primary allocation. His main reason for requesting that the maritime mobile-satellite service be retained on a primary basis was concern for the safety of human life. Other Region 3 countries should perhaps be given the opportunity to express their opinion on the matter.

1.14 In the ensuing discussion the delegates of Korea, Malaysia, New Zealand, Papua New Guinea and Sri Lanka expressed their support for the generic allocation to the mobile-satellite service as proposed by the delegate of Mexico, whereas the delegates of Singapore, Bangladesh, the Islamic Republic of Iran, Japan, Pakistan and the Democratic People's Republic of Korea endorsed the views expressed by the delegate of China.

1.15 The delegate of Australia, supported by the delegate of Brunei Darussalam, stressed the importance of the point at issue and urged the Region 3 countries to agree to an allocation for the mobile satellite-service. However, if that was not acceptable, the reference to the Footnote 726B in the Region 3 box should be deleted so as to provide additional flexibility for the allocation to the land mobile-satellite service. Finally, he drew attention to the fact that Footnote 726X was relevant to the subject under discussion.

1.16 The Chairman observed that the Mexican proposal appeared to enjoy the support of the Region 2 countries. Accordingly, he took it that the allocations in the first set of square brackets could be deleted from the Region 2 box together with the second set of square brackets and the reference to Footnote 726B, retaining only the primary allocation to the mobile-satellite service.

1.17 It was so agreed.

1.18 The Chairman, having regard to the comments by the delegate of Australia, suggested that the Region 3 countries should hold informal discussions with a view to seeking an acceptable solution. The square brackets in the Region 3 box would be retained pending the outcome of those discussions.

1.19 It was so agreed.

MOD 726A and 726B

1.20 Approved.

ADD 726X

1.21 The Chairman of Committee 4 said that on account of the divergence of views within Committee 4 on which power flux-density limits should be applied, the relevant provisions of the Radio Regulations had been placed between square brackets. In his view, RR 2557 would be the more appropriate choice, since that provision normally applied to the bands in question.

1.22 The delegate of the United Kingdom endorsed that view. Furthermore, since it had been Committee 4's intention for Resolution COM5/8 to apply to all mobile-satellite service bands, he proposed that the band limits should be amended to read: "1 525 - 1 559 MHz and 1 626.5 - 1 660.5 MHz".

1.23 The delegate of the Russian Federation endorsed the comments by the Chairman of Committee 4 and supported the proposal by the delegate of the United Kingdom.

1.24 In response to a suggestion by the delegate of the United States to include the reference "non-geostationary" in the last sentence of the footnote, the Member of the IFRB observed that the Resolution COM5/8 coordination procedure applied to all space stations in the band and not only to non-geostationary ones. The delegate of the United States said that, in that case, the sentence need not apply to Region 2.

1.25 The delegate of Cuba endorsed both the suggestion by the Chairman of Committee 4 and the comments by the Member of the IFRB, drawing attention to Footnote 723A in the latter connection.

1.26 The delegate of Canada said that, as he interpreted the provisions of Resolution COM5/8, coordination was not required when sharing was not on an equal footing. With regard to the power flux-density limits, the references might perhaps be kept in square brackets until Document 393 had been discussed.

1.27 Following further discussion, it was agreed to amend the band limits as proposed by the United Kingdom and to retain the reference to RR 2557, deleting the square brackets around it as well as the reference to RR 2562.

MOD Table 1 530 - 1 533 MHz, SUP 726

1.28 Approved.

ADD 726C

1.29 It was decided to replace the text in Document 377 by the one proposed by the United States in Document 373, subject to the addition of Argentina to the list of countries.

MOD Table 1 533 - 1 559 MHz

1.30 Approved subject to the addition of a reference to Footnote 726X in the 1 544 - 1 545 MHz and 1 545 - 1 555 MHz boxes.

ADD 730B

1.31 The delegate of Australia, supported by the delegate of Mexico, said that the text of the footnote as it appeared in Document 377 did not fully reflect the agreement reached in Committee 4 which, as he understood it, was that the whole of the text following the words "on a primary basis" should be deleted.

1.32 The delegate of Argentina, referring to proposal ARG/370/3 (Document 370), said that his Administration wished its name to be included in the footnote and was opposed to the deletion of the last part of the text.

1.33 The delegate of the United States considered that further discussion was desirable with the countries concerned; meanwhile, the footnote might perhaps be put in square brackets.

1.34 It was so agreed.

1.35 The delegate of the United States drew attention to his Administration's proposal for the addition of a new Footnote 729B concerning an additional allocation on a secondary basis in the bands 1 545 - 1 555 and 1 646.5 - 1 656.5 MHz (Document 366).

1.36 The delegates of Argentina and France and the observer for the International Civil Aviation Organization (ICAO) emphasized that the question had been discussed at length in Committee 4 where the majority view had been that, for reasons of safety, no change should be made to the exclusive allocation to the aeronautical mobile-satellite (R) service in the bands concerned.

1.37 The delegate of Mexico observed that APC was already authorized in the bands in question on a secondary basis (RR 729A). His comments were endorsed by the delegate of the United States, who emphasized that the proposal concerned only a secondary allocation to a country or countries, whereas the discussion in Committee 4 had focused on the primary allocation.

1.38 The Chairman of Committee 4, supported by the delegates of Ghana and Kenya, confirmed that the firmly held view in Committee 4 had been that the allocation in those bands should be maintained on a world-wide basis without change.

1.39 In response to an appeal by the Chairman, the delegate of the United States said that his delegation would not pursue the matter but reserved its position in that regard.

MOD Table 1 610 - 1 626.5 MHz

1.40 On a proposal by the delegate of the United Kingdom, it was agreed to move the reference to Footnote 733E to the bottom of all the boxes in which it appeared; at the suggestion of the Chairman of Committee 4, it was further agreed to move the reference to Footnote 731X to the bottom of the Region 2 boxes, so that it applied to both the radiodetermination-satellite and the mobile-satellite services.

1.41 It was agreed to include China in the list of countries in Footnote 733B, in accordance with that Administration's proposal in Document 352.

SUP 731A, 731B, 731C, 731D

1.42 Approved.

ADD 731X

1.43 The Chairman of Committee 4 suggested that the first and second sentences should be amended to read, respectively: "The use of the band 1 610 - 1 626.5 MHz by the mobile-satellite service and by the radiodetermination-satellite service (Earth-to-space) is subject to ..." and "Mobile earth stations in these services shall not produce ...".

1.44 It was so agreed.

1.45 The delegate of the Russian Federation said that his country operated an aeronautical radionavigation service in the band 1 610 - 1 626.5 MHz, to which the mobile-satellite service in the same band might cause harmful interference and thus endanger flight safety and human lives. He therefore proposed that, in Footnote 731X, the e.i.r.p. density limit should be set at -15 dB in the band 1 610 - 1 620 MHz; it would remain at -3 dB in the band 1 620 - 1 626.5 MHz.

1.46 The Chairman of the Working Group of the Plenary said that many hours had been spent discussing the e.i.r.p. density figure in Footnote 731X; despite finding the -3 dB value unsatisfactory, the Working Group had unfortunately been unable to propose a more acceptable one. The -3 dB limit was proposed for use on a provisional basis until such time as it was revised by a competent world administrative radio conference, and it would certainly need to be reviewed by the CCIR.

1.47 The delegate of the Russian Federation said that the comments by the Chairman of the Working Group of the Plenary added weight to his proposal. Surely it was better to stay on the safety side until CCIR studies produced a more reliable basis for estimating the implications for aeronautical radionavigation.

1.48 The Chairman of Committee 4 suggested that informal discussions might be held with a view to finding a compromise solution.

1.49 On that understanding, it was decided to put ADD 731X between square brackets until the second reading of the text.

ADD 731Y

1.50 The delegate of the Russian Federation drew attention to his Administration's proposal for the addition of a new Footnote 731E (Document 365).

1.51 Following a discussion in which the delegates of the United States and the Russian Federation, the Chairman of the Working Group of the Plenary and the Chairman of Committee 4 took part, it was agreed to put ADD 731Y between square brackets until the second reading of the text, pending informal discussions on that footnote in conjunction with the proposal by the Russian Federation in Document 365.

MOD 733A, 733E and 734

1.52 Approved.

Table 1 626.5 - 1 660.5 MHz

1.53 The delegate of Brazil proposed that, to be consistent with the generic allocation for the mobile-satellite service already approved for the band 1 525 - 1 530 MHz in Region 2, there should be a similar generic allocation for the mobile-satellite service in the band 1 626.5 - 1 631.5 in that Region, since the two frequency bands were paired.

1.54 It was so agreed.

1.55 At the proposal of the delegate of Canada, it was agreed to insert a reference to Footnote 726X in the boxes for the bands 1 645.5 - 1 646.5 MHz, and 1 646.5 - 1 656.5 MHz.

1.56 The table for the band 1 626.5 - 1 660.5 MHz, as amended, was approved.

1.57 The Chairman said that the Plenary had completed the first reading of Document 377 and Corrigendum 1.

2. Seventeenth series of texts submitted by the Editorial Committee for first reading (B.17) (Document 391)

2.1 The Chairman thanked delegates for their spirit of compromise and generosity which should make it possible for the Conference to proceed on the basis of consensus. It was his intention to invite three people to introduce Document 391: the delegate of Morocco, as the author of the proposal upon which the contents of the document were based; the Chairman of Committee 4 for the mobile service aspects; and the delegate of the Netherlands, who had served as Chairman of the Drafting Group which had dealt with the broadcasting service aspects.

2.2 The delegate of Morocco thanked the Chairman for the honour but said that the Chairman of Committee 4 and the Chairman of the Drafting Group deserved greater credit for achieving results on the basis of his compromise proposal. He noted that Document 391 had been drawn up under severe pressure of time and contained some layout and drafting errors. He suggested that the Secretary-General should officially be made responsible for seeing to it that the necessary editorial corrections were made to the text prior to the publication of the Final Acts.

2.3 The Chairman of Committee 4 and the Chairman of the Drafting Group introduced Document 391 as it related, respectively, to the mobile-satellite and the broadcasting-satellite services, drawing attention to some editorial corrections.

2.4 The Chairman of Committee 6 apologized for the mistakes in the document and confirmed that the necessary alignment of texts and editorial corrections would be made in preparing the Final Acts for publication.

Article 8

Table 1 429 - 1 525 MHz and related footnotes

2.5 The delegate of Saudi Arabia, referring to the band 1 452 - 1 492 MHz, said that no account appeared to have been taken of Document 384 in preparing Document 391. Furthermore, there was no mention of a date for the introduction of the broadcasting-satellite service in that band.

2.6 The delegate of New Zealand requested the Secretariat to take account of Document 388, which had been submitted by his delegation and contained a proposal for an additional footnote, given as 722A in that document.

2.7 The delegate of Burkina Faso said that he shared the concern expressed by the delegate of Saudi Arabia, and drew attention to the proposals submitted by his and two other administrations in Document 376(Rev.1).

2.8 The delegate of Mexico, referring to ADD 722B, said that bilateral coordination was only required in frontier zones and suggested that the words "prior to their bringing into use" at the end of the footnote should be replaced by "where necessary".

2.9 The delegate of Pakistan, after stressing the need to set a time-limit for the transfer or displacement of services, pointed out that the date of 1 April 2007 had been the subject of almost unanimous agreement in Committee 4. He also considered that the power flux-density limits proposed by the Working Group of the Plenary in Document 393 should be appropriately reflected in the footnotes.

2.10 The delegate of the United Arab Emirates said that, on account of national requirements, his Administration had no option but to enter a reservation concerning the introduction of the broadcasting-satellite service (sound) in the 1.5 GHz band. With regard to the time-frame for implementation of that service, he noted that the date given in Resolution COM5/12 (Document 378) was 1 January 2005, and wondered whether that Resolution had been taken into account in preparing Document 391. Lastly, he enquired whether both Resolutions COM4/[W] and COM5/12 would be applicable to the BSS (sound) bands under discussion.

2.11 The delegates of Ireland, Greece and Portugal said that their countries wished to be included in Footnote 722AAA.

2.12 The delegate of Italy also requested that the name of his country be included in Footnote 722AAA; if that were done, proposal ISR/I/360/1 would become redundant, at least as far as the Italian Administration was concerned.

2.13 The delegate of Kenya also expressed concern with regard to the time-frame for implementation of the broadcasting-satellite service (sound). His country was in the process of installing systems whose lifetime would extend beyond the year 2007 and he wished to be sure that full use could be made of those systems before the changeover to different frequencies.

2.14 The delegate of Ecuador agreed that there was a need to set deadlines for implementation of BSS (sound) in the band 1 452 - 1 492 MHz and said that the date of 1 April 2007 was acceptable to his delegation.

2.15 The delegate of India sought confirmation that Footnote 7YY in Document 393 would be made applicable to the footnotes in Document 391 relating to BSS (sound), particularly Footnotes 722A, 750B and 757A. He too was concerned about the protection of existing services in the 2 500 - 2 690 MHz band and therefore suggested that a cross-reference to Resolution COM5/12 should be included in Footnote 7YY when the final alignment of the texts was carried out.

2.16 The delegate of the United States said that he would hand in a number of changes and corrections to the footnotes on page B.17/2 at the appropriate time.

2.17 The delegate of Bangladesh said that the date of 1 April 2007 was acceptable to his Administration. He also requested that the name of his country should be included in Footnotes MOD 753C and ADD 757A.

2.18 The delegate of France, supported by the delegate of Senegal, suggested that the Plenary's work would be facilitated if discussion of Document 391 was deferred until the proposals in Document 393 had been considered.

2.19 It was so decided.

3. Report by the Working Group of the Plenary on power flux-density values and coordination procedures (Document 393)

3.1 The Chairman of the Working Group of the Plenary, introducing Document 393, said that the Working Group had finally agreed, as a compromise solution, to propose the use, on a provisional basis, of the power flux-density values given on page 1 of the document, in order to facilitate coordination procedures in connection with the introduction of MSS and BSS (sound) services. Those values corresponded to the limits specified in RR 2566, which were normally applied to the 4 GHz band. They were clearly not ideal values and, as he had indicated earlier, the CCIR should be invited, as matter of urgency, to develop appropriate recommendations on the matter; Recommendation GT-PLN/B, which had already been approved, could be used for that purpose.

3.2 Turning to the footnotes in the Annex, he suggested that the words "those countries" in the second sentence of ADD 7XX should be replaced by "the situation", and that the beginning of the second sentence of ADD 7YY should be amended to read: "However, with the exception of the situations referred to in Nos. 723 and 751 and of Canada in the band 2 300 - 2 483.5 MHz ...".

3.3 In conclusion, he said that the approval of Document 393 should enable a number of footnotes in Document 391 to be deleted; other footnotes in the same document might require consequential modifications that could perhaps be identified in due course by the Chairman of Committee 4.

3.4 The delegate of the Netherlands said that the approval of Document 393 should enable the meeting to make progress in its work. With regard to ADD 7YY, the phrase "1 452 - 1 492 MHz and wherever applicable" should be inserted in place of the dotted line in the square brackets, to take account of all the relevant bands as set out in Document 391.

3.5 The delegate of Canada suggested, in order to simplify matters, that the reference to Canada should be deleted from the second sentence of ADD 7YY and included instead in Footnote 751.

3.6 The delegate of the United States, referring to the amended version of the second sentence of ADD 7YY, considered that it would be more appropriate to refer to "No. 723 or No. 751".

3.7 A question from the delegate of Morocco as to whether the values given in Document 393 would apply inside or outside the main beam of the system concerned gave rise to a discussion in which the Chairman of the Working Group of the Plenary, the Member of the IFRB and the delegates of France, Morocco, the Netherlands, Finland, the United Arab Emirates, Spain and India took part, and following which the delegate of the United Kingdom, supported by the delegates of Brazil and the Russian Federation, proposed that the beginning of the first sentence of ADD 7YY should read: "The use of the band 1 452 - 1 492 MHz and where applicable the bands [...] by the broadcasting-satellite service (sound) ...", and that the phrase "outside the territory of the countries being served" should be added at the end of the text, after the reference to No. 2566.

3.8 In response to a question by the Chairman, the Chairman of Committee 4 observed that the point at issue was not whether coordination was necessary, but rather when and how it should be undertaken. Unless agreement could be reached fairly rapidly on the United Kingdom proposal, further consideration of Document 393 might have to be deferred pending informal discussion of the matter. He also drew attention to the fact that ADD 7YY, as it stood, applied to the broadcasting-satellite service (sound) only and would therefore have to be adjusted to take account of complementary terrestrial broadcasting.

3.9 The delegate of Morocco signified his acceptance of the United Kingdom proposal.

3.10 Following further comments by the delegates of Saudi Arabia and the United States, the Chairman said that it was not possible to devote any more time to the discussion of the footnotes in Document 393, which, unless he heard any objection, he would consider as having been adopted, as amended by the delegates of the Netherlands and the United Kingdom.

3.11 There was no objection.

4. Seventeenth series of texts submitted by the Editorial Committee for first reading (B.17) (resumed) (Document 391)

Article 8

4.1 Replying to points raised earlier in the discussion of Document 391, the Chairman of the Drafting Group said that the time schedule decided upon was the outcome of a proposal by some administrations, the discussion of which had resulted in Footnote 722AAA. With regard to the actual frequency bands, 1 452 - 1 492 MHz had been considered the better of the two alternatives put forward, and he hoped that those delegates who had expressed a preference for the other alternative (1 450 - 1 490 MHz) would understand that it had not been possible to please everybody. New Zealand's proposal for an additional footnote (Document 388) could be taken care of outside the meeting, now that Document 393 had been adopted. In reply to the delegate of the United Arab Emirates, he said that Resolution COM5/12 might prove to be redundant once the annexes to Document 391 had been approved. In conclusion, he emphasized that administrations which were concerned about either the time schedule or the actual bands would be able to solve the problem by having the name of their country included in Footnote 722AAA.

4.2 The delegate of the United Arab Emirates said that if Resolution COM5/12 were indeed to become redundant and be withdrawn, his delegation would likewise be able to withdraw the reservation it had entered at an earlier stage of the discussion.

MOD Table 1 429 - 1 525 MHz

4.3 Approved.

ADD 722A

4.4 Following a brief discussion on the need to align that footnote with the text of ADD 7YY, which had already been adopted (Document 393), ADD 722A was approved as it stood.

ADD 722AAA

4.5 The delegate of Saudi Arabia proposed that the band 1 452 - 1 492 MHz should become available to the broadcasting-satellite and broadcasting services as of 1 April 2007. The delegate of Pakistan supported that proposal, emphasizing that the footnote as it stood had serious financial and logistical implications for operators.

4.6 The delegate of Morocco, supported by the delegates of Italy, Brazil and the United Arab Emirates, said that ADD 722AAA was a compromise text and the result of lengthy discussions. According to the Preamble to the Convention, each country was sovereign in the matter of organizing its radiocommunication services provided it did not cause harmful interference to neighbouring countries. Flexibility was the key element in ADD 722AAA, and the proposal by Saudi Arabia would nullify all the endeavours which had been made in that direction over the past days.

4.7 The delegates of Burkina Faso and Swaziland said that they had no difficulty with the text of the footnote, to which they would be adding their country's name.

4.8 The delegate of Qatar suggested that a provision should be included to the effect that use of the band in question for BSS (sound) should not commence before proper planning had been carried out by the conference referred to in Resolution COM4/[W].

4.9 In response to an appeal by the Chairman, the delegates of Saudi Arabia and Pakistan said that, given the late stage of the proceedings, they would not press their point.

4.10 ADD 722AAA was approved on the understanding that delegations wishing their country's name to be included in the text would notify the Secretariat.

ADD 722B

4.11 The delegate of the United States, referring to the suggestion by the delegate of Mexico to replace "prior to their bringing into use" by "where necessary", proposed the deletion of the whole of the text following "No. 723" and the addition of a reference to the fact that the allocation was an alternative one.

4.12 The delegate of Mexico said he could agree to that proposal on the understanding that the relevant coordination procedures would be addressed in a resolution.

4.13 ADD 722B, as amended by the delegate of the United States, was approved.

ADD 723B

4.14 The delegate of Germany, with the agreement of the delegate of the Russian Federation, proposed that the final sentence, appearing in square brackets, should be replaced by "As of 1 April 2007, the use of the band 1 452 - 1 492 MHz is subject to agreement between administrations concerned."

4.15 ADD 723B, as amended, was approved.

ADD 723C

4.16 The delegates of Brazil and France considered that the text of Document 393 should be used in preference to the one in Document 391.

4.17 The Chairman of Committee 4, supported by the delegate of Switzerland, proposed that the text, which seemed fairly clear, should be left as it stood.

4.18 In response to a request for clarification by the delegate of Canada, the Member of the IFRB said that, as drafted, Footnote 723C could be read as referring to an absolute limit rather than to a trigger value for coordination, which was its intention. Perhaps the text should be clarified accordingly (see 7XX in Document 393).

4.19 It was so agreed.

ADD 723E

4.20 In reply to questions by the delegate of Mexico, the Chairman confirmed that the Spanish-language version of the text was correct, and the Chairman of Committee 4 said that, as he understood it, Footnote 723E referred to Region 2 in the band 1 492 - 1 525 MHz.

4.21 The delegate of France was of the opinion that Footnote 723E could be replaced by the text in Document 393. The Chairman of Committee 4 preferred the text in Document 391; however, at least some of the text of Footnote 723E seemed to be redundant.

4.22 It was agreed to combine the texts of 723E and 723D and align with 7XX as in Document 393.

4.23 The delegate of the United States said that the word "geostationary" should be inserted after "transmitting" in the last sentence.

ADD 755A

4.24 The Chairman of the Drafting Group recalled that Footnote 755A had been proposed by Israel and Italy to limit power flux-density in their countries. If Israel and Italy joined ADD 722AAA, then ADD 755A could be deleted; he understood that Italy had already signified its intention to do so.

4.25 The delegate of Israel said that he could agree to the deletion of ADD 755A on the understanding that the power flux-density limit in ADD 722AAA applied to the terrestrial broadcasting service.

4.26 The reference to Footnote 755A was deleted.

ADD 723D

4.27 The delegate of the United States suggested that the text of Footnote 723D should be amended, in line with Footnote 722B, to read: "Alternative allocation: in the United States, the band 1 492 - 1 525 MHz is allocated to the fixed and mobile services, including No. 723, on a primary basis".

4.28 In response to a suggestion by the delegate of Panama that Footnotes 722B and 723D should be amalgamated, the Chairman of Committee 4 expressed the view that such drafting changes were better left to the Editorial Committee.

4.29 It was so agreed.

4.30 In response to a comment by the Chairman of Committee 4, the delegate of the United States said that his delegation was willing to withdraw its proposal for the addition of a new Footnote 721A (Document 366).

MOD Table 1 670 - 1 700 MHz

4.31 The delegate of the United States expressed concern about the addition of the mobile-satellite service to the band 1 675 - 1 700 MHz, which was already being used by the meteorological-aids and meteorological-satellite services. In response to that comment, the delegate of Canada acknowledged that coordination would be required but was confident that the mobile-satellite service could be accommodated in the band, while the delegate of Brazil drew attention to Footnote 735A which was proposed by Brazil with a view to protecting the meteorological-satellite service.

4.32 The table for the band 1 670 - 1 700 MHz was approved.

ADD 735A, ADD 735B

4.33 The delegate of the United States noted that Footnotes 735A and 735B both sought to protect the meteorological-satellite and meteorological-aids services in the band 1 675 - 1 710 MHz, and he suggested that the two footnotes should be combined. The delegate of Brazil replied that that was an editorial matter which could be discussed between two delegations.

4.34 On this understanding, the texts of ADD 735A and ADD 735B were approved.

ADD 700A (Document 377, page B.14/6) and ADD 740A (Document 377, page B.14/15)

4.35 The Chairman of Committee 4 drew attention to ADD 700A and ADD 740A, approval of which had been deferred when the Plenary had considered the fourteenth series of texts submitted by the Editorial Committee (Document 377), and suggested that they might appropriately be taken up at the present juncture.

4.36 At the proposal of the delegate of Germany, it was agreed to delete all the parts of the text between square brackets in both footnotes.

4.37 ADD 700A and ADD 740A, as amended, were approved.

MOD Table 1 700 - 1 970 MHz, ADD 722F

4.38 The Chairman of Committee 4 pointed out that, in the band 1 700 - 1 710 MHz for Region 1, "MOBILE except aeronautical mobile" should be shown in square brackets to reflect the concern of the Russian Federation regarding compatibility with the meteorological-satellite service.

4.39 The delegate of the Russian Federation withdrew the reservation of his delegation on that point and accepted the deletion of the square brackets.

4.40 Following a query by the delegate of Sweden, the Chairman of Committee 4 said that, so far as he was able to establish, the references in the Table to Footnote 722A were erroneous and should be deleted.

4.41 The delegate of France proposed that the text of ADD 722F should be deleted and replaced by the text of ADD 7XX (Document 393).

4.42 The delegate of Cuba said that his country would be in favour of a footnote of the type referred to by the delegate of France, in the band which was to accommodate the new mobile services.

4.43 The Chairman of Committee 4 considered that if the text of ADD 722F were to be replaced by that of ADD 7XX, many of the references to Footnote 722F in the Table would become inappropriate and would have to be deleted. As far as he could see, the only one of those references which would remain was that in the Region 2 box for the band 1 700 - 1 710 MHz.

4.44 The delegate of France endorsed those remarks, observing that the editorial aspects could most appropriately be dealt with by Committee 6.

4.45 The table for the band 1 700 - 1 970 MHz and ADD 722F, as amended, were approved.

Table 1 970 - 2 010 MHz

4.46 Approved.

ADD 746T

4.47 Replying to a question by the delegate of Canada concerning the reference to RR 2557, the Member of the IFRB confirmed that the values in question were trigger, not absolute, levels. An appropriate phrase on the lines used in other footnotes might perhaps be inserted to indicate that that was the case.

4.48 The delegate of the United Arab Emirates, having observed that the direction references had been omitted from the footnote, the Chairman of Committee 4 pointed out that they already appeared in the Table but that cross-references could be included in the footnote if required.

4.49 The delegate of Saudi Arabia, supported by the delegates of Sweden, Mexico, Oman and Congo, proposed that the date for the introduction for the mobile-satellite service in the bands 1 970 - 2 010 MHz and 2 160 - 2 200 MHz be amended to read "1 January 2005".

4.50 The delegate of the United States objected to the proposed change in date on the grounds that several national and regional concerns including INMARSAT would thereby be denied access to the spectrum they required for MSS operations in the short term.

4.51 The Chairman of Committee 4 recalled that the date of 1 January 2000 had been selected after lengthy debate and careful consideration of the issues at stake. Concern had been expressed in particular regarding systems which would be developed in the short term and whose implementation would not be feasible if the use of the bands was postponed a further five years.

4.52 Following an appeal by the Chairman, the delegate of Saudi Arabia said that he wished to press his proposal, which he considered necessary in order to protect existing services.

4.53 The delegate of Mexico proposed an arrangement for the phased implementation of the service, with the use of one band being authorized as of the year 2002 and the other being introduced three years later.

4.54 The delegate of the United States suggested that the countries which had difficulty with the date proposed in ADD 746T should indicate that their services would be implemented at a later date by means of an appropriate footnote.

4.55 The Chairman invited delegates to state their preference for the proposals made so far by means of an indicative show of cards. It emerged that a very large majority favoured the proposal by the delegate of Saudi Arabia to amend the date to "1 January 2005".

4.56 ADD 746T, as amended and aligned with a text of ADD 7XX was approved.

4.57 The delegate of Nigeria objected to the proposed amendment as well as to the procedure by which it had been approved, and dissociated himself from the decision taken.

4.58 The delegate of the United States said that his delegation would submit a text indicating that implementation of the service in question in the bands in question would commence earlier in the United States.

ADD 746A

4.59 The delegate of Australia said that the original version of ADD 746A in Document 357 had contained an additional sentence between square brackets relating to the identification of sub-bands within the overall spectrum designated for FPLMTS in which a combination of terrestrial and space techniques might be used. It was an important part of the footnote since it provided guidance to the CCIR on the studies to be undertaken in future. He proposed that the additional sentence be reinstated, with the sub-bands corrected to read: "1 980 - 2 010 MHz and 2 170 - 2 200 MHz." The bands given in Resolution COM4/4 would need to be aligned accordingly.

4.60 In the discussion which followed, the delegates of Sweden and Oman supported that proposal. The delegate of the United States objected to the proposal since it was bound to restrict the operations of INMARSAT and other users in those bands. The delegate of the United Arab Emirates recalled that he had entered a reservation with regard to the FPLMTS allocation in Committee 4, but said that he was willing to support the view of the majority on the matter.

4.61 In reply to a question by the delegate of Morocco, the Chairman of Committee 4 confirmed that it had been the understanding in Committee 4 that up to 10 MHz should be made available for the space component in the spectrum designated to FPLMTS. However, there had been some uncertainty as to which 10 MHz would be appropriate. In response to further comments by the delegate of Morocco, the delegate of Australia emphasized that the intent had not been merely to designate 10 MHz for the space component of FPLMTS but, rather, to provide a much more flexible arrangement whereby the space techniques might be accommodated in the bands to which he had referred earlier. More importantly, there was no intention to restrict in any way access to the MSS for general mobile-satellite operation, which he took to be the major concern of the delegates of Morocco and the United States.

4.62 The delegate of the United States urged the meeting to approve the footnote as it stood. If there was a need to make specific reference to the sub-bands in question, that could more appropriately be done in Resolution COM4/4.

4.63 It was so agreed.

4.64 ADD 746A was approved on that understanding.

ADD 746B

4.65 It was agreed to delete this footnote since the appropriate allocation for the mobile-satellite service in Region 2 in the bands 1 910 - 1 990, 2 110 - 2 150 and 2 160 - 2 200 was introduced in the table.

MOD Table 2 010 - 2 200 MHz

4.66 Approved subject to an editorial correction to the Spanish-language version and the insertion of a reference to Footnote 746A in several boxes from which it had been omitted.

**MOD Table 1 700 - 2 290 MHz (continued), SUP 747, ADD 747A, SUP 748, 749, 750, ADD 750A,
MOD Table 2 290 - 2 450 MHz**

4.67 Approved.

[SUP 743A]

4.68 Approved subject to the deletion of the square brackets.

ADD 750B

4.69 Approved subject to the deletion of the square brackets in the first sentence and the insertion of the word "also" before "allocated".

4.70 A request by the delegate of France for the inclusion of proposed new Footnote 751A in Document 391 (text for the footnote in Corrigendum 1 to Document 355) before it was taken up for second reading was noted.

ADD 751X

4.71 Approved subject to alignment of the French text with the other language versions.

MOD Table 2 483.5 - 2 500 MHz

4.72 Approved.

ADD 753F

4.73 The delegate of the United States considered that the power flux-density limits to be applied should be those in No. 2566 of the Radio Regulations, as recommended by the Working Group of the Plenary in Document 393, rather than those in No. 2557.

4.74 During the ensuing discussion, the Chairman of Committee 4 explained that the texts in Document 391 had been prepared on the basis of the existing provisions of the Radio Regulations (i.e. application of No. 2557 up to 2 500 MHz, and of No. 2562 above that frequency), in order to ensure some degree of compatibility between the various satellite services appearing in the Table and the new MSS trigger level for coordination; any change made to the texts as they stood at present would entail numerous consequential amendments, for instance to the document relating to the revision of Articles 27 and 28 submitted by the Chairman of Committee 5 (Document 390). The Chairman of the Working Group of the Plenary agreed that the adoption of the values in Document 393 would create some inconsistency in the treatment of existing and new satellite services in some frequency bands; however, the Working Group had not had time to do more than consider the new MSS and BSS services, and its recommendations in

Document 393 were made on the understanding that the values in question were for provisional use only, pending a full review of the issue by the CCIR. The delegate of France, while acknowledging the validity of both points of view, proposed that the values recommended by the Working Group of the Plenary (i.e. those in No. 2566) should be used throughout the document, as required.

4.75 It was so agreed.

4.76 ADD 753F, as amended, was approved.

ADD 722F

4.77 It was agreed that the text should be replaced by that of ADD 7XX in Document 393.

MOD 753, MOD 753C

4.78 Approved.

MOD Table 2 500 - 2 655 MHz

4.79 Approved subject to the reinstatement of the reference to Footnote 754 in the Region 3 box.

SUP 753E

4.80 Approved.

ADD 755A

4.81 New Footnote 755A, proposed by Argentina in Document 370 and omitted inadvertently from Document 391, was approved.

ADD 760A

4.82 Approved subject to alignment with ADD 7XX.

ADD 764A

4.83 Deleted.

ADD 757A

4.84 During the discussion of the footnote, the delegate of Finland raised the question of including the last sentence of ADD 7YY (Document 393) and also enquired about the applicability of **resolves** 3 of Resolution COM4/[W], the delegate of China requested clarification in respect of the last sentence of ADD 757A, the delegates of Japan and India and the Chairmen of Committee 4 and the Drafting Group expressed their views on those issues, the delegates of Czechoslovakia and Hungary proposed the inclusion of a companion footnote based on Footnote 751X to protect services operating on a co-equal basis in the band 2 535 - 2 655 MHz, and the delegate of Ukraine asked for his country's name to be included in the footnote. After a fairly lengthy exchange of views, the Chairman appealed to delegates to accept the text as it stood, subject to the addition of the word "also" before "allocated in the third line and the inclusion of any country names notified to the Secretariat in accordance with the practice followed in respect of other footnotes.

4.85 It was so agreed.

MOD Table 2 520 - 2 655 MHz

4.86 Approved subject to the deletion of the reference to Footnote 764A.

MOD 758, MOD 757

4.87 Approved.

MOD 754

4.88 The delegate of Japan proposed the deletion of the first line of the footnote, which called for application of the Article 14 procedure; furthermore, at the end of the footnote, "No. 2467" should be replaced by "No. 2566". The delegate of Pakistan endorsed the proposal to delete the beginning of the footnote. The Member of the IFRB explained that the purpose of the Article 14 procedure was to ensure conformity with the Table of Frequency Allocations; it was not a substitute for the coordination procedure contemplated in Resolution COM5/8.

4.89 MOD 754 was approved.

ADD 754B, MOD Table 2 655 - 2 690 MHz, ADD 764A, MOD 766

4.90 Approved.

4.91 Referring back to ADD 757A, the delegate of Czechoslovakia proposed, as a consequence of Ukraine's request to be included in the footnote, that the following sentence should be added after the second sentence: "The same provisions as in No. 751X shall apply in this band."

4.92 The Chairman observed that ADD 757A had already been approved on first reading. If the point raised by the delegate of Czechoslovakia was a drafting matter, it could be brought up again during the second reading of the document.

Resolution COM/4[W]

4.93 The delegate of the Netherlands said it was his understanding that Resolution COM4/[W] replaced Resolution COM5/12. The Chairman confirmed that that was the case.

4.94 Following a comment by the delegate of Algeria, it was agreed to amend the end of **resolves 3** to read: "... coordination with administrations whose services may be affected".

4.95 The delegate of Finland having asked whether **resolves 3** would apply in the interim period to all frequency bands allocated for BSS (sound), since it was important for his Administration to know in what parts of the band to expect request for coordination, the Chairman of Committee 4 said he believed that the text, as it was currently drafted, would apply to all bands and the delegate of Morocco confirmed that such had been the authors' intention. Following an exchange of views on the relative merits of opting for the upper or lower 25 MHz of the bands concerned, in which the delegates of the United Kingdom, Morocco and India and the Chairman of the Drafting Group took part, the Chairman suggested that that part of the text should be left as it stood.

4.96 It was so agreed.

4.97 Resolution COM4/[W], as amended, was approved.

Resolution COM/4[X]

4.98 Approved subject to the deletion of the square brackets from round "in Region 2" in the title.

4.99 The seventeenth series of texts submitted by the Editorial Committee (B.17) (Document 391), as a whole, as amended, was approved on first reading.

4.100 The delegate of the United States said that the circumstances in which Document 391 had been considered had not been conducive to a thorough examination of its contents, some of which were of critical importance. A number of major decisions had been taken, and there had no doubt been ample opportunity for errors to creep in during the discussion. Footnote 746T concerning the timing of implementation of the mobile-satellite service in the band around 2 GHz was a case in point; that particular issue had been part of a package of which some strands now seemed to have become unravelled, and he therefore proposed that the footnote should be placed within square brackets for further consideration. Furthermore, the entire document should be issued again, as amended, before the second reading so that an informed assessment could be made of the ramifications of the decisions which had been taken.

4.101 The Chairman observed that the texts in question had already been approved by the Plenary.

5. Changes to be introduced in certain footnotes of Article 8

5.1 The Secretary recalled that the fourteenth series of texts submitted by the Editorial Committee (Document 377) contained a recapitulatory list of requests for country names to be included in, or deleted from, certain footnotes. A further list, reflecting requests received by the Secretariat for inclusion in ADD 608Z, would be found in Document 392; to it should be added the names of Belarus, Cyprus, Malta and Ukraine, whose requests had been received after the document had been processed.

5.2 With regard to the seventeenth series of texts (Document 391), he read out a list of countries having requested that their name be either included in or deleted from various footnotes.

5.3 The delegate of Burkina Faso asked for his country's name to be included in ADD 722AAA.

5.4 The delegate of France drew attention to Document 355 which contained, inter alia, a request for his country to be included in MOD 598 and MOD 730.

5.5 The requests for changes to footnotes were noted.

6. Texts submitted by the Editorial Committee for second reading (continued) (Document 378)

Resolution COM4/4

6.1 The Chairman recalled that during the first reading the square brackets had been removed from round the dates in **noting a)** and **b)**, but kept round the bands in **noting b)**.

6.2 The delegate of Syria expressed concern over the decision regarding the year 2000 and the hasty manner in which it had been taken. To his recollection, during the deliberations in Committee 4 the majority of countries had been in favour of the date 2005.

6.3 The delegate of Finland, supported by the delegate of New Zealand, disagreed, emphasizing that the dates 2000 and 2010 had already been approved on first reading. Furthermore, it should be borne in mind that the only statement made in **noting a)** was that the initial implementation of the terrestrial components of FPLMTS was expected to commence by the year 2000; it would be up to each administration to decide when, if at all, to implement the service.

6.4 At the suggestion of the Chairman of Committee 4, it was agreed to amend the band limits in **noting b)** to read, respectively, "1 980 - 2 010 MHz" and "2 170 - 2 200 MHz", and to delete the square brackets.

6.5 Resolution COM4/4, as amended, was approved.

Resolution COM4/5

6.6 At the suggestion of the delegate of Brazil, and following comments by the delegates of Qatar and the Chairman of Committee 4, it was agreed to delete Resolution COM4/5 in the light of the approval of Resolution COM4/X in Document 391.

Resolution COM5/12

6.7 The Chairman of Committee 5 said that, in the light of the approval of Resolution COM4/W (Document 391), Resolution COM5/12 could be deleted.

6.8 It was so agreed.

6.9 The Chairman said that, with the approval of Resolution COM4/4 and the deletion of Resolutions COM4/5 and COM5/12, the Plenary had completed its second reading of the texts in Document 378.

7. Eighth series of texts submitted by the Editorial Committee for second reading (R.8) (continued) (Document 382)

ADD 723B

7.1 The Chairman observed that ADD 723B, consideration of which had been deferred, no longer needed to be discussed, since it had been amended and approved during the first reading of Document 391.

ADD Recommendation No. 716 (Orb-88)

7.2 The Chairman of Committee 4 said that, following further discussion, it had been concluded that, with the exception of Resolution No. 208 (Mob-87), all the Resolutions and Recommendations listed in square brackets could be abrogated.

7.3 It was so agreed.

7.4 The Chairman said that no other items had been left pending in the eighth series of texts (Document 382), which could therefore be considered as having been approved as a whole on second reading.

8. Revision of Articles 27 and 28 (Document 390)

8.1 The Chairman of Committee 5 introduced Document 390, which he had been requested to prepare in order to deal with a number of pending issues relating to the revision of Articles 27 and 28. At the time of drafting the document it had been difficult to anticipate exactly what decisions would be taken; a number of assumptions had therefore been made, but some parts of the document would need to be looked at again in the light of decisions taken with regard to Document 391. The revision of Article 27 had been fairly straightforward but Article 28 had proved more complex, particularly with respect to MOD 2559 and MOD 2563A, as would be seen from the document itself.

8.2 Since it had been impossible in the circumstances to prepare a final consolidated document containing all the consequential modifications arising from decisions taken on Article 8, he suggested that the ITU Secretariat should be entrusted with that task. As the delegate of Morocco had observed earlier, similar post-Conference work had been handled in that way in the past, and the Secretary-General and the permanent organs of the Union could be relied upon to discharge that duty efficiently.

8.3 The delegate of the Russian Federation endorsed that suggestion but drew attention to the fact that when Article 27 had been examined on a previous occasion, there had been a proposal under ADD 2509A to include the following frequency bands: 1 700 - 1 710 MHz, 1 970 - 1 980 MHz and 1 980 - 2 010 MHz.

8.4 It was agreed that the consolidated document would be prepared by the ITU Secretariat after the Conference.

8.5 Document 390 was approved on that understanding.

9. Texts submitted for second reading (Document 377 and Corrigendum 1)

9.1 The Chairman invited delegates to consider the matters which had been left in abeyance during the first reading pending informal consultations between the administrations concerned.

Article 8

MOD Table 1 525 - 1 530 MHz (Corrigendum 1 to Document 377)

9.2 Following comments by the Chairman of Committee 4 and the delegates of Indonesia, Japan and Singapore, it was agreed to retain the generic allocation to the mobile-satellite service in Region 3 and, consequently, to delete the allocations appearing in the first set of square brackets in the related box.

ADD 730B

9.3 The delegate of Mexico sought clarification with regard to the status of ADD 730B. As he understood it, the whole of the text following the words "on a primary basis" would be deleted, together with the name of the United States, leaving only Australia, Canada and Mexico associated with the footnote. A separate footnote, numbered 730C and containing the complete text of the earlier version of ADD 730B, would be inserted for Argentina and the United States.

9.4 The delegate of the United States confirmed that understanding and said that the text of the additional footnote for his country and Argentina had been handed in to the Secretariat.

ADD 731X

9.5 The Chairman of Committee 4 said that, following informal discussions, the parties concerned had agreed that the second sentence of ADD 731X should be deleted and replaced by:

"A mobile earth station operating in the 1 610 - 1 626.5 MHz band shall not exceed an e.i.r.p. density of -15 dBW/4 kHz in the part of the band used by systems operating in accordance with the provisions of No. 732, unless otherwise agreed by the affected administrations. In the part of the band where such systems are not operating, a value of -3 dBW/4 kHz is applicable."

9.6 The delegate of the Russian Federation said he could accept that amendment to ADD 731X, on the understanding that it ensured that the radionavigation-satellite services could operate in the bands concerned without interference.

9.7 The delegate of the United States expressed his appreciation to the delegation of the Russian Federation and the other delegations which had worked with the United States on the allocation in question. As he understood it, the purpose of the new text was to protect systems operating pursuant to RR 732 by creating a -15 dBW limit, the -3 dBW value being retained as long as there were no such systems operating in any part of the band concerned.

9.8 ADD 731X, as amended, was approved.

ADD 731Y

9.9 Following comments by the Chairman of Committee 4, the Member of the IFRB and the delegate of the United States, it was agreed to delete the second sentence of the footnote and to correct the band limits in the first sentence to read: "1 613.8 - 1 626.5 MHz".

9.10 ADD 731Y, as amended, was approved.

MOD Table 1 626.5 - 1 631.5 MHz

9.11 The Chairman of Committee 4 said that, as a consequence of the decision taken in respect of the mobile-satellite service in Region 3 in the lower band (1 525 - 1 530 MHz), the Region 3 allocation in the band 1 626.5 - 1 631.5 should be adjusted in the same way as decided earlier for the Region 2 allocation.

9.12 It was so agreed.

9.13 The texts in Document 377 and Corrigendum 1 as a whole, as amended, were approved on second reading.

10. Last series of texts submitted for second reading (Document 391)

10.1 The Chairman said that if he heard no objection he would take it that the Plenary agreed to approve the texts in Document 391 on second reading, leaving it to the Chairman of Committee 6 and the Secretariat to introduce the corrections made during the first reading.

10.2 It was so agreed.

10.3 The Chairman of Committee 6 proposed that the Secretary-General should be mandated to prepare an addendum to the Final Acts of the Conference, containing all the texts approved during the present Plenary meeting, duly aligned. In the event of any difficulties arising during that process, the Chairman and the two Vice-Chairmen of Committee 6 should be consulted and, to that end, their mandate should be extended by the Conference to cover the period up to the publication of the final version of the Final Acts. Furthermore, under No. 597 of the Nairobi Convention, he proposed that the final numbering of chapters, articles and paragraphs should be entrusted to the Secretary-General.

10.4 It was so decided.

The meeting rose at 0735 hours on Tuesday, 3 March 1992.

The Secretary-General:
P. TARJANNE

The Chairman:
J. BARRIONUEVO PEÑA

PLENARY MEETING

MINUTES

OF THE

FIFTEENTH PLENARY MEETING

Tuesday, 3 March 1992, at 1610 hours

Chairman: Mr. J. BARRIONUEVO PEÑA (Spain)

Subjects discussed

1. Noting of declarations
2. Statement by the Minister for Transport and Communications of Nigeria

Documents

389

Noting of declarations (Document 389)

1.1 The Secretary-General said that the purpose of the meeting was to enable the Plenary to take note of the declarations set out in Document 389. In accordance with the usual practice, there would be no discussion of the declarations, and any editorial amendments were to be handed directly to the Secretariat rather than introduced from the floor.

1.2 At the invitation of the Chairman, the meeting took note of the declarations in Document 389.

2. Statement by the Minister for Transport and Communications of Nigeria

2.1 H.E. O.A. Ige, Minister for Transport and Communications of Nigeria, made the statement reproduced in the annex.

The meeting rose at 1630 hours.

The Secretary-General:
P. TARJANNE

The Chairman:
J. BARRIONUEVO PEÑA

Annex: 1

ANNEX

Statement by the Minister for Transport and Communications of Nigeria

On behalf of the Nigerian Government and my delegation, I congratulate you, Mr. Chairman, on the able way you have conducted this Conference. I also bring you greetings and felicitations from the President Commander-in-Chief of the Armed Forces of the Federal Republic of Nigeria, and the entire people of Nigeria.

I should like to express our gratitude to the Government and people of Spain for the warm welcome and hospitality extended to us since our arrival in the beautiful city of Malaga-Torremolinos. The scenic splendours of the city and the excellent facilities provided for this Conference have gone a long way to complement the process of positive decision-making which is vital to this all-important gathering.

The World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum is timely, considering the flurry of activities that the ITU has embarked upon, since the Plenipotentiary Conference at Nice, to enhance the efficiency of the organization.

Since the 1979 WARC which dealt with all services, a lot has happened in the world of telecommunications. There have been dramatic developments in the utilization of digital techniques and their integration with analogue techniques universally. The convergence of computers and communications has led to the development of advanced transmission systems, switching techniques and other new services, all of which have contributed to greater demands for the use of the radio-frequency spectrum.

WARC-92 is appropriately scheduled to deal with frequency allocations in certain parts of the spectrum to ensure efficient and equitable use of this limited natural resource. By and large, developing countries of the world are observers in the unfolding drama of technological advancement which is taking place in the advanced and industrialized countries of the world. The WARC forum is nevertheless an appropriate one in which the views of the developing countries are clearly expressed and need to be listened to, in the interests of fair play and equitable distribution of this natural resource for the use of all, in keeping with our avowed universal charter. The demand for telecommunication services in the developing countries is on the increase since most countries now recognize telecommunications as a vehicle for national development. Some of the frequency allotments to these countries which are not used at present will undoubtedly be required in the future for the development and expansion of their telecommunication services.

WARC-92, I believe, has taken due cognizance of this fact in its deliberations. It is gratifying to note that the compromise solution arrived at by the Conference in respect of additional spectrum availability for HF broadcasting and the time-frame stipulated for implementation ensure that a serious financial burden is not imposed on the developing countries. My Administration has noted with keen interest the decision of the Conference to provide additional allocations for the mobile-satellite services and broadcasting-satellite services, which we as a country will find immensely useful as they hold out the promise of providing telecommunication services to our numerous remote areas and easy dissemination of information at a much more reasonable cost.

However it is our duty, collectively as an organization and individually as administrations, to ensure that due care is taken in the introduction of these new services to avoid harmful interference to existing services, especially those that are vital to safety of life. It is noted that WARC-92 cannot resolve in their entirety all the problems facing the world spectrum utilization community, that many studies are currently being undertaken and that many more are to be embarked upon in the future in some specific areas. Scientists and engineers of the developing world, though few, should be involved in carrying out these studies.

I commend you, Mr. Chairman, distinguished delegates and Conference officials, on the spirit of mutual understanding and friendship that has pervaded this Conference over the past four weeks. I hope that the outcome of WARC-92 will be of immense benefit to the world at large.

PLENARY MEETING

MINUTES

OF THE

SIXTEENTH AND LAST PLENARY MEETING

Tuesday, 3 March 1992, at 2200 hours

Chairman: Mr. J. BARRIONUEVO PEÑA (Spain)

Subjects discussed

1. Noting of additional declarations
2. Signature of the Final Acts
3. Closure of the Conference

Documents

395

-

-

1. Noting of additional declarations (Document 395)

1.1 The Chairman observed that the additional declarations were submitted to the Plenary simply so that they could be noted; any editorial errors would be corrected in the usual way.

1.2 Document 395 was noted.

2. Signature of the Final Acts

2.1 The Executive Secretary, after drawing the attention of delegations to Document 336 containing information on the procedure to be followed for the signing ceremony, indicated that three countries had delegated their powers, namely, Belize to the Commonwealth of the Bahamas, the Republic of Latvia to the Republic of Lithuania and the Principality of Liechtenstein to the Confederation of Switzerland.

2.2 The delegate of Morocco pointed out that not all the provisions adopted by the Conference had been included in the Final Acts of WARC-92 as distributed, and sought the Secretary-General's assurance that all the decisions taken would be duly incorporated in the document.

2.3 The Secretary-General confirmed that that would be done.

2.4 The Executive Secretary called the roll of those delegations whose credentials had been found to be in order.

2.5 The Final Acts and the Final Protocol were signed by the 118 countries listed in Annex 1.

3. Closure of the Conference

3.1 The Secretary-General delivered the address reproduced in Annex 2 and presented the Chairman with the silver medal of the ITU.

3.2 The Chairman thanked the Secretary-General and said he was most honoured by that token of appreciation. He then delivered the address reproduced in Annex 3.

3.3 The delegate of Norway said that, although there was little to add to what the ITU Secretary-General and the Chairman of the Conference had said, he wished to thank the Chairman warmly on behalf of the CEPT countries for the way he had conducted the work of the Conference and for his patience and perseverance. For the first time ever, no vote had been taken on any matter of substance during the entire four weeks which had just elapsed. Everyone could feel satisfied and all delegations could return home smiling. Everybody had learned to get along together and not to take decisions in isolation. He particularly thanked the Spanish Government and Administration, as well as the entire staff. The CEPT countries again warmly thanked all participants in the Conference for the excellent atmosphere that had prevailed, and wished them a safe journey home.

3.4 The delegate of Brazil congratulated the Chairman on his conduct of the proceedings and also thanked the Vice-Chairmen, the Chairmen of Working Groups, ad hoc Groups and Committees, and all delegates, especially the delegate of Morocco who had spared no effort. His delegation also wished to thank the ITU Secretary-General, the Deputy Secretary-General and all the staff who had worked for the Conference. The decisions taken marked a first step towards a new world in which all countries would benefit. On behalf of Region 2, he thanked the Spanish Government and people, as well as the Chairman for his untiring efforts to settle difficult problems and achieve the final objective.

3.5 The delegate of Canada expressed the gratitude of his delegation to the Chairman for his superb leadership. Many decisions had been taken even though some of them might be wanting in precision, particularly in respect of certain bandwidths. Thanks to the High Level Committee, however, he hoped that future conferences of that kind would be less complex and more frequent. The Chairman was to be commended for his patience, and thanks were also due to the Vice-Chairmen, the Chairmen of Committees, Working Groups and ad hoc Groups as well as the elected officials of the ITU. Finally, a special tribute should be paid to the remarkable personality of the delegate of Morocco, whose wisdom had enabled the Conference to settle awkward problems, especially in the final days, and to complete the work successfully.

3.6 The delegate of Argentina associated himself with the tributes paid to the Chairman of the Conference and the Secretary-General of the Union for their efforts, which had made it possible for everybody to communicate in a spirit of fraternity.

3.7 The delegate of the Russian Federation also thanked the Spanish Government, the host Administration and the Chairman, together with the Secretary-General and the ITU Secretariat, for having done all in their power to ensure the success of an extremely difficult Conference.

3.8 The Minister for Transport and Communications of Nigeria, speaking on behalf of all of the African delegations, complimented the host Government on its hospitality and paid a tribute to the Chairman, the Secretary-General of the Union and the entire staff of the Secretariat, who had spared no effort to make the Conference a success. He hoped that Africa would one day have the opportunity of hosting a similar conference.

3.9 The delegate of India expressed satisfaction, on behalf of all the countries of Region 3, that WARC-92 was ending on a successful note. The introduction of new services and technologies would have a major impact on the way of life in the countries of his Region. In spite of his earlier misgivings as to the outcome of the Conference, the spirit of goodwill, cooperation and compromise had prevailed over all obstacles. He thanked the Spanish Government for its hospitality and congratulated the Chairman on his impartiality, patience and sense of humour, thanks to which delegates had been able to reach a compromise without the need for formal voting. He also thanked the Secretary-General of the ITU and his entire staff for their unfailing support.

3.10 The delegate of Saudi Arabia expressed gratitude to the host Government and the Spanish people for their warm welcome, and to the Chairman for his unparalleled devotion to the cause of the Conference. He too wished to emphasize the fact that decisions had been taken without voting. After recalling that the Union was moving towards a change in structure and organization in order better to serve the cause of telecommunications throughout the world, he paid a tribute to the Secretary-General and staff of the ITU, whose efforts had contributed to the success of the Conference.

3.11 The delegate of Japan also thanked the Spanish Government, the Chairman and the Secretary-General, all of whom had contributed to the success of the Conference.

3.12 The delegate of New Zealand paid a tribute to the host Administration, congratulated the Chairman on his conduct of the discussions and thanked the whole of the ITU staff for doing everything possible to ensure the success of the Conference.

3.13 The delegate of Morocco said that he was greatly moved by the expressions of gratitude addressed to him. He commended the Chairman for his patience and his conduct of the deliberations, and expressed gratification at the cordial relations which had prevailed among delegates.

3.14 The delegate of Spain said that the Secretary-General of the ITU and the entire staff of the Secretariat deserved the highest praise for their diligence. The results achieved were truly gratifying, and she expressed the hope that all delegates had enjoyed their stay in Spain and would meet again soon.

3.15 The Chairman declared the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum closed.

The meeting rose at 0015 hours on Wednesday, 4 March 1992.

The Secretary-General:

P. TARJANNE

The Chairman:

J. BARRIONUEVO PEÑA

Annexes: 3

ANNEX 1

List of Members having signed the Final Acts of the World Administrative Radio Conference for Dealing with Frequency Allocations in Certain Parts of the Spectrum (Malaga-Torremolinos, 1992).

Algeria (People's Democratic Republic of), Germany (Federal Republic of), Saudi Arabia (Kingdom of), Argentine Republic, Australia, Austria, Bahamas (Commonwealth of the), Bahrain (State of), Bangladesh (People's Republic of), Belarus (Republic of), Belgium, Belize, Benin (Republic of), Bhutan (Kingdom of), Botswana (Republic of), Brazil (Federative Republic of), Brunei Darussalam, Bulgaria (Republic of), Burkina Faso, Burundi (Republic of), Cameroon (Republic of), Canada, Cape Verde (Republic of), Central African Republic, Chile, China (People's Republic of), Cyprus (Republic of), Vatican City State, Colombia (Republic of), Congo (Republic of the), Korea (Republic of), Côte d'Ivoire (Republic of), Cuba, Denmark, United Arab Emirates, Ecuador, Spain, United States of America, Ethiopia (People's Democratic Republic of), Finland, France, Gabonese Republic, Gambia (Republic of the), Ghana, Greece, Guatemala (Republic of), Guinea (Republic of), Honduras (Republic of), Hungary (Republic of), India (Republic of), Indonesia (Republic of), Iran (Islamic Republic of), Ireland, Iceland, Israel (State of), Italy, Japan, Jordan (Hashemite Kingdom of), Kenya (Republic of), Kuwait (State of), Latvia (Republic of), Lebanon, Libya (Socialist People's Libyan Arab Jamahiriya), Liechtenstein (Principality of), Lithuania (Republic of), Luxembourg, Madagascar (Democratic Republic of), Malaysia, Malawi, Mali (Republic of), Malta (Republic of), Morocco (Kingdom of), Mexico, Monaco, Mongolia, Mozambique (Republic of), Nicaragua, Niger (Republic of the), Nigeria (Federal Republic of), Norway, New Zealand, Oman (Sultanate of), Uganda (Republic of), Pakistan (Islamic Republic of), Panama (Republic of), Papua New Guinea, Netherlands (Kingdom of the), Philippines (Republic of the), Poland (Republic of), Portugal, Qatar (State of), Syrian Arab Republic, Democratic People's Republic of Korea, Romania, United Kingdom of Great Britain and Northern Ireland, Russian Federation, San Marino (Republic of), Senegal (Republic of), Singapore (Republic of), Sri Lanka (Democratic Socialist Republic of), Sweden, Switzerland (Confederation of), Suriname (Republic of), Swaziland (Kingdom of), Tanzania (United Republic of), Chad (Republic of), Czech and Slovak Federal Republic, Thailand, Togolese Republic, Tunisia, Turkey, Ukraine, Uruguay (Eastern Republic of), Venezuela (Republic of), Yemen (Republic of), Yugoslavia (Socialist Federal Republic of), Zambia (Republic of), Zimbabwe (Republic of).

ANNEX 2

Address by the Secretary-General

Mr. Chairman,
Excellencies,
Ladies and Gentlemen,

On this day, the third of March, which happens to be the anniversary of the birth of the first telephone operator, Alexander Graham Bell, the Final Acts of this arduous but successfully concluded Conference have been signed and we have come to the end of a period of hard work. I am convinced that everybody here will agree with my statement: a period of hard work of four weeks, and two final rushed days and nights.

Our work may be taken as the culmination of the efforts that began in WARC-79. As all of us here know, our Torremolinos revision and "complication" of the Radio Regulations will be the last one before their simplification on the basis of the work by the Voluntary Group of Experts, which will meet in this very Palace tomorrow morning. I hope that these future simplified Regulations will not need major refinement until well into the next century. It is certainly very impressive to observe that we have been using, in some of our Resolutions here, such expressions as "that will become available for use from 1 April 2007", thus showing very clearly that our institution is really looking not only to the year 2000 but well into the next millennium.

The proposals submitted by administrations have been considered in depth, and they are now reflected in the revision of Article 8 to be included in the Radio Regulations. All the decisions which you have reached concerning the Table of Frequency Allocations to the various services will certainly be of considerable value to all countries, and it is my pleasure as Secretary-General of the Union to underline the excellent spirit of creative compromise in which all these decisions have been taken.

Questions such as suitable provisions for the use of new technologies have been the central focal point, and we have all become accustomed to very inspiring acronyms: HDTV, FPLMTS, BSS (sound), with however some very difficult moments for our p.f.d. (meaning of course "patience flux-density"), associated terrestrial DAB, and the now famous LEOs. All these have been considered, and a number of important decisions, of which we are all proud, have been taken. Participants can indeed look back with satisfaction to the work that has been achieved in these past weeks. In particular, it is most gratifying that the traditional spirit of international cooperation and understanding, which has been a long-standing tradition of the Union, has prevailed in spite of the difficult task, in spite of many apparent and real difficulties. This Conference will thus stand as yet another important milestone in the history of the Union, and it is a good omen for its future in the context of the changing environment, in which the adaptability of the Union is bound to be put to the test again and again. It is of course fundamental for the Union to continue to strengthen its ability to find appropriate responses to the challenges of both policy and technology changes in the realm of telecommunications of all kinds.

Mr. Chairman,
Ladies and Gentlemen,

I venture to state as a fact that this will be the last world administrative radio conference of its kind. The additional Plenipotentiary Conference of the ITU is expected to approve, by the end of this year, the framework of the new structure proposed by the High Level Committee for our Union, and this new structure will include regularly scheduled radio conferences every two years. These conferences will undoubtedly be easier to manage and will be somewhat less arduous, more efficient and timely exercises, both for you as delegates of ITU Members and for us as ITU responsible officials.

Mr. Chairman,

Let me take this opportunity to express, on behalf of my colleagues and myself, our sincere gratitude for all your efforts and in particular your patience and understanding in guiding the work of this Conference. These past few days have been particularly trying, given the long hours we have had to keep and the many incompatibilities which had to be resolved. Your contribution to the success of this Conference has been quite invaluable. Your wisdom, patience, impartiality, sense of fair play and humour have been major factors in keeping us all together in a sincere search for acceptable solutions. May I, Mr. Chairman, present to you the highest token of appreciation that the ITU can give, our silver medal, on behalf of all of us as a token of gratitude for your work towards the success of this Conference.

Mr. Chairman,

May I also say what a pleasure it is for me to reiterate, on behalf of the 166 Members of our Union, our sincere thanks for your Government's kind and generous invitation to hold this important Conference here in Malaga-Torremolinos, an invitation which - as I already stated in my opening address to the Conference - was greeted with enthusiasm by all Members of the Union.

Mr. Chairman,
Excellencies,
Ladies and Gentlemen,

The time has come to say goodbye to all those who have been associated with the Conference in one way or another. The past four weeks have provided a grand opportunity for new friendships, and I am sure everyone has taken full advantage of that opportunity. Most of all, of course, we all appreciate the friendship of the great Bs of this Conference. I do not want to say that this is a B-class Conference but, if we look at the stars, we have Mr. Barrionuevo and Mr. Bellchambers here on my right, we have Mr. Berrada as some kind of a symbol of our Conference, we have Mr. Baran, Mr. Boe, Mr. Boulgak and, believe it or not, a certain Mr. Butler who has been behind the scenes, in the background, and has affected the results of the Conference. And the tradition continues: the VGE that is starting the work of simplification tomorrow morning will be chaired by Mr. Bjornsjø.

Ladies and Gentlemen,

I should like to inform you that I intend to write to Mr. Guinness to tell him that some new items should be included in his Book of Records: of course WARC-92 as such, as the biggest and most difficult WARC ever, but also the month of February as the stormiest February ever in Torremolinos (but only outside the Palace) and, last but not least, Mr. Hutchings with more pins on his jacket than anybody has ever had.

However, dear friends, we now all have a desire to return home. Allow me to convey to all those leaving Torremolinos in the hours to come my best wishes for a safe and pleasant journey home.

Bon voyage y hasta la vista!

ANNEX 3

Address by the Chairman of the Conference

Honourable Delegates,
Mr. Secretary-General,
Officials of the ITU and the Spanish Administration,
Ladies and Gentlemen,

Once again the International Telecommunication Union, represented by those of us who have met for this World Administrative Radio Conference, has emerged triumphantly from the test of WARC-92. Let me therefore start by paying a tribute to the sense of responsibility you have repeatedly displayed.

I do not think it is easy to find an international organization in which the initial and, as generally acknowledged, divergent positions of its Members eventually come together as they have here.

The flexibility, forbearance and cooperation which have enhanced and complemented the sense of responsibility I mentioned, were in my view the precondition for and basic achievement of this Conference.

I can assure you that our hosting of WARC-92 has been rewarded through our having been able to contribute to the good work done, as reflected in the signing of the Final Acts of the Conference.

A brief analysis of what has been achieved here leads to the conclusion that we have not betrayed the Nice Plenipotentiary Conference in its decision to allow WARC-92 the opportunity of consolidating the role of the Union as set out in the preamble to the Convention, which is to facilitate international cooperation and economic and social development among peoples by means of efficient telecommunications. All the more so, indeed, as we have endeavoured and largely succeeded in starting to provide for the application of new technologies that will reach their peak in the coming century. Sound broadcasting by satellite, HDTV, low-orbit satellites, inter-satellite radiocommunication services, digital broadcasting by satellite and many other subjects which have been part of our daily routine over the past month were regarded only a short time ago as belonging to the world of science fiction.

We have also had to deal with conventional topics such as HF broadcasting and problems arising from changes in our famous Appendix 26, on the allotment of aeronautical mobile service frequencies, which have aroused very keen general interest.

It now remains for all of us to analyse the results of the Conference and for the organs of the ITU, especially the CCIR and the IFRB, to tackle the studies and tasks with which they have been entrusted in order to make those results viable.

On returning to your countries, you as experts will also have to scrutinize the results of the Conference, with both its achievements - which is what matters - and its frustrations caused by the fact that, as always, success has not been total. I trust that what will then remain freshest in your memory will be the "spirit of Torremolinos" which made possible the former and minimized the latter.

In thinking of the people who have supported us and helped us successfully through this experience, which it has been my good fortune to share with you, I should mention first the members of the Steering Committee whose advice and knowledge of the intricacies of the Conference have contributed much to its success. Then we have all those who participated in many essential Working Groups, Sub-Groups, ad hoc Groups and Drafting Groups, and we have too the Secretary-General and the Secretariat staff, both those whom we have seen on the podium and those who have worked so hard behind the scenes to have everything ready for the meetings, whom we have not seen: I refer to the pool and to the translation and reprography services, because you were perhaps not aware that 2,601 documents have been produced, the equivalent of six million pages or 28 tons of paper.

There is no need to tell you that the technical work was performed superbly, both before and during the Conference, by the IFRB and the CCIR; special thanks are due to the professionalism of their specialized secretariats and to their unstinted efforts to secure the final outcome.

Since the list of persons to be acknowledged is very long and the risk of omitting somebody is therefore very great, I shall not attempt to mention everyone by name. However, I hope and trust that all those concerned will know to whom I am referring and will accept my heartfelt thanks and appreciation.

The devotion, hard work and forbearance of the teams of interpreters, thanks to whom we have been able to understand one another, deserve special praise from all of us.

Although this is an in-house matter, I should like to commend the efforts and dedication of the Spanish Secretariat and the auxiliary services, whose contribution to the success of the Conference is obvious to all, as well as the staff of the Palacio de Congresos for their wholehearted cooperation.

Your Excellencies,
Ladies and Gentlemen,

In my opening address I stressed that the purpose of holding this Conference in Spain was to associate the International Telecommunication Union with the commemorative events of 1992, in order to enhance and extend understanding and peaceful relations between the peoples of the Earth, a broad sample of whom have been represented here.

Five centuries after a handful of men started out, not very far from here, on a daring journey which was to push back the horizons of the world, we can claim that here a larger, but still not very large, group of women and men have taken a series of decisions which may similarly be qualified as daring and difficult, and which will certainly increase the opportunities for communication and understanding among the whole of mankind.

Telecommunications, and radiocommunications in particular, are an essential instrument of progress, understanding and tolerance and have unquestionably served as the very basis for the success of our Conference.

With the signing of the Final Acts, the decisions we have taken are linked to a date, namely, 12 October of the year following our Conference, the day on which the Spanish-speaking community on both sides of the Atlantic and in the heart of Africa came together to reaffirm its brotherhood. We should like to project that brotherhood to all parts of the globe, and telecommunications will be an essential tool in that process.

Thank you very much.

**LISTE DES PARTICIPANTS - LIST OF PARTICIPANTS -
LISTA DE PARTICIPANTES**

Cette liste comprend les sections suivantes - This list includes the following sections -
Esta lista comprende las secciones siguientes

- I Administrations - Administrations - Administraciones
- II Exploitations privées reconnues - Recognized private operating agencies -
Empresas privadas de explotación reconocidas
- III Organisations internationales - International Organizations -
Organizaciones Internacionales
 - III.1 Nations Unies - United Nations - Naciones Unidas
 - III.2 Institutions spécialisées - Specialized Agencies - Instituciones especializadas
 - III.3 Organisations régionales - Regional Organizations - Organizaciones regionales
 - III.4 Autres organisations - Other Organizations - Otras Organizaciones
- IV Siège de l'Union - Headquarters of the Union - Sede de la Unión
- V Secrétariat de la Conférence - Secretariat of the Conference -
Secretaría de la Conferencia

Symboles utilisés - Symbols used - Símbolos utilizados

- C : Chef de délégation - Head of delegation - Jefe de delegación
- CA : Chef adjoint - Deputy Head - Subjefe
- D : Délégué - Delegate - Delegado
- A : Conseiller - Adviser - Asesor

I. ADMINISTRATIONS - ADMINISTRATIONS - ADMINISTRACIONES

ALG Algérie (République algérienne -
démocratique et populaire)
Algeria (People's Democratic -
Republic of)
Argelia (República Argelina -
Democrática y Popular

1)C S.E. M. ABERKANE Mohamed
Ambassadeur
Ministère des affaires
étrangères
Alger

1) 3 - 5.2

1)C M. HAMZA Ali
Secrétaire général du CIT/CES
Cabinet M. le Ministre
Ministère des postes et
télécommunications
Alger

1) 6.2 - 3.3
2) CA: 3 - 5.2

CA M. BOUHADEB Slimane
Chef du Bureau Planification
et Gestion des fréquences
Ministère des postes et
télécommunications
Alger

CA M. FARAOUN Boualem
Ingénieur Conseiller
Ministère des postes et
télécommunications
Alger

D M. BOUNAB Rezki
Ingénieur
Ministère des postes et
télécommunications
Alger

D M. DEBBAH Mohamed
Conseiller
Ministère des affaires
étrangères
Alger

D M. DJEMATENE Slimane
Ingénieur Chef de Projet
Ministère des postes et
télécommunications
Alger

D M. DRICI Hamidouche
Ingénieur Conseil
Ministère des postes et
télécommunications
Alger

ALG Algérie (République algérienne -
démocratique et populaire)
Algeria (People's Democratic -
Republic of)
Argelia (República Argelina -
Democrática y Popular
(suite)

D M. FRAOUCENE Mohamed
Ingénieur Radiocommunication
Ministère des postes et
télécommunications
Alger

D M. HOUAMEL Kamel
Ingénieur en chef
Ministère des postes et
télécommunications
Alger

D M. HOUYOU Abdelmalek
Directeur Général
Etablissement Public de
Télédiffusion
Alger

D M. KHELIFI Abdelkin
Conseiller
Ministère des affaires
étrangères
Alger

D M. MEHNI Mohamed
Directeur des Services
Techniques et de l'Équipement
ENTV
Alger

D Allemagne (République -
fédérale d')
Germany (Federal Republic of)
Alemania (República Federal de)

C M. KAHL Peter
Director General
Head of Department
Federal Ministry of Posts and
Telecommunications
Bonn

CA M. BROUDRE-GROGER Joachim
Vortragender Legationsrat
I. Klasse
Foreign Office
Bonn

CA M. GEORGE Eberhard
Ministerialrat
Federal Ministry of Posts and
Telecommunications
Bonn

D **Allemagne (République -
fédérale d')**
Germany (Federal Republic of)
Alemania (República Federal de)
(suite)

- CA M. MASSON Franz
Ministerialdirigent
Federal Ministry of Posts and
Telecommunications
Bonn
- D M. DOSCH Christoph
Institut für Rundfunktechnik
GmbH
München
- D M. FUCHS Karl J.
Scientific Adviser
Deutsche Bundespost TELEKOM
Fernmeldetechnisches
Zentralamt
Darmstadt
- D M. GABEL Guntram
Bundesanstalt für
Flugsicherung
Frankfurt
- D M. GOLDNER Lothar
Radio Expert
Federal Ministry of Transport
Bonn
- D M. GRAHL Bernd H.
Scientist
Max-Planck-Institut für
Radioastronomie
Bonn
- D M. HAMMERSCHMIDT Uwe
Regierungsdirektor
Federal Maritime and
Hydrographic Agency
Hamburg
- D Mrs. HOEHN Hanni
Interpreter/translator
Federal Ministry of Posts and
Telecommunications
Bonn
- D M. JANDA Volker
Head of Division
Deutsche Bundespost TELEKOM
Fernmeldetechnisches
Zentralamt
Darmstadt
- D M. KNOBEL Axel
Major
Bundesministerium der
Verteidigung
Bonn

D **Allemagne (République -
fédérale d')**
Germany (Federal Republic of)
Alemania (República Federal de)
(suite)

- D Miss KOCH Sandra
Secretary
Federal Ministry of Posts and
Telecommunications
Bonn
- D M. KRAEMER Wilhelm
Frequency Manager
DARA/DLR
Weilheim
- D M. KRANK Wolfgang
Technical Director
Südwestfunk
Baden-Baden
- D M. LANDGRAF Herbert
Regierungsdirektor
Federal Ministry of Posts and
Telecommunications
Bonn
- D M. LIEBLER Reiner
Oberregierungsrat
Bundesamt für Post und
Telekommunikation
Mainz
- D M. MAEGELE Manfred
Leitender Regierungsdirektor
Bundesamt für Post und
Telekommunikation
Mainz
- D M. MALINA Klaus B.
Oberpostdirektion
Hamburg
- D M. MEIER Klaus-Dieter
Federal Ministry of Posts and
Telecommunication
Bonn
- D M. MOSSAL Günter
Regierungsrat
Federal Ministry of Posts and
Telecommunications
Bonn
- D M. MULLER Karl-Ulrich
Vortragender Legationsrat
Foreign Office
Bonn
- D M. MUTINELLI Alfred
Head of Section
Deutsche Bundespost TELEKOM
Fernmeldetechnisches
Zentralamt
Darmstadt

D Allemagne (République -
fédérale d')
Germany (Federal Republic of)
Alemania (República Federal de)
(suite)

- D M. RAABE Werner
TRHS
Bundesamt für Post und
Telekommunikation
Mainz
- D M. REISCHMANN Klaus
Director
Deutsche Bundespost TELEKOM
Bonn
- D M. ROESSLER Günter R.
Technical Director
Deutsche Welle
Anstalt des öffentlichen
Rechts
Köln
- D M. ROIGAS Hillar
Head of Broadcasting Coverage
and Transmitter Engineering
Division
Institut für Rundfunktechnik
GmbH
München
- D M. SAUERMAN Erwin
Director
Deutsche Bundespost TELEKOM
Bonn
- D M. SCHIEVER Wolfgang P.
Assistant Director
Deutsche Bundespost TELEKOM
Bonn
- D M. SCHLEGEL Robert
Fregattenkapitän
Bundesministerium der
Verteidigung
Bonn
- D M. SCHMID Reinhard
Assistant Director
Deutsche Bundespost TELEKOM
Bonn
- D M. SCHOLZ Horst
Head of RF-Operations
Deutsche Welle
Anstalt des öffentlichen
Rechts
Köln
- D Mrs. SCHONFELDER-DOBLER Edith
Regierungshauptsekretärin
Bundesamt für Post und
Telekommunikation
Mainz

D Allemagne (République -
fédérale d')
Germany (Federal Republic of)
Alemania (República Federal de)
(suite)

- D M. SCHROGL Kai-Uwe
Adviser
DARA GmbH
Bonn
- D M. STRICK Joachim-Siegfried
Oberamtsrat
Federal Ministry of Posts and
Telecommunications
Bonn
- D M. TANDLER Dieter
Diplom. Wirtschafts Ingenieur
AEG/ZVEI
Frankfurt am Main
- D M. TRAUTMANN Eberhard
Lieutenant Colonel
Communications and Information
Systems
Federal Armed Forces
Rheinbach
- D M. WOLKO Bernd-Dieter
Regierungsamtsrat
Bundesamt für Post und
Telekommunikation
Mainz
- A M. DODEL Hans
ZVEI
Bonn
- A M. MULLER Karl-Otto
Head of Department
Rohde & Schwarz
Munich
- A M. NEDELICHEV Vladimir
Counsellor
Rohde & Schwarz
Munich

AGL Angola (République populaire d')
Angola (People's Republic of)
Angola (República Popular de)

- D M. ALVES SARAIVA José
Director de Gabinete Estudios
y Proyectos
Radio Nacional de Angola
Luanda

ARS Arabie saoudite (Royaume d')
Saudi Arabia (Kingdom of)
Arabia Saudita (Reino de)

- C M. AL-SHANKITI Habeeb K.
Director General
Radiocommunications Department
Ministry of PTT
Riyadh
- CA M. AL-BASHEER Sami S.
Director General
International Relations
Department
Ministry of PTT
Riyadh
- D M. ABALLALA Majid A.
- D M. AL-DARRAB Abdullah A.
Director General
Mobile and Rural
Telecom Department
Ministry of PTT
Riyadh
- D M. AL-DEBASI Abdullah A.
Ministry of PTT
Riyadh
- D M. AL-DEHAIM Yousef S.
Ministry of Information
Riyadh
- D M. AL-DHALAAN Abdul-Aziz A.
Communication Directorate
Ministry of PTT
Riyadh
- D M. AL-ELAIWI Daloh M.
Riyadh
- D M. AL-MEGHLEETH Saleh A.
Manager
Ministry of Information
Riyadh
- D M. AL-OMARI Dahish A.
Ministry of PTT
Riyadh
- D M. AL-SAMNAN Sulaiman A.
Ministry of Information
Riyadh
- D M. AL-TALHI Mohammad H.
Ministry of PTT
Riyadh
- D M. ALTUWAIJRI Nasser H.
Saudi Sea Port Authority
Riyadh

ARS Arabie saoudite (Royaume d')
Saudi Arabia (Kingdom of)
Arabia Saudita (Reino de)
(suite)

- D M. ALZAKRI Ibrahim S.N.
Telecom Department
Ministry of Information
Riyadh
- D M. ARAB Osama T.
PTT
Riyadh
- D M. BILAL Ahmed M.
Telecom Department
Ministry of Information
Riyadh
- D M. DHAHI Abdel-Rahim A.
Saudi Arabia National Guard
Riyadh
- D M. HASSANAIN Mahmoud
PTT
Riyadh
- D M. KHALIL Khalid O.
Ministry of PTT
Riyadh
- D M. MANNAN Ahmad J.
Presidency of Civil Aviation
Riyadh

ARG Argentine (République)
Argentine Republic
Argentina (República)

- C M. SANCHEZ ELIA José A.
Subinterventor
Comisión Nacional de
Telecomunicaciones
Buenos Aires
- CA M. TABOADA Jorge A.
Director de Departamento a/c
Organismos Internacionales
Comisión Nacional de
Telecomunicaciones
Buenos Aires
- D M. AROMI José D.
Jefe Departamento
Comunicaciones
Prefectura Naval
Comisión Nacional de
Telecomunicaciones
Buenos Aires

**ARG Argentine (République)
Argentine Republic
Argentina (República)
(suite)**

- D M. BALBERDI Santiago
Director de Departamento
Autorizaciones de
Radiocomunicaciones
Comisión Nacional de
Telecomunicaciones
Buenos Aires
- D M. BELAUSTEGUI GOITIA Carlos F.
Jefe División Radio Ayudas
Fuerza Aérea Argentina
Buenos Aires
- D M. BERMUDEZ Norberto H.
Abogado
Comisión Nacional de
Telecomunicaciones
Buenos Aires
- D M. BEUNZA Osvaldo
Comisión Nacional de
Telecomunicaciones
Buenos Aires
- D M. FURCH Juan Carlos
Jefe Departamento Normas y
Frecuencias
Fuerza Aérea Argentina
Buenos Aires
- D M. GIORNO Federico
Auxiliar Departamento Normas
y Frecuencias
Fuerza Aérea Argentina
Buenos Aires
- D M. OLIVER Miguel Angel
Comisión Nacional de
Telecomunicaciones
Buenos Aires
- D M. VARELA Carlos E.
Encargado Asuntos
Internacionales
Prefectura Naval
Comisión Nacional de
Telecomunicaciones
Buenos Aires
- A M. BAYO Eduardo G.A.
Comisión Nacional de
Telecomunicaciones
Buenos Aires
- A Mlle MEALLA Graciela B.
Consultora
Comisión Nacional de
Telecomunicaciones
Buenos Aires

**ARG Argentine (République)
Argentine Republic
Argentina (República)
(suite)**

- A M. PARODI Osvaldo E.
Adscripto a la Presidencia
Asociación de Teledifusoras
Argentinas
Buenos Aires
- AUS Australie
Australia
Australia**
- C M. SMITH Roger N.
First Assistant Secretary
Radiocommunications Division
Department of Transport and
Communications
Canberra
- CA M. HARTLEY David
Department of Transport and
Communications
Canberra
- D M. BARTON Richard M.
FACTS
Sydney
- D M. BUTLER Richard E.
Department of Transport and
Communications
Canberra
- D M. CHRISTENSEN Rex E.
Manager, Industry Standard
Branch
Australian Telecommunications
Authority
Melbourne
- D M. COLE David G.
Director
Department of Admin. Services
IPS
West Chatswood, NSW
- D M. COUTTS Reginald P.
Telecom Australia
Collingwood, Vic.
- D M. DEACON Christopher W.
Department of Transport and
Communications
Canberra
- D M. EDWARDS Mark E.
ITU and Standards Policy
Section
Radiocommunications Division
Department of Transport and
Communications
Canberra

**AUS Australie
Australia
Australia
(suite)**

- D M. ELSTON Colin G.
Chief Analyst, Technical
Standards
OPTUS Communications
Sydney
- D M. HENDERSON Ronald G.
Vice Chairman
Executive Wireless Institute
of Australia
Melba
- D M. HUTCHINS G.R.
Director of Spectrum Planning
Department of Transport and
Communications
Canberra
- D M. JENKINSON Garth F.
Telecom Australia Research
Laboratories
Clayton, Vic.
- D M. MCDONALD William J.
Hutchison Telecommunications
(Aust) Ltd.
St. Leonards, NSW
- D M. NATOLI Peter A.
Supervising Engineer
Forward Network Planning
Telecom Australia
Melbourne, Vic.
- D M. O'SHANNASSY Bernard T.
Motorola
Mulgrave, Vic.
- D M. ROBINSON Brian J.
Chief Research Scientist
Division of Radiophysics
CSIRO
Epping, NSW
- D Miss RYAN Janet L.
Senior Engineer
OTC Maritime
St. Leonards, NSW
- D M. VIPOND J.A.
Manager, Regulatory Affairs
(International)
OPTUS Communications
Sydney
- D M. WARDLAW David A.
WARC Coordinator
WIA
Camberwell, Vic.

**AUS Australie
Australia
Australia
(suite)**

- D M. WARDLE George
Engineer
Department of Transport and
Communications
Canberra
- D M. WARREN Eric G.
Manager, Corporate Engineering
Projects
Australian Broadcasting
Corporation
Sydney

AUT Autriche - Austria - Austria

- C M. LETTNER Gerd
Ministerialrat
Generaldirektion für die Post
und Telegraphenverwaltung
Wien
- CA M. STEINER Ernst
Amtsdirektor
Generaldirektion für die Post
und Telegraphenverwaltung
Wien
- D M. BERGER Josef
Frequency and Coverage
Planning
Osterreichischer Rundfunk
Wien
- D M. BUCHER Helmut
Zentralinspektor
Fernmeldetechnisches
Zentralamt
Wien
- D M. FISCHER Karl
Osterreichischer Rundfunk
Wien
- D M. LANG Reinhart P.
Frequency Management
Osterreichischer Rundfunk
Wien
- D M. MORAWETZ Theodor
OIC-Frequency Management
Federal Ministry of Defence
Wien
- D M. VRANKA Ernst
Osterreichischer Rundfunk
Wien

**BAH Bahamas (Commonwealth des)
Bahamas (Commonwealth of the)
Bahamas (Commonwealth de las)**

- C M. RUSSELL Barrett A.
General Manager
Bahamas Telecommunications
Corporation
Nassau
- D M. BETHER L.A.
Bahamas Telecommunications
Corporation
Nassau
- D M. HANCHELL Louis W.A.
General Manager
Broadcasting Corporation
of the Bahamas
Nassau
- D M. RAMNARINE Deoraj
Secretary General
Caribbean Telecommunication
Union
Port of Spain
- D M. THOMPSON Michael P.
Broadcasting Corporation
of the Bahamas
Nassau

**BHR Bahreïn (Etat de)
Bahrain (State of)
Bahrein (Estado de)**

- C M. ABDULMALIK Arif Ahmed
Director
Telecommunications Bureau for
GCC
Manama
- CA M. ASHOOR A.A.
Bahrain Telecommunications
Company
Manama
- D M. MOHAMMED Ali Ahmed
Superintendent Communications
Technical Affairs Directorate
Civil Aviation Affairs
Manama

**BGD Bangladesh (République -
populaire du)
Bangladesh (People's Republic of)
Bangladesh (República Popular de)**

- C M. MIAH Siddique Ali
General Manager
Overseas Telecommunication
Region
Telegraph and Telephone Board
Dhaka

**BGD Bangladesh (République -
populaire du)
Bangladesh (People's Republic of)
Bangladesh (República Popular de)
(suite)**

- D M. CHOUDHURY Abdul Azim
Staff Officer
General Staff Branch
Government of Bangladesh
Dhaka
- D M. ISMAIL Muhammad
Divisional Engineer
Telegraph and Telephone Board
Dhaka
- D M. SIDDIQUUR RAHMAN
Assistant Director
(Communication)
Civil Aviation Authority
Dhaka

**BLR Bélarus (République du)
Belarus (Republic of)
Belarús (República de)**

- C M. GRITSUK Ivan M.
Minister of PTT
Ministry of Posts,
Telecommunications and
Informatics
Minsk
- CA M. BOUDAI Anatoli I.
Chief of the Broadcasting and
Television Department
Ministry of Posts,
Telecommunications and
Informatics
Minsk
- D M. CHILOVITCH S.N.
Premier secrétaire
Ministère des affaires
étrangères
Minsk

BEL Belgique - Belgium - Bélgica

- C M. PIRLOT Jean-Pierre
Ingénieur en chef
Département de la transmission
Bruxelles
- CA M. VAN GEERT Roger
Chief Engineer
Director of Administration
Radio Maritime Services
Ostend

BEL Belgique - Belgium - Bélgica
(suite)

- D M. AUDENAERT Désiré
Ingénieur-Directeur
BRTN - Radio Télévision Belge
Bruxelles
- D M. DEVENTER E.
Ingénieur principal
Chef de service
BRTN
- D M. DUCHEYNE Gino G.
Ingénieur
Département de Transmission
Bruxelles
- D M. VAN RUYMBEKE Roger
Chief Engineer-Director
Régie des voies aériennes
Brussels
- D M. VANNIEUWENHUYSE Gilbert L.
Chef de section principal
Régie des Télégraphes et des
Téléphones
Bruxelles
- A M. DEWULF A.
Membre NFC
Régie des Télégraphes et des
Téléphones
Bruxelles
- A M. KONINGS Roland J.H.
Membre NFC
Régie des Télégraphes et des
Téléphones
Bruxelles

BLZ Belize - Belize - Belice

Représenté par les Bahamas

BEN Bénin (République du)
Benin (Republic of)
Benin (República de)

- C M. METINHOUE G.
Directeur de Cabinet du
Ministre de la Culture et des
Communications
Cotonou

BEN Bénin (République du)
Benin (Republic of)
Benin (República de)
(suite)

- C M. BACHABI Jean F.
Directeur des
Télécommunications
Office des Postes et
Télécommunications
Cotonou
- D M. OTENIA Rémy Béatrix
Directeur du Réseau et du
Développement Technique
Office de Radiodiffusion et
Télévision du Bénin
Cotonou
- D M. ZODEHOUGAN Nicolas U.
Chef Division
Télécommunications
Internationales
Office des Postes et
Télécommunications
Cotonou

BTN Bhoutan (Royaume du)
Bhutan (Kingdom of)
Bhután (Reino de)

- CA M. DHUNGYEL Om P.
Engineer Officer,
Department of
Telecommunications
Thimphu

BOT Botswana (République du)
Botswana (Republic of)
Botswana (República de)

- C M. SOSOME Habuji
Information and Broadcasting
Gaborone
- D M. MOTLOKWA Loftus N.
Radio Spectrum Coordinator
Botswana Telecommunications
Corporation
Gaborone

B Brésil (République fédérative du)
Brazil (Federative Republic of)
Brasil (República Federativa del)

- C M ALBERNAZ Joao Carlos F.
Deputy Director
National Department of
Spectrum Management
National Secretariat of
Communications
Brasilia

**B Brésil (République fédérative du)
Brazil (Federative Republic of)
Brasil (República Federativa del)
(suite)**

- CA M. DA COSTA Almir H.
National Secretariat of
Communications
Brasilia
- D Mme ANDRADE Tania
EMBRATEL
Rio de Janeiro
- D M. ASSIS Mauro S.
Advisor
National Secretariat of
Communications
Rio de Janeiro
- D Mme CABRAL Regina
EMBRATEL
Rio de Janeiro
- D M. CARLEIAL Aydano
Senior Researcher
Space Engineering
Instituto de Pesquisas
Espaciais (INPE)
Sao José dos Campos
- D M. DE ARAUJO Sueli
Jefe de División
Secretaría Nacional de
Comunicaciones
Rio de Janeiro
- D M. HOYER Franklin N.
Deputy Chief of
Telecommunications Division
DEPV
Rio de Janeiro
- D M. MACHADO Newton
TELEBRAS
- D M. MANDIM Daniel
Engenheiro
Diretoria de Telecomunicações
BRB
Brasilia
- D M. NEIVA Mario
Engineer
Ministerio da Marinha
Rio de Janeiro
- D M. OLIVEIRA Ricardo S.
Diretoria de Eletronica e
Proteção ao voo
Rio de Janeiro

**B Brésil (République fédérative du)
Brazil (Federative Republic of)
Brasil (República Federativa del)
(suite)**

- D M. PURRI Victor
Coordenador del Comité
Técnico
Asociación Brasileña de
Radio y Televisión
Brasilia
- BRU Brunéi Darussalam
Brunei Darussalam
Brunei Darussalam
- C M. PSI PG HJ ISMAIL PG HJ Shahminan
Deputy Director of
Telecommunications
Telecommunications Department
Ministry of Communications
Bandar Seri Begawan
- D M. ISMAIL Marsap B.
Acting Senior Telecom
Engineer
Jabatan Telekom Brunei
Ministry of Communications
Bandar Seri Begawan

**BUL Bulgarie (République de)
Bulgaria (Republic of)
Bulgaria (República de)**

- C M. MIRSKI Krastju
Vice President
Committee of Posts,
Telecommunications and
Informatics
Sofia
- CA M. HARLOV Boyko
Chief Expert
Committee of Posts,
Telecommunications and
Informatics
Sofia
- CA M. VASSILEV Vassil
Chief Expert
Bulgarian Posts and
Telecommunications Ltd.
Sofia
- D M. DIMITROV Dimitar
Expert
State Shipping Inspectorate
Ministry of Transport
Sofia

BUL Bulgarie (République de)
Bulgaria (Republic of)
Bulgaria (República de)
 (suite)

- D M. DIMITROV Stefan
 Expert
 Navigation maritime bulgare
 Sofia
- D M. STOIKOV Ivan
 Expert
 Committee of Post,
 Telecommunications and
 Informatics
 Sofia
- D M. STOYANOV Ludmil
 Expert
 State Aviation Inspectorate
 Ministry of Transport
 Sofia

BFA Burkina Faso
Burkina Faso
Burkina Faso

- C M. LOUARI Jean-Hervé
 Chef du service du contrôle
 interne
 Office national des
 télécommunications
 Ouagadougou
- CA M. OUEDRAOGO Pousbilo
 Office national des
 télécommunications
 Ouagadougou
- CA M. PARE Aly
 Directeur
 Direction des transmissions
 Ouagadougou
- D M. KABA Youssouf
 Office national des
 télécommunications
 Ouagadougou
- D M. SAWADOGO Abel
 Ingénieur, Exploitation
 technique des équipements
 radioélectriques aéronautiques
 Service Navigation Aérienne
 Direction de l'Aviation Civile
 Ouagadougou
- D M. TOE Marcel
 Chef du Centre Emetteur
 de Gounghin
 Ouagadougou

BDI Burundi (République du)
Burundi (Republic of)
Burundi (República de)

- D M. MUBAYA Cyprien
 Chef du Service des Fréquences
 Office National des
 Télécommunications
 Bujumbura
- D M. NDABIRINDE Gamaliel
 Chef du Service des
 Télécommunications
 aéronautiques
 Régie des Services
 aéronautiques
 Bujumbura
- D M. NDIKUMWAMI Laurent
 Conseiller
 Direction Générale
 Radio-Télévision Nationale
 Bujumbura

CME Cameroun (République du)
Cameroon (Republic of)
Camerún (República de)

- C M. KAMDEM KAMGA Emmanuel
 Inspecteur général des
 P. et T.
 Ministère des postes et
 télécommunications
 Yaoundé
- CA M. DJOUAKA Henri
 Directeur général adjoint
 INTELCAM
 Ministère des postes et
 télécommunications
 Yaoundé
- CA M. MAGA Richard
 Directeur
 Centre d'études des
 télécommunications
 Ministère des postes et
 télécommunications
 Yaoundé
- D M. MBEGA Hilaire
 Chef de service émetteurs VHF
 CRTV
 Yaoundé
- D M. ZOURMBA Aboubakar
 Sous-Directeur
 Gestion des fréquences et des
 réalisations privées
 Direction des Télécomm.
 Ministère des postes et
 télécommunications
 Yaoundé

CAN Canada - Canada - Canadá

- C M. JONES Robert William
Director General
Radio Regulatory Branch
Department of Communications
Ottawa, Ontario
- CA M. GRACIE Bruce A.
Head, WARC/CCI Affairs
International Relations Branch
Department of Communications
Ottawa, Ontario
- D M. AMERO Ronald G.
Manager, Space Services
Orbit/Frequency Management
Division
Department of Communications
Ottawa, Ontario
- D M. ATHANASSIADIS Demetre
Chief Satellite Applications
Department of Communications
Ottawa, Ontario
- D M. BASTIKAR Arvind R.
Canadian Space Agency
Ottawa, Ontario
- D M. BOWEN Robert R.
Chief
Orbit Policy
Department of Communications
Ottawa, Ontario
- D M. CAMPBELL Edward
Director Frequency Spectrum
Management
Department of National Defence
Ottawa, Ontario
- D M. DOWNEY Robert E.
Spectrum engineer
Ottawa, Ontario
- D M. DROLET Marc J.L.
Department of National Defence
Ottawa, Ontario
- D M. HUNT Murray
Chief, Mobile Services
Spectrum and Orbit Policy
Department of Communications
Ottawa, Ontario
- D M. LEGER Fernand
Director
Spectrum and Orbit Policy
Department of Communications
Ottawa, Ontario

CAN Canada - Canada - Canadá
(suite)

- D M. LONGMAN Wayne G.
Chief
Fixed Services
Department of Communications
Ottawa, Ontario
- D M. MC CAUGHERN Robert W.
Deputy Director General
Engineering Programs
Department of Communications
Ottawa, Ontario
- D M. MIMIS Vassilios
MSat Systems Manager
Department of Communications
Ottawa, Ontario
- D M. NUNAS Maurice
Director
Spectrum Management Operations
Ottawa, Ontario
- D M. RAWAT Veena
Director
Spectrum Engineering
Department of Communications
Ottawa, Ontario
- D M. ROGER Roberts
Radio Astronomy Spectrum MRG
National Research Council
Penticton, B.C.
- D M. ROLSTON J. Garry
Manager
VHF/UHF Spectrum Engineering
Department of Communications
Ottawa, Ontario
- D Mme SANSFIELD Mary
Administrative Officer
Department of Communications
Ottawa, Ontario
- D M. TRENHOLM J. Royce
Manager
Broadcast Planning and
New Technology
Department of Communications
Ottawa, Ontario
- D M. ZEITOUN Ralph F.
Director
Broadcast Applications
Engineering
Department of Communications
Ottawa, Ontario

CAN Canada - Canada - Canadá
(suite)

- A M. AZARBAR Bahman
Manager, Systems Studies,
Communication Systems
Engineering
Telesat
Gloucester
- A M. BRETT R.
Bell-Northern Research
Ottawa, Ontario
- A M. CONWAY François
Supervising Engineer
Broadcast Spectrum,
Transmission
Canadian Broadcasting Corp.
Montreal, Quebec
- A M. FENELEY John T.
Director
INMARSAT and
Radiocommunications
Teleglobe Canada Inc.
Montreal, Quebec
- A M. GHANDEHARIAN Hossein
Telesat Canada
Gloucester, Ontario
- A M. KANTOLA Roy
Telecom Canada
Ottawa, Ontario
- A M. KUBIS Lloyd
Vice President
Motorola Canada Ltd.
North York, Ontario
- A M. LAM Kenneth
Telecom Canada
Ottawa, Ontario
- A M. LEE John C.
Manager, Network, Technology
Canadian Broadcasting
Corporation Engineering
Montreal, Quebec
- A M. MITANI Brian
Teleglobe Canada
Montreal, Quebec
- A M. PARENT Claude J.
Telecom Canada
Ottawa, Ontario
- A M. ROSCOE Orest
Telesat Mobile (TMI)

CAN Canada - Canada - Canadá
(suite)

- A M. SOPHIANOPOULOS Alexander A.
Telecom Canada
Ottawa, Ontario
- A M. STACEY Wayne A.
Technical Advisor
Canadian Association of
Broadcasters
Ottawa, Ontario
- A M. TAYLOR William J.
Supervising Engineer
Radio Standards Development
Telecom Canada
Ottawa, Ontario
- A M. TOWAIJ Sabah
Bell-Northern Research
Ottawa, Ontario
- A M. VINODRAI Chhotalal
Manager, Industry Relations
and Standards
Bell Cellular
Etobicoke, Ontario
- A M. WACHIRA Muya
Telesat Mobile (TMI)
- A M. WARREN Gabriel
Special Advisor
International
Telecommunications
Department of Communications
Ottawa, Ontario
- A M. WEESE Don
Telesat Canada
Gloucester, Ontario

CPV Cap-Vert (République du)
Cape Verde (Republic of)
Cabo Verde (República de)

- C M. MONTEIRO Jose Luis
Directeur général
Entreprise Publique des PTT
Praia
- D M. GALVAO Sabino
Directeur Télécommunication
Aéroport Sûreté Aérienne
Entreprise Publique
Ile du Sal

CPV Cap-Vert (République du)
Cape Verde (Republic of)
Cabo Verde (República de)
(suite)

D M. LOBO Antonio P.
Assesseur du Directeur
général
Entreprise Publique des PTT
Praia

CAF Centrafricaine (République)
Central African Republic
Centroafricana (República)

C M. SAKILA Jean Marie
Directeur d'exploitation et
des affaires commerciales
Société centrafricaine des
télécommunications
Bangui

CHL Chili - Chile - Chile

C M. DEL RIO VASQUEZ Americo
Jefe
División Radiocomunicaciones
Subsecretaría de
Telecomunicaciones
Santiago

D M. GARAY SILVA Victor M.
Ingeniero
Administración de Frecuencias
Subsecretaría de
Telecomunicaciones
Santiago

D M. MAZZEI HAASE Italo
Ingeniero en Planificación
ENTEL
Santiago

A M. ORMAZABAL LOBOS Moises
Jefe, Departamento
Telecomunicaciones
Dirección General de
Aeronáutica Civil
Santiago

CHN Chine (République populaire de)
China (People's Republic of)
China (República Popular de)

C M. YANG Taifang
Ministre
Ministère des Postes et
Télécommunications
Beijing

CHN Chine (République populaire de)
China (People's Republic of)
China (República Popular de)
(suite)

CA M. HE Fu Qi
Office of State Radio
Regulatory Commission
Ministry of Posts and
Telecommunications
Beijing

CA M. WANG Zhanning
Deputy Director
Ministry of Posts and
Telecommunications
Beijing

D Mme BAI Duan Wen
First Secretary
Ministry for Foreign Affairs
Beijing

D M. BI Xin An
Chief, Telecommunications
Division
Civil Aviation Administration
Beijing

D M. CHEN Daoming
Vice President
Science and Technology
Committee
Chinese Academy of Space
Technology
Beijing

D M. CHEN Jian Cheng
Vice Director
China Transport
Telecommunication Centre
Beijing

D M. CHI Jiaping
Ministry of Posts and
Telecommunications
Beijing

D M. DING Yixing
Chief Engineer
Office of State Radio
Regulatory Commission
Beijing

D Mrs. HU Yumei
Division Chief
Radio Regulatory Department
Ministry of Posts and
Telecommunications
Beijing

**CHN Chine (République populaire de)
China (People's Republic of)
China (República Popular de)
(suite)**

- D M. KANG Songshi
Ministry of Radio,
Film and Television
Beijing
- D M. LIANG Xiaojing
Engineer
Directorate General of
Telecommunication
Ministry of Posts and
Telecommunications
Beijing
- D M. PAN Kan Hui
Vice Director Senior Engineer
Office of State Radio
Regulatory Commission
Beijing
- D M. QIU Shigang
Ministry of Posts and
Telecommunications
Beijing
- D Mme WANG Yurong
Chef adjoint
Département des affaires
extérieures
Ministère des Postes et
Télécommunications
Beijing
- D M. ZHU Yunbao
Division Chief Senior Engineer
Development and Coordination
Department
State Space Office
Beijing

**CYP Chypre (République de)
Cyprus (Republic of)
Chipre (República de)**

- C M. KYPRIANOU Arpalos
Assistant Manager
Technical Services
Cyprus Telecommunications
Authority
Nicosia
- CA M. MICHAELIDES Andreas
Head Transmitters Department
Cyprus Broadcasting
Organization
Nicosia

**CYP Chypre (République de)
Cyprus (Republic of)
Chipre (República de)
(suite)**

- D M. DEMETRIADES Andreas
Engineer
Cyprus Telecommunications
Authority
Nicosia
- D M. PERICLEOUS Charalambos
Acting Manager
Radio and Transmissions
Systems
Cyprus Telecommunications
Authority
Nicosia
- D M. PSYLLIDES Costas
Communications Engineer
Planning Department
Cyprus Telecommunications
Authority
Nicosia

**CVA Cité du Vatican (Etat de la)
Vatican City State
Ciudad del Vaticano (Estado de la)**

- C M. MATIS Eugenio
Directeur technique
Radio Vatican
Cité du Vatican
- CA M. GIUDICI Pier V.
Vice Directeur technique
Radio Vatican
Cité du Vatican
- D M. PACIFICI Costantino
Deputy Technical Director
Vatican Radio
General Direction
Vatican City
- D M. TOLAINI Umberto
Head Frequency
Management Section
Vatican Radio
General Direction
Vatican City

**CLM Colombie (République de)
Colombia (Republic of)
Colombia (República de)**

- C M. VARGAS LINARES Mauricio
Ministro de Comunicaciones
Ministerio de Comunicaciones
Bogotá

CLM Colombie (République de)
Colombia (Republic of)
Colombia (República de)
 (suite)

- C M. CASTRO ROJAS Felix
 Jefe de Oficina Internacional
 Ministerio de Comunicaciones
 Bogotá
- D M. DAZA CASTELBLANCO German
 Profesional Especializado
 Oficina Internacional
 Ministerio de Comunicaciones
 Bogotá
- D M. MEDINA Hernán
 Gerente Técnico de R.C.N.
 Ministerio de Comunicaciones
 Bogotá
- D M. OSORNO NAVARRETE Edgar
 Profesional Especializado
 División de Redes
 Ministerio de Comunicaciones
 Bogotá
- D M. ROBAYO GUERRERO Hiram Abiff
 Empresa Nacional de
 Telecomunicaciones
 Bogotá
- D M. TACHE MUÑOZ Alberto
 Jefe División Planeación de
 Frecuencias y Redes
 Ministerio de Comunicaciones
 Bogotá
- A M. BUSTAMANTE GIL Mauricio
 Secretario General
 Caracol Radio
 Bogotá

COG Congo (République du)
Congo (Republic of the)
Congo (República del)

- C M. WENAMIO Pascal
 Directeur Général Président
 Office national des postes et
 télécommunications
 Brazzaville
- CA M. KINZONI Léonard
 Directeur des
 télécommunications
 Office national des postes et
 télécommunications
 Brazzaville

COG Congo (République du)
Congo (Republic of the)
Congo (República del)
 (suite)

- D M. MAKOUNDOU Jean
 Chef de Service de gestion des
 fréquences
 Office national des postes et
 télécommunications
 Brazzaville

KOR Corée (République de)
Korea (Republic of)
Corea (República de)

- C M. LEE In-Hak
 Director General
 Radio Regulation Bureau
 Ministry of Communications
 Seoul
- CA M. KANG Duk Keun
 Director
 Frequency Division
 Radio Regulation Bureau
 Ministry of Communications
 Seoul
- D M. KANG Tae Shin
 Section Chief
 Frequency Division
 Radio Regulation Bureau
 Ministry of Communications
 Seoul
- D M. LEE Ki-Joo
 Assistant Director
 Radio Planning Division
 Radio Regulation Bureau
 Ministry of Communications
 Seoul
- A M. BAE Jang-Ho
 Assistant Manager
 Korean Broadcasting
 System
 Seoul
- A M. HA Ju Yong
 Manager
 DACOM Corporation
 Seoul
- A M. HWANG In-Kwan
 Senior Engineer
 Satellite Communication
 Network Section
 Electronics and
 Telecommunications Research
 Institute
 Daejeon

KOR Corée (République de)
Korea (Republic of)
Corea (República de)
 (suite)

- A Mlle KIM Mi Li
Staff Corporate Strategy
Division
DACOM Corporation
Seoul
- A M. MOON Yang Hwan
Director
Network Planning Department
Engineering Strategy Planning
Group
Korea Telecom
Seoul
- A M. PARK Hyong Rock
Manager
System Planning Department
Paging Planning Division
Korea Mobile
Telecommunications Corp.
Seoul
- A M. PARK Jae Hong
Head of Satellite
Communication Service Section
Electronics and
Telecommunication Research
Institute
Daejeon
- A M. PARK Jai Berm
Member of Radio
Communications Laboratory
Research Center
Korea Telecom
Seoul
- A M. SEO Bo Hyun
Research Fellow
Radio & New Media Policy
Research Division
Korea Information Society
Development Institute
Seoul

CTI Côte d'Ivoire (République de)
Côte d'Ivoire (Republic of)
Côte d'Ivoire (República de)

- 1)C M. SIKA Koffi Emile
Conseiller technique et
Directeur de l'Office national
des télécommunications
Ministère des postes et
télécommunications
Abidjan

1) jusqu'au 20.2.92

CTI Côte d'Ivoire (République de)
Côte d'Ivoire (Republic of)
Côte d'Ivoire (República de)
 (suite)

- C M. TIEMELE Kouande Charles
Inspecteur
Ministère de la Communication
Abidjan
- CA M. ABOA Alain Cyrille
Directeur de la Réglementation
générale
Ministère des postes et
télécommunications
Abidjan
- CA M. AKA Bonny Léon
Président Directeur Général
CI-TELCOM
Abidjan
- D M. BOTI BI GOUESSE George
Ingénieur, Chef de Département
ANAM
Abidjan
- D M. COULIBALY Sinaly
Officier Radio
Société ivoirienne de
transport maritime (SITRAM)
Abidjan
- D M. ELEFTERIOU Georges
Ingénieur, Chef de Département
ANAM
Abidjan
- D M. HOBA Attoumou H.
Sous-Directeur de la
navigation et de la sécurité
maritime
Ministère de l'équipement,
des transports et du tourisme
Abidjan
- D M. KESSE Angaman
Chef de Département
radiocommunications et gestion
des fréquences
CI TELCOM
Abidjan
- D M. KOFFI Kouman A.
Secrétaire du Comité
technique
Radiodiffusion Télévision
Ivoirienne
Abidjan
- D M. NIAMIEN Yeffe
Inspecteur des Services
Techniques
Radiodiffusion Télévision
Ivoirienne
Abidjan

**CTI Côte d'Ivoire (République de)
Côte d'Ivoire (Republic of)
Côte d'Ivoire (República de)
(suite)**

- D M. NIAMKE Kakou Jean
Directeur
Exploitation technique
CI-TELCOM
Abidjan
- D Mlle RENAUT Michèle P.
Directeur des relations
publiques
CI-TELCOM
Abidjan
- D M. YAO Kouakou Jean-Baptiste
Sous-Directeur, Contrôle
des radiocommunications
Direction de la Réglementation
générale
Ministère des postes et
télécommunications
Abidjan

CUB Cuba - Cuba - Cuba

- C M. MARTINEZ ALBUERNE Carlos M.
Director de Frecuencias
Radioeléctricas
Ministerio de Comunicaciones
La Habana
- CA M. FERNANDEZ MCBEATH Hugo
Jefe de Departamento
Administración Frecuencias
Dirección de Frecuencias
Radioeléctricas
Ministerio de Comunicaciones
La Habana
- D M. DELGADO SOLER Armando
Especialista en
Telecomunicaciones
Dirección de Frecuencias
Radioeléctricas
Ministerio de Comunicaciones
La Habana

DNK Danemark - Denmark - Dinamarca

- C M. JACOBSEN Marius
Head of Division
National Telecom Agency
Copenhagen

**DNK Danemark - Denmark
Dinamarca (suite)**

- CA M. HESS Soeren
Deputy Head of Division
National Telecom Agency
Copenhagen
- D M. ANDERSEN Henning B.
Frequency Manager
National Telecom Agency
Copenhagen
- D M. BACH Joern
Telecom A/S
Taastrup
- D M. CHRISTENSEN Per
Frequency Manager
National Telecom Agency
Copenhagen
- D M. LAURSEN Keld S.
Inspector
Civil Aviation Administration
Copenhagen
- D M. LINDGAARD Robert
Frequency Manager
National Telecom Agency
Copenhagen
- D M. WEDERVANG Bendt
Telecom A/S
Taastrup

**DJI Djibouti (République de)
Djibouti (Republic of)
Djibouti (República de)**

- C M. AREH Houssein
Directeur technique
Radio Télévision de Djibouti
Djibouti
- C M. FARAH-MOUMIN Yabeh
Directeur général adjoint
Office des postes et
télécommunications
Djibouti
- CA M. BOREH Abdallah
Chef de centre émetteur
Office des postes et
télécommunications
Djibouti
- D M. BOULHAN AWALEH Omar
Chef de Service Radio
Office des postes et
télécommunications
Djibouti

EGY Egypte (République arabe d')
Egypt (Arab Republic of)
Egipto (República Árabe de)

- C M. IBRAHIM Ibrahim
 Head of Antennas and Radio
 Propagation
 Egyptian Radio and TV Union
 Cairo
- CA Mme ABOUL ELA Raga
 General Manager, Technical
 Affairs
 ARENTO
 Cairo
- CA Mme SEDKY Aisha
 Manager of Wireless Department
 ALEX
 ARENTO
 Cairo
- D M. FAYOUMI Abdoh
 Head of Transmission Projects
 Egyptian Radio and TV Union
 Cairo
- D M. HAMMOUDA Ibrahim
 Director of MF & HF Projects
 Egyptian Radio and TV Union
 Cairo
- D Mme KAMEL Rokaya
 General Director of
 Propagation
 Egyptian Radio and TV Union
 Cairo
- D Mme LAWRENCE Niveen
 Head of HF Department
 Egyptian Radio and TV Union
 Cairo

UAE Emirats arabes unis
United Arab Emirates
Emiratos Arabes Unidos

- C M. LUTFI Hatim
- CA M. AL ZAABI Ibrahim Rashid H.
 Director General
 Technical Department
 Ministry of Information &
 Culture
 Abu Dhabi
- D M. AL ALI Abdul Rehman
 Assistant Controller of
 Engineering/TV
 UAE Radio & Television
 Dubai

UAE Emirats arabes unis
United Arab Emirates
Emiratos Arabes Unidos
 (suite)

- D M. AL MUHAIDEB Ahmed
 Assistant Controller
 Engineering/Radio Affairs
 UAE Radio & Television
 Dubai
- D M. AL NUAIMI Fadl
 ETISALAT
 Abu Dhabi
- D M. AL ZABE Abdullah
 Ministry of Communications
 Abu Dhabi
- D M. AMIRI Ali M.R.A.
 Ministry of Communications
 Abu Dhabi
- D M. HATTAB
 Chief Engineer
 Technical Department
 Ministry of Information
 Abu Dhabi
- D M. ISHAQ Mustafa Hamouda
 Head of Television Engineering
 Department
 Ministry of Information &
 Culture
 Abu Dhabi
- D M. RAIS-UL-HAQ
 Senior Engineer
 Technical Department
 Ministry of Information &
 Culture
 Abu Dhabi
- D M. YAROOF Ali
 ETISALAT
 Abu Dhabi
- A M. CHAUDHURI Biswapati
 Telecommunication Adviser
 Ministry of Communications
 Abu Dhabi
- A M. DAVEY Norman Charles
 Technical Adviser
 UAE Radio & Television
 Dubai

EQA Equateur - Ecuador - Ecuador

- C M. IZQUIERDO Luis
 Miembro del Directorio
 Instituto Ecuatoriano de
 Telecomunicaciones
 Quito

EQA Equateur - Ecuador - Ecuador
(suite)

- 1)C M. VIVANCO ARIAS José
Subgerente Técnico General de
Frecuencias
Instituto Ecuatoriano de
Telecomunicaciones
Quito
- 1) 3 - 22.2
- D M. BENAVIDES ALOMIA Edgar O.
Jefe de la División de
Administración Técnica
Instituto Ecuatoriano de
Telecomunicaciones
Quito
- D M. MATUTE URIA Enrique
Jefe de la División de
Comprobación Técnica
Instituto Ecuatoriano de
Telecomunicaciones
Quito
- D M. ROLDAN REASCOS Milton E.
Jefe de la División de
Planificación y Normalización
Instituto Ecuatoriano de
Telecomunicaciones
Quito

E Espagne - Spain - España

- C Sra. SALGADO MENDEZ Elena
Secretaria General de
Comunicaciones
Palacio de Comunicaciones
Madrid
- CA M. ALVARADO DELGADO Antonio
Subdirector General Control
e Inspección
Dirección General de
Telecomunicaciones
Madrid
- CA M. ESTEBAN Fernando
Subdirector General
Gabinete Técnico
Secretaría General de
Comunicaciones
Madrid
- CA M. LOPEZ DE CHICHERI Juan
Director General de OCI
Ministerio de Asuntos
Exteriores
Madrid

E Espagne - Spain - España
(suite)

- CA M. LOPEZ MOLINA Angel Luis
Secretaría General de
Comunicaciones
Madrid
- CA M. MORENO PERAL Isaac
Subdirector General
Concesiones y Gestión
Espectro Radioléctrico
Dirección General de
Telecomunicaciones
Madrid
- CA M. NADAL ARIÑO Javier
Director General de
Telecomunicaciones
Madrid
- CA M. OSA BUENDIA Joaquin
Subdirector General de
Redes y Sistemas
Dirección General de
Telecomunicaciones
Madrid
- CA M. SANCHEZ VALLE Juan N.
Jefe de Area R.R.I.I.
Dirección General de
Telecomunicaciones
Madrid
- D M. ABEIJON GARCIA Manuel
Jefe de Area de Programas
Espaciales
Dirección General de
Telecomunicaciones
Madrid
- D M. ALONSO MARTINEZ Isidoro
RETEVISION
Madrid
- D M. ALVAREZ BALBOA José Ramón
Jefe del Servicio de
Comprobación Técnica de
Emisiones
Dirección General de
Telecomunicaciones
Madrid
- D M. ALVARIÑO ALVAREZ Ricardo
Consejero Técnico
Planificación del Espectro
Dirección General de
Telecomunicaciones
Madrid

E Espagne - Spain - España
(suite)

- D Sra. AMENEIRO ESPÍNEIRA Aurora
Jefe de Sección Jurídica
Dirección General de
Telecomunicaciones
Madrid
- D M. AMO RUIZ Luis
Sociedad Española de
Radiodifusión, S.A.
Madrid
- D M. AZNAR TABERNER José
Director General
RETEVISION
Madrid
- D M. BARRANCO ALVAREZ José Luis
Servicios Móviles
Telefónica
Madrid
- D M. BARRASA FERNANDEZ Gabriel
Consejero delegado
Hispasat, S.A.
Madrid
- D M. BARRIONUEVO José
Miembro del Parlamento
Madrid
- D M. BELTRAN FERNANDEZ Rafael
Jefe Subunidad Técnica
Ministerio de Defensa
Madrid
- D M. BENEYTO PEREZ Juan Carlos
Consejero Técnico
Secretaría General de
Comunicaciones
Madrid
- D Sra. CALLEJAS COTRINA C.
Cuerpo Especial de
Facultativos de Meteorólogos
Instituto Nacional de
Meteorología
Madrid
- D M. CAMBLOR-FERNANDEZ José R.
Jefe Area Planificación
Espectro Radioeléctrico
Dirección General de
Telecomunicaciones
Madrid
- D M. CARRASCAL PRIETO Carlos
Jefe de Area Servicios Fijo y
Móvil
Dirección General de
Telecomunicaciones
Madrid

E Espagne - Spain - España
(suite)

- D M. CASTEJON DE LA CUESTA A.
Cuerpo Especial Facultativo de
Meteorólogos
Instituto Nacional de
Meteorología
Madrid
- D M. CAÑAS SANTOS Juan
Consejero Técnico
Dirección General de
Telecomunicaciones
Madrid
- D M. CHAMORRO Lorenzo
Subdirector Adjunto de
Relaciones Técnicas
Internacionales
Radiotelevisión Española
Madrid
- D Srta. CRESPO GUTIERREZ M.V.
Jefa de Negociado
Secretaría General de
Comunicaciones
Madrid
- D M. DE BENITO Julio
Asesor
Ministerio de Obras Públicas y
Transportes
Madrid
- D M. DE INES HORCAJO Francisco
Servicios Móviles
Telefónica
Madrid
- D M. DE LA CALLE GARCIA Juan
Planificación de Redes y
Servicios
Telefónica
Madrid
- D Sra. DE TORRONTGUEI Y PICO DE COAÑA
Jefa Protocolo Ministro
Obras Públicas y Transportes
Madrid
- D M. DEL CID Ricardo
Director Provincial de Málaga
Dirección Provincial del
Departamento
Málaga
- D M. DHALLUIN FARIA Miguel J.
Técnico de la Subdirección
General de Tránsito Aéreo
Dirección General de Aviación
Civil
Madrid

E Espagne - Spain - España
(suite)

- D Srta. DIAZ ASENJO M. Carmen
Jefe de Sección
Secretaría General de
Comunicaciones
Madrid
- D Srta. ESTIVALIS MOSCARDO Anabel
Ministerio Asuntos Exteriores
Madrid
- D M. FELIU ORTEGA Luis
Ministerio de la Defensa
Madrid
- D M. FERNANDEZ FERREIRA Julio
Telefónica
Madrid
- D M. FERNANDEZ-CONDE Enrique
Area Asuntos Jurídicos
Dirección General de
Comunicaciones
Madrid
- D M. GARCIA BARQUERO Pedro
Jefe de Area de Ingeniería del
Espectro Radioeléctrico
Dirección General de
Telecomunicaciones
Madrid
- D M. GARCIA LOPEZ Pedro
Director
Telefónica
Madrid
- D M. GIL LOPEZ José Luis
Jefe de Servicio de
Interferencias
Dirección General de
Telecomunicaciones
Madrid
- D M. GONZALEZ DE LINARES Juan M.
Subdirector General OCI
Ministerio de Asuntos
Exteriores
Madrid
- D M. GOYA LAZA Javier
Coordinador de Actividades
Secretaría General de
Comunicaciones
Madrid
- D M. GUERRA Fernando
Secretario
Secretaría General de
Comunicaciones
Madrid

E Espagne - Spain - España
(suite)

- D M. HERRERO ALCON Antonio
Ministerio de Obras Públicas y
Transportes
Madrid
- D M. JIMENEZ PALOP Luis
Desarrollo Nuevos Servicios
Telefónica
Madrid
- D Sra. JIMENEZ-RIDRUEJO Mercedes
Area de Relaciones
Internacionales
Dirección General de
Telecomunicaciones
Madrid
- D M. LEON CABREJAS Juan José
Servicios Moviles
Telefónica
Madrid
- D M. LOPEZ LOZANO José Antonio
Jefe Provincial Inspección
Telecomunicaciones
Dirección General de
Telecomunicaciones
Sevilla
- M. LOSADA Angel
Consejero
Misión Permanente de España
Ginebra
- D M. MACHOTA VADILLO José Luis
Relaciones Internacionales
Telefónica
Madrid
- D M. MANZANO RENGEL Juan Manuel
Jefe Sección
Telecomunicaciones
Dirección General de Aviación
Civil
Madrid
- D M. MARTIN GARCIA Alberto
Consejero Técnico
Dirección General de
Telecomunicaciones
Madrid
- D M. MARTIN MANRIQUE Valeriano
Jefe Area Comprobación Técnica
Emisiones Radioeléctricas
Dirección General de
Telecomunicaciones
Madrid

E Espagne - Spain - España
(suite)

- D M. MATEO ALCANTARA Manuel A.
Secretario
Secretaría General de
Comunicaciones
Madrid
- D M. MENCHEN ALUMBREROS Miguel
Tecnología y Normativa Técnica
Telefónica
Madrid
- D M. MENENDEZ SANCHEZ Pascual
Director de Explotación
Hispasat, S.A.
Madrid
- D M. MIRA GARCIA Andrés
Jefe Provincial
Inspección Telecomunicaciones
Ministerio de Obras Públicas y
Transportes
Málaga
- D M. MIRALLES MORA Vicente
Subdirector General
Ministerio de Defensa
Madrid
- D M. MOLINA MILANES Rafael
Responsable Técnicas de
Transmisión
Hispasat, S.A.
Madrid
- D M. MOLINA NEGRO Francisco
Asesor para las Relaciones
Internacionales
RETEVISION
Madrid
- D M. NAVASCUES CHIVITE Javier
Planificación de Redes y
Servicios
Telefónica
Madrid
- D M. NUÑEZ MACIA José
Asesor Técnico
Estado Mayor Conjunto
Madrid
- D M. ORTEGA PUENTE Luis
Dirección General de
Telecomunicaciones
Madrid
- D M. PADILLA MARTINEZ Juan
Asesor Técnico

E Espagne - Spain - España
(suite)

- D M. PANDURO PANADERO Miguel A.
Responsable Recursos Orbitales
Hispasat, S.A.
Madrid
- D M. PASARON LOPEZ Domingo
Sociedad Española de
Radiodifusión, S.A.
Madrid
- 1)D Srta. PIESCHACON Beatriz
Palacio de Comunicaciones
Madrid
1) Secretaria
- D Srta. PIESCHACON QUIJANO Adriana
Secretaría General de
Comunicaciones
Madrid
- D M. PINTO TARDON Pedro
Director de Programas
Hispasat, S.A.
Madrid
- D M. PITA RIOLA Fernando
Planificación de Redes y
Servicios
Telefónica
Madrid
- D M. PLAZA GONZALEZ Luis M.
Ingeniero Aeronáutico
Dirección General de Aviación
Civil
Madrid
- D M. PRIETO GALLEGO José
Planificación de Redes y
Servicios
Telefónica
Madrid
- D M. PRIETO GARCIA Fernando
Dirección General de Aviación
Civil
Madrid
- D M. QUINTAS RIPOLL Eduardo
Instituto Nacional de
Técnica Aeroespacial
Madrid
- D Sra. RODRIGUEZ COLOMO Yolanda
Area de Relaciones
Internacionales
Dirección General de
Telecomunicaciones
Madrid

E Espagne - Spain - España
(suite)

- D M. ROMERO ALES José
Jefe del Estado Mayor Conjunto
Madrid
- D M. RUBIO CARRETON Vicente
Jefe del Servicio Jurídico
Internacional
Dirección General de
Telecomunicaciones
Madrid
- D Srta. RUIZ DE VELASCO Pilar
Coordinadora General
Secretaría General de
Comunicaciones
Madrid
- D Sra. SANCHEZ RAMOS Inmaculada
Sistemas de Comunicaciones
por Satélites
Telefónica
Madrid
- D M. SESEÑA NAVARRO Julián
Jefe Departamento Sistemas
Telecomunicación
Hispasat, S.A.
Madrid
- D M. SOLANO BALERIOLA Juan
Planificación de Redes y
Servicios
Telefónica
Madrid
- D M. SUAREZ BERNALDO Luis
Dirección General de
Telecomunicaciones
Palacio de Telecomunicaciones
Madrid
- D M. SUBERVIOLA CASTAÑOS Lorenzo
Técnico Medio
Dirección General de
Telecomunicaciones
Madrid
- D M. TEJERINA GARCIA José Luis
RETEVISION
Madrid
- D M. TORRES JIMENEZ Juan
Jefe de Prensa
Secretaría de Comunicaciones
Madrid
- D M. VADILLO SACRISTAN Luis E.
Instituto Nacional de Técnica
Aeroespacial
Madrid

E Espagne - Spain - España
(suite)

- D M. VALVERDE ASENSIO Luis
Jefe Sección Frecuencias
Dirección General de Aviación
Civil
Madrid
- D Srta. ZALDIVAR MARTINEZ Rosario
Jefe de Sección Tramitación y
Estadística
Dirección General de
Telecomunicaciones
Ministerio de Obras Públicas
y Transportes
Madrid
- D M. ZARAGOZA MIFSUD Manuel
Asesor
- A M. BERNARDO JIMENEZ Rafael
Sociedad Española de
Radiodifusión
Madrid
- A M. DIAZ LANZA Antonio
Jefe Subunidad Técnica
Ministerio de Defensa
Madrid
- A M. GARCIA NAVARRO Luis José
Ingeniero Aeronáutico
Dirección General
Aviación Civil
Madrid
- A M. IRANZO COLLADO Julian
Jefe Subunidad Técnica
Cuartel General del Ejercito
- A M. MUÑOZ MOSQUERA Andrés
Sargento Narfa SP
Ministerio de Defensa
Madrid
- A M. RUIZ ALDEREGUIA Francisco J.
Jefe Subunidad Técnica
Estado Mayor Conjunto
Madrid
- A M. SALAS SALVATIERRA José
Jefe Subunidad Técnica
Cuartel General del Ejercito

USA Etats-Unis d'Amérique
United States of America
Estados Unidos de América

- C H.E. Mr. BARAN Jan Witold
Ambassador

USA Etats-Unis d'Amérique
United States of America
Estados Unidos de América
(suite)

CA M. FITCH Michael
Department of State
Washington

CA M. HELMAN Gerald
Department of State
Washington

CA Mrs. ROSEMAN Walda
Dir. of International
Communications
Federal Communications
Commission
Washington

CA M. RUSH Charles
Department of Commerce
Washington

CA M. SCHMITT Harrison
Department of State
Washington

CA M. URBANY Frank
Director International and
Agency Relations
Bell South
Washington

D M. ANDERSON Dexter
Telecommunications Manager
US Information Agency
Washington

D M. BAILEY Edward J.
President
National Association of
Shortwave Broadcasters
Franklin, Tennessee

D M. BINCKES Jeffrey
Manager, Frequency
Utilization Engineering
Comsat Mobile Communications
Washington

D M. BORMAN William M.
Vice President
Motorola, Inc.
Washington

D M. CARROLL James
Program Director
SFA Inc.
Landover, MD

USA Etats-Unis d'Amérique
United States of America
Estados Unidos de América
(suite)

D M. COOK William
Director
Electromagnetic Spectrum
Management
Dept. of Navy
Washington

D M. FISHER Ben C.

D M. FOOSE Victor
Manager, Frequency Engineering
Branch
Federal Aviation
Administration
Washington

D M. GERGELY Tomas E.
National Science Foundation

D M. GILSENAN John
Department of Commerce
Washington

D M. GLASER Paul F.
VITA
Arlington, VA

D M. HATCH Bill
Department of Commerce
Washington

D Mme HEYWARD Ann O.
NASA
Cleveland, Ohio

D Mme HUTCHISON Kris
Aviation Expert
Annapolis, MD

D Mlle IRION Karyl
NASA/ARC
Sterling, VA

D M. JACOBS Ed
Deputy Chief
Land Mobile and Microwave
Division
Federal Communications
Commission
Washington

D M. JANSKY Donald

D M. KIMBALL Hal
Department of Commerce
Washington

USA Etats-Unis d'Amérique
United States of America
Estados Unidos de América
(suite)

- D M. LEINWOLL Stanley
United States Government
Washington
- D M. LEPKOWSKI Ron
Vice President-Engineering
Alexandria, VA
- D M. LEVIN Lon
American Mobile Satellite
Corporation
Washington
- D M. LUTHER Bill
International Advisor
Federal Communications
Commission
Washington
- D M. MARQUARDT Niels
U.S Embassy
Paris
- D M. MAY Robert
- D M. MC INTYRE Robert C.
Chief, International Liaison
Staff
Federal Communications
Commission
Washington
- D M. MESSER H. Donald
- D M. MILLER John
Department Manager
Stanford Telecom
Seabrook, MD
- D M. OLSON Larry
Chief International Branch
Federal Communications
Commission
Washington
- D M. PALMER Lawrence
Program Manager
Department of Commerce
National Telecommunications
and Information Administration
Washington
- D M. PAPPAS Walter
U.S. Coast Guards
Washington

USA Etats-Unis d'Amérique
United States of America
Estados Unidos de América
(suite)

- D M. RAISH Leonard R.
Association of American
Railroads
Washington
- D M. RAPPOPORT Eugene
AT&T
Bedminster, NJ
- D M. RATNER Steven R.
Attorney-Adviser for Economic,
Business and Communications
Affairs
US Department of State
Washington
- D M. REINHART Edward E.
Consultant
- D M. RICHARDS Warren
Deputy Director
CIP/SIO
Department of State
Washington
- D M. RINALDO Paul
Newington, CT
- D M. RINKER Alan
ARC Professional Services
Group
Sterling, VA
- D M. RODRIGUEZ Raul R.
Partner
Leventhal Senter & Lerman
Washington
- D M. ROSE Reynold L.
- D M. TAYLOR Bob
Spectrum Management Specialist
NASA
Washington
- D Mme TAYLOR Leslie A.
President
Leslie Taylor Associates
Bethesda, MD
- D M. TYCZ Thomas S.
Deputy Chief
Domestic Facilities Division
CCB
Federal Communications
Commission
Washington

**USA Etats-Unis d'Amérique
United States of America
Estados Unidos de América
(suite)**

- D M. VORHIES Jim
Department of Commerce
Washington
- D M. WALSH Thomas M.
Engineer
Office of International
Communications
Federal Communications
Commission
Washington
- D M. WILLIAMS Frank
Federal Communications
Commission
Washington
- D M. ZAPUTOWYCZ Roman
Bell Atlantic Corporation
Bedminster, NJ

**ETH Ethiopie (République -
démocratique populaire d')
Ethiopia (People's Democratic -
Republic of)
Etiópía (República Democrática -
Popular de)**

- C M. YADETTA Bekele
Acting Radio Division Manager
Ethiopian Telecommunications
Authority
Addis Ababa
- D M. ABAI Gessese
Chief Engineer (ETV)
Ministry of Information
Addis Ababa

FNL Finlande - Finland - Finlandia

- C M. KARJALAINEN Jorma Kalervo
Head of Radio Frequency
Department
Telecommunications
Administration Centre
Helsinki
- CA M. HAHKIO Touko I.
Engineer in Chief
Ministry of Transport and
Communications
Helsinki

**FNL Finlande - Finland
Finlandia (suite)**

- CA Mme HUHTALA Margit A.L.
Head of Section
Telecommunications
Administration Centre
Helsinki
- D M. HUUHKA Esko
Planning Engineer
Network Planning Department
Oy. Yleisradio Ab.
Helsinki
- D M. KOSKENNIEMI Osmo Matti
Department Head
Network Planning Department
Oy. Yleisradio Ab.
Helsinki
- D M. PASANEN Matti
Development Manager
Mobile Communications
Telecom Finland
Helsinki
- D M. SAARINEN Erkki
Head of Division
Telecommunications
Administration Centre
Helsinki
- D M. VAYRYNEN Esko O.
LTC Engineer
Finnish Defence Forces
Helsinki
- A M. LAMPI Martti N.J.
Chief Inspector
Civil Aviation Administration
Vantaa

F France - France - Francia

- C M. FEVRE Nicolas
Président
Comité de Coordination des
Télécommunications
Paris
- CA M. DEVEMY Jean-François
Sous-Directeur des
Radiocommunications
Direction de la Réglementation
générale
Ministère des postes et
télécommunications
Paris

**F France - France - Francia
(suite)**

- CA M. POPOT Michel
Secrétaire général
Comité de Coordination des
Télécommunications
Paris
- CA M. SAUVET-GOICHON Daniel
Directeur du CERIM
TDF
Paris
- CA M. ZINOVIEFF Eric
Chef du Département Fréquences
Division Mobiles
France Telecom
Montrouge
- CA M. SILLARD François J.L.
Ingénieur en Chef des
Télécommunications
Direction de la Réglementation
générale
Ministère des PTT
Paris
- D M. ABOUDARHAM Pierre
Directeur Départemental
FT/BF
Montrouge
- D M. ALONSO Michel
Chef du Bureau des fréquences
CNES
Toulouse
- D Mme ALVERNHE Martine
Division Mobiles
France Telecom
Montrouge
- D M. ATTANASIO Bernard
Chef du Bureau Fréquences
DGA-DEI
Ministère de la Défense
Paris
- D M. BARELLI Yves
Conseiller des affaires
étrangères
Ministère des affaires
étrangères
Paris
- D M. BRUNSCHWIG Pierre
Ingénieur en Chef des
Télécommunications
CNET
Issy-les-Moulineaux

**F France - France - Francia
(suite)**

- D Mlle CHRUPEK Nathalie J.
Direction de la Navigation
Aérienne
Paris
- D M. CLAUDEL Jean-Jacques
Conseiller technique
Conseil Supérieur de
l'Audiovisuel
Paris
- D M. COCHEPIN Robin-Frédéric
Responsable Fréquences
Etat-major des Armées
- D M. CORDIER Pascal
Bureau Fréquences
France Telecom
CNET
Montrouge
- D M. DONZELLE Michel
Chef de Département
Conseil Supérieur de
l'Audiovisuel
Paris
- D M. DUMONT Patrick
Technical Manager
CNES
Toulouse
- D M. DURAND-CARRIER Franck
Responsable systèmes
radiodiffusion
CNES
Toulouse
- D M. DURTESTE Bruno
Capitaine de Corvette
Etat-Major de la Marine
Ministère de la Défense
Paris
- D M. FREMONT Jean-François
Gestionnaire des Fréquences
CTAA
Villacoublay-Air
- D Mlle GARNIER Mireille
Télédiffusion de France
Montrouge
- D M. GELAS Joseph P.E.
Responsable de la
Normalisation
Matra Communication
Bois d'Arcy

F France - France - Francia
(suite)

- D Mme GIOVACHINI Madeleine
Adjoint au Directeur du CERIM
TDF
Paris
- D M. GUINARD Jean-Jacques
Ingénieur d'Etudes et
d'Exploitation de l'Aviation
Civile
Direction de la Navigation
Aérienne
Paris
- D M. HERNANDEZ Daniel J.
Sous-Directeur
Radiocommunications
CNES
Toulouse
- D Mme HERVE Danielle
Secrétaire
Comité de Coordination des
Télécommunications
Paris
- D M. HOSPITAL Jean-Jacques
Chef du Département
Prospective du Spectre
Direction de la Réglementation
générale
Ministère des PTT
Paris
- D Mme HUMBERT Sylvie G.C.
Division Mobiles
France Telecom
Montrouge
- D M. JEANNERET Jean-Claude
Ingénieur en Chef
Direction de la Réglementation
générale
Ministère des PTT
Paris
- D M. LEFEVRE Eric
Ingénieur, chargé de Mission
Conseil supérieur de
l'Audiovisuel
Paris
- D M. LEMAIRE Jean
Chef du Service technique
Conseil supérieur de
l'Audiovisuel
Paris

F France - France - Francia
(suite)

- D Mme LIMODIN Martine
Inspecteur Principal
FT/BF
Montrouge
- D M. LLORENS Jean-Claude
CNES
Toulouse
- D M. LORQUET Paul
Chef du Département Liaisons
Conseil Supérieur de
l'Audiovisuel
Paris
- D M. LOUVET Francis
CNES
Toulouse
- D M. LUCIANI Jean-Pierre
Directeur départemental
adjoint
Direction de la Réglementation
générale
Ministère des PTT
Paris
- D M. MANGUIAN Jean-Pierre
Chef de Département
Direction de la Réglementation
générale
Ministère des PTT
Paris
- D M. MAROTTE Frank
CCT
Paris
- D M. MASSIP Bernard
Conseiller technique PTT
Ministère de la Défense
Villacoublay
- D M. MEILHOC Michel D.P.
Ingénieur en Chef
Chargé de mission
CCETT/TDF
Cesson-Sevigné
- D M. MONNOT Michel
Chef du Groupement
Gestion des Fréquences
Direction de la Réglementation
générale
Ministère des PTT
Paris

F France - France - Francia
(suite)

- D Mme NICLOT Claire
Chef du Département Satellites
Direction de la Réglementation
générale
Ministère des PTT
Paris
- D M. ORDAS Jean-Claude
Chef Bureau Fréquences
DMA
Paris
- D M. ORTEGA MOLINA Arturo
Ingénieur
France Telecom
CNET/PAB/SHM
Issy-les-Moulineaux
- D M. PICHEVIN Bernard
Responsable des Fréquences
Ministère de la Défense
Paris
- D M. PIPONNIER Jean
Ingénieur en Chef
CNET/PAB
Issy-les-Moulineaux
- D M. QUENTEL Michel
Inspecteur Central des
Transmissions
BMNF
Paris
- D M. RANCY François
France Telecom
CNET
Issy-les-Moulineaux
- D M. RICHY Michel
Lieutenant Colonel
BMNF
Paris
- D M. ROLLAND François
Chef de département
Direction de la Réglementation
générale
Ministère des PTT
Paris
- D M. ROUSSEL Thibaut
France Telecom
CNET/PAB/STS
Issy-les-Moulineaux
- D M. RUIZ Luis
Responsable de Programme
CNES
Paris

F France - France - Francia
(suite)

- D M. SAINT-ETIENNE Jean
Assistant du Directeur
technique
CNES
Toulouse
- D M. SCHLATTER Alain
Chef Service Fréquences
TDF
Montrouge
- D M. TASSIN Jean
Administrateur
Direction de la Réglementation
générale
Ministère des PTT
Paris
- D M. THIBLET Gérard
Gestionnaire des Fréquences
de l'Armée de Terre
Bureau Militaire National des
Fréquences
Ministère des PTT
Paris
- D M. THUE Marcel
Ingénieur général
CNET
Issy-les-Moulineaux
- D M. ZARRAGOZA Jean-Louis
Bureau des Fréquences
CNES
Toulouse
- A M. ALTIERI Roland
Responsable des Coordinations
pour la Radiodiffusion
Direction de la Réglementation
générale
Ministère des PTT
Paris
- A M. BESSIS Jean-Luc
CLS
Toulouse
- A M. BLOCH Jean-Jacques
Responsable des Programmes
futurs de satellites de
télécommunication
Aérospatiale
Cannes-la-Bocca
- A M. BOUTES Jean-Pierre
Manager
Communications Systems
Matra Marconi Space
Toulouse

F France - France - Francia
(suite)

- A M. BROUSSE Louis
Director of Telecommunications
Policy - Europe
Motorola S.A.
Issy-les-Moulineaux
- A M. CAYLA Guy A.B.
Télécommunications
Radioélectriques et
Téléphoniques
Paris
- A M. DELION Philippe R.M.
Ingénieur Chef de Projet
Direction des services et
systèmes de communications
civiles
Thomson-CSF
Boulogne-Billancourt
- A M. FRAISE Pierre
Alcatel
Toulouse
- A M. HAMMOND Jean-Christophe
Ingénieur
Direction de la Réglementation
générale
Ministère des PTT
Paris
- A M. IZOULET Henri
Inspecteur
Direction de la Réglementation
générale
Ministère des PTT
Paris
- A Mme POUSSINES Sylvie
Inspecteur
Direction de la Réglementation
générale
Ministère des PTT
Paris
- A M. ROUFFET Denis
Chef de Projet
Alcatel Espace
Courbevoie

GAB Gabonaise (République)
Gabonese Republic
Gabonesa (República)

- C M. YOMBIYENI CAMARA I.J.
OPT
Libreville

GAB Gabonaise (République)
Gabonese Republic
Gabonesa (República)
(suite)

- CA M. MBENG-EKOGHA Fabien
Directeur
OPT
Libreville
- D M. IMOUNGA Francis
Directeur Technique
Radiodiffusion Télévision
Gabonaise
Libreville
- D M. KOUMBA François
Directeur
OPT
Libreville
- D M. LEGNONGO Jules
Directeur Général Adjoint
Radiodiffusion Télévision
Gabonaise
Libreville
- D M. NKOGHE NDONG Louis
Ingénieur des
télécommunications
OPT
Libreville

GMB Gambie (République de)
Gambia (Republic of the)
Gambia (República de)

- C M. BAYO Mamadou A.
Ministry of Works and
Communications
Banjul
- CA M. MOMODOU Cham
Gambia Telecommunications
Company Ltd.
Lusaka

GHA Ghana - Ghana - Ghana

- C M. ESSEL Paul A.
Posts and Telecommunications
Corporation
Accra
- D M. JACKSON Kofi A.
Chief Technical Coordinator
Posts and Telecommunications
Corporation
Accra

GHA Ghana - Ghana - Ghana
(suite)

D M. OSEI ANSAH Samuel
Director of Engineering
Ghana Civil Aviation Authority
Accra

GRC Grèce - Greece - Grecia

C M. ANTONIOU Georges
Directeur général
Ministère des Transports et
des Communications
Athens

CA M. HATZIMANOLIS Theodoros
Principal Engineer
Hellenic Telecommunications
Organization
Athens

D M. BOUKIS Dimitrios
Ministry of Defence
Athens

D M. GIANNAKAKIS Nikolaos
Head of Transmitters
Engineering Department
Greek Radio Television
Athens

D M. KATSELIS George
Director of Engineering and
Development
Greek Radio Television
Athens

D M. LAMBROU George
Director of Marine Education
Division
Greek Ministry of Mercantile
Marine
Piraeus

D M. RIGAS Pantelis
Hellenic Chamber of Shipping
Athens

A M. KOLOBOS G.
Greek Merchantile Marine
Athens

GTM Guatemala (République du)
Guatemala (Republic of)
Guatemala (República de)

C M. SANTOS DE LEON Rocaël O.
Jefe de Asesoría de
Frecuencias
Ministerio de Comunicaciones,
Transportes y Obras Públicas
Guatemala City

GUI Guinée (République de)
Guinea (Republic of)
Guinea (República de)

C M. SOW Mamadou D.
Responsable de la Gestion
des Fréquences
Ministère de la Communication
PTT
Conakry

CA M. SOUARE Souleymane
Ingénieur
Chef Service Maintenance
Radio Télévision Guinéenne
Conakry

D M. CAMARA Koly
Chef Centre CTS
Ministère de la Communication
PTT
Conakry

D M. CONDE Lancey
Chef Réseaux locaux
Ministère de la Communication
PTT
Conakry

HND Honduras (République du)
Honduras (Republic of)
Honduras (República de)

C M. PAZ IZAGUIRRE José M.
Director de
Radiocomunicaciones
HONDUTEL
Tegucigalpa

D M. LOBO FLORES Mario A.
Subjefe Departamento
Ingeniería del Espectro
HONDUTEL
Tegucigalpa

D M. MONTESSI PALMA Emilio A.
Jefe Departamento de
Frecuencias
Tegucigalpa

A M. FLORIAN Mario
Asesor Técnico
Compañía Televisora Hondureña
Tegucigalpa

HNG Hongrie (République de)
Hungary (Republic of)
Hungría (República de)

C M. DOROS Béla
Deputy State Secretary
Ministry of Transport,
Communications and Water
Management
Budapest

HNG Hongrie (République de)
Hungary (Republic of)
Hungria (República de)
 (suite)

- CA M. TOTH Kalman
 Head of Department
 Ministry of Transport,
 Communications and Water
 Management
 Budapest
- D M. HAZAY István
 Frequency Manager
 Ministry of Transport,
 Communications and Water
 Management
 Budapest
- D M. HEGYI Gábor
 Frequency Manager
 Ministry of Transport,
 Communications and Water
 Management
 Budapest
- D M. HORVATH Ferenc
 Deputy Head of Department
 Ministry of Transport,
 Communications and Water
 Management
 Budapest
- D M. KOMJATHY Andras
 Office of National
 Security
 Budapest
- D M. NEMES István
 Frequency Manager
 Ministry of Transport,
 Communications and Water
 Management
 Budapest
- D Mme NYERGES Júlia
 Frequency Manager
 Ministry of Transport,
 Communications and Water
 Management
 Budapest
- D M. RAJKI Tibor
 Head of Department
 Ministry of Transport,
 Communications and Water
 Management
 Budapest
- D M. SIMON Gyula
 Frequency Manager
 Ministry of Transport,
 Communications and Water
 Management
 Budapest

HNG Hongrie (République de)
Hungary (Republic of)
Hungria (República de)
 (suite)

- D Mme SZLATENYI Bajcseva S.
 Chief of Section
 Ministry of Transport,
 Communications and Water
 Management
 Budapest

IND Inde (République de l')
India (Republic of)
India (República de la)

- C M. NAYAK U.V.
 Member (Technology)
 Telecom Commission
 New Delhi
- CA M. JOSHI A.M.
 Wireless Adviser
 Ministry of Communications
 New Delhi
- D M. AGARWAL R.N.
 Joint Wireless Adviser
 Ministry of Communications
 New Delhi
- D M. KUSHVAHA R.J.S.
 Officer on Special Duty
 Ministry of Communications
 New Delhi
- D M. MOHANAVELU K.S.
 Deputy Director
 Frequency Management
 Indian Space Research
 Organisation
 Bangalore
- D M. MUTHUSWAMY S.
 Deputy Director General
 Department of
 Telecommunications
 Ministry of Communications
 New Delhi
- D M. RAI G.C.
 Director Frequency Assignment
 Ministry of Information
 Broadcasting
 New Delhi
- D M. SINHA Rameshwar P.
 Ministry of Communications
 New Delhi

INS Indonésie (République d')
Indonesia (Republic of)
Indonesia (República de)

- C H.E. Mr. UTOMO
 Ambassador of the Republic of
 Indonesia to Spain
 Embassy of the Republic of
 Indonesia
 Madrid

INS Indonésie (République d')
Indonesia (Republic of)
Indonesia (República de)
(suite)

- CA M. DJIWATAMPU Arnold Ph.
Deputy Director General for
Post & Telecom Standards
Directorate General of Posts
and Telecommunications
Jakarta
- CA M. SOEGIHARTO
Directorate General of Posts
and Telecommunication
Jakarta
- D M. AMIR Ahmad
General Manager
Directorate General of Posts
and Telecommunications
Jakarta
- D M. BIN MAHAMMAD BADIJURI Himami
Senior Communication Staff
Officer
Armed Forces
Jakarta
- D M. DEWATA
Department of Communication
Directorate General of Sea
Communications
Jakarta
- D M. DJAUHARI Ahmad
Director General
Radio, Television and Film
Department of Information
- D M. DJOHAR Mochamad A.
Senior Engineer
Satellite Operation
PT INDOSAT
Purwakarta
- D M. JUWANTO Arief
Project Manager
PT Bimantara Citra
Jakarta
- D M. MANURUNG Permin
Directorate General of
Air Communication
Jakarta
- D M. MULYOREDJO Mulyadi
Communication Staff Officer
DOD
Jakarta

INS Indonésie (République d')
Indonesia (Republic of)
Indonesia (República de)
(suite)

- D M. NANGOI Edmond
General Manager
Indonesian Telecommunication
Industry
(PT INTI)
Bandung
- D M. NIKELAS Ismara
Director of Radio Standard
D.G. Postel
Jakarta
- D Mme NISCAYA Nia
Department of Tourism, Posts
and Telecommunications
Jakarta
- D M. PRAJITNO Djoko
Manager, Engineering
INDOSAT
Jakarta
- D M. PUTRO Kresno
National Aeronautic and
Space Council
Jakarta
- D M. RAHARDJO Tulus
Head of Frequency Assignment
Directorate of Frequency
Management
Directorate General of Posts
and Telecommunications
Jakarta
- D M. SAMSU Ben S.
Directorate General of Posts
and Telecommunications
Jakarta
- D M. SIMORANGKIR B.P.
Indonesian Embassy
Madrid
- D M. SUHARDJO Hernawan
General Manager
PT Telekomunikasi Indonesia
Directorate General of Posts
and Telecommunications
Jakarta
- A M. ADAMHAR Ferry
Indonesian Mission to the UN
Geneva
- A M. PURAWIDJAJA Djakaria
Expert Staff
Ministry of Tourism, Posts
and Telecommunication
Jakarta

INS Indonésie (République d')
Indonesia (Republic of)
Indonesia (República de)
(suite)

- A M. SAKIDIN Syahri
Department of Foreign Affairs
Jakarta
- A M. VAN DER HEYDEN Thomas A.
Adviser to Director
PT Mediacitra Indostar
Jakarta

IRN Iran (République islamique d')
Iran (Islamic Republic of)
Irán (República Islámica del)

- C M. SHAHABEDDIN Hossein
Deputy Minister for
Telecommunication Affairs
Ministry of PTT
Tehran
- 1) CA M. MAHYAR Hossein
Director General of
Telecommunications
Directorate General of
Telecommunications
Ministry of PTT
Tehran
- 1) Acting Head
- CA M. BEHDAD Emamgholi
General Director of Network
Expansion
Islamic Republic of Iran
Broadcasting
- D M. ASKARI Mohammad Ali
Directorate General of
Telecommunications
Ministry of PTT
Tehran
- D M. BARZEGAR-MARVASTI Hossein
Tehran
- D M. DJOUHARI Gholam Hossein
Expert of Frequency Management
Ministry of PTT
Tehran
- D M. ETEMADI Mohammad
Expert of Frequency Management
Ministry of PTT
Tehran
- D M. GASPAR Vanand
Senior Planning Engineer
Islamic Republic of Iran
Broadcasting
Tehran

IRN Iran (République islamique d')
Iran (Islamic Republic of)
Irán (República Islámica del)
(suite)

- D M. HAKKAK Mohammad
- D M. KABIRI RAHANI Mansoor
Telecommunication Company
of Iran
Tehran
- D M. KARAMATY TAVALLAAI Mohammad S.
Deputy Director
Engineering and Development
Long Distance Hauls
Telecommunication Company
of Iran
Tehran
- D M. MAKAREMI SHARIFI Ali A.
Frequency Management Expert
Ministry of PTT
Tehran
- D M. MEHRPOOYAN Golali
Senior Engineer
Islamic Republic of Iran
Broadcasting
Tehran
- D M. MOAZZAMI Reza
Director of International
Technical Affairs
Islamic Republic of Iran
Broadcasting
Tehran
- D M. MORTAZAVI Asaad
Satellite Manager
Islamic Republic of Iran
Broadcasting
Tehran
- D M. RAZANI NEZAMULOLAMAEI M.
Directorate General of
Telecommunications
Ministry of PTT
Tehran
- D M. RAZAVI Mozaffar
Senior Engineer
Islamic Republic of Iran
Broadcasting
Tehran
- D M. STEPANIAN Valod
Chief Engineer
Islamic Republic of Iran
Broadcasting
Tehran

**IRN Iran (République islamique d')
Iran (Islamic Republic of)
Irán (República Islámica del)
(suite)**

D M. ZAMANIAN Masmhour
Senior Engineer
Islamic Republic of Iran
Broadcasting
Tehran

IRL Irlande - Ireland - Irlanda

C M. CAREY Patrick L.
Department of Tourism,
Transport and Communications
Dublin

CA M. RYAN Aidan
Department of Tourism,
Transport and Communications
Dublin

D M. FOLEY John Oliver
Telecom Eireann
Radio Satellite Section
Dublin

D M. KEATING Patrick
Assistant Chief Executive
ANSO
Department of Tourism,
Transport and Communications
Dublin

D M. VERCOE-ROGERS Peter
Radio Telefis Eireann
Dublin

ISL Islande - Iceland - Islandia

1)C M. ARNAR Gustav
Chief Engineer
General Directorate of Posts
and Telecommunications
Reykjavik

1) Joint

1)C M. OLAFSSON Guomundur
Chief of Teleinspectorate
General Directorate of Posts
and Telecommunications
Reykjavik

1) Joint

**ISL Islande - Iceland - Islandia
(suite)**

CA M. HARDARSON Hordur
Chief Engineer
Teleinspectorate
General Directorate of Posts
and Telecommunications
Reykjavik

**ISR Israël (Etat d')
Israel (State of)
Israel (Estado de)**

C M. KLEPNER Samuel
Director of Engineering
& Licensing
Ministry of Communications
Tel Aviv

1)C M. MAZAR Haim
Head of Spectrum Licensing
Division
Ministry of Communications
Tel Aviv

1) C du 2 au 17.2
2) CA du 18.2 au 3.3

1)C M. OHOLY Menachem
Legal Adviser
Ministry of Communications
Tel Aviv

1) Alternate

D M. ASHKENAZI Mordo
Head, Radio Link Planning
BEZEQ - The Israel
Telecommunication Corporation
Tel Aviv

D M. BAR-SELA Alon
Head, Special Licensing
and Examinations Department
Ministry of Communications
Tel Aviv

D M. BEIVAR Israel
Adviser to the Director of
Engineering
Ministry of Communications
Tel Aviv

D M. KESHET Ronen
Adviser to the Director of
Engineering
Ministry of Communications
Jerusalem

**ISR Israël (Etat d')
Israel (State of)
Israel (Estado de)
(suite)**

- D M. KUCK Avigdor
Special Adviser on Spectrum
Management
Ministry of Communications
Jerusalem
- D M. LEVKOVITZ Zeev
Head, Satellite Communications
Ministry of Communications
Jerusalem
- D M. LIVNE Adam
Adviser to the Director of
Engineering
Ministry of Communications
Tel Aviv
- D M. ROTEM Yohanan
Engineer - AM Department
BEZEQ - The Israel
Telecommunication Corporation
Jerusalem
- D M. SHAPIRA Joseph
Special Adviser to Director of
Engineering
Ministry of Communications
Tel Aviv
- A M. HAREL Haim
Nexus Telecom Ltd.
Tel-Aviv

I Italie - Italy - Italia

- C M. DELL'OVO Andrea
Dirigeant
ISPT
Ministero Poste e
Telecomunicazioni
Roma
- CA M. FARIOLI Marcello
Dirigeant
DCSR
Ministero Poste e
Telecomunicazioni
Roma
- D M. BALDINI Fulgenzo
Telespazio
Roma

**I Italie - Italy - Italia
(suite)**

- D M. BARBADORO Alceo
Ministero Poste e
Telecomunicazioni
Roma
- D M. CAGNETTI Pierpaolo
Chief of Telecommunication
Section
Italia M.M.
Roma
- D M. COMINETTI Mario
Centro Ricerche
Torino
- D M. D'ANDRIA Emanuele
Telespazio
Roma
- D Mlle DAMIA Giovanna
Directeur Division
Relations Internationales
Ministero Poste e
Telecomunicazioni
Roma
- D M. DE RUBERTIS Antonio
Safety Department
Italian Coast Guard
Merchant Marine Ministry
Roma
- D M. DEL DUCE Vittorio
RAI
Roma
- D M. DELL'ANNO Pasquale
Ministero Poste e
Telecomunicazioni
Roma
- D M. DI CRESCENZIO Mauro
Telespazio
Roma
- D M. DI LOLLI Alberto
Director of ATC
Azienda Autonoma Assistenza
al Volo
Roma
- D M. GIACOPELLO Roberto
Azienda Autonoma Assistenza
al Volo
Roma
- D Mlle GIANCASPRO Maria
Ministero Poste e
Telecomunicazioni
Roma

I Italie - Italy - Italia
(suite)

D M. GIGANTINO Romano
Ministero Poste e
Telecomunicazioni
Roma

D M. LA ROSA Giuseppe
Ministero Poste e
Telecomunicazioni
Roma

D M. LARI Mario
RAI
Roma

D M. MAGENTA Alfredo
RAI

D M. MENCI Angelo
Ministero Poste e
Telecomunicazioni
Roma

D Mme MEROLA Rossella
Head of the Satellite
Communications Section
Ministero Poste e
Telecomunicazioni
Roma

D M. MICELI Marino
Associazione Radioamatori
Italiani

D M. MOCERINO Giuseppe
Ministero Poste e
Telecomunicazioni
Roma

D M. MONTI Silvio
Inspectorate of
Telecommunication
Roma

D M. MORELLO Alberto
RAI

D M. MORO Giovanni
RAI
Torino

D M. PARENTE Pietro
SIP

D M. PETRI Claudio
Frequency Manager
Ministère de la défense
Roma

I Italie - Italy - Italia
(suite)

D Mme PILERI Alessandra
Bureau Relations
Internationales
Ministero Poste e
Telecomunicazioni
Roma

D M. PINCI Eugenio
Ispetrasmisioni
Ministère de la Défense
Roma

D M. POLACCO Gian Mario
RAI
Roma

D M. SANTINI Fabio
Telespazio
Roma

D M. SCARPELLI Micheli
Ministero Poste e
Telecomunicazioni
Roma

D M. SCOTTI Aldo
Engineer
RAI
Roma

D M. SERAFINI Roberto
Frequency Manager
RAI
Roma

D M. SICA Donato
Adviser
General Navy Staff
Roma

D M. SIRIANNI Aldo
Direzione Centrale
Ministero Poste e
Telecomunicazioni
Servizi Radioelettrici
Roma

D Mlle STENDARDI Alida
Dirigeant principal pour
l'exploitation
Relations internationales
Ministero Poste e
Telecomunicazioni
Roma

D M. TAGLIALEGNA Giuseppe
Ministero Poste e
Telecomunicazioni
Roma

I **Italie - Italy - Italia**
 (suite)

- D M. TARANTINO Salvatore
 RAI
 Roma
- D M. TATA Antonio
 Directeur de Division
 Ministero Poste e
 Telecomunicazioni
 Roma
- D M. TERZANI Carlo
 RAI
 Roma
- D M. TOMATI Lorenzo
 RAI
- D M. TORRI Sergio
 Ministero Poste e
 Telecomunicazioni
 Roma
- D M. TOSATO Enrico
 ANIE
- D M. VALENTINO Gian Battista
 Directeur de Division
 Ministero Poste e
 Telecomunicazioni
 Roma
- D M. VINCENTI Antonio
 Istituto Superiore PT
 Ministero Poste e
 Telecomunicazioni
 Roma
- D Mme VISIN Luciana
 Responsible of the Monitoring
 Center
 RAI
- D M. VITALE Luigi
 Ministero Poste e
 Telecomunicazioni
 Roma
- D M. ZANICHELLI Bruno
 Frequency Manager
 Ministère de la Défense
 Roma
- D M. ZAPPI Silvio
 Azienda Autonoma Assistenza
 al Volo
 Roma

I **Italie - Italy - Italia**
 (suite)

- D M. ZECCHINI Oriano
 RAI

J **Japon - Japan - Japón**

- C M. OIDA Kiyoshi
 Assistant Vice-Minister
 Ministry of Posts and
 Telecommunications
 Tokyo
- CA M. ISHIDA Yoshihiro
 Director, International
 Frequency Affairs Division
 Telecommunications Bureau
 Ministry of Posts and
 Telecommunications
 Tokyo
- CA M. KOSAKA Katsuhiko
 Director, International
 Affairs Section
 Ministry of Posts and
 Telecommunications
 Tokyo
- CA M. WATANABE Kazushi
 Senior Adviser
 Ministry of Posts and
 Telecommunications
 Tokyo
- D M. FUKUDA Sachio
 Deputy Director, International
 Affairs Division
 Ministry of Posts and
 Telecommunications
 Tokyo
- D M. HAYASHI Teiji
 Third Secretary
 Embassy of Japan
 Madrid
- D M. KIYASU Taku
 Deputy Director, Frequency
 Planning Division
 Ministry of Posts and
 Telecommunications
 Tokyo
- D M. MINAMI Takaaki
 Official, Social Cooperation
 Division
 Ministry of Foreign Affairs
 Tokyo

J Japon - Japan - Japón
(suite)

- D M. NAGAO Tomoo
Official, International
Affairs Division
Communications Policy Bureau
Ministry of Posts and
Telecommunications
Tokyo
- D M. OHTAKE Tatsuhito
Official, Land Mobile
Communications Division
Telecommunications Bureau
Ministry of Posts and
Telecommunications
Tokyo
- D M. OYA Hiroshi
Deputy Director, Space
Communications Policy Division
Ministry of Posts and
Telecommunications
Tokyo
- D M. SAKAMOTO Mitsuhiro
Official, Frequency Planning
Division
Telecommunications Bureau
Ministry of Posts and
Telecommunications
Tokyo
- D M. SUGIURA Makoto
Deputy Director, Satellite
Broadcasting and HDTV Division
Broadcasting Bureau
Ministry of Posts and
Telecommunications
Tokyo
- D M. TAKEI Toshiyuki
Deputy Director, Trunk
Communications Division
Ministry of Posts and
Telecommunications
Tokyo
- D M. TANAKA Hidekazu
Deputy Director, Engineering
Division
Broadcasting Bureau
Ministry of Posts and
Telecommunications
Tokyo
- D M. TANAKA Kenji
Deputy Director, Aeronautical
and Maritime Communication
Division
Telecommunications Bureau
Ministry of Posts and
Telecommunications
Tokyo

J Japon - Japan - Japón
(suite)

- D M. YAMAMOTO Yuzo
Deputy Director, Operator
Qualifications Office
Telecommunications Bureau
Ministry of Posts and
Telecommunications
Tokyo
- D M. YANO Tsunenatsu
Deputy Director, Land Mobile
Communications Division
Telecommunications Bureau
Ministry of Posts and
Telecommunications
Tokyo
- A M. AKATSUKA Koichi
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. FUJIOKA Masayoshi
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. FURUKAWA Hiroshi
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. FURUYA Takashi
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. HARA Hideo
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. HARA Shozo
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. HASHIMOTO Akira
Adviser
Ministry of Posts and
Telecommunications
Tokyo

J Japon - Japan - Japón
(suite)

- A M. HATA Masaharu
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. HATTORI Naohiko
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. HIRATA Yasuo
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. ISHIYAMA Kenji
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. ITO Yoshiharu
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. IWAMOTO Yoshinao
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. IWASAKI Shozo
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. KAWAGUCHI Yutaka
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. KAWAI Makoto
Senior Research Engineer
Nippon Telegraph and
Telephone Corporation
Take, Yokosuka
- A M. KAWAJIRI Nobuhiro
Adviser
Ministry of Posts and
Telecommunications
Tokyo

J Japon - Japan - Japón
(suite)

- A M. KOMOTO Taro
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. KOSEKI Yasuo
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. KURIHARA Yoshitaka
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. KUWABARA Moriji
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. MATSUMORI Eiji
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. MATSUO Yoshitake
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. MISHIMA Hiraku
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. MIZUNO Toshio
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. MORIKAWA Shuichi
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. MORINAGA Norioki
Adviser
Ministry of Posts and
Telecommunications
Tokyo

J Japon - Japan - Japón
(suite)

- A M. MOUE Kiyoshi
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. MUROTANI Masayoshi
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. NAKAJIMA Mutsuaki
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. OHARA Mitsuo
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. OHMI Katsuro
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. SAMEJIMA Shuichi
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. SASAKI Akio
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. SASAKI Susumu
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. SATO Kenjiro
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. SATO Kohei
Adviser
Ministry of Posts and
Telecommunications
Tokyo

J Japon - Japan - Japón
(suite)

- A M. SEGAWA Jun
Nippon Telegraph and
Telephone Corporation
- A M. SUZUKI Naoshi
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. TAKENAKA Osamu
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. TAKEUCHI Hironobu
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. TANAKA Hiroyuki
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. TERUYA Shigeru
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. TOYODA Tetsuji
M.T.T.
Tokyo
- A M. USUI Isao
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. YAMAMOTO Kiyoshi
Deputy Director
The ITU Association
of Japan Inc.
Tokyo
- A M. YAMANASHI Masahiko
Adviser
Ministry of Posts and
Telecommunications
Tokyo
- A M. YAMASHITA Hiromoto
Adviser
Ministry of Posts and
Telecommunications
Tokyo

J Japon - Japan - Japón
(suite)

A M. YOSHIOKA Masanori
Adviser
Ministry of Posts and
Telecommunications
Tokyo

JOR Jordanie (Royaume hachémite de)
Jordan (Hashemite Kingdom of)
Jordania (Reino Hachemita de)

C M. BANI HANI Ahmad
Manager of Transmission
Department
Telecommunications Corporation
Amman

1)C M. WADI Khamis
Manager of Space Communication
Department
Telecommunications Corporation
Amman

1) 2.2 - 14.2

1)C M. BORGAN Munther Z.
Chief Engineer for Frequencies
Jordan Radio and Television
Amman

1) 15.2 - 24.2

D M. SARAIH Ahmad
Engineer
Telecommunication Corporation
Amman

KEN Kenya (République du)
Kenya (Republic of)
Kenya (República de)

C M. WANJAU James Kigundu
Deputy Secretary
Ministry of Transport and
Communication
Nairobi

D M. GITHUA Daniel K.
Development Engineer
Kenya Broadcasting Corporation
Nairobi

D M. JUMA Salim
Assistant General Manager
Marketing Sales and Public
Relations
Kenya Posts &
Telecommunications Corporation
Nairobi

KEN Kenya (République du)
Kenya (Republic of)
Kenya (República de)
(suite)

D M. KIBE S.K.
Assistant Manager
Radio Control and Licensing
Kenya Posts &
Telecommunications Corporation
Nairobi

D M. MUREITHI Muriuki
Assistant Manager
International Relations
Kenya Posts &
Telecommunications Corporation
Nairobi

D M. NGANGA James M.
Telecommunications Engineer
Office of the President
Kenya Police
Nairobi

D M. ODUNDO Isaac N.
Assistant Director
Directorate of Civil Aviation
Nairobi

D M. SHIGOLI Aggrey W.
Staff Officer
Department of Defence
Nairobi

D M. SHINGIRAH Reuben M.J.
Assistant General Manager
Telecommunications Services
(International)
Kenya Posts &
Telecommunications Corporation
Nairobi

KWT Koweït (Etat du)
Kuwait (State of)
Kuwait (Estado de)

1)C M. AL-AMER Sami
Director
Monitoring Frequency and
Licence Department
Ministry of Communications
Safat

1) 16.2 - 3.3

1)C M. AL-KATTAN Hameed
Assistant Director
Ministry of Communications
Safat

1) 3-15.2

2) CA: 16.2 - 3.3

**KWT Koweït (Etat du)
Kuwait (State of)
Kuwait (Estado de)
(suite)**

- D M. AL-DAHMALI Ali Zaid A.
Ministry of Interior
Safat
- D M. AL-NAKHEELAN Yousuf
Projects Controller
Ministry of Communications
Safat
- D M. AL-SALILI
Engineer
Ministry of Communications
Safat
- D M. AL-SANE'I Naser S.
Assistant Engineer
Engineering Affairs
Ministry of Information
Safat
- D M. AL-ZAID Ahmed
Ministry of Information
Safat
- D M. ALI Abdul Ameer
Engineer
Frequency Management
Radio Kuwait
Ministry of Information
Safat
- D M. HADDAD Sulaiman Yousif
Engineer
Engineering Affairs
Ministry of Information
Safat
- D M. HUSAIN Muhammed M.K.
International Relations
Researcher
Ministry of Communications
Safat
- D M. JAFAR Ali Naseer
Chief Frequency Management
Radio Kuwait
Ministry of Information
Safat

**LVA Lettonie (République de)
Latvia (Republic of)
Letonia (República de)**

Représenté par la Lituanie

LBN Liban - Lebanon - Líbano

- C M. GHAZAL Maurice H.
Ministère des Postes et
Télécommunications
Beyrouth

**LBY Libye (Jamahiriya arabe libyenne -
populaire et socialiste)
Libya (Socialist People's Libyan -
Arab Jamahiriya)
Libia (Jamahiriya Arabe Libia -
Popular y Socialista)**

- C M. GHERWI Ali Mohamed
Secretariat of Communication
and Transport
Tripoli
- D M. EL HAMMALI Zakaria A.
General Post &
Telecommunication Company
Tripoli
- D M. EL-AMARI Faraj Mohamed
General Post &
Telecommunication Company
Tripoli
- D M. SALEH SEBI Emhemed
Posts and Telecommunications
Administration
Tripoli
- D M. SHALLUF Mohamed
General Post &
Telecommunication Company
Tripoli

**LIE Liechtenstein (Principauté de)
Liechtenstein (Principality of)
Liechtenstein (Principado de)**

Représenté par la Suisse

**LTU Lituanie (République de)
Lithuania (Republic of)
Lituania (República de)**

- C M. BIRULIS Kostas
Senior Adviser
Ministry of PTT Communications
and Informatics
Vilnius

**LTU Lituanie (République de)
Lithuania (Republic of)
Lituania (República de)
(suite)**

- CA M. VARNAS Henrikas
Chief of Service
Radio Frequencies Management
Vilnius
- D M. BUZANAS Mecislovas
Director for Broadcasting
Ministry of PTT Communications
and Informatics
Vilnius

**LUX Luxembourg
Luxembourg
Luxemburgo**

- C M. ZENS J.P.
Conseiller de Légation
Ministère des Affaires
Etrangères, du Commerce
Extérieur et de la Coopération
Luxembourg
- CA M. ALVARES DE AZEVEDO Celso
Directeur technique
Société Européenne des
Satellites
Administration des P. et T.
Luxembourg
- D M. BICHLER Marc
Attaché de Légation
Ministère des Affaires
Etrangères
Luxembourg
- D M. DONDELINGER Charles
Directeur adjoint
Administration des P. et T.
Luxembourg
- D M. ERPELDING Armand
Ingénieur technique
Inspecteur principal 1er en
rang
Administration des P. et T.
Luxembourg
- D M. JEFFERIS Alan
Consultant
Société Européenne des
Satellites
Administration des P. et T.
Luxembourg
- D M. NETTERVILLE David
Spectrum Management Engineer
Société Européenne des
Satellites
Administration des P. et T.
Luxembourg

**LUX Luxembourg
Luxembourg
Luxemburgo
(suite)**

- D M. THURMES Roland
Ingénieur technique principal
Administration des P. et T.
Luxembourg
- D M. TORRES Milton
Manager, Communications
System Division
Société Européenne des
Satellites
Administration des P. et T.
Luxembourg
- A M. DOLEZEL Igor
SES
Luxembourg

**MDG Madagascar (République -
démocratique de)
Madagascar (Democratic -
Republic of)
Madagascar (República -
Democrática de)**

- C M. RASAMIMANANA Victorien
Chef Division
Contrôle et Gestion
Ministère des P.T.T.
Antananarivo
- CA Mme RAHARISOA Tiana
Responsable du Comité de
Coordination des
Télécommunications
Ministère des P.T.T.
Antananarivo

MLA Malaisie - Malaysia - Malasia

- C M. BERNAWI Mohd Aris
Director of Frequency
Management
Jabatan Telekom Malaysia
Ministry of Energy,
Telecommunications and Posts
Kuala Lumpur
- D M. HENG Yang Teck
Unit Manager
Fundamental Planning Division
Telekom Malaysia Berhad
Kuala Lumpur

MLA Malaisie - Malaysia - Malasia
(suite)

- D M. TAN Kim Shah
Manager International Division
Satellite New Services
Telekom Malaysia Berhad
Kuala Lumpur
- D M. WAHAB ALI Mohd Isa
Group Manager
Telekom Malaysia
Kuala Lumpur
- A M. DEVAN Deva Das
Jabatan Telekom Malaysia
Kuala Lumpur

MWI Malawi - Malawi - Malawi

- C M. MAKAWA M. M.
Deputy Engineer in Chief
Department of Posts and
Telecommunications
Blantyre
- D M. CHINSEU Philip P.F.
Head of Technical Services
Malawi Broadcasting
Corporation
Blantyre
- D M. HIWA Ewen S.
Assistant Chief Telecomms
Officer
Department of Posts and
Telecommunications
Blantyre
- D M. LONGWE Dixon K.
Chief Engineer
Operations and Maintenance
Malawi Posts and
Telecommunications
Blantyre

MLI Mali (République du)
Mali (Republic of)
Malí (República de)

- C M. SAMAKE Idrissa
Directeur général adjoint
Société des télécommunications
du Mali
Bamako

MLI Mali (République du)
Mali (Republic of)
Malí (República de)
(suite)

- CA M. SISSOKO Sikon
Chef service communications
par satellite
Société des télécommunications
du Mali
Bamako
- D M. NIAMBELE Sékou Hamed
Ingénieur-Radiocommunications
Direction centrale des
Transports et
Télécommunications
Bamako
- D M. TOURE Diadie
Chef Service Prospective et
Relations Internationales
Société des télécommunications
du Mali
Bamako
- D M. TRAORE Cheick Oumar
Chef Section Radio et Section
de Fréquences
Société des télécommunications
du Mali
Bamako
- D M. TRAORE Nouhoum
Chef
Centre HF
Radiodiffusion Télévision du
Mali
Bamako

MLT Malte (République de)
Malta (Republic of)
Malta (República de)

- C M. BARTOLO Joseph F.
Head Wireless Telegraphy
Branch
Office of the Prime Minister
Valletta
- CA M. SPITERI George J.
Inspector of Wireless
Telegraphy
Wireless Telegraphy Branch
Office of the Prime Minister
Valletta
- D M. LATEO Albert J.
Inspector of Wireless
Telegraphy
Wireless Telegraphy Branch
Office of the Prime Minister
Valletta

MLT Malte (République de)
Malta (Republic of)
Malta (República de)
 (suite)

D M. MIFSUD Henry
 Technical Officer
 Telemalta Corporation
 St. Georges

MRC Maroc (Royaume du)
Morocco (Kingdom of)
Marruecos (Reino de)

C M. BERRADA Abderrazak
 Conseiller Mission permanente
 Genève

1)CA M. JAZOULI Mohamed
 Chef Division Equipement
 Transmission
 Office National des Postes
 et Télécommunications
 Rabat

1) 22.2 - 3.3

CA Mlle NOAAMAN Khadija
 Ingénieur d'Etat
 Radiodiffusion Télévision
 Marocaine
 Rabat

1)CA M. TOUMI Ahmed
 Directeur
 Ministère des Postes et
 Télécommunications
 Rabat

1) Jusqu'au 21.2

D M. EL ORCH Habib
 Chef du Service
 Radiocommunication
 Ministère des Postes et
 Télécommunications
 Rabat

D M. FADIL Mohamed
 Officier Transmissions
 Etat Major Général des Forces
 Royales Armées
 Marine Royale
 Rabat

D M. HAMMOUDA Mohamed
 Radiodiffusion Télévision
 Marocaine
 Rabat

MRC Maroc (Royaume du)
Morocco (Kingdom of)
Marruecos (Reino de)
 (suite)

D M. IQBAL Mohamed
 Officier Supérieur
 Etat Major Général des Forces
 Armées Royales
 Rabat

D M. LIMOURI Lekbir
 Officier Supérieur
 Etat Major Général des Forces
 Armées Royales
 Rabat

D M. LOUTFI Abdelghani
 Chef de Service
 Ministère des Postes et
 Télécommunications
 Rabat

D M. MANESSOURI Mohammed
 Ingénieur, Chef de Service
 Equipement Radiocommunications
 Direction Centrale des
 Télécommunications
 ONPT
 Rabat

MTN Mauritanie (République -
islamique de)
Mauritania (Islamic Republic of)
Mauritania (República -
Islámica de)

D M. BA Oumar Mamadou
 Ingénieur
 Chef Division Fréquences et
 Radioélectricité Privée
 Office des Postes et
 Télécommunications
 Nouakchott

D M. OULD EL MOUSTAPHA Aly
 Ingénieur au CTST
 Office des Postes et
 Télécommunications
 Nouakchott

MEX Mexique - Mexico - México

C M. PADILLA LONGORIA José
 Coordinador General de
 Relaciones Internacionales
 Secretaría de Comunicaciones
 y Transportes
 México D.F.

MEX Mexique - Mexico - México
(suite)

- CA M. BROWN HERNANDEZ Luis M.
Subdirector de Asuntos
Internacionales
Secretaría de Comunicaciones
y Transportes
México D.F.
- CA M. MERCHAN ESCALANTE Carlos A.
Secretaría de Comunicaciones
y Transportes
México D.F.
- CA Mme RAMIRES DE ARELLANO Rosa M.
Directora de Consulta y
Estudios Jurídicos
Secretaría de Comunicaciones
y Transportes
México D.F.
- D M. AGUIRRE GOMEZ Carlos
Asesor
CIRT
México D.F.
- D Mlle BERECHUEA María
Jefe del Departamento de
Tratados de la Consultoría
Jurídica
Secretaría de Relaciones
Exteriores
México D.F.
- D M. CACHEUX LOPEZ Raúl
Jefe de Area
Telecomunicaciones
Ferrocarriles Nacionales de
México
México D.F.
- D M. CARBAJAL VILCHIS Federico
Director de Radiocomunicación
México D.F.
- D M. CARDENAS DOMINGUEZ Angel
Jefe del Departamento de
Ingeniería del Espectro
Radioeléctrico
Dirección General
Políticas y Normas
de Comunicaciones, S.C.T.
México D.F.
- D M. CORONA MEDINA Manuel
Subjefe del Departamento de
Telecomunicaciones
Ferrocarriles Nacionales de
México
México D.F.

MEX Mexique - Mexico - México
(suite)

- D M. GALVAN TALLEDO Joel
Gerente de los Comités
Consultivos Internacionales
Telecomunicaciones de México
México D.F.
- D M. GUTIERREZ QUIROZ Alejandro
Coordinación de Relaciones
Internacionales
Secretaría de Comunicaciones
y Transportes
México D.F.
- D M. HANSEN RIVERA Erwin
Coordinador de Asuntos
Internacionales
Dirección General de Asuntos
Jurídicos
Secretaría de Comunicaciones
y Transportes
México D.F.
- D M. HUESCA BUSTAMANTE Humberto
- D M. LOPEZ TORRES Alonso A.
Subdirector de Concesiones y
Permisos de Televisión
Secretaría de Comunicaciones
y Transportes
México D.F.
- D M. MARQUEZ SUAREZ Salvador
Instituto Mexicano de
Comunicaciones
México D.F.
- D M. MARTINEZ LOPEZ Jaime
Director Técnico de
Comunicaciones Navales
Secretaría de Marina
México D.F.
- D M. MIER Y TERAN Carlos
Subsecretario de
Comunicaciones y Desarrollo
Tecnológico
Secretaría de Comunicaciones
y Transportes
México D.F.
- D Mme MORENO POMPA Victoria
Jefe de la Unidad de Asuntos
Jurídicos
Instituto Mexicano de
Comunicaciones
México D.F.

MEX Mexique - Mexico - México
(suite)

- D M. PI OROZCO Luis E.
Director General de Radio
Educación
Secretaría de Educación
Pública
México D.F.
- D M. PICAZO DIAZ Alonso A.
Supervisor de Satélites
Telecomunicaciones de México
México D.F.
- D M. RODRIGUEZ ARELLANO Hector M.
Subdirector Organismos
Internacionales
Secretaría de Relaciones
Exteriores
México D.F.
- D M. ROJANO SAHAB Sergio
Asociación Mexicana de
Ingenieros y Técnicos en
Radiodifusión
México D.F.
- D M. SANCHEZ HERNANDEZ Eduardo
Director de Radio
Secretaría de Comunicaciones
y Transportes
México D.F.
- D M. TERRONES FONSECA Salvador
Dirección de Estudios y
Proyectos
Instituto Mexicano de
Comunicaciones
México D.F.
- D M. VINALS PADILLA Sergio
Coordinador de Ingeniería
Instituto Mexicano de
Comunicaciones
México D.F.
- A M. ADAME SALAS Lucio
Ingeniero
Secretaría de Comunicaciones
y Transportes
México D.F.
- A M. ANTONIOLI RAVETTO Celestino
Asesor
CIRT
México D.F.
- A M. AVALOS NAVARRO Alfredo
Asociación Mexicana de
Ingenieros y Técnicos en
Radiodifusión
México D.F.

MEX Mexique - Mexico - México
(suite)

- A M. BASSOCO HERNANDEZ Leopoldo
Aerovías de México
México D.F.
- A M. BELTRAN GARCIA Victor H.
Secretaría de Comunicaciones y
Transportes
México D.F.
- A M. FERNANDEZ QUIROZ Melesio
Asesor, Subsecretario
de Comunicaciones y
Desarrollo Técnico
Dirección General de
Sistemas de Difusión
México D.F.
- A M. GAMA TERRAZAS José Luis
Subgerente de Control del
Espectro Radioeléctrico
Teléfonos de México
México D.F.
- A M. HERNANDEZ CHAVEZ Saulo
Secretaría de Comunicaciones y
Transportes
México D.F.
- A M. HERRERA VELAZQUEZ José
Jefe de Departamento de
Propagación e Interferencias
Teléfonos de México
México D.F.
- A M. MONTANO SEGURA Miguel A.
Secretaría de Comunicaciones
y Transportes
México D.F.
- A M. PENA JIMENEZ Leopoldo
Director de Servicios de
Telecomunicaciones
Cámara Nacional de la
Industria de Radio y
Televisión
México D.F.
- A M. PEREZ SALINAS Victor H.
Cámara Nacional de la
Industria Electrónica y de
Comunicaciones Eléctricas
México D.F.
- A M. PONCE CERON Jesús A.
Jefe del Departamento de
Ingeniería
ROLM Telecomunicaciones
México D.F.

MEX Mexique - Mexico - México
(suite)

A M. ROBLEDO Jaime
Gerente Técnico
Cámara Nacional de la
Industria de Radio y
Televisión
México D.F.

MCO Monaco - Monaco - Mónaco

CA M. FRANZI Etienne
Délégué Permanent Adjoint
auprès des Organismes
Internationaux
Service des Relations
Extérieures/Affaires
Techniques
Monaco

D M. ALLAVENA Lucien
Service des Relations
Extérieures/Affaires
Techniques
Monaco

MNG Mongolie - Mongolia - Mongolia

C M. BAATAR Byambajan
President
Mongolian Telecommunications
Authority
Ulan Bator

CA Mme BANZRAGCH Luvsanchimidiin
Expert
Mongolian Telecommunications
Authority
Ulan Bator

MOZ Mozambique (République du)
Mozambique (Republic of)
Mozambique (República de)

CA M. JORGE Joao
Head of Frequency Management
Division
Telecomunicações de Moçambique
Maputo

NMB Namibie - Namibia - Namibia

C M. KRUGER J.H.
Chief Telcom Technician
Department of Post and
Telecommunication
Windhoek

NCG Nicaragua
Nicaragua
Nicaragua

D M. QUANT PALLAVICINI Roger
Instituto Nicaraguense de
Telecomunicaciones y Correos
Managua

NGR Niger (République du)
Niger (Republic of the)
Niger (República del)

C M. NABARAN Saidou
Chef Division Transmission
Office des Postes et
Telecommunications
Niamey

CA M. MALAM BOUKAR Abdoulaye
Chef Section Gestion des
Fréquences
Office des Postes et
Télécommunications
Niamey

NIG Nigéria (République fédérale du)
Nigeria (Federal Republic of)
Nigeria (República Federal de)

C M. IGE Olawale Adeniji
Minister of Transport &
Communications
Ministry of Transport &
Communications
Lagos

1)CA M. GBENEBOR Gabriel Ehizomo
Assistant Director
Ministry of Communications
Lagos

1) A partir du 28.2

CA M. UMAR A.S.
Director General
Ministry of Transport and
Communications
Lagos

D M. ADEGBEMI Adewale J.
Nigerian Telecommunications
Limited
Lagos

D M. ADERINOYE Oleseano Martins
Telecommunication Engineer
Ministry of Transport &
Communications
Lagos

NIG Nigéria (République fédérale du)
Nigeria (Federal Republic of)
Nigeria (República Federal de)
 (suite)

- D M. ADESUNLOYE Jo
Lagos
- D M. AJAYI Gabriel Olalere
Professor and Adviser
Ministry of Transport and
Communications
Lagos
- D M. AJAYI O.B.
Secretary General
Nigerian Amateur Radio Society
SNOOBA
Ministry of Transport and
Communication
Lagos
- D M. AKAH O.B
Senior Telecomms Engineer
Ministry of Transport and
Communications
Lagos
- D M. AKPAN C.O.
Lt. Col.
Ministry of Transport and
Communications
Lagos
- D M. ANEBI B.A.
Major
Ministry of Transport and
Communications
Lagos
- D M. BUHARI S.A
Squadron leader
Ministry of Transport
and Communications
Lagos
- D M. EKPE John D.
Superintendent of Police
Ministry of Transport and
Communications
Lagos
- D M. FOLORUNSHO G.A
Captain
Ministry of Communication
Lagos
- D M. IDOWU Ilesanmi H.
Director of Engineering
Ministry of Transport and
Communications
Lagos

NIG Nigéria (République fédérale du)
Nigeria (Federal Republic of)
Nigeria (República Federal de)
 (suite)

- D M. NNAMA E.C.
Deputy Director
Ministry of Transport and
Communications
Lagos
- D M. NWUKE I.K.
Major
Ministry of Transport and
Communications
Lagos
- D M. OFOCHE E.B.C.
Director of Studies
Ministry of Transport and
Communications
Lagos
- D M. OJEBA E.B.
Chief of International
Relations
Ministry of Transport and
Communication
Lagos
- D M. OKUNDAYE E.U.
Group Captain
Ministry of Transport and
Communications
Lagos
- D M. ONI W.O.
Squadron leader
Ministry of Transport and
Communications
Lagos
- D M. WAKOMBO I.M.
Director of Engineering
Ministry of Transport and
Communications
Lagos
- A M. OWOLABI Israel
University of Ilorin
Ministry of Transport and
Communications
Lagos

NOR Norvège - Norway - Noruega

- C M. BOE Thormod
Chief Engineer
Norwegian Telecommunications
Regulatory Authority
Oslo

NOR Norvège - Norway - Noruega
(suite)

- CA M. BIGSETH Odd-G.
Senior Adviser
Norwegian Telecommunications
International
Oslo
- CA M. GRIMSTVEIT Lavrans
Chief Engineer
Norwegian Telecom Mobile
Oslo
- D M. BANG Hans Fredrik
Senior Engineer
Norwegian Power Pool
Oslo
- D M. ECKHOFF Nicolay
Head of Section
Civil Aviation Administration
Oslo
- D Miss HANETHO Ellen Merete
International Consultant
Norwegian Telecommunications
Regulatory Authority
Oslo
- D M. HANSEN Harald
Senior Engineer
Norwegian Telecom
Oslo
- D M. HESTAD O.H.
Director
Norwegian Telecommunications
Regulatory Authority
Oslo
- D M. JOHANSEN Olav
Head of Section
Civil Aviation Administration
Oslo
- D M. JOHNSEN Ingar
Senior Engineer
Norwegian Telecom
Oslo
- D M. JOROL Erik H.
Senior Engineer
Norwegian Telecommunications
Regulatory Authority
Oslo
- D M. NORDHEIM Olep
Norwegian Telecommunications
Regulatory Authority
Oslo

NOR Norvège - Norway - Noruega
(suite)

- D M. OVENSEN Tore
Head of Research and
Development
Norsk Rikskringkasting
Oslo
- D M. SCHEEL Trygve
Special Adviser
Norwegian Maritime Directorate
Oslo
- D M. SUNDE Geir
Senior Engineer
Norwegian Telecommunications
Regulatory Authority
Oslo
- D M. TANEM Torbjørn
Chief Engineer
Norwegian Telecom
Oslo

NZL Nouvelle-Zélande
New Zealand
Nueva Zelandia

- C M. HUTCHINGS Ian R.
Manager Radio Spectrum
Policy
Communications Division
Ministry of Commerce
Wellington
- CA M. MCGUIRE Kenneth J.
Manager International
Radio Policy
Communications Division
Ministry of Commerce
Wellington
- D M. EMIRALI Bruce R.
Defence Radio Frequency
Manager
New Zealand Defence Force
Wellington
- D M. GOODWIN Robert Ian
Product Development Manager
Broadcast Communications Ltd.
Wellington
- D M. JOHNSON J. Fred C.
Liaison Officer
New Zealand Association of
Radio Transmitters Inc.
Upper Hutt

NZL Nouvelle-Zélande
New Zealand
Nueva Zelandia
 (suite)

- D M. MILNER Murray Owen
 Manager Business Development
 Telecom Corporation of
 New Zealand Ltd.
 Wellington
- D M. VERNALL Robert Brian
 Principal Engineer Frequency
 Planning
 Telecom Corporation of
 New Zealand Ltd.
 Wellington

OMA Oman (Sultanat d')
Oman (Sultanate of)
Omán (Sultanía de)

- C M. AL-ABDISSALAAM Salim Ali
 Director of Frequency
 Management and Monitoring
 Ministry of PTT
 Muscat
- CA M. AL-KINDY Hamed Yahya
 Director General for Technical
 Affairs
 Ministry of Information
 Muscat
- D M. AL-HABASHEY Abdul-Aziz A.J.
 Section Head TV Transmission
 Directorate General Network
 Services
 General Telecommunication
 Organization
 Ruwi
- D M. AL-RAWAHY Abdulla I.
 Ministry of PTT
 Ruwi
- D M. AL-ZADJALI Najeeb
 Directorate General Network
 Services
 General Telecommunication
 Organization
 Ruwi

UGA Ouganda (République de l')
Uganda (Republic of)
Uganda (República de)

- D M. HAMALA Yoda
 Chief Broadcasting Engineer
 Radio Uganda
 Kampala

PAK Pakistan (République -
islamique du)
Pakistan (Islamic Republic of)
Pakistán (República Islámica del)

- C M. CHAUDHARY Malik Ali
 Pakistan Broadcasting
 Corporation
 Islamabad
- C M. MAHMOOD Wasiq
 Pakistan Telecommunication
 Corporation
 Islamabad
- CA M. ALVI Abdul H.
 Pakistan Broadcasting
 Corporation
 Islamabad
- CA M. SHAIKH Arjumund A.
 Pakistan Telecommunication
 Corporation
 Islamabad
- D M. MUHAMMAD Tariq
 Naval Headquarters
 Ministry of Communication
 Islamabad
- D M. SYED Ghulam M.
 Pakistan Television
 Corporation
 Islamabad

PNR Panama (République du)
Panama (Republic of)
Panamá (República de)

- C M. DE SOUZA FRANCESCHI Alfredo
 Medios de Comunicación Social
 Ministerio de Gobierno y
 Justicia
 Panamá
- D Mme RAMIREZ MONZO Blanca E.
 Cuerpo Consular
 Ministerio de Relaciones
 Exteriores
 Panamá

PNG Papouasie-Nouvelle-Guinée
Papua New Guinea
Papua Nueva Guinea

- CA M. KAMARA Dale Penias
 Director, Corporate Relations
 Post and Telecommunication
 Corporation
 Boroko

PNG Papouasie-Nouvelle-Guinée
Papua New Guinea
Papua Nueva Guinea
 (suite)

- CA M. KONERUS Nera Jesua
 Director, Engineering and
 Technical Services
 National Broadcasting
 Commission
 Boroko
- D M. CHOLAI John Posing
 Department of Civil Aviation
 Boroko
- D M. DE SOYZA Annesley
 Manager, Spectrum Engineering
 Branch
 Spectrum Management Department
 Post and Telecommunication
 Corporation
 Port Moresby
- D M. GULO-VUI Kila
 Standards Engineer, Spectrum
 Engineering Branch
 Spectrum Management Department
 Post and Telecommunication
 Corporation
 Port Moresby
- D M. KARIKO David
 Executive Manager Spectrum
 Management
 Spectrum Management Department
 Post and Telecommunication
 Corporation
 Port Moresby
- D M. MOIGAH Bernhard
 Radio Engineer
 Department of Civil Aviation
 Boroko
- D M. MOLEAN Francis Malikes
 Assistant Secretary Shipping
 Operations
 Maritime Division
 Department of Transport
 Konedobu
- D M. MOREHARI George
 Executive Manager
 Telecommunications Planning
 Department
 Post and Telecommunication
 Corporation
 Boroko

PRG Paraguay (République du)
Paraguay (Republic of)
Paraguay (República del)

- C M. GINI E. Miguel H.
 Director de
 Radiocomunicaciones y
 Administración de Frecuencia
 ANTELCO
 Asunción

PRG Paraguay (République du)
Paraguay (Republic of)
Paraguay (República del)
 (suite)

- D Sra. MARTINEZ DE PEREIRA Gladys
 Jefe División Convenios y
 Organismos Internacionales
 ANTELCO
 Asunción
- HOL Pays-Bas (Royaume des)
Netherlands (Kingdom of the)
Países Bajos (Reino de los)
- C M. DE RUITER Albert
 Head
 Telecommunications and Post
 Department
 Ministry of Transport, Public
 Works and Water Management
 The Hague
- CA M. LUIKENS Houko
 Director Operational Affairs
 Telecommunications and Post
 Department
 Ministry of Transport, Public
 Works and Water Management
 Groningen
- D M. BAKHUIZEN Hans
 Engineering Consultant
 Radio Nederland Wereldomroep
 Hilversum
- D M. BRAEKEN Marco J.
 International Policy Affairs
 Telecommunications and Post
 Department
 Ministry of Transport, Public
 Works and Water Management
 The Hague
- D M. BROERE Jan F.
 Head, Frequency Management,
 Standardization and Licencing
 Telecommunications and Post
 Department
 Ministry of Transport, Public
 Works and Water Management
 Groningen
- D M. DE VRIES Y.P.
 Management Adviser
 Netherlands Broadcasting
 Transmission Company
 Zoetermeer
- D M. MATHEY Henri A.
 Head, Frequency Management
 Office
 Ministry of Defence
 The Hague

**HOL Pays-Bas (Royaume des)
Netherlands (Kingdom of the)
Países Bajos (Reino de los)
(suite)**

- D M. ROMEYN Evert F.
Ministry of Economic Affairs
The Hague
- D M. SERVAAS Rudolf A.
Senior Policy Officer
Frequency Management
Telecommunications and Post
Department
Ministry of Transport, Public
Works and Water Management
Groningen
- D M. TROOST Robert
Embajada de los Países Bajos
Madrid
- D M. VAN DER STEEN Hendrik
NOS
Hilversum
- D M. VAN DIEPENBEEK Chris T.
Frequency Management
Standardization and Licencing
Telecommunications and Post
Department
Ministry of Transport, Public
Works and Water Management
Groningen
- D M. VAN DIJK H.B.
Frequency Manager
Telecommunications and Post
Department
Ministry of Transport, Public
Works and Water Management
Groningen
- D M. VAN DYK Jan E.
Policy Advisor
Media Department
Ministry of Welfare, Health
and Culture
Ryswijk
- D M. VAN NOORT H.L.
Senior Expert
Telecommunications
Department of Civil Aviation
The Hague
- D M. VISSER Anne
PTT Telecom B.V.
The Hague
- A M. TANGE Marinus
Chairman ARFA
NATO
Brussels

PRU Pérou - Peru - Perú

- C M. GUIMOYE MELLADO Andrés
Vice-Consul
Consulado del Perú
Sevilla

**PHL Philippines (République des)
Philippines (Republic of the)
Filipinas (República de)**

- C M. BENEDICTO Mariano E.
Commissioner
National Telecommunications
Commission
Quezon City
- CA M. CABANLIG Efren
Director II, Radio
Regulation & Licencing Dpt.
National Telecommunications
Commission
Quezon City
- D M. ABIGANIA Cesar A.
Director
Legal/Rates & Tariffs and
Asst. Corporate Secretary
Globe Mackay Cable & Radio
Corporation
Manila
- D M. ALIAS Cresenciano B.
Technical Assistant Operation
Philippine Communications
Satellite Corporation
Quezon City
- D M. VIRATA Nestor A.
First Vice President
Philippine Long Distance
Telephone Company
Manila

**POL Pologne (République de)
Poland (Republic of)
Polonia (República de)**

- C M. RUSIN Marek
Minister of PTT
Ministry of PTT
Warszawa
- CA M. KUPCZYK Zbyszko
Chef de section
Panstwowa Agencja
Radiokomunikacyjna Zarzad
Krajowy
Warszawa

POL Pologne (République de)
Poland (Republic of)
Polonia (República de)
(suite)

- CA M. WOJTYNSKI Benedykt
Deputy Chairman of Agency
Panstwowa Agencja
Radiokomunikacyjna Zarzad
Krajowy
Warszawa
- D M. CUZYTEK Leszek
Ingénieur en chef
Panstwowa Agencja
Radiokomunikacyjna Zarzad
Krajowy
Warszawa
- D M. GODLEWSKI Jan
Chief Expert
Ministerstwo Obrony Narodowej
Szefostwo Wojsk Łączności
Warszawa
- D M. KISŁO Marian
Head of Department
Panstwowa Agencja
Radiokomunikacyjna Zarzad
Krajowy
Warszawa
- D M. KSIEŻNY Andrzej
Head of Department
Panstwowa Agencja
Radiokomunikacyjna Zarzad
Krajowy
Warszawa
- D M. PACHNIEWSKI Grzegorz
Head of Department
Panstwowa Agencja
Radiokomunikacyjna Zarzad
Krajowy
Warszawa
- D M. WIZIMIRSKI Zbigniew
Head of Department
Panstwowa Agencja
Radiokomunikacyjna Zarzad
Krajowy
Warszawa
- D M. WULTANSKI Zygmunt
Senior Engineer
Panstwowa Agencja
Radiokomunikacyjna Zarzad
Krajowy
Warszawa
- A Mme GRODZICKA Filomena
Chef de section
Panstwowa Agencja
Radiokomunikacyjna Zarzad
Krajowy
Warszawa

POL Pologne (République de)
Poland (Republic of)
Polonia (República de)
(suite)

- A M. GRZYBKOWSKI Maciej
Engineer
Instytut Łączności
Wrocław
- A M. SEGA Wiktor
Engineer
Instytut Łączności
Wrocław
- A Mme SMOLENSKA Halina
Engineer
Panstwowa Agencja
Radiokomunikacyjna Zarzad
Krajowy
Warszawa
- A M. SOBOLEWSKI Janusz
Engineer
Instytut Łączności
Wrocław
- A M. ZYGIEREWICZ Janusz
Engineer
Instytut Łączności
Warszawa

POR Portugal - Portugal - Portugal

- C M. SIMOES CARNEIRO Rogério
Administrator
ICP - Instituto das
Comunicações de Portugal
Lisboa
- CA Mme MENDES Luisa
Frequency Manager
ICP - Instituto das
Comunicações de Portugal
Lisboa
- CA M. PEREIRA DA COSTA Luciano
Engineering Director
ICP - Instituto das
Comunicações de Portugal
Lisboa
- D M. ABRANTES Luis
Engineer
ICP - Instituto das
Comunicações de Portugal
Lisboa

POR Portugal - Portugal
Portugal (suite)

D M. ANTUNES Carlos
Engineer
ICP - Instituto das
Comunicações de Portugal
Lisboa

D M. CAMACHO DE CAMPOS Américo
CDR
ICP - Instituto das
Comunicações de Portugal
Lisboa

D M. CRUZ Fernando
Engineer
ICP - Instituto das
Comunicações de Portugal
Lisboa

D Mme GIRAO Fernanda
Engineer
ICP - Instituto das
Comunicações de Portugal
Lisboa

D M. MAGALHAES Luis
Engineer
ICP - Instituto das
Comunicações de Portugal
Lisboa

D M. MASCARENHAS Francisco
Engineer
ICP - Instituto das
Comunicações de Portugal
Lisboa

D M. MIRANDA Carlos
Engineer
ICP - Instituto das
Comunicações de Portugal
Lisboa

D Mme PARENTE Isabel
Engineer
CTT - Correios
e Telecomunicações de Portugal
Telecom Portugal
Lisboa

D M. ROBALO CABRAL Antonio
ICP - Instituto das
Comunicações de Portugal
Lisboa

D M. SANTOS LOURENCO Fernando
CDR
ICP - Instituto das
Comunicações de Portugal
Lisboa

QAT Qatar (Etat du)
Qatar (State of)
Qatar (Estado de)

C M. AL MANNAI Abdulla Ali
Assistant General Manager
Qatar Public
Telecommunications Corporation
Doha

CA M. AL ATTIYAH Hamad
Colonel
Qatar Armed Forces
Doha

D M. AL HAMADI Issa Ahmed
Frequency Manager
Ministry of Information &
Culture
Doha

D M. AL KHULAIFF Saad
Director of Communications
Police Forces
Doha

D M. AL NASAR Ahmed
Captain
Qatar Armed Forces
Communications Department
Doha

D M. AL QAYED Jassim Ahmed
Communication Engineer
Qatar Public
Telecommunications Corporation
Doha

D M. AL-MASS Hassan Mohammed
Assistant Head of Engineering
Ministry of Information &
Culture
Doha

D M. ALRASHEED Abdul R.M.
Qatar Public
Telecommunications Corporation
Doha

D M. ALSHABI Abdulrab Mohd
Eng. Manager Subscriber
Services
Qatar Public
Telecommunications Corporation
Doha

D M. MAKKI Hussain Ali
Eng. Manager Transmission
Systems
Qatar Public
Telecommunications Corporation
Doha

**QAT Qatar (Etat du)
Qatar (State of)
Qatar (Estado de)
(suite)**

D M. QUADRI Syed Peer Badshah
Ministry of Information &
Culture
Doha

**KRE République populaire démocratique -
de Corée
Democratic People's Republic -
of Korea
República Popular Democrática -
de Corea**

C M. JI SUNG SU
Senior Officer
Department of
International Relations
Ministry of Posts and
Telecommunications
Pyongyang

D M. AN JAE CHUN
Officer
Department of
International Relations
Ministry of Posts and
Telecommunications
Pyongyang

**SYR République arabe syrienne
Syrian Arab Republic
República Arabe Siria**

C M. BARA Michel
Deputy Minister of
Information for Engineering
Ministry of Information
Damascus

C M. HAMOUDA Marwan
Director Wireless
Radio and Frequency Department
Syrian Telecommunications
Establishment
Damascus

CA M. AL KHALIL Ali
Syrian Telecommunications
Establishment
Damascus

CA M. DAYOUB Hassan
Researcher and Advisor
Syrian Telecommunications
Establishment
Damascus

**SYR République arabe syrienne
Syrian Arab Republic
República Arabe Siria
(suite)**

D M. ALI Ali
Broadcasting and TV
Authority
Damascus

D M. KBILI Jomaa
Syrian Telecommunications
Establishment
Damascus

D M. KHANJAR Fouad
Frequency Department
PTT
Damascus

D M. MOURANI Elias
Researcher
Syrian Telecommunications
Establishment
Damascus

D M. SARHAN Fouad
Syrian Telecommunications
Establishment
Damascus

D M. TOUTOUNJEE Mohamad M.
Researcher
Syrian Telecommunications
Establishment
Damascus

D M. ZAHRA Abdulilah
Syrian Telecommunications
Establishment
Damascus

ROU Roumanie - Romania - Rumania

C M. POPESCU Virgil
Sous-Secrétaire d'Etat
Ministère des communications
Bucharest

CA M. IONESCU Cantemir
Directeur général
Ministère des communications
Bucharest

D M. CERBU Nicolae
Engineer
Ministry of Communications
Bucharest

**ROU Roumanie - Romania - Rumania
(suite)**

- D M. CHITACU Anton
Ministère de la défense
Bucharest
- D M. CONSTANTINESCU Cristian
Ministry of Communications
Bucharest
- D Mme DANILA Elena
Expert
Ministry of Communications
Bucharest
- D M. DRAGHICI Aurel
Expert
Ministère des communications
Bucarest
- D M. GROPAN Nicolae
Expert
Ministère de la défense
Bucarest
- D M. NICOLA Dan
Director General
General Inspectorate of
Radiocommunications
Bucharest
- D M. POPA Gheorge
Directeur technique
Inspectorat général des
radiocommunications
Bucarest
- D M. RUSU Vasile
Ministère de la défense
Bucharest

**G Royaume-Uni de Grande-Bretagne -
et d'Irlande du Nord
United Kingdom of Great Britain -
and Northern Ireland
Reino Unido de Gran Bretaña -
e Irlanda del Norte**

- C M. GODDARD Michael
Head of International Branch
Radiocommunications Agency
Department of Trade and
Industry
London
- CA M. BEDFORD R.A.
Head of Branch
Radiocommunications Agency
Department of Trade and
Industry
London

**G Royaume-Uni de Grande-Bretagne -
et d'Irlande du Nord
United Kingdom of Great Britain -
and Northern Ireland
Reino Unido de Gran Bretaña -
e Irlanda del Norte
(suite)**

- CA M. DAVIES Michael P.
Consultant
Radiocommunications Agency
Department of Trade and
Industry
London
- CA M. DOLBY Graham
Head of Frequency Policy and
Spectrum Management Group
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. AU-YEUNG Henry
Senior Satellite System
Engineer
Asia Satellite
Telecommunications Co. Ltd.
Hong Kong
- D M. BAKER Anthony N.
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. BONDE Stephen Robin
First Secretary, HM Diplomatic
Service
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. BROOKS Michael
General Manager
Mobile Support Services
Hong Kong Telecom CSL
Hong Kong
- D M. CHEESEMAN Chris J.
B.T. Laboratories
Ipswich
- D M. CHRISTENSEN Jorn
Consultant
Asia Satellite
Telecommunications Co. Ltd.
Hong Kong
- D M. CONNOLLY Jim
Head of Spectrum Management
Section
Radiocommunications Agency
Department of Trade and
Industry
London

G Royaume-Uni de Grande-Bretagne -
et d'Irlande du Nord
United Kingdom of Great Britain -
and Northern Ireland
Reino Unido de Gran Bretaña -
e Irlanda del Norte
(suite)

- D M. CROWE Peter
Head of Frequency Policy Group
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. DAVEY Ian E.
Manager (International
Liaison)
BBC World Service
London
- D M. DAVIES Peter G.
Science and Engineering
Research Council
Rutherford Appleton Laboratory
Didcot, Oxon.
- D M. EVANS David A.
WARC Liaison Officer
Radio Society of Great Britain
Bovingdon, Herts.
- D M. FINNIE J.S.
Head of Research and Forward
Planning Section
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. GREGORY David N.
Director
British Aerospace
Communications Limited
Stevenage, Herts.
- D M. HAILSTONE Michael
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. HALL David James
Senior Executive
Satellite Policy
Cable & Wireless PLC
London
- D M. HARDING Stephen J.
Senior Frequency Manager
Civil Aviation Authority
London

G Royaume-Uni de Grande-Bretagne -
et d'Irlande du Nord
United Kingdom of Great Britain -
and Northern Ireland
Reino Unido de Gran Bretaña -
e Irlanda del Norte
(suite)

- D M. HARDING Stevan John
Radio Adviser
Marine Directorate
Department of Transport
London
- D M. HENDON David A.
Deputy Director
Department of Trade and
Industry
London
- D M. JAYASURIYA Don
Head - Mobile Technology
Section 1
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. JEACOCK Terry
Head of International
Regulatory Unit
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. KELLY Michael R.
Group Technical Manager
Hutchison Telecommunications
Limited
Hong Kong
- D M. KENYON Michael W.
Maritime Radio Adviser
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. LAFLIN Nigel J.
Head of Service
Planning Section
Research Department
British Broadcasting
Corporation
London
- D M. LAST B.A.
Radiocommunications Agency
Department of Trade and
Industry
London

**G Royaume-Uni de Grande-Bretagne -
et d'Irlande du Nord
United Kingdom of Great Britain -
and Northern Ireland
Reino Unido de Gran Bretaña -
e Irlanda del Norte
(suite)**

- D Mme LEMON Tulin Louise
Personal secretary
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. LOW Michael John
Frequency Manager
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. MCKENDRY John N.
Manager Regulatory Affairs
EEA/Philips Telecom
- D M. MCLEOD Peter
Head of Frequency Management
Ministry of Defence
London
- D M. PEAKE Gordon E.J.
Representative
British National Space Centre
London
- 1)D Miss PRICE Joan Rosina
Radiocommunications Agency
Department of Trade and
Industry
London
- 1) Secretary for UK Delegation
- D M. RATLIFF Paul A.
Head of Transmission Group
BBC Research Department
Tadworth, Surrey
- D M. ROGERS John Bernard
Manager Radio Regulatory
Policy
British Telecom
London
- D M. SEARLE Roger P.
Senior Radio Adviser
BT Laboratories
Ipswich, Suffolk

**G Royaume-Uni de Grande-Bretagne -
et d'Irlande du Nord
United Kingdom of Great Britain -
and Northern Ireland
Reino Unido de Gran Bretaña -
e Irlanda del Norte
(suite)**

- D M. SHEA Dominic
Branch Manager International
Relations
Hong Kong Telecom
International
Hong Kong
- D M. SHELSWELL Peter
Head of Radio Frequency
Section
BBC Research Department
Tadworth, Surrey.
- D M. SILK Russell
Intelsat Technical
Development Manager
British Telecom
London
- D M. SPANSWICK Simon N.J.
Engineer
BBC World Service
London
- D M. SPELLS Geoff
Senior Engineer
BBC World Service
London
- D M. SPURLING John O.N.
Manager
ITU & Radio Regulatory Affairs
Cable & Wireless PLC
London
- D M. STEMP Graham C.
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. TAKHAR Rohan
Radiocommunication Agency
Department of Trade and
Industry
London
- D M. THOMPSON Paul
Manager Network Technology
and Development
BT Worldwide Networks
London

**G Royaume-Uni de Grande-Bretagne -
et d'Irlande du Nord
United Kingdom of Great Britain -
and Northern Ireland
Reino Unido de Gran Bretaña -
e Irlanda del Norte
(suite)**

- D M. TOWLER Geoffrey O.
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. WHEATON Oliver
Head of Mobile Radio
Technology Group
Radio Communications Agency
Department of Trade and
Industry
London
- D M. WHITTINGHAM Keith
Head of Television
Broadcasting Section
Radiocommunications Agency
Department of Trade and
Industry
London
- D M. WONG Kwok-Shu
Assistant Postmaster General
Hong Kong Post Office
Hong Kong
- D M. WONG Sik Kei
Assistant Postmaster General
(Telecommunications 1)
Hong Kong Post Office
Hong Kong
- A M. BEATTIE William E.
Radiocommunications Agency
Department of Trade and
Industry
London
- A M. BURNS J.W.
Technical Operations Fixed
Services
Radiocommunications Agency
Department of Trade and
Industry
London
- A M. DEVINE Stephen
Radiocommunication Agency
Department of Trade and
Industry
London

**G Royaume-Uni de Grande-Bretagne -
et d'Irlande du Nord
United Kingdom of Great Britain -
and Northern Ireland
Reino Unido de Gran Bretaña -
e Irlanda del Norte
(suite)**

- A Mme JERVIS Valerie A.
Radiocommunication Agency
Department of Trade and
Industry
London
- A M. JOHNSON Malcolm
Radiocommunications Agency
Department of Trade and
Industry
London
- A M. POLLARD Anthony F.
Radiocommunications Agency
Department of Trade and
Industry
London
- A M. REED Anthony
Radiocommunications Agency
Department of Trade and
Industry
London
- A M. TOMPKINS Robert W.
Section Leader
Radiocommunications Agency
Department of Trade and
Industry
London
- A Mlle TULLY A.M.
Assistant
BBC
London
- A M. YARD K.H.C
Engineer
Radiocommunications Agency
Department of Trade and
Industry
London
- A M. YUNG E.H.T.
Radiocommunications Agency
Department of Trade and
Industry
London

**URS Russie (Fédération de)
Russian Federation
Rusia (Federación de)**

- 1)C M. BOULGAK V.B.
Ministre des PTT
Ministère des postes et
télécommunications
Moscou
- 1) 3-7.2/29.2-3.3

URS Russie (Fédération de)
Russian Federation
Russia (Federación de)
(suite)

- 1)C M. KOROLEV G.A.
Director
International Relations
Ministry of Posts and
Telecommunications
Moscow
- 1) 8-28.2
- CA M. BADALOV Ashot L.
Senior Counsellor
Ministry of Posts
and Telecommunications
Moscow
- CA M. KOSSENKO E.V.
Expert des télécommunications
Ministère de la Défense
Moscou
- CA M. STAROVOITOV A.V.
Director General
Federal Agency of Governmental
Communications and Information
Moscow
- CA M. ZOUBAREV Lu.B.
Président de la Commission
d'Etat pour la gestion de
fréquences
Moscou
- D M. ALEKSANDROV V.V.
Expert, State Inspection of
Telecommunications
Ministry of Posts and
Telecommunications
Moscow
- D M. BOGATOV E.P.
Chief, State Inspection of
Telecommunications
Ministry of Posts and
Telecommunications
Moscow
- D M. CHTCHEPOTINE V.I.
Vice President
v/o Morsviazsputnik
Russian PTT
Moscow
- D M. DMITRIEV L.N.
General Manager
Ministry of Posts and
Telecommunications
Moscow

URS Russie (Fédération de)
Russian Federation
Russia (Federación de)
(suite)

- D M. DOUBINSKY Boris A.
Scientific Secretary
Scientific Council for
Radioastronomy
Russian Academy of Sciences
Moscow
- D M. EFIMOV Alexandre
Adviser
Ministry of Health
Moscow
- D M. GAPOTCHKO V.G.
Ministry of Posts and
Telecommunications
Moscow
- D M. GREBENIK V.A.
Expert, State Inspection of
Telecommunications
Ministry of Posts and
Telecommunications
Moscow
- D M. IASTREBTSOV Igor
Ministry of Health
Moscow
- D M. KOROLKOV A.T.
General Manager
International Relations
Department
Ministry of Post and
Telecommunications
Moscow
- D M. KOUCHTOUJEV A.I.
First Deputy Director
Radio Research Institute
Ministry of Posts and
Telecommunications
Moscow
- D M. KOUZNETSOV Valdimir
Director
Ministry of Health
Moscow
- D M. KOZLOV V.I.
Expert, State Inspection of
Telecommunications
Ministry of Posts and
Telecommunications
Moscow
- D M. KRAPOTINE O.S.
Head of Division
Ministry of Posts and
Telecommunications
Moscow

**URS Russie (Fédération de)
Russian Federation
Russia (Federación de)
(suite)**

- D M. KRESTIANINOV V.V.
Chief Adviser
v/o Morsviazsputnik
Russian PTT
Moscow
- D M. KRIVOCHEEV M.I.
Head, Scientific Department
on Television
Radio Research Institute
Ministry of Posts and
Telecommunications
Moscow
- D M. MALIAKOV E.P.
Expert, State Inspection of
Telecommunications
Ministry of Posts and
Telecommunications
Moscow
- D M. PANTCHENKO V.E.
Expert, State Inspection of
Telecommunications
Ministry of Posts and
Telecommunications
Moscow
- D M. PARFEMOV Alexander J.
Deputy General Director
Ministry of Health
Moscow
- D M. PAVLUK A.P.
Head of Laboratory
Radio Research Institute
Ministry of Posts and
Telecommunications
Moscow
- D M. PISKOUNOV A.A.
Head, Sub-Commission on
Communications, Informatics
and Cosmos
Conseil Suprême de la Russie
Moscow
- D M. SAMODOUROV Ivan
Delegación Comercial de
la Federación de Rusia
Madrid
- D Mme SLIVINA Tatiana M.
Ministry of Posts and
Telecommunications
Moscow

**URS Russie (Fédération de)
Russian Federation
Russia (Federación de)
(suite)**

- D M. STEPANOV Lu.A.
Expert
Ministry of Posts
and Telecommunications
Moscow
- D M. TIMOFEEV V.V.
Head of Department
Radio Research Institute
Ministry of Posts and
Telecommunications
Moscow
- D M. VASSILIEV L.B.
Director, Centre International
Accounting
Ministry of Posts
and Telecommunications
Moscow
- D M. VASSILIEV M.B.
Ministry of Posts
and Telecommunications
Moscow
- A M. BOGOMAZOV Eugueni
Embajada de la Federación
de Rusia
Madrid
- A M. KOLLOSOV Alexander V.
Ministry of Health
Moscow

**SMR Saint-Marin (République de)
San Marino (Republic of)
San Marino (República de)**

- C M. PASOLINI Gastone
Minister of Post and
Telecommunication
Dicastero Comunicazioni e
Transporti
San Marino
- CA M. CAPICCHIONI Luciano
General Director PTT
Direzione Generale Poste et
Telecomunicazioni
San Marino
- D M. GIRI Michele
Direzione Generale Poste e
Telecomunicazioni
San Marino

**SMR Saint-Marin (République de)
San Marino (Republic of)
San Marino (República de)
(suite)**

D M. GRANDONI Ivo
Direzione Generale Poste e
Telecomunicazioni
San Marino

**SEN Sénégal (République du)
Senegal (Republic of)
Senegal (República del)**

C M. NDIONGUE Cheikh T.
Directeur de la
Communication
Ministère de la Communication
Dakar

CA M. MBAYE Souleymane
Directeur Coopération et
relations internationales
Société nationale des
télécommunications
Dakar

D M. BA Mamadou
Chef Service Gestion des
Fréquences
Société nationale des
télécommunications
Dakar

D M. DIALLO M.S.
Chef Division études
techniques et planification
Radiodiffusion Télévision
Sénégalaise
Dakar

D M. KEBE Ousmane
Secrétariat général
Présidence de la République
Dakar

**SNG Singapour (République de)
Singapore (Republic of)
Singapur (República de)**

C M. LIM CHOON SAI
Manager (Regulation)
Telecommunication Authority
Singapore

CA M. LIM Eng Tuan
Singapore Telecom
Singapore

**SNG Singapour (République de)
Singapore (Republic of)
Singapur (República de)
(suite)**

D M. CHOR Yee Lok S.
Singapore Braodcasting
Corporation
Singapore

D M. KANG AIK SIANG Kas
Engineer
Singapore Telecom
Singapore

D M. LEONG Ngai Weng
Singapore Broadcasting
Corporation
Singapore

**CLN Sri Lanka (République socialiste -
démocratique de)
Sri Lanka (Democratic Socialist -
Republic of)
Sri Lanka (República Socialista -
Democrática de)**

CA M. DISSANAYAKE Radley C.R.
Associate Expert
Directorate General of
Telecommunications
Colombo

D M. RANASINGHE Nelson E.
Engineer, Radio Regulations
Directorate General of
Telecommunications
Colombo

S Suède - Sweden - Suecia

C M. BJORNSJO Krister
Head of Frequency Management
Swedish Telecom
Haninge

1)CA M. EKEDAHN PETERSSON Percy
Manager, Spectrum Utilization
Frequency Management
Swedish Telecom
Haninge

1) Acting Head 5 - 28.2

CA M. FREDERICH Anders
Manager Spectrum Allocation
Frequency Management
Swedish Telecom
Haninge

S Suède - Sweden - Suecia
(suite)

- D M. BEIJER Thomas
Telia Research AB
Haninge
- D M. BERGMAN Lars
Swedish Defence Staff
Stockholm
- D M. BERGSMARK Staffan
Telecommunication Engineer
Telia Research AB
Haninge
- D M. EKLUND Anders
Swedish Defence Staff
Stockholm
- D Mlle HENRIKSSON Maria
Engineer
Frequency Management
Swedish Telecom
Haninge
- D M. JOHANSSON Karl M.
Manager, Broadcasting
Swedish Telecom Radio
Lulea
- D M. LUNDQVIST Per E.M.
Major
Air Force Staff
Stockholm
- D M. MELLBERG Per
Manager
Swedish Telecom Radio
Haninge
- D M. OLSTRUP Bertil
Manager, Sound and TV Services
Swedish Telecom Radio
Haninge
- D M. SKARSFJALL Sigge C.J.
Senior Executive Officer
Civil Aviation Administration
Norrköping
- D M. SONESSON Lars E.
Counsellor
Frequency Management
Malmö
- D M. STENBERG Berndt
Senior Executive Officer
Frequency Management
Swedish Telecom
Haninge

S Suède - Sweden - Suecia
(suite)

- D M. VAN DER SPANK Anders
Broadcasting Frequency
Planner
Swedish Telecom Radio
Haninge
- D M. WAHLMAN Bo Lennart
Principal Technical Officer
Defence Material
Administration
Stockholm
- D M. WOLFF Axel-Werner
Chief Engineer
Swedish Telecom Radio
Haninge
- A M. ANDERMO Per-Göran
Project Manager
Ericsson Radio Systems AB
Stockholm
- A M. HALL J. Peter
Society of Swedish Radio
Amateurs
Farsta

SUI Suisse (Confédération)
Switzerland (Confederation of)
Suiza (Confederación)

- C M. RIEDWEG Walter G.
Head of Division
Radio Regulatory Division
General Directorate of
Swiss PTT
Bern
- CA M. KIEFFER Henry A.
Deputy Head of Division
Radio Regulatory Division
General Directorate of
Swiss PTT
Bern
- D M. BARBIER Paul
Head TV-Planning
Radio Communication
Engineering
General Directorate of
Swiss PTT
Bern
- D M. BUEHLER Peter
Assistant
Direction of Engineering
Swiss Broadcasting Corporation
Bern

**SUI Suisse (Confédération)
Switzerland (Confederation of)
Suiza (Confederación)
(suite)**

- D M. FLUEHMANN Walter
Head of Planning Section
Federal Office for Signal
Troops
Bern
- D M. GASSER Peter
Assistant
Air Navigation Services
Section
Federal Office for Civil
Aviation
Bern
- D M. HAUCK Erhard
Head of Wireless Division
Research and Development
General Directorate of
Swiss PTT
Bern
- D M. KANGELDI Tahsin
Head of Frequency Management
Branch
Radio Regulatory Division
General Directorate of
Swiss PTT
Bern
- D M. LIECHTI Urs
Frequency Management,
Head of Mobile Branch
Radio Regulatory Division
General Directorate of
Swiss PTT
Bern
- D M. MARTIN Jesus
Head of International Radio
Affairs
Radio Regulatory Division
General Directorate of Swiss
PTT
Bern
- D M. RIEHL Frédéric L.G.
Chef adjoint
Service de la radio et de la
télévision
Secrétariat général du DFTCE
Bern
- D M. STETTLER Robert
Head Flight Communications
Swissair
Zurich

**SUR Suriname (République du)
Suriname (Republic of)
Suriname (República de)**

- C Mrs. STRUIKEN-WIJDENBOSCH Iris
Deputy Director
Legal and Personnel Affairs
Telesur
Paramaribo
- CA M. JOHANNIS Leonard C.
Deputy Director
Development and Logistic
Affairs
Telesur
Paramaribo
- D M. RAJCOMAR Wim A.
Head, Radio Control Department
Telesur
Paramaribo
- A M. NOGUERA Felipe
Caribbean Association of
National Telecom Organizations

**SWZ Swaziland (Royaume du)
Swaziland (Kingdom of)
Swazilandia (Reino de)**

- C M. MKHONTA Petros M.
Engineer Frequency Management
Posts and Telecom Corporation
Mbabane
- D M. GUMEDZE Lucas M.
Assistant Engineering Manager
Swaziland Television
Broadcasting Corporation
Mbabane
- D M. MOTSA Mandla D.
Transmission Engineer
Swaziland Broadcasting and
Information Services
Mbabane

**TZA Tanzanie (République-Unie de)
Tanzania (United Republic of)
Tanzanía (República Unida de)**

- C M. NDAKIDEMI A.S.
Director of Communications
Ministry of Communications and
Transport
Dar es Salaam

**TZA Tanzanie (République-Unie de)
Tanzania (United Republic of)
Tanzania (República Unida de)
(suite)**

- CA M. NGATENA J.S.
Director
Design and Engineering
Tanzania Posts &
Telecommunications Corporation
Dar es Salaam
- D M. MAKONDOO R.
Ministry of Planning
Dar es Salaam

**TCD Tchad (République du)
Chad (Republic of)
Chad (República del)**

- C M. ZAKARIA Abdoulay O.
Office national des postes et
télécommunications
N'Djamena
- D M. OUMAR MOUSSA Mbassa
Directeur des
Télécommunications
Office national des postes et
télécommunications
N'Djamena

**TCH Tchèque et slovaque (République -
fédérale)
Czech and Slovak Federal -
Republic
Čecha y Eslovaca (República -
Federal)**

- C M. MATAS Attila
First Vice Minister
Federal Ministry of Posts and
Telecommunications
Praha
- CA M. BUJNOVSKY Jan
Director
Federal Ministry of Posts and
Telecommunications
Praha
- D M. BAK Pavel
Counsellor
Federal Ministry of Posts and
Telecommunications
Praha
- D M. CHALUPSKY Zdenek
Counsellor
Federal Ministry of Posts and
Telecommunications
Praha

**TCH Tchèque et slovaque (République -
fédérale)
Czech and Slovak Federal -
Republic
Čecha y Eslovaca (República -
Federal)
(suite)**

- D M. ORAVEC Peter
Director
Federal Ministry of Posts and
Telecommunications
Praha
- D M. RYVOLA Richard
Scientific Worker
Research Institute of PTT
Praha
- D M. ZACHEJ Marian
Counsellor
Federal Ministry of Defence
Praha

**THA Thaïlande
Thailand
Tailandia**

- C M. UTHAISANG Sombut
Director General
Post and Telegraph Department
Bangkok
- CA M. REOWILAISUK Rianchai
Post and Telegraph Department
Bangkok
- D M. APICHARTTRISORN Witoon
Chief of Surveying and
Planning Sub-Division
Public Relations Department
Radio Thailand
Bangkok
- D M. ASWAMANASAK Tawich
Engineer, Planning Section
Satellite Telecommunication
Division
The Communications Authority
of Thailand
Bangkok
- D M. CHANINYUDTHAVONG Kamol
Aeronautical Radio of
Thailand Ltd.
Bangkok
- D M. COMSOOKSRI Yuthdanai
Telephone Organization of
Thailand
Bangkok

**THA Thaïlande
Thailand
Tailandia
(suite)**

- D M. JAMPATHOM Bhumisathit
Aeronautical Radio of
Thailand Ltd.
Bangkok
- D M. RATRISAWADI Prapan
Communications Official
Post and Telegraph Department
Bangkok
- D M. SEWETSRITHAWAN Thanoo
Telecommunications Engineer
Post and Telegraph Department
Bangkok
- D M. SOOKCHAYEE Manit
Assistant Director
The Communications Authority
of Thailand
Bangkok

**TGO Togolaise (République)
Togolese Republic
Togolesa (República)**

- C M. AKPAKI Koffi O.
Ingénieur
Service de la Radiodiffusion
Ministère de la Communication
et de la Culture
Lomé
- C M. AYIKOE Kossivi
Directeur général
Office des Postes et
Télécommunications
Lomé
- CA M. AMEGANVI-LYS Ayi
Ingénieur principal
Office des Postes et
Télécommunications
Lomé
- CA M. KOMLAN Kadza K.
Ingénieur
Service de la Télévision
Ministère de la Communication
et de la Culture
Lomé
- D M. AHITE Anani S.
Ingénieur
Aviation Civile
Lomé

**TGO Togolaise (République)
Togolese Republic
Togolesa (República)
(suite)**

- D M. AMEDODJI Komi
Inspecteur en chef
Direction générale
Office des postes et
télécommunications
Lomé
- D M. TCHARA Kouma
Ingénieur
Direction de l'Aviation Civile
Lomé

**TON Tonga (Royaume des)
Tonga (Kingdom of)
Tonga (Reino de)**

- D M. NAATI Hama
Tonga Telecommunication
Commission
Nukualofa

**TRD Trinité-et-Tobago
Trinidad and Tobago
Trinidad y Tobago**

- D M. RAMNARINE Deoraj
Secretary General
Caribbean Telecommunication
Union
Port of Spain

TUN Tunisie - Tunisia - Túnez

- CA M. DOUIHECH Hachmi
Directeur
PTT
Tunis
- D M. ABDEIKADER Kamel
PTT
Tunis
- D M. BETTAIEB Bechir
Responsable des Affaires
Internationales
Télédiffusion Tunisienne
Tunis
- D M. DAHECHE Salah
Responsable de la réception et
couverture
Télédiffusion Tunisienne
Tunis

TUN Tunisie - Tunisia - Túnez
(suite)

- D M. JEMAI Faouzi
Ministère des Communications
Tunis
- D Mme MOUIHBI SOUSSI Lilia S.
Responsable de Service des
Radiocommunications
Direction de l'Exploitation
Tunis

TUR Turquie - Turkey - Turquía

- 1)C M. GULER Huseyin
Deputy Director General
General Directorate of
Radiocommunications
Ankara
- 1) 24.2 - 3.3
- 1)CA M. SENSOY Gursel
Adviser
Ministry of Transportation and
Communications
Ankara
- 1) 2 - 15.2
- 1)CA M. UZAL Vahit
General Directorate of PTT
Ankara
- 1) 15.2 - 3.3
- D M. CAKIMCI Turgay
Engineer
Turkish Radio and Television
Corporation
Ankara
- D M. CEYLAN Halil
General Directorate of PTT
Ankara
- D M. ERYOLDAS Yilmaz
General Directorate of PTT
Ankara
- D M. GOK Ihsan
Member
Supreme Council for Radio and
Television
Ankara

TUR Turquie - Turkey - Turquía
(suite)

- D M. KURU Yucel
Head of Frequency Management
General Directorate of
Radiocommunications
Ankara
- D Miss OZTUNC Sule
Third Secretary
Embassy of Turkey
Madrid
- D M. SAYRAC Mehmet Timur
Head of Research Department
Supreme Council for Radio and
Television
Ankara
- D M. YURDAL Fatih M.
Branch Manager
General Directorate of
Radiocommunications
Ankara

UKR Ukraine - Ukraine - Ucrania

- C M. AMERKHANIAN G.G.
Chief, State Inspection of
Telecommunication
State Committee of
Communications
Kiev
- C M. SOLOVIEV Iouri
Ministry of Communications
Kiev

**URG Uruguay (République -
orientale de l')
Uruguay (Eastern Republic of)
Uruguay (República Oriental del)**

- 1)C M. RISSO ABADIE Ignacio
Vice-Ministro de Defensa
Nacional
Ministerio de Defensa Nacional
Montevideo
- 1) Jusqu'au 13.2
- 1)CA M. HACKEMBRUCH Esteban J.
Director Nacional
Dirección Nacional de
Comunicaciones
Montevideo
- 1) Jusqu'au 13.2
- 2) C: A partir du 14.2

URG Uruguay (République -
orientale de l')
Uruguay (Eastern Republic of)
Uruguay (República Oriental del)
(suite)

D M. PINTOS ALVARIZA Walter A.
Jefe Adjunto
Dirección Nacional de
Comunicaciones
Montevideo

VEN Venezuela (République du)
Venezuela (Republic of)
Venezuela (República de)

C M. MIJAREZ PENA Juan
Director General Sectorial
CONATEL
Ministerio de Transporte y
Comunicaciones
Caracas

CA M MARVAL MORA Jesus Rafael
Asesor del Director
CONATEL
Ministerio de Transporte y
Comunicaciones
Caracas

D M. AGUERREVERE Santiago
Asesor
CANTV
Caracas

D M. TARAZONA VERA Jesus M.
Coordinador de proyectos
CANTV
Caracas

A M. ARAUJO JUAREZ José R.
Gerente Legal
Comisión Nacional de
Telecomunicaciones
Ministerio de Transporte
y Comunicaciones
Caracas

A M. JOVE HAUGERUD Nicolas
Comisión Nacional
de Telecomunicaciones
Caracas

YEM Yémen (République du)
Yemen (Republic of)
Yemen (República del)

C M. ALGILANI Abdulwahab A.
Adviser, Technical Affairs
Ministry of Communications
Sana'a

YEM Yémen (République du)
Yemen (Republic of)
Yemen (República del)
(suite)

CA M. AL-NONO Husein H.
Engineering Advisor
Yemen General Corporation for
Radio and TV
Sana'a

D M. AZZANI Mohammed A.
General Director for
Transmission
Yemen General Corporation for
Radio and TV
Sana'a

D M. FARHAN Abdullah
General Director
Technical Section
Radio
Sana'a

D M. MOGBIL Hussain
Chairman of Engineering Sector
Radio and TV
Ministry of Information
Sana'a

D M. MOHSEN Ali bin Ali
Department Manager
Frequency Management
Public Telecommunication
Corporation
Sana'a

D M. YESER Ahmed A.M.
Director
Frequency Management
Ministry of Communications
Sana'a

YUG Yougoslavie (République -
socialiste fédérative de)
Yugoslavia (Socialist Federal -
Republic of)
Yugoslavia (República -
Socialista Federativa de)

C H.E. Mr. DIZDAREVIC Paik
Ambassador
Madrid

C M. JELIC Slobodan
Assistant to the Federal
Secretary
Federal Secretariat for
Transport and
Telecommunications
Beograd

**YUG Yougoslavie (République -
socialiste fédérative de)
Yugoslavia (Socialist Federal -
Republic of
Yugoslavia (República -
Socialista Federativa de)
(suite)**

- 1) CA M. RASAJSKI Slavenko
Head of Department
Federal Radiocommunication
Administration
Beograd
- 1) Acting Head
- D M. MANDRINO Mirko S.
Head of International
Affairs Group
Federal Radiocommunication
Administration
Beograd
- D M. MEDAN Rodoljub
Adviser
Federal Radiocommunications
Administration
Beograd
- D M. MLADENOVIC Vladimir
Senior Adviser
Community of the Yugoslav PTT
Beograd
- D M. RACKOV Borislav
Head of Section
Federal Radiocommunication
Administration
Beograd
- D M. SIMIC Momcilo
Assistant Director
Development and Frequency
Planning
RTB/Yugoslav Radio Television
Beograd
- D M. STEFANOVIC Petar
Head of Section
Federal Radiocommunication
Administration
Beograd
- D M. STEVANCEVIC Milan
Senior Adviser
Federal Secretariat for
Transport and
Telecommunication
Beograd

**ZAI Zaïre (République du)
Zaire (Republic of)
Zaire (República del)**

- D M. BINTOMA Masaka
Sous-Directeur
Office Zaïrois de
Radiodiffusion et de
Télévision
Kinshasa

**ZMB Zambie (République de)
Zambia (Republic of)
Zambia (República de)**

- C M. SIAME Ronnie K.
Chief Engineer (Radio and
Transmission)
Posts and Telecommunications
Corporation Ltd.
Ndola
- D M. CHILESHE Elias
Manager, Radio Frequency
Management
Posts and Telecommunications
Corporation Ltd.
Ndola
- D M. KUNDA Mwila
Director of Communications
Government Communications
Department
Lusaka
- D M. MBAZIMA Duncan
Zambia National Broadcasting
Corporation
Lusaka

**ZWE Zimbabwe (République du)
Zimbabwe (Republic of)
Zimbabwe (República de)**

- C M. MATAVIRE F.D.
Manager Frequency Management
and Services
Posts and Telecommunications
Corporation
Harare
- CA M. MUCHIMBIRI Elliot
Assistant Director
Zimbabwe Broadcasting
Corporation
Harare

II. EXPLOITATIONS PRIVEES RECONNUES

III.1 NATIONS UNIES

ONU

M. BRANSFORD Louis

M. BUTLER Richard E.
(Voir Australie)

M. LAW Gordon
New York

III.2 INSTITUTIONS SPECIALISEES

ICAO

M. CHAGAS Judimar das
International Civil Aviation
Organization
Montreal, Quebec

M. SHILLING Franklin L.
Montreal, Quebec

IMO

M. AWAI Tsuguo
Technical Officer
International Maritime
Organization
London

OMM

M. RAINER Jean-Michel
World Meteorological
Organization
Geneva

UNESCO

M. DUPONT Georges
Administrateur spécialiste
du programme UNESCO
Paris

III.3 ORGANISATIONS REGIONALES

APT

M. NUMATA Naomichi
Programme Officer
Bangkok

M. SONOKI Hiroyasu
Deputy Executive Director
Asia-Pacific Telecommunity
Bangkok

CEPT

M. COURT David I.
Head of Office
European Radiocommunication
Office
Copenhagen

CTU

M. RAMNARINE Deoraj
(voir Bahamas et
Trinité-et-Tobago)

EUMETSAT

M. FISCHER James C.
Darmstadt

M. WOLF Robert
Mission Manager
Meteosat Operational Programme
Darmstadt

PATU

M. ELGEBALY Ahmed M.
Technical Director
Pan African Telecommunications
Union
Kinshasa

III.4 AUTRES ORGANISATIONS

ABU

M. KHUSHU Om Prakash
Director, Technical Centre
Asia-Pacific Broadcasting
Union
Kuala Lumpur

AIR

M. MEDINA Hernán
Asociación Internacional de
Radiodifusión
Montevideo

M. MELIDE ARIZMENDI Luis M.
Montevideo

M. RUIZ DE ASSIN CHICO DE GUZMAN A.
Secretario del Capítulo
Europeo de Radiodifusión
Montevideo

ARABSAT

M. SULTAN Ghassan Homad
Inter-System Coordination
Section
Riyadh

ASBU

M. SULEIMAN Abdelrahim
Director, Engineering Affairs
Tunis

CE

M. BLANC Jean-Louis
Principal Administrator
Commission of the European
Communities
Brussels

M. BURMANJER Robert
Administrator
Brussels

M. LUIS Orlando Reis
Expert
Brussels

M. MAJO CRUZATE Joan
Consejero
Bruselas

M. REEKIE Alan
Expert
Brussels

CE

(suite)

M. TOSCANO J.M.
Administrator
Brussels

M. VERHOEF Paul
Administrator
Brussels

M. WELTEVREDEN Pieter
Director for
Telecommunications
Brussels

Mme WILKINSON Anne
Legal Advisor
Brussels

M. WILKINSON Christopher
Head of Division for
International Affairs
Brussels

CICR

M. CAUDERAY G.C.
Conseiller technique
Comité International de la
Croix Rouge
Genève

M. FAIVRE Patrick
Head of Telecommunication
Division
Geneva

CIRM

M. FOX Michael P.
Secretary-General
Comité International
Radio Maritime
London

Mlle AGUADO PADILLA Dora M.
London

M. CHESTON T. Stephen
London

M. HOLBY Vegard

Mlle HOTRA Karen H.
London

M. ROTHBLATT Martin
London

CIRM

(suite)

Mme SAFWAT Safia
London

M. SAMARA Noah A.
London

COSPAS-SARSAT

M. KING J.V.
Technical Officer
COSPAS-SARSAT Secretariat
Inmarsat
London

M. LEVESQUE D.J.
Head, COSPAS-SARSAT
Secretariat
London

ESA

M. BARANI Bernard
European Space Agency
Noordwijk

M BLOCK Gerhard F.
Head, Frequency Management
Office
Paris

M. FROMM Hans-Hermann
Manager
Noordwijk

M. GALLIGAN Kevin
Mission Manager
Paris

M. OTTER Manfred
Darmstadt

M. ROGARD Roger
Mobile System Manager
Paris

EUTELSAT

C M. GRENIER Jean
Directeur général
EUTELSAT
Paris

M. AMADESI Paolo
CCIR/CCITT Matters
Paris

EUTELSAT

(suite)

M. DHARMADASA Don
Head of System Studies
Division
PARIS

M. GRECO Antonio
Access to orbit/Spectrum
Engineer
Paris

M. PAYET Georges
Directeur technique
Paris

M. RAISON Jean-Claude
Conseiller pour le
développement des stratégies
et objectifs
Paris

GCC

M. ABDULMALIK Arif A.
Director
Telecommunication Bureau
for GCC
Manama

IARU

M. BALDWIN Richard L.
President
Waldoboro

M. ALLAWAY E. J.
Birmingham

M. ATKINS Thomas
Secretary IARU Region 2
Ontario

M. BERGERON Daniel M.
Warc Specialist

M. NIETYKSZA WOJCIECH J.
Region
Geneva

M. OWEN Michael

M. PRICE Larry E.
Secretary
Newington

M. RANKIN David Henry
Chairman Region 3
Singapore

IARU
(suite)

M. SHAI0 Alberto
President Region 2

M. SUMNER David
International Secretariat
Staff
Newington

IATA

M. FISHER David W.
International Air Transport
Association
Montreal, Quebec

M. HABRAKEN Toby
Montreal, Quebec

M. LEMMON Nathan
International Air Transport
Association
Montreal, Quebec

M. SELVES Gerry
Montreal

ICS

M. RAYFIELD C.F.
International Chamber of
Shipping
London

INMARSAT

M. LUNDBERG Olof
Director General
London

M. ASINUGO Johnson N.
Inmarsat Representative
(Africa)
London

M. EL AMIN Mohamed
London

M. GHAI5 Ahmad F.

M. KENNEDY Donald M.
Senior Manager, Systems
Engineering
London

M. PHILLIPS Bob
Deputy General Manager
Land Mobile and Special
Services
London

INMARSAT
(suite)

M. POSKETT Peter Ian
London

M. SINGARAJAH Anselm J.
Senior Frequency Coordination
Engineer
London

M. SINGH Jai P.
General Manager
Land Mobile and Special
Services
London

INTELSAT

M. CHASIA Henry
Manager
Orbital Resources Department
Washington

M. DICKS Jack
Senior Advisor,
Engineering Division
Washington

M. HENRI Yvon
Regulatory Specialist
Orbital Resources Department
Washington

M. LATAPIE Francis
Director
External Relations Division
Washington

M. LEIVE David
Legal Advisor
Washington

Mlle ORNES Alejandra
External Relations
Coordinator
Washington, D.C.

INTERSPOUTNIK

M. CHIRKOV Boris
Director General
Moscow

M. FERNANDEZ VALDES Mario
Moscow

M. KANTOR Lev
Expert-Adviser
Moscow

INTERSPOUTNIK
(suite)

M. PAIANSKI Iouri
Moscow

M. TSIRLIN Igor
Expert-Adviser
Moscow

ITF

M. MURPHY Kevin A.
Special Adviser
International Transport
Workers' Federation
London

IUCAF

M. ROBINSON Brian
Chairman
(see Australia)

M. DOUBINSKY Boris A.
Member of IUCAF appointed by
IAU
(see Russian Federation)

M. KAHLMANN H.C.
Member of IUCAF
representing URSI
Zwiggelte

M. SWARUP Govind
India

M. THOMPSON Anthony R.
Representative of IAU

OIRT

M. KRYLOV Yuri
International Radio & TV
Organization
Praha

SITA

M. PERRY Geoff W.
Consultant
Société Internationale de
Télécommunications
Aéronautiques
Neuilly-sur-Seine

UER/EBU

M. CANEI P.
Chef de Service
Union Européenne de
Radiodiffusion
Genève

UER/EBU
(suite)

M. HUNT Ken J.
Senior Engineer
Geneva

M. KOZAMERNIK Franc
Genève

M. O'LEARY Terence
Senior Engineer
Geneva

URTNA

M. BENKADA Kaddour Bachir
Chairman, Technical Commission
Alger

M. LO Medoune
Director
Technical Centre
Bamako

M. MUCHIMBIRI Elliot
Harare

IV. SIEGE DE L'UNION - HEADQUARTERS OF THE UNION - SEDE DE LA UNION

IV.1 Secrétariat général

M. P. Tarjanne, Secrétaire général

Assistante: Mme M. Thynell

M. J. Jipguep, Vice-Secrétaire général

Assistante: Mme Ch. Gervais

M. G. Barboux, Département des conférences et services communs

IV.2 Comité international d'enregistrement des fréquences (IFRB)

M. W.H. Bellchambers, Président

Assistante: Mlle M. Iglesias

M. M. Miura, Vice-Président

Assistante: Mlle L. Arocena

M. G.C. Brooks, Membre

M. M. Harbi, Membre

M. V.V. Kozlov, Membre

M. M. Sant, Chef de Département

Mme M. McMahon

IV.3 Comité consultatif international des radiocommunications (CCIR)

M. R.C. Kirby, Directeur

Assistante: Mme G. Benoit

IV.4 Bureau de développement des télécommunications (BDT)

M. P.S. Kurakov, Département des activités hors siège

M. A. Laouyane, Département politiques, stratégies et programmes

V. SECRETARIAT DE LA CONFERENCE - SECRETARIAT OF THE CONFERENCE
SECRETARIA DE LA CONFERENCIA

V.1 Secrétaire de la Conférence : M. P. Tarjanne, Secrétaire général

Secrétaire exécutif : M. X. Escofet

Secrétaire technique : M. K. Olms

Secrétaire administratif : M. J. Escudero

V.2 Séances plénières et Commissions

Séance plénière et Commission 1	:	M. D. Schuster <u>Assistante:</u> Mme F. Demeiller
Commission 2	:	M. X. Escofet <u>Assistante:</u> Mlle H. Tulloch
Commission 3	:	M. A. Tazi Riffi <u>Assistante:</u> Mme P. Bertinotti
Commission 4	:	M. T. Gavrilov
Commission 5	:	M. J. Lewis
Commission 6	:	M. P.A. Traub assisté de Mme S. Petter <u>Assistants:</u> Mlle C. Brunet Mme Ch. Boccard
Groupe de travail de la Plénière	:	M. G. Rossi <u>Assistante:</u> Mlle M. Pardell

V.3 Division technique

Secrétaire technique	:	M. K. Olms Secrétaire des Commissions 4, 5 et du Groupe de travail de la Plénière
Ingénieurs	:	M. F. Leite M. G. Mesias M. H. Koker M. P. Korobekov M. A. Zoudov
Assistants	:	Mme A. Behrouz Mme A. Trifler Mme L. Trarieux-Leclerc

V.4 <u>Affaires de caractère légal</u>	:	M. A. Boussaid M. A. P. Guillot <u>Assistante:</u> Mlle M.J. Urena
--	---	--

V.5 Relations publiques

Presse	:	Mme F. Lambert Mme V. Shahna-Ekman
--------	---	---------------------------------------

V.6 <u>Ordinateur</u>	:	M. G. Jones M. C. Clerc
-----------------------	---	----------------------------

V.7 Services de la Conférence

Secrétaire administratif : M. J. Escudero
Assistante: Mlle D. Boccard

Inscription des délégués : Mme J. Jones-Ferrer
Mme L. Domingo
Mme M. Sincholle

Contrôle des documents : Mme B. Bux
Mme E. Baron
Mlle P. Janin
Mme M. Monet

Traduction

Enregistrement des documents : Mme M.T. Rubio
Mme P. Meynet Cordonnier

Section française : Mme F. Sala
M. D. Halpern
M. P. Ferry
Mlle M. Touraud
Mlle A.M. Deturche
M. J.P. Missire
M. R. Ripert
Mme H. Eckert
Mme C. Anghelone, Secrétaire

Section anglaise : M. G. Whiting
M. A. Pitt
M. D. Plumley
M. P. Stabler
M. A. Jennings
Mlle S. Scott, Secrétaire

Section espagnole : M. A. Peñaranda
M. J. Ramos
M. F. Garcia Alonso
M. J. Berenguer
M. F. Sevilla
M. A. Fernandez
M. J.A. Prieto
M. G. Alvarez-Santullano
Mme C. Marin, Secrétaire

Procès-verbalistes :

Mme S. Rossington
Mme A. Haden
M. K. Cowx
Mlle M. Greenstone
Mme G. Seriot
Mme M. Cren
Mme C. Briand
Mme C. Ferrie-Tenconie
M. M. Queyrane
M. R. Pickering
Mme V. Schwarb
Mlle J. Barley
M. T. Elridge
Mme S. Hall
Mme V. Costarini
Mlle T. Lucas, Dactylographe

Interprétation

Service des interprètes :

Mme M. Jouffroy
Mme J. Sanchez

Cabine française :

Mme M. Ducroux
Mme F. Le Dantec
Mme M. Gucassoff
Mme C. Bielik
Mlle D. Porret
Mme C. Litvinov
Mme W. Minder
Mlle M. Girot
Mme D. Tournut
M. Ch. Stenersen
Mlle H. Ciolkovitch
Mme D. Portier
Mme F. Stuby
M. C. Lord
Mlle G. Minder

Cabine anglaise	:	Mme L. De Villoutreys Mme I. Sakov Mme M. De Gren Mme T. Borowiec Mlle A. Sieveking Mme E. Nekrouf M. E. Harley Mlle P. Davidson Mlle C. Ganson Mme K. Cru M. J. Jennings Mme N. Gregory Mme V. Para-Idreos M. N. Gregory Mme M. Giri
Cabine espagnole	:	Mlle J. Udler Mme A. Hubner Mme E. Goldberg Mme R. Posewitz Mme E. Flegenheimer Mme R. Wesenfelder Mme E. Romero Mme L. Ramirez-Pfeiffer Mme E. Yndurain Mme C. Romero M. E. Kahane Mlle M. Alvarez Mlle I. Schroeder Mme M.E. Trivino
Cabine arabe	:	Mlle Z. Abdel-Magid Mlle G. Elias Mlle C. Arnaout M. A. Attia Mme S. Abdellatif M. F. Damergy Mme N. Hassan M. M. Khallaf Mme S. Khatan M. A. El Manzalawiy M. N. Chalabi M. T. Rayes Mlle J. Aouad M. Ben Yedder M. F. Al Salti M. K. Bitar Mme S. Touma Mme H. Al Mudhaffer

Cabine chinoise

: Mme Y. Lei
M. X. Yang
Mme P. Wang Reiser
Mlle R. Pan
M. J.-L. Schott
Mlle E. Fan
Mme Z. Wu
Mme S. Gao
M. J. Yang
Mme L. Zhao
Mme L. Huang
M. W. Xie
M. Z. Liu
Mme X. Zeng
Mlle J. Yu
Mlle Y. Zhou
M. X. Wu

Cabine russe

: M. Y. Souvorof
M. N. Krivocheine
M. V. Poliakov
M. A. Dorogoi
M. V. Soudovtsev
M. A. Tadevossian
Mme L. Alexanderson
Mme E. Nurock
Mme O. Romanova
Mme A. Gorbunova
M. V. Oukhanov
Mme L. Koulchitskaya
Mme I. Outkina
Mme O. Vassilieva

<u>Pool dactylographique</u>	:	Mme Duvernay
<u>Assistante</u>	:	Mme J. Félisaz
Section française	:	Mme M.C. Girard Mme M.H. Sané Mme C. Francony Mme D. Ethoré Mme P. Ruscon Mme M. Brévot Mme M. Clavel Mlle C. Brice M. P. Sallin Mme F. Mestrallet Mlle N. Saxod Mlle V. Galeazzi Mlle V. Vigny Mme C. Arminjon Mme S. Audouy Mlle N. Mosca Mme M. Decourt Mme M. Lataillade Mme M.C. Ventaja Mlle D. Ducrot Mme D. Duby Mme M. Lagier
Section anglaise	:	Mme G. Winter Mlle S. Neal Mlle J. Currie Mlle M. Stephens Mlle J. Jones Mme J. Lindsay Mlle A. Lavin Mlle J. Butterfield Mlle C. Ochienghs Mlle J. Magero Mlle Y. Bedoya Mlle E. Walsh Mlle C. De Guzman Mme M. Campion Mlle R. Verney Mlle V. Codd Mme L. Millet Mme F. Afarih Mlle S. Gavinio Mlle E. Chapin

Section espagnole	:	Mlle M.C. Burro Mme R. Escudero Mlle B. Toral Mme M. Hyseni Mme E. Lugris Mlle R. Martinez Mme G. Guijosa Mme P. Solé Guerra Mme B. Giovannini Mme A.M. Enriquez Mme L. Chumbez Mlle A.D. Rodriguez Mme M.P.Rodriguez-Arias Mme M.J. Tello de la Rosa Mlle E. Garcia Prieto Mme M. Munoz M. R. Norrick Mme Zepeda M. A. Martinez Romera Mlle P. Santos Mlle D. Montero Mlle P. Vergara
<u>Reprographie</u>	:	M. P. Constantin M. E. Unterlerchner M. V. Vazquez M. E. Guven M. C. Despond
<u>Distribution des documents</u>	:	M. G. Delaye M. A. Herrerin M. C. Bochet Mme J. Hudry M. B. Pihen
<u>Communications</u>	:	Mlle N. Lemaire Mme F. Giltairé
<u>Huissiers de salle</u>	:	M. M. Diaby M. P. Cailler
<u>Messagers</u>	:	M. A. Brusson
<u>Economat/Photo</u>	:	M. R. Launaro
<u>Finances/personnel</u>	:	Mme A. Paderewski

WARC-92WARC FOR DEALING WITH FREQUENCY
ALLOCATIONS IN CERTAIN PARTS OF THE SPECTRUM

MÁLAGA-TORREMOLINOS, FEBRUARY/MARCH 1992

Document 401-E

15 June 1992

Original: English
French
Spanish**FINAL LIST OF DOCUMENTS****A. Basic documents of the Conference**

	Document N°		Document N°
<u>Conference Chairmanships</u>	70(Rev.2)	COMMITTEE 4	
<u>Structure of the Conference</u>	66	<u>Summary Records (continuation)</u>	
<u>List of participants</u>	400	3rd meeting	166+Cor.1
PLENARY MEETING		4th meeting	168
<u>Minutes</u>		5th meeting	196
Official Opening Ceremony	134	6th meeting	197
1st meeting	96+Cor.1	7th meeting	245
2nd meeting	112+Cor.1	8th meeting	247
3rd meeting	164+Cor.1	9th meeting	260
4th meeting	195+Cor.1,2	10th meeting	261
5th meeting	244	11th meeting	262
6th meeting	266	12th meeting	289
7th meeting	291	13th meeting	297
8th meeting	299	14th meeting	298
9th meeting	321	15th meeting	302
10th meeting	367	16th meeting	303
11th meeting	368	17th meeting	322
12th meeting	369	18th meeting	323
13th meeting	396	19th and last meeting	324
14th meeting	397		
15th meeting	398	COMMITTEE 5	
16th and last meeting	399	(Regulatory)	
COMMITTEE 2 (Credentials)		<u>Summary Records</u>	
<u>Summary Records</u>		1st meeting	103(Rev.1)
1st meeting	107	2nd meeting	105(Rev.1)
2nd and last meeting	292	3rd meeting	113+Cor.1
<u>Report</u>	282+Cor.1, 2	4th meeting	167
COMMITTEE 3		5th meeting	193
(Budget Control)		6th meeting	246
<u>Summary Records</u>		7th meeting	248
1st meeting	106+Cor.1	8th meeting	263
2nd meeting	194	9th meeting	264
3rd and last meeting	301	10th meeting	265
<u>Report</u>	296	11th meeting	290
COMMITTEE 4		12th meeting	304
(Frequency Allocation)		13th meeting	305
<u>Summary Records</u>		14th and last meeting	363
1st meeting	102+Cor.1	COMMITTEE 6 (Editorial)	
2nd meeting	104(Rev.1)	<u>Summary Record</u>	108(Rev.1)

B. Complete list of documents in numerical order (1 - 401)

No.	Origin	Title	Destination
1	SG	Agenda of the Conference	PL
2	SG	Credentials of Delegations	C2
3	CCIR	Report of the CCIR to the Conference	C4, C5, WG PL
4 + Add.1	IFRB	Report of the IFRB to the Conference	C4, C5
5 + Add.1, 2	IFRB	Report of the IFRB: Implementation of Resolution No. 9 (Nice, 1989)	C5
6	ZWE	Proposals for the work of the Conference	C4, C5
7 + Cor.1, 2 + Add.1 to Cor. 1	URS	Proposals for the work of the Conference	C4, C5
8	KOR	Proposals for the work of the Conference	C4, C5
9 + Add.1	NIG	Proposals for the work of the Conference	C4, C5, WG PL
10 + Add.1	OACI	Information Paper	C4, C5, WG PL
11	OMI	Information Paper	C4, C5, WG PL
12 + Add.1-13 +Cor. 1, 2, 3	USA	Proposals for the work of the Conference	C4, C5, WG PL
13 + Add. 1, 2	KEN	Proposals for the work of the Conference	C4, C5
14	CTR, SLV, NCG	Proposals for the work of the Conference	C4, C5
15	KRE	Proposals for the work of the Conference	C4
16	PNG	Proposals for the work of the Conference	C4, C5, WG PL
17	KRE	Proposals for the work of the Conference	C4
18	SG	Budget of the Conference	C3

No.	Origin	Title	Destination
19	SG	Contributions of Recognized Private Operating Agencies and Non-Exempt International Organizations	C3
20 + Cor.1,2,3	EUR	European Common Proposals for the work of the Conference	C4, C5, WG PL
21	D	Proposals for the work of the Conference	C5
22	SG	Letter from the Chairman of the Voluntary Group of Experts to Study Allocation and Improved Use of the Radio Frequency Spectrum and Simplification of the Radio Regulations	C4, C5
23 + Add.1,2	CAN	Proposals for the work of the Conference	C4, C5, WG PL
24	IFRB	Report of the IFRB to the Conference	C4, C5
25	E	Proposals for the work of the Conference	C4
26	NZL	Proposals for the work of the Conference	C4, C5
27+ Cor.1 + Add.1	J	Proposals for the work of the Conference	C4, C5, WG PL
28	FNL	Proposals for the work of the Conference	C4
29	FNL	Proposals for the work of the Conference	C4
30+Cor.1+ Add.1(Rév.1) +Add.2+ Add.2(Cor.1)	B	Proposals for the work of the Conference	C4, C5
31 + Add.1	AUS	Proposals for the work of the Conference	C4, C5, WG PL
32	E	Proposals for the work of the Conference	C5
33	IFRB	Report of the IFRB: Implementation of Resolutions Nos. 8 and 9 (WARC-79)	C4, C5
34+Cor.1	IND	Proposals for the work of the Conference	C4, C5 , WG PL
35	E	Proposals for the work of the Conference	WG PL
36	MOZ	Proposals for the work of the Conference	C4
37	PRG	Proposals for the work of the Conference	C4, C5
38	IATA	Information paper	PL, C4, C5

No.	Origin	Title	Destination
39(Rev.1)	MLI	Proposals for the work of the Conference	C4, C5, WG PL
40	ALG	Proposals for the work of the Conference	C4, C5
41(Rev.1)	YEM	Proposals for the work of the Conference	C4, C5
42	SG	Financial Responsibilities of Administrative Conferences	C3
43	SG	Participation Requests Submitted by International Organizations	PL
44	PAK	Proposals for the work of the Conference	C4, C5, WG PL
45	EQA	Proposals for the work of the Conference	C4, C5, WG PL
46	EUR	European Common Proposals for the work of the Conference	C4, C5, WG PL
47	SG	Expenditure limits	C3
48	VUT	Proposals for the work of the Conference	C4, C5
49 + Add.1, 2 + Add.1(Cor.1)	BFA	Proposals for the work of the Conference	C4, C5
50	SG	List of documents (1 - 50)	PL
51 + Add.1,2,3+ Add.2(Cor.1)	ISR	Proposals for the work of the Conference	C4
52	INS	Proposals for the work of the Conference	C4, C5
53	E	Proposals for the work of the Conference	C4
54	F	Proposals for the work of the Conference	C4
55	MWI	Proposals for the work of the Conference	C4
56	THA	Proposals for the work of the Conference	C4
57	CTI	Proposals for the work of the Conference	C4, C5
58	SG	Invitations	PL
59+Cor.1	BUL	Proposals for the work of the Conference	C4
60(Rev. 3)	SG	Loss of the right to vote	PL

No.	Origin	Title	Destination
61+Cor.1	CHN	Proposals for the work of the Conference	C4, C5, WG PL
62 + Add.1	CLN	Proposals for the work of the Conference	C4
63 + Add. 1, 2	MEX	Proposals for the work of the Conference	C4, C5, WG PL
64+Cor.1	LUX	Proposals for the work of the Conference	C4, C5, WG PL
65	CUB	Proposals for the work of the Conference	C4, C5, WG PL
66	SG	Structure of the WARC-92	-
67	SG	Secretariat of the Conference	-
68	SG	General Schedule of the work of the Conference	-
69	SG	Allocation of documents	-
70(Rev. 2)	SG	Chairmanship of the Conference	-
71	SG	Agreement between the Government of Spain and the Secretary-General of the International Telecommunication Union relating to the holding, organization and financing of the WARC-92	C3
72	F	Proposals for the work of the Conference	C4, WG PL
73	CAN	Proposals for the work of the Conference	WG PL
74	TZA	Proposals for the work of the Conference	C4, C5, WG PL
75+Cor.1	SEN	Proposals for the work of the Conference	C4
76	-	Not allocated	-
77	POR	Proposals for the work of the Conference	C4
78	MEX	Proposals for the work of the Conference	C4, C5
79	ARG	Proposals for the work of the Conference	C5
80	ARG	Proposals for the work of the Conference	WG 5B
81	C4	Note by the Chairman of Committee 4 - Organization of the work of Committee 4	C4
82	C5	Terms of reference for Working Groups of Committee 5	C5

No.	Origin	Title	Destination
83	ICS	Information document - International Chamber of Shipping	PL
84	ICSU	Information document - International Council of Scientific Unions	PL
85	IARU	Information document - International Amateur Radio Union	PL
86	IAB	Information document - International Association of Broadcasting	PL
87+Cor.1	ITF	Information document - International Transport Workers' Federation	PL
88	ICSU	Information document - International Council of Scientific Unions	PL
89	-	Not allocated	-
90(Rev.2)	BFA, CME, CTI, GAB	Proposals for the work of the Conference	WG 4B
91	ZMB	Proposals for the work of the Conference	C4
92	C4, C5, WG PL	Chairmen of Committees 4 and 5 and of the Working Group of the Plenary - Allocation of Proposals relating to draft Resolutions and Recommendations	C4, C5, WG PL
93	LBN, MRC	Procedure applicable to non-geostationary satellite networks	C5
94	CTI	Proposals for the work of the Conference	C4, C5
95	COG	Proposals for the work of the Conference	C4
96+Cor.1	PL	Minutes of the First Plenary Meeting	PL
97 + Add. 1	NIG	Proposals for the work of the Conference	C4, C5
98+Cor.1 +Add. 1, 2	IRN	Proposals for the work of the Conference	C4, C5
99	TUN	Proposals for the work of the Conference	C4
100+Cor.1	SG	List of documents (50-100)	-
101 + Add. 1, 2	TUR	Proposals for the work of the Conference	C4, C5
102+Cor.1	C4	Summary Record of the first meeting of Committee 4	C4
103(Rev.1)	C5	Summary Record of the first meeting of Committee 5	C5
104(Rev.1)	C4	Summary Record of the second meeting of Committee 4	C4

No.	Origin	Title	Destination
105(Rev.1)	C5	Summary Record of the second meeting of Committee 5	C5
106+Cor.1	C3	Summary Record of the first meeting of Committee 3	C3
107	C2	Summary Record of the first meeting of Committee 2	C2
108(Rev.1)	C6	Summary Record of the first meeting of Committee 6	C6
109(Rev.2)	*)	Use of tropical zone bands for extending the HF bands exclusively allocated to the HFBC	C4
110	ARG	Proposals for the work of the Conference	WG 4A
111	BEN	Proposals for the work of the Conference	C4, C5,
112+Cor.1	PL	Minutes of the Second Plenary Meeting	PL
113+Cor.1	C5	Summary Record of the third meeting of Committee 5	C5
114	SG	Transfer of Powers - Principality of Liechtenstein / Confederation of Switzerland	PL
115	BEL, LUX	Proposals for the work of the Conference	C4
116	C4	Note by the Chairman of Committee 4 to the Chairman of Committee 5	C5
117	IRN	Proposals for the work of the Conference	C4, C5
118	SG	Transfer of Powers - Lebanon / Kingdom of Morocco	PL
119	**)	The Use of the band 2 500 - 2 690 MHz	C4
120	CAN	Notes on Appendix item 2.4	WG 5B
121	C5	Note by the Chairman of Committee 5 to the Chairman of the Working Group to the Plenary	WG PL
122	C5	Note by the Chairman of Committee 5 to the Chairman of Committee 4	C4
123	MRC	Simplified procedure for the replacement of frequency assignments in the HF bands	C5
124	MRC	Appendix 26	C5
125	SG	Transfer of Powers - Republic of Latvia / Republic of Lithuania	PL

*) ALG, B, BFA, CME, CPV, CAF, CLM, COG, CTI, EQA, ETH, GAB, GMB, KEN, LBN, MLA, MWI, MLI, MRC, MTN, MEX, NGR, NIG, SEN, TZA, TCD, TGO.

**) ALG, BHR, EGY, JOR, KWT, LBN, MTN, MRC, OMA, QAT, ARS, SYR, TUN, UAE, YEM.

No.	Origin	Title	Destination
126 + Cor. 1, 2	BGD	Proposals for the work of the Conference	C4, C5
127+Cor.1	WG 5A	First report of the Chairman of Working group 5A to Committee 5	C5
128	GAB	Proposals for the work of the Conference	C4
129	IAB	Information document - International Association of Broadcasting	C4
130	GRC	Proposals for the work of the Conference	C4
131 + Add. 1	LBY	Proposals for the work of the Conference	C4
132	WG 5C	First Report of the Chairman of Working Group 5C to Committee 5	C5
133	NIG	Proposal for Additional Mobile-Satellite Service Spectrum below 3 GHz	C4
134	-	Minutes of the Official Opening Ceremony	-
135	CVA	Proposals for the work of the Conference	C4
136	WG PL	First report to the Plenary from the Working Group to the Plenary - Draft Recommendation on Wind Profiler Radars	PL
137	WG 2A	First report of Working Group 2A to Committee 2	C2
138	WG 4A	First report of Working Group 4A to Committee 4	C4
139(Rev.1)	C4	Allocation of proposals concerning Resolutions and Recommendations	WG 4A, 4B, 4C
140	HNG	Proposals for the work of the Conference	C4
141	WG PL	First series of texts from the Working Group to the Plenary to the Editorial Committee	C6
142	E	Proposals for the work of the Conference	C4
143	YUG	Proposals for the work of the Conference	C4
144	VTN	Information paper from the Administration of Viet Nam	C4
145	MRC	Proposals for the work of the Conference	C5
146	WG 5B	First report of Working Group 5B to Committee 5	C5
147	WG 5B	Second report of Working Group 5B to Committee 5	C5
148	MRC	Proposed modifications to DT/35	SWG 5C1

No.	Origin	Title	Destination
149(Rev.1)	WG 5C	Draft Resolution relating to Terrestrial Digital Sound Broadcasting	WG 5C
150	SG	List of documents (101 - 150)	-
151	WG 5B	Third Report of Working Group 5B to Committee 5	C5
152	WG 5A	Second Report of the Chairman of Working Group 5A to Committee 5	C5
153	C3	Note by the Chairman of Committee 3 to the Chairmen of Committees 4 and 5	C4, C5
154	CLM, CUB, EQA, HND, PNR	Agenda items 2.2.4a and 2.2.4d - Low-Orbit Satellites	C4
155	SG	Transfer of powers - Belize / Commonwealth of the Bahamas	PL
156	WG PL	Note by the Chairman of the Working Group to the Plenary to the Chairman of Committee 5	C5
157	WG PL	Note by the Chairman of the Working Group to the Plenary to the Chairman of Committee 5	C5
158	WG PL	Second series of texts from the Working Group to the Plenary to the Editorial Committee	C6
159	F	Proposals for the work of the Conference	WG 4B
160	GUI	Proposals for the work of the Conference	C4
161(Rev.2)	SG	Budget of the WARC-92 adjusted at 1 February 1992	C3
162+Cor.1	ARG	Proposals for the work of the Conference	C5
163	E	Proposed amendment to Document DT/40	C5
164+Cor.1	PL	Minutes of the third Plenary Meeting	PL
165+Cor.1	SWG 4B1	Report of the Chairman of Sub-Working Group 4B1 to the Chairman of Working Group 4B	WG 4B
166+Cor.1	C4	Summary Record of the third meeting of Committee 4	C4
167	C5	Summary Record of the fourth meeting of Committee 5	C5
168	C4	Summary Record of the fourth meeting of Committee 4	C4
169	WG 4C	First Report of Working Group 4C to Committee 4	C4
170	WG 5C	Draft Resolution relating to implementation of changes in frequency allocations between [4 000 kHz and 20 000 kHz]	WG 5C

No.	Origin	Title	Destination
171	WG PL	Note by the Chairman of the Working Group to the Plenary to the Chairmen of Committees 4 and 5	C4, C5
172	WG PL	First progress report to the Plenary on the work of the Working Group of the Plenary	PL
173+Cor.1	GHA, NIG, ZMB	Proposals for the work of the Conference	C4, C5
174	SG	Transfer of powers - Republic of Cape Verde / Republic of Senegal	PL
175	C6	B.1 - First series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
176	SG	Situation of the accounts of the Conference as at 17 February 1992	C3
177	WG 4C	Note by the Chairman of Working Group 4C to the Working Group of the Plenary	WG PL
178	C5	First series of texts from Committee 5 to the Editorial Committee	C6
179	C5	Second series of texts from Committee 5 to the Editorial Committee	C6
180	C6	B.2 - Second series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
181	WG 5B	Fourth Report of Working Group 5B to Committee 5	C5
182	WG 5B	Fifth Report of Working Group 5B to Committee 5	C5
183	C5	Third Series of texts from Committee 5 to the Editorial Committee	C6
184 + Add.1 + Add.1(Cor.1)	URS	Proposals for the work of the Conference	C4, C5
185	Ad Hoc 1 to C5	Note by the Chairman of Ad Hoc 1 to Committee 5 - Resolution COM5/: Provisional application of Article 56 to ensure harmonization with the International Convention for the Safety of Life at Sea (SOLAS) as revised in 1988	C5
186	NGR	Proposals for the work of the Conference	C4, C5
187	INS, MLA, CLN	Proposals for the work of the Conference	WG 4B
188	PHL	Proposals for the work of the Conference	WG 4B
189	GAB	Proposal for modification of Document DT/40	WG 5B

No.	Origin	Title	Destination
190	CAN	Proposal to accommodate FPLMTS around 2 GHz	C4
191	CAF	Proposals for the work of the Conference	C4
192	WG 5C	Second and Final Report of the Chairman of Working Group 5C to Committee 5	C5
193	C5	Summary Record of the Fifth Meeting of Committee 5	C5
194	C3	Summary Record of the Second Meeting of Committee 3	C3
195 + Cor. 1, 2	PL	Minutes of the Fourth Plenary Meeting	PL
196	C4	Summary Record of the Fifth Meeting of Committee 4	C4
197	C4	Summary Record of the Sixth Meeting of Committee 4	C4
198	WG 4A	Third Report of Working Group 4A to Committee 4	C4
199	C6	B.3 - Third series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
200	SG	List of documents (151 - 200)	-
201	INS	Proposals for the work of the Conference	WG 4B
202	WG 4C	Note by Chairman of Working Group 4C to the Working Group of the Plenary	WG PL
203(Rev.1) + Add. 1	BEN, GMB, SEN	Proposals for the work of the Conference	C4
204	E	Proposals for the work of the Conference	C4
205	WG 4C	Consequential changes required as a result of allocation proposals adopted by Working Group 4C in the frequency range 31.8 - 34.7 GHz	C4
206	DG 2 to WG 4C	Report from the Chairman of Drafting Group 2 presented by the Chairman of Working Group 4C to Committee 4	C4
207+Cor.1	WG 4C	Second Report of Working Group 4C to Committee 4	C4
208	C5	Fourth series of texts from Committee 5 to the Editorial Committee	C6
209	C4	Note from the Chairman of Committee 4 to the Chairman of Committee 5	C5
210	C6	R.1 - First series of texts submitted by the Editorial Committee to the Plenary Meeting	PL

No.	Origin	Title	Destination
211	COG	Proposed amendment to Document DT/40 concerning Appendix 26 of the Radio Regulations	C5
212	C6	B.4 - Fourth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
213	WG 4A	Second Report of Working Group 4A to Committee 4	C4
214	WG 4A	Fourth and last Report of Working Group 4A to Committee 4	C4
215	C4	First series of texts submitted to the Editorial Committee by Committee 4	C6
216	C4	Second series of texts from Committee 4 to the Editorial Committee	C6
217	WG PL	PFD Limits applicable to the Band 37 - 37.5 GHz	C4, C5
218(Rev.1)	WG PL	Coordination of Geostationary Satellite Systems with Geostationary Space Stations in the Inter-Satellite Service above 20 GHz	C5
219	WG PL	The maximum allowable inclination angle of satellite networks using slightly inclined Geostationary-Satellite Orbits	C5
220	C4	Third series of texts submitted to the Editorial Committee by Committee 4	C6
221	CAN	Proposals for the work of the Conference	C4
222	WG PL	Third series of texts from the Working Group to the Plenary to the Editorial Committee	C6
223+Cor.1	WG PL	Sharing between Services	C4
224	WG 4B	First Report of the Chairman of Working Group 4B to Committee 4	C4
225	INS	Proposals for the work of the Conference	C4
226	WG 2A	Second Report of Working Group 2A to Committee 2	C2
227(Rev.1)	CME, CTI, GHA, GUI, IND, MOZ, TZA, TON, UGA, ZMB, ZWE	Introduction of Low-Earth Orbit (LEO) systems above 1 GHz	C4
228	GUI	Proposals for the work of the Conference	C4
229	WG PL	EIRP Limits of the terrestrial systems to protect the inter-satellite service above 20 GHz	C5

No.	Origin	Title	Destination
230	C4	Draft new Recommendation [COM4/A2] relating to the elimination of HF broadcasting on frequencies outside the HF bands allocated to the broadcasting service	C4
231	C4	Fourth series of texts from Committee 4 to the Editorial Committee	C6
232	WG PL	Additional orbital characteristics to be provided with the data already listed in Appendices 3 and 4 to allow the evaluation of interference to and from non-geostationary satellite networks	C5
233	WG PL	Note from the Chairman of the Working Group to the Plenary to the Chairman of Committee 4	C4
234	AUS, B, CHL, USA, IND, INS, LBN, MRC, MEX, NIG, VEN	Proposals for the work of the Conference	C4
235	Ad hoc group 2 to C4	Report from the Chairman of ad hoc Group 2 to the Chairman of Committee 4	C4
236 + Add. 1, 2	Ad hoc group 3 to C4	Report from the Chairman of ad hoc Group 3 to Committee 4 to the Chairman of Committee 4 - General-Satellite Service	C4
237 + Add.1	C6	B.5 - Fifth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
238	C6	B.6 - Sixth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
239	Ad hoc group 1 of PL	Report by the Chairman of ad hoc 1 of the Plenary	PL
240	C4	Allocation of documents	C4
241	MEX	Proposals for the work of the Conference	C4
242	WG 5B	Sixth Report of Working Group 5B to Committee 5	C5
243	C5	Fifth series of texts from Committee 5 to the Editorial Committee	C6
244	PL	Minutes of the Fifth Plenary Meeting	PL
245	C4	Summary Record of the seventh meeting of Committee 4	C4
246	C5	Summary Record of the sixth meeting of Committee 5	C5
247	C4	Summary Record of the eighth meeting of Committee 4	C4

No.	Origin	Title	Destination
248	C5	Summary Record of the seventh meeting of Committee 5	C5
249	C5	Sixth series of texts from Committee 5 to the Editorial Committee	C6
250	SG	List of documents (201 - 250)	-
251	S	Proposals for the work of the Conference	C4
252	C4	Fifth series of texts from Committee 4 to the Editorial Committee	C6
253	Ad hoc group 1 to C4	Report of the Chairman of ad hoc 1 to Committee 4 - Allocation of frequency bands to BSS (HDTV) and the associated feeder links	C4
254	WG PL	Sharing criteria in Articles 27 and 28 (First reply)	C5
255	WG PL	Generalized coordination distance for coordination between fixed stations and typical earth stations operating in non-geostationary satellite networks	C5
256	MEX	Proposals for the work of the Conference	C5
257	WG 5B	Seventh and last report of Working Group 5B to Committee 5	C5
258	WG 4B	Consideration of Agenda Item 2.2.3a (BSS (Sound))	C4
259	WG 4B	Consideration of Agenda Item 2.2.4c (FPLMTS - Terrestrial Component)	C4
260	C4	Summary Record of the ninth meeting of Committee 4	C4
261	C4	Summary Record of the tenth meeting of Committee 4	C4
262	C4	Summary Record of the eleventh meeting of Committee 4	C4
263	C5	Summary Record of the eighth meeting of Committee 5	C5
264	C5	Summary Record of the ninth meeting of Committee 5	C5
265	C5	Summary Record of the tenth meeting of Committee 5	C5
266	PL	Minutes of the sixth Plenary Meeting	PL
267	C5	Seventh series of texts from Committee 5 to the Editorial Committee	C6
268	WG 4B	Note from the Chairman of Working Group 4B	C4
269(Rev.1)	SG	Note of the IFRB: Financial implications of the decisions of WARC-92	C3,C4,C5
270	WG 4B	Consideration of Agenda Item 2.2.4 (MSS)	C4

No.	Origin	Title	Destination
271	C5	Note from the Chairman of Committee 5	C5
272	CAN	Proposals for the work of the Conference	C4
273	SG	Situation of the accounts of the Conference as at 25 February 1992	C3
274	WG PL	Trans-horizon radio-relay systems in the 2 025 - 2 110 MHz and 2 200 - 2 290 MHz bands	C4, C5
275	Ad hoc group 1 to C4	Note from the Chairman of ad hoc 1 to Committee 4	C4
276	C6	B.7 - Seventh series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
277+Cor.1	*)	Proposals for the work of the Conference	C4
278	MRC	Proposals for the work of the Conference	PL
279	BLR, URS, UKR	Proposals for the work of the Conference	C4
280	WG 4B	Consideration of Agenda Item 2.2.4 (MSS)	C4
281	C5	Proposed text for Resolution COM5/[] (Document 257)	C5
282 + Cor. 1, 2	C2	Report by Committee 2 to the Plenary Meeting (Credentials)	PL
283	C6	B.8 - Eighth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
284	C6	R.2 - Second series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
285	CLM, CUB, EQA, E, PNR	Draft Resolution relating to the Establishment of Standards for the Operation of Low-Orbit Systems	C5
286	SG	Final days of the Conference	-
287	C5	Eighth series of texts from Committee 5 to the Editorial Committee	C6
288	C4	Sixth series of texts from Committee 4 to the Editorial Committee	C6
289	C4	Summary Record of the twelfth meeting of Committee 4	C4
290	C5	Summary Record of the eleventh meeting of Committee 5	C5

*) ALG, CME, CAF, DNK, F, LBN, LTU, LVA, NGR, POL, G, SEN, SNG, SWZ, TCD.

No.	Origin	Title	Destination
291	PL	Minutes of the seventh Plenary Meeting	PL
292	C2	Summary Record of the second and last meeting of Committee 2	C2
293	C5	Ninth series of texts from Committee 5 to the Editorial Committee	C6
294	C5	Revision of Resolution COM5/[] - Introduction of Systems in the Broadcasting-Satellite Service (Sound), BSS (Sound) in the Band [], including the Complementary Terrestrial Sound Broadcasting Users	C5
295	C6	R.3 - Third series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
296	C3	Report of the Budget Control Committee to the Plenary Meeting	PL
297	C4	Summary Record of the thirteenth meeting of Committee 4	C4
298	C4	Summary Record of the fourteenth meeting of Committee 4	C4
299	PL	Minutes of the eighth Plenary Meeting	PL
300	SG	List of documents (251 - 300)	-
301	C3	Summary Record of the third and last meeting of Committee 3	C3
302	C4	Summary Record of the fifteenth meeting of Committee 4	C4
303	C4	Summary Record of the sixteenth meeting of Committee 4	C4
304	C5	Summary Record of the twelfth meeting of Committee 5	C5
305	C5	Summary Record of the thirteenth meeting of Committee 5	C5
306	C5	Tenth series of texts from Committee 5 to the Editorial Committee	C6
307	C5	Eleventh series of texts from Committee 5 to the Editorial Committee	C6
308	C5	Twelfth and last series of texts from Committee 5 to the Editorial Committee	C6
309	C4	Seventh series of texts from Committee 4 to the Editorial Committee	C6
310	C6	B.9 - Ninth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
311	C5	Report of the Chairman of Committee 5 to the Plenary	PL

No.	Origin	Title	Destination
312	C6	B.10 - Tenth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
313	WG PL	Fourth series of texts from the Working Group to the Plenary to the Editorial Committee	C6
314	WG PL	EIRP limits for certain frequency bands referred to in Documents DT/107 and DT/115	C5
315	WG PL	Sharing criteria in Articles 27 and 28 (second reply)	C5
316	BRU	Proposals for the work of the Conference	C4
317	POL	Proposals for the work of the Conference	C4
318	ALG, ARS, BHR, CME, GAB, IND, MLI, MTN, NGR, SEN, TUN	Draft Resolution relating to the Convening of a World Administrative Radio Conference for the Planning of HF Bands Allocated to the Broadcasting Service	C4
319	AUS, CAN, USA, MEX	Proposals for the work of the Conference	C4
320	USA	Proposals for the work of the Conference	C4
321	PL	Minutes of the ninth Plenary Meeting	PL
322	C4	Summary Record of the seventeenth meeting of Committee 4	C4
323	C4	Summary Record of the eighteenth meeting of Committee 4	C4
324	C4	Summary Record of the nineteenth and last meeting of Committee 4	C4
325	CAN, USA, MEX	Proposals for the work of the Conference	C4
326	C6	B.11 - Eleventh series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
327	C6	B.12 - Twelfth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
328	USA	Additional Proposal for the Conference	C4
329	C6	R.4 - Fourth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
330	WG PL	Sharing Criteria in Articles 27 and 28 (Third and last reply)	C5
331	WG PL	Fifth and last series of texts from the Working Group to the Plenary to the Editorial Committee	C6

No.	Origin	Title	Destination
332	C4	Eighth series of texts from Committee 4 to the Editorial Committee	C6
333	Ad hoc group 1 to PL	Note by the Chairman of ad hoc 1 to the Plenary	PL
334	USA	Proposals for the work of the Conference	PL
335	F	Draft Recommendation - Possible allocation of frequency bands to the Earth exploration-satellite service for the operation of radiolocation stations on board spacecraft	C4
336	SG	Signing Ceremony	-
337	B	Proposals for the work of the Conference	C4
338	HND	Proposals for the work of the Conference	C4
339	C4	Proposed modifications to Article 8 of the Radio Regulations (MSS and FPLMTS, Bands up to 2 500 MHz)	C4
340	C5	Note from the Chairman of Committee 5 to the Plenary	PL
341	C5	Sharing Criteria in Articles 27 and 28	WG PL
342	YUG	Proposals for the work of the Conference	C4
343	USA	Proposals for the work of the Conference	C4
344	C6	B.13 - Thirteenth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
345	WG PL	Report to the Plenary from the Chairman of the Working Group to the Plenary	PL
346	WG PL	Sharing criteria in articles 27 and 28	C5
347	C6	R.5 - Fifth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
348	C6	R.6 - Sixth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
349(Rev.1)	CHN, KOR, J, PAK, SNG, THA	Proposals for the work of the Conference	PL
350	-	Not allocated	-
351(Rev.2)	CHN, KOR, J, PAK, SNG, CLN, THA	Proposals for the work of the Conference	PL
352	CHN	Proposals for the work of the Conference	PL

No.	Origin	Title	Destination
353	USA	Proposals for the work of the Conference	PL
354	USA	Proposals for the work of the Conference	PL
355+Cor.1	F	Proposals for the work of the Conference	PL
356	F	Proposals for the work of the Conference	PL
357+ Add.1	C4	Ninth series of texts from Committee 4 to the Editorial Committee	C6
358	C4	Tenth and last series of texts from Committee 4 to the Editorial Committee	C6
359+Cor.1	MEX	Proposals for the work of the Conference	PL
360	ISR, I	Proposals for the work of the Conference	PL
361	C4	Note from the Chairman of Committee 4	PL
362	WG PL	Texts prepared by the Working Group of the Plenary	WG PL, C5, C6
363	C5	Summary Record of the fourteenth and final meeting of Committee 5	C5
364	S, SUI	Proposals for the work of the Conference	PL
365	URS	Proposals for the work of the Conference	PL
366	USA	Proposals for the work of the Conference	PL
367	PL	Minutes of the tenth Plenary Meeting	PL
368	PL	Minutes of the eleventh Plenary Meeting	PL
369	PL	Minutes of the twelfth Plenary Meeting	PL
370	ARG	Proposals for the work of the Conference	PL
371	BUL, HNG, POL, TCH	Proposals for the work of the Conference	PL
372	MEX	Proposals for the work of the Conference	PL
373	USA	Proposals for the work of the Conference	PL
374	*)	Proposals for the work of the Conference	PL
375+Cor.1	EQA	Proposals for the work of the Conference	PL

*) ALG, AUS, B, CAN, CTI, FNL, INS, LBN, MLA, MLI, MEX, MRC, NIG, SYR, ZWE.

No.	Origin	Title	Destination
376(Rev.1)	BEN, BFA, GUI	Proposals for the work of the Conference	PL
377+Cor.1	C6	B.14 - Fourteenth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
378	C6	B.15 - Fifteenth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
379	C6	R.7 - Seventh series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
380	CAN	Proposals for the work of the Conference	PL
381	C5	Series of texts adopted by the Plenary Meeting and submitted to the Editorial Committee	C6
382	C6	R.8 - Eighth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
383	C6	B.16 - Sixteenth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
384	Chairman of the Conf.	Note by the Chairman of the Conference	PL
385	E	Proposals for the work of the Conference	PL
386	CAN	Proposals for the work of the Conference	PL
387	USA	Proposals for the work of the Conference	PL
388	NZL	Proposals for the work of the Conference	PL
389	-	Declarations	PL
390	C5	Revision of Articles 27 and 28 following proposals to and decisions of the conference	PL
391	C6	B.17 - Seventeenth series of texts submitted by the Editorial Committee to the Plenary Meeting	PL
392	Chairman of the Conf.	Note by the Chairman of the Conference	PL
393	WG PL	Report to the Plenary from the Working Group of the Plenary on the power flux density and coordination procedures	PL
394	SYR	Proposals for the work of the Conference	PL
395	-	Additional Declarations	PL
396	PL	Minutes of the thirteenth Plenary Meeting	PL
397	PL	Minutes of the fourteenth Plenary Meeting	PL

No.	Origin	Title	Destination
398	PL	Minutes of the fifteenth Plenary Meeting	PL
399	PL	Minutes of the sixteenth and last Plenary Meeting	PL
400	SG	List of participants	-
401	SG	Final list of documents	-