Documents of the World Radiocommunication Conference (WRC-2000) (Istanbul, 2000)

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 101-E
28 March 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Indonesia (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

(RESOLUTION 86 (MINNEAPOLIS, 1998))

In order to be in line with the APT common proposal on Resolution 86, Indonesia proposes the following modifications:

APPENDIX S30A

MOD INS/101/1

TABLE 2

Table showing correspondence between channel numbers and assigned frequencies

Channel No.	Assigned frequency (MHz)	Channel No.	Assigned frequency (MHz)
1	17 324.00	17	17 557.28
2	17 338.58	18	17 571.86
3	17 353.16	19	17 586.44
4	17 367.74	20	17 601.02
5	17 382.32	21	17 615.60
6	17 396.90	22	17 630.18
7	17 411.48	23	17 644.76
8	17 426.06	24	17 659.34
9	17 440.64	25	17 673.92
10	17 455.22	26	17 688.50
11	17 469.80	27	17 703.08
12	17 484.38	28	17 717.66
13	17 498.96	29	17 732.24
14	17 513.54	30	17 746.82
15	17 528.12	31	17 761.40
16	17 542.70	32	17 775.98

NOTE - Assigned frequency = 17 309.42 + 14.58 * n, where n is the channel number.

MOD INS/101/2

TABLE 2A

Table showing correspondence between channel numbers and assigned frequencies for the feeder-links in the frequency band 14.5-14.8 GHz

Channel No.	Assigned feeder-link frequency (MHz)
1	14 525.30
2	14 544.48
3	14 563.66
4	14 582.84
5	14 602.02
6	14 621.20
7	14 640.38
8	14 659.56
9	14 678.74
10	14 697.92
11	14 717.10
12	14 736.28
13	14 755.46
14	14 774.64

NOTE - Assigned frequency = 14 506.12 + 19.18 * n, where n is the channel number.

MOD INS/101/3

TABLE 2B

Table showing correspondence between channel numbers and assigned frequencies for the feeder-links in the frequency band 17.3 GHz-18.1 GHz

Channel No.	Assigned feeder-link frequency (MHz)	Channel No.	Assigned feeder-link frequency (MHz)
1	17 327.48	21	17 711.08
2	17 346.66	22	17 730.26
3	17 365.84	23	17 749.44
4	17 385.02	24	17 768.62
5	17 404.20	25	17 787.80
6	17 423.38	26	17 806.98
7	17 442.56	27	17 826.16
8	17 461.74	28	17 845.34
9	17 480.92	29	17 864.52
10	17 500.10	30	17 883.70
11	17 519.28	31	17 902.88
12	17 538.46	32	17 922.06
13	17 557.64	33	17 941.24
14	17 576.82	34	17 960.42
15	17 596.00	35	17 979.60
16	17 615.18	36	17 998.78
17	17 634.36	37	18 017.96
18	17 653.54	38	18 037.14
19	17 672.72	39	18 056.32
20	17 691.90	40	18 075.50

NOTE - Assigned frequency = 17 308.3 + 19.18 * n, where n is the channel number.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

Poland (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

The Administration of the Republic of Poland has examined the footnotes to the Table of Frequency Allocations (Article S5 of the Radio Regulations) under agenda item 1.1 and concluded that the following footnotes could be modified:

MOD POL/102/1

S5.338 In Azerbaijan, Bulgaria, Mongolia, ~~Poland,~~ Kyrgyzstan, Slovakia, the Czech Republic, Romania, Turkmenistan and Ukraine, existing installations of the radionavigation service may continue to operate in the band 1 350-1 400 MHz.

Reasons: There are no existing installations of the radionavigation service operating in Poland in the band 1 350-1 400 MHz, therefore no provision to continue operation is needed in the Radio Regulations.

MOD POL/102/2

S5.428 *Additional allocation:* in Azerbaijan, Bulgaria, Cuba, Kazakstan, Mongolia, ~~Poland,~~ Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 3 100-3 300 MHz is also allocated to the radionavigation service on a primary basis.

Reasons: The radionavigation service is no longer in use in Poland in the band 3 100-3 300 MHz, therefore no additional allocation is needed in the Radio Regulations.

MOD POL/102/3

S5.430 *Additional allocation:* in Azerbaijan, Bulgaria, Cuba, Mongolia, ~~Poland,~~ Kyrgyzstan, Romania, Turkmenistan and Ukraine, the band 3 300-3 400 MHz is also allocated to the radionavigation service on a primary basis.

Reasons: The radionavigation service is no longer in use in Poland in the band 3 300-3 400 MHz, therefore no additional allocation is needed in the Radio Regulations.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

Bulgaria (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

The Administration of the Republic of Bulgaria has examined the footnotes to the Table of Frequency Allocations (Article S5 of the Radio Regulations) under agenda item 1.1 and concluded that the following corrections can be made:

MOD BUL/103/1

S5.58 *Additional allocation:* in Armenia, Azerbaijan, ~~Bulgaria,~~ Georgia, Kazakstan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 67-70 kHz is also allocated to the radionavigation service on a primary basis.

MOD BUL/103/2

S5.75 *Different category of service:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Moldova, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan, Ukraine and the Black Sea areas of Bulgaria and Romania, the allocation of the band 315-325 kHz to the maritime radionavigation service is on a primary basis under the condition that in the ~~Baltic~~Black Sea area, the assignment of frequencies in this band to new stations in the maritime or aeronautical radionavigation services shall be subject to prior consultation between the administrations concerned.

MOD BUL/103/3

S5.93 *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, ~~Bulgaria,~~ Georgia, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Nigeria, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Chad, Turkmenistan and Ukraine, the bands 1 625-1 635 kHz, 1 800-1 810 kHz and 2 160-2 170 kHz and in Bulgaria the bands 1 625-1 635 kHz and 1 800-1 810 kHz, are also allocated to the fixed and land mobile services on a primary basis, subject to agreement obtained under No. **S9.21**.

MOD BUL/103/4

S5.98 *Alternative allocation:* in Angola, Armenia, Austria, Azerbaijan, Belarus, Belgium, ~~Bulgaria,~~ Cameroon, the Congo, Denmark, Egypt, Eritrea, Spain, Ethiopia, Georgia, Greece, Italy, Kazakstan, Lebanon, Lithuania, Moldova, the Netherlands, Syria, Kyrgyzstan, Russian Federation, Somalia, Tajikistan, Tunisia, Turkmenistan, Turkey and Ukraine, the band 1 810-1 830 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

MOD BUL/103/5

S5.454 *Different category of service:* in Armenia, Azerbaijan, Belarus, ~~Bulgaria,~~ Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5 670-5 725 MHz to the space research service is on a primary basis (see No. **S5.33**).

MOD BUL/103/6

S5.501 *Additional allocation:* in Austria, Azerbaijan, ~~Bulgaria,~~ Hungary, Japan, Mongolia, Kyrgyzstan, Romania, the United Kingdom, Turkmenistan and Ukraine, the band 13.4-14 GHz is also allocated to the radionavigation service on a primary basis.

MOD BUL/103/7

S5.545 *Different category of service:* in Armenia, Azerbaijan, Belarus, ~~Bulgaria,~~ Georgia, Kazakstan, Mongolia, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 31-31.3 GHz to the space research service is on a primary basis (see No. **S5.33**).

MOD BUL/103/8

S5.546 *Different category of service:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, ~~Bulgaria,~~ Egypt, United Arab Emirates, Spain, Estonia, Finland, Georgia, Hungary, the Islamic Republic of Iran, Israel, Jordan, Kazakstan, Latvia, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Syria, Kyrgyzstan, Romania, the United Kingdom, Russian Federation, Tajikistan, Turkmenistan, Turkey and Ukraine, 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. **S5.33**).

MOD BUL/103/9

S5.550 *Different category of service:* in Armenia, Azerbaijan, Belarus, ~~Bulgaria,~~ Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 34.7-35.2 GHz to the space research service is on a primary basis (see No. **S5.33**).

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PLENARY MEETING

Note by the Secretary-General

ABU INFORMATION PAPER

I have the honour to bring to the attention of the Conference, at the request of the Asia Pacific Broadcasting Union (ABU), the annexed information paper.

Yoshio UTSUMI
Secretary-General

Annex: 1

ANNEX

ABU position on WRC-2000 agenda items 1.6.1, 1.19 and 1.20

Agenda item 1.6.1 - review of spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Frequency Allocations as necessary

Current situation in bands used for broadcasting services

In relation to broadcasting service and broadcasting-satellite service (sound), administrations participating in Study Groups 10 and 11 have adopted two Questions seeking studies to assess spectrum requirements for these services in the light of their transition to digital technology. The studies are to be completed by 2003. Actual requirements of radio-frequency spectrum for these services in the transitional, and full-digital, environment would be known only after the results of the studies become available. In the meanwhile, any assessment for possible candidate bands for IMT-2000 in the bands allocated to broadcasting services would be premature and, possibly, misleading. It may be noted that Resolution 728 (WRC-97), in *considering i*) indicates increased usage of the relevant bands by the analogue and digital television services during the transitional period on account of parallel operation of these services.

Analysis of the results of studies

Limited sharing studies conducted to date within ITU-R indicate that IMT-2000 systems generally cannot share spectrum in the same geographical area with other radio operations in the mobile, mobile-satellite and other radio services. Use of spectrum on a co-channel basis with other radio operations may be feasible only through geographic separation. Nevertheless, it is recognized that the frequency bands most suitable for IMT-2000 are already heavily utilized by other operations in some geographic areas.

ABU position on candidate bands for additional spectrum for IMT-2000

ABU views on possible candidate bands for additional IMT-2000 spectrum are given in the following:

1 Frequency band 470-806 MHz

This band is allocated to the broadcasting service worldwide. This band is mainly used for analogue broadcasting at the present time. The introduction of digital television is planned in many countries. A transition period of perhaps 10-15 years is foreseen during which both digital and analogue transmissions will be in parallel.

Due to the nature of analogue television planning, the vacant channels in specific areas have found widespread application of low power services such as wireless microphones and biomedical telemetry.

Studies have been initiated in ITU-R to establish the future spectrum requirements for digital broadcasting.

Disadvantages

In most countries, the availability of TV spectrum, following phasing out of analogue TV is uncertain. Furthermore, the phasing out of analogue TV will vary between countries and is not expected to occur in many countries until after that the 2005-2010 time-frame.

It is expected that spectrum demands for TV broadcasting will be greater during the transitional period and possibly beyond.

2 Frequency band 806-960 MHz

This band is allocated worldwide to the fixed, mobile and broadcasting services on a co-primary basis, with some exceptions in Region 2.

In those countries currently using part of this band for analogue broadcasting (up to 862 MHz), the transition to digital broadcasting may, in the future, allow use of this spectrum for IMT-2000. However, due to the nature of analogue television planning, the vacant channels in specific areas have found widespread application of low power services such as wireless microphones and biomedical telemetry.

Studies have been initiated in ITU-R to establish the future spectrum requirements for digital broadcasting.

Disadvantages

Parts of this band are already used in some countries by some other services and such use may continue e.g. TETRA, Railway-GSM, television broadcasting, ancillary broadcasting services, radiolocation and Tactical Radio Relay.

In some countries, the availability of TV spectrum following phasing out of analogue TV is uncertain. Furthermore, the phasing out of analogue TV might not occur in the 2005-2010 time-frame.

3 Frequency band 1 429-1 501 MHz

The band 1 452-1 492 MHz is allocated worldwide on a co-primary basis to the broadcasting and broadcasting-satellite services in accordance with RR No. S5.345, and is the only worldwide allocation identified for digital audio broadcasting.

Disadvantages

The present and planned usage for aeronautical mobile telemetry, FS and digital audio broadcasting, both terrestrial and satellite, may preclude its use for IMT-2000 in many parts of the world. Several countries in Region 3 have notified ITU-R of their intention to launch satellite DAB systems operating in the L-band allocation. Any consideration of the use of the 1 452-1 492 MHz band for IMT-2000 should take into account the following facts, among several others:

- A number of other Region 3 operators have notified intention to use the 1 467-1 492 MHz part of the BSS(S) allocation. Current studies in WP 10-11S aim at developing guidelines to facilitate the management of the available BSS (Sound) spectrum prior to a plan being developed.
- The L-band is the only “universal” BSS (Sound) allocation. It provides opportunities through satellite applications to bring large area service deliveries, including to the

under served rural and remote centres and communities which have been largely dependent upon inferior and expensive short wave services.

In general, phasing out of existing services would have cost/operational implications.

4 Frequency band 2 520-2 670 MHz

This band is allocated on a co-primary basis to the fixed and mobile (except aeronautical mobile), and broadcast-satellite services in all three Regions. FSS (s-E) is allocated in this band in Region 2 and parts of this band, 2 520-2 535 MHz (s-E) and 2 655-2 670 MHz (E-s) in Region 3.

BSS services have been operating in several Region 1 and Region 3 countries for the last two decades, covering large areas in these Regions and MSS services are used in some Region 3 countries.

This band is used for different services and applications in different countries e.g. for fixed, ENG/OB (Electronic News Gathering/Outside Broadcasting) and multi-point distribution applications.

Disadvantages

The use by countries for BSS television covers large areas of Regions 1 and 3 and provides important broadcasting services to rural and remote communities. These communities and individual consumers have a large investment in the services. The sharing implications for IMT-2000 and BSS have not been examined. Further, the announced plans for BSS sound services in this band will need to be examined for the possible sharing implications for IMT-2000 before identification of the band for that application.

In a number of countries this band is used for multi-point distribution systems (in some countries extensively) that have been deployed in urban as well as in rural areas. Licences for this service have been recently granted for extended periods of up to 20 years. Phasing out of these services and BSS and MSS will therefore be very difficult for the foreseeable future. Therefore the use of these bands may be precluded for IMT-2000 in these countries.

The use of this band for IMT-2000, if considered, would conflict with its current use for ENG and Outside Broadcast applications in several countries, particularly in areas of high population density.

Agenda item 1.19 - to consider the report of the Inter-conference Representative Group (IRG) submitted by the Director of the Radiocommunication Bureau and determine the basis for replanning by the next conference so as to afford each country an amount of spectrum that permits the economical development of a broadcasting-satellite service system

ABU position

1 Completion of BSS replanning at WRC-2000

The ABU considers completion of BSS replanning at WRC-2000 to be a good way forward for the following reasons:

1) The BSS planning process has gone on far too long and it is highly desirable to bring it to a successful conclusion at the earliest.

2) At the present juncture, all major BSS planning issues have either been resolved or are near resolution. However, the methodology for resolving residuary incompatibilities should be developed by an ITU-R conference.

3) Currently, the IRG/GTE planning exercises seem to meet all major requirements enshrined in Resolution 532, including enhanced number of channels for economical implementation of BSS systems, full digital planning and incorporation of country specific preferences. This seems to be the most opportune stage to conclude the replanning studies and finalize the BSS plan at WRC-2000.

4) The only major unresolved issue is that of inclusion in the BSS plan of systems filed under Article 4 modification procedures (since WRC-95). However, several developments have taken place since and the need for such filings may not arise any longer. For instance, modifications seeking only changes in orbital location or beam footprints need not be considered now since BR has already taken on-board country preferences in the GTE exercise.

   Modifications seeking additional capacity is another matter. However, after having been provided 10 channels in the new plans for Region 1 and 10 + 2 channels in Region 3 as against the present 5 and 4 respectively, any case for garnering further additional capacity does not stand scrutiny. It is assumed that once the enhanced capacity is provided, reasonable channel requirements of all the countries would have been met. In light of this, filings seeking additional capacity are superfluous at this juncture. If this line of action is not adopted, given the current number of Article 4 filings, the task of BSS planning would go on interminably.

In view of the above, WRC-2000 provides a good opportunity to culminate the task of BSS planning. The ABU generally supports this line of action.

2 Replanning principles

Number of channels

Region 3 studies indicate that it is entirely feasible to provide 12 channels to all countries in this region without any undue burden on the orbital and frequency resources. Such an arrangement will also permit efficient use of the available frequency band (500 MHz) which is divided into 24 channels. Similarly, it has been shown that in Region 1, 10 channels can be provided to all countries. The ABU strongly supports provision of 10 channels to all countries in Region 1 and 12 channels to all countries in Region 3.

Orbital offsets

Orbital offsets of about ±0.2 degrees have been found highly effective in eliminating incompatibilities in the feeder links. The ABU supports use of orbital offsets and the use of marginally non-nominal orbital locations consequent to implementation of the offsets. Relevant regulatory provisions are required that maintain the status of the assignments at the new position.

Full digital planning

Considering that a majority of new BSS systems are expected to use digital emissions, the ABU supports that replanning should be based on full digital planning. However, considering that a number of existing systems are still in the analogue format, the existing analogue services should be protected to their current level of protection.

Protection of “existing” systems

The ABU supports protection of the existing BSS systems, as defined in Resolution 532, at the same levels as adopted at WARCSAT-77 or WRC-97.

Digital protection ratios

Based on initial studies, ITU-R has developed empirical values of protection ratios between digital and digital, and between digital and analogue emissions. While these values may be used in the on-going exercises, ITU-R is urged to continue studies for optimizing these initial values.

Channel raster

Channel raster b) is very similar to the "assignment planning" approach of the current Plan. It offers a much greater opportunity for countries to retain their current assignments without change. Therefore, the ABU supports use of channel raster b) in replanning. If necessary, channel raster d) may be implemented at a later stage for resolving problems at specific orbital locations.

Channel bandwidth

The ABU sees considerable merit in expanding the channel width to more than 27 MHz for digital emissions, provided that technical studies establish that the plans will not be seriously impacted as a result. The two guardbands at the edges of the band (11.7-12.2/12.5 MHz) should be left out of this arrangement.

Composite beams and country preferences

Recent studies have indicated enhanced spectrum resource efficiency can be achieved through use of composite beams for countries with large coverage areas and multiple beams. The ABU supports the use of composite beams in replanning as also incorporation of country preferences.

Consideration of "Article 4" systems in replanning

The ABU is of the view that in replanning, provisions of Resolution 532 be followed. However, it would be reasonable to consider a limited number of Article 4 systems which have completed coordination prior to a cut-off date. The selection of a suitable date might be determined at WRC-2000.

Assignments which have been notified to the Bureau and coordinated and notified to the Bureau but not yet brought into use and have submitted necessary "Due Diligence" information (Resolution 49), be taken into account in replanning exercises.

Article 4 modifications applying to cases, where the 1977 allocations have not been brought into use, be given lower priority than the modifications applying to those cases where the original assignments have been brought into use.

After the replanning is concluded, some Article 4 systems may require more time in making adjustments to their planned parameters as a result of the changes brought about during replanning. In view of this, all realistic and legitimate Article 4 systems should:

- be retained in the same order of priority as they had before replannings;
- be provided with suitable extensions in expiry dates.

3 Other related regulatory issues

Capacity for future requirements

A significant proportion of the BSS orbital and frequency resource should be kept free from planning. This resource, to be earmarked for future additional requirements, shall be distributed all over the orbital arc to the extent possible, so as to be easily accessible by all countries.

Buffer between Regions 1 and 3

3.1 Concept of Region 3 Arc for BSS Plan

The ABU supports the concept of a Region 3 arc, to be defined as the orbital arc from 34º E to 200º E (160º W), noting that some orbital locations between 160º W-180º W have been assigned to some Region 2 countries in the Region 2 BSS Plan (which covers 12.2-12.7 GHz and 17.3-17.8 GHz).

3.2 Limitation of Region 1 BSS assignments

No new BSS assignments in the Plans will be made for Region 1 BSS services serving areas west of 34º E.

No new broadcasting satellite serving an area in Region 1 and using a frequency in the band 12.2-12.5 GHz shall occupy a nominal orbital position further east than 34º E.

In the event of a modification to an assignment in the Region 1 Plan intended to be located in the Region 3 arc defined above, the use of a new nominal orbital position not coincident with any nominal orbital position in the WRC-BSS-97 Plan shall involve an [8] dB reduction in the e.i.r.p. compared to that appearing in the Region 1 Plan for the assignment before the modification.

In any case, incompatibility issues between Region 1 BSS and Region 3 FSS should be satisfactorily resolved before a draft Plan can be finalized.

Maintenance of Section A of Annex 7 of Appendix S30

The use of the 12.2-12.7 GHz band is allocated to different service applications in Regions 2 and 3, some of which would have sharing difficulties. The ABU feels that sub-section A 2) *c)* of Annex 7 of Appendix S30 serves a useful purpose and should not be suppressed.

Agenda item 1.20 - to consider the issues related to the application of Nos. S9.8, S9.9 and S9.17 and the corresponding parts of Appendix S5 with respect to Appendices S30 and S30A, with a view to possible deletion of Articles 6 and 7 of Appendices S30 and S30A, also taking into consideration Recommendation 35 (WRC-95)

Restructuring of Appendices S30 and S30A

The ABU view is that clarity of procedures is necessary. However, the ABU is not in favour of the incorporation of Article 6 and 7 of Appendices S30 and S30 A in Article S9 as such an action may lead to unnecessary complications as far as protection to BSS services is concerned.

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PLENARY MEETING

Indonesia (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

(PP-98 RESOLUTION 86)

APPENDIX S8

Method of calculation for determining if coordination is required between geostationary-satellite networks sharing the same frequency bands

MOD INS/105/1

1 Introduction

The method of calculation for determining if coordination is required under provision No. **S9.6**~~**/1060**~~ is based on the concept that the noise temperature of a system subject to interference increases as the level of the interfering emission increases. It can, therefore, be applied irrespective of the modulation characteristics of these satellite networks, and of the precise frequencies used.

In this method, the apparent increase in the ~~equivalent~~ satellite link noise temperature resulting from an interfering emission of a given system is calculated (see § 2 below) and the ratio of this increase to the ~~equivalent~~ satellite link noise temperature, expressed as a percentage, is compared to a threshold value (see § 3 below).

MOD INS/105/2

2 Calculation of the apparent increase in noise temperature of the satellite link subject to an interfering emission

Two possible cases are considered:

Case I: wanted and interfering networks share one or more frequency bands, each in the same direction of transmission;

Case II: wanted and interfering networks share one or more frequency bands, each in opposite directions of transmission (bidirectional use).

These two cases cover all relative satellite positions from closely-spaced to near-antipodal positions.

MOD INS/105/3

2.1 Parameters

~~Let A be a satellite link of network R associated with satellite S and A′ be a satellite link of network R′ associated with satellite S′.~~ The symbols relating to interfering satellite link ~~A′~~ bear primes, those relating to wanted satellite ~~link A~~ do not bear primes.

The parameters are defined as follows ~~(for satellite link A)~~:

~~T: the equivalent satellite link noise temperature, referred to the output of the receiving antenna of the earth station (K);~~

T_S: the receiving system noise temperature of the space station, referred to the output of the receiving antenna of the space station (K);

T_e: the receiving system noise temperature of the earth station, referred to the output of the receiving antenna of the earth station (K);

ΔT_S: apparent increase in the receiving system noise temperature of the satellite S, caused by an interfering emission, referred to the output of the receiving antenna of this satellite (K);

ΔT_e: apparent increase in the receiving system noise temperature of the earth station e_R, caused by an interfering emission, referred to the output of the receiving antenna of this station (K);

p_s: maximum power density per Hz delivered to the antenna of satellite S (averaged over the worst 4 kHz band for a carrier frequency below 15 GHz or over the worst 1 MHz band above 15 GHz) (W/Hz);

$g_3(\eta)$: transmitting antenna gain of satellite S in the direction η (numerical power ratio);

~~η_A: direction, from satellite S, of the receiving earth station e_R of satellite link A;~~

$\eta_{e'}$: direction, from satellite S, of the receiving earth station e'_R of satellite link A′;

NOTE – The product $p_S\, g_3\, (\eta_{e'})$ is the maximum e.i.r.p. per Hz of satellite S in the direction of the receiving earth station e'_R of satellite link A′.

$\eta_{s'}$: direction, from satellite S, of satellite S′;

p_e: maximum power density per Hz delivered to the antenna of the transmitting earth station e_T (averaged over the worst 4 kHz band for a carrier frequency below 15 GHz or over the worst 1 MHz band above 15 GHz) (W/Hz);

$g_2(\delta)$: receiving antenna gain of satellite S in the direction δ (numerical power ratio);

~~δ_A: direction, from satellite S, of the transmitting earth station e_T of satellite link A;~~

$\delta_{e'}$: direction, from satellite S, of the transmitting earth station e'_T of satellite link A′;

$\delta_{s'}$: direction, from satellite S, of satellite S′;

θ_t: topocentric angular separation in degrees between the two satellites[1], taking the longitudinal station-keeping tolerances into account;

[1] A method for calculation of the topocentric angular separation is given in Annex I.

NOTE – Only the topocentric angle θ_t should be used in dealing with Case I.

θ_g: geocentric angular separation in degrees between the two satellites, taking the longitudinal station-keeping tolerances into account;

NOTE – Only the geocentric angle θ_g should be used in dealing with Case II.

$g_1(\theta_t)$: transmitting antenna gain of the earth station e_T in the direction of satellite S′ (numerical power ratio);

$g_4(\theta_t)$: receiving antenna gain of the earth station e_R in the direction of satellite S′ (numerical power ratio);

k: Boltzmann's constant (1.38×10^{-23} J/K);

l_d: free-space transmission loss[2] on the downlink (numerical power ratio), evaluated from satellite S to the receiving earth station e_R for satellite link A;

NOTE – The free-space transmission loss on any downlink evaluated from the satellites S or S′ to the receiving earth stations e_R or e'_R is considered to be equal to l_d.

l_u: free-space transmission loss[2] on the uplink (numerical power ratio), evaluated from the earth station e_T, to satellite S for satellite link A;

NOTE – The free-space loss on any uplink evaluated from the earth stations e_T or e'_T to the satellite S or S′ is considered to be equal to l_u.

l_s: free-space transmission loss[2] on the inter-satellite link (numerical power ratio), evaluated from satellite S′ to satellite S;

γ: transmission gain of a specific satellite link subject to interference evaluated from the output of the receiving antenna of satellite S to the output of the receiving antenna of the earth station e_R (numerical power ratio, usually less than 1).

2.2 General method

In the following equations, the frequency to be used for the calculation of l_d, l_u, and l_s is the average frequency of the band common to both networks in the direction considered. If, in a given direction, there is no overlap of the assigned frequency bands of the two networks, the corresponding value (ΔT_s or ΔT_e) is taken to be equal to zero. For cases where the Appendix **S4** data have not been published, the assigned frequency band for that network shall be considered as being the frequency range as provided for in Appendix **S4**.

2.2.1 Case I – Wanted and interfering networks sharing the same frequency band in the same direction of transmission

The gains $g_1(\theta_t)$ and $g_4(\theta_t)$ are those of the earth stations concerned. When neither measured data nor a relevant ITU-R Recommendation accepted by the administrations concerned are available the radiation patterns set out in Annex III should be used.

[2] A method for calculation of the free-space transmission loss is given in Annex II.

MOD INS/105/4

2.2.1.1 Simple frequency-changing transponder on board the satellite

The parameters ΔT_s and ΔT_e are given by the following equations:

$$\Delta T_s = \textbf{Error!} \gamma \quad (1)$$

$$\Delta T_e = \textbf{Error!} \quad (2)$$

where ΔT_s and ΔT_e are the apparent increase in the receiving noise temperature of the satellite and earth station respectively.

~~The symbol ΔT will be used to denote the apparent increase in the equivalent noise temperature for the entire satellite link referred to the output of the receiving antenna of the receiving earth station e_R due to the interfering emission from link A'.~~

~~This increase is the result of the interfering emissions entering at both the satellite and the earth station receiver of link A and can accordingly be expressed as:~~

~~$$\Delta T = \gamma \Delta T_s + \Delta T_e \quad (3)$$~~

~~Hence,~~

~~$$\Delta T = \gamma \textbf{Error!} + \textbf{Error!} \quad (4)$$~~

An example calculation for the application of the method of this Appendix in Case I is given in Annex IV.

~~In the same way, the increase $\Delta T'$ in the equivalent noise temperature for the entire satellite link, referred to the output of the receiving antenna of the receiving earth station e'_R, under the effect of the interference caused by satellite link A, is given by the following equations:~~

~~$$\Delta T'_{s'} = \textbf{Error!} \quad (5)$$~~

~~$$\Delta T'_{e'} = \textbf{Error!} \quad (6)$$~~

~~$$\Delta T' = \gamma' \textbf{Error!} + \textbf{Error!} \quad (7)$$~~

MOD INS/105/5

2.2.1.2 Cases requiring independent treatment of the uplink and the downlink

If there is a change of modulation in the satellite or if the transmission originates on board the satellite, equation (2) is also applicable to determine ~~then~~ the apparent increase in the noise temperature ~~must be related to the total~~ of the receiving earth station. ~~system noise temperature of the specific link being examined (the space station or the earth station, whichever is applicable). In this case, the equivalent noise temperature of the entire satellite link and the transmission gain are not used and equations (1) and (2) above are used separately as required (see § 3.2).~~

For apparent increase in the noise temperature of the receiving satellite station the following equation is used:

$$\Delta T_s = \frac{p'_e \, g'_1(\theta_1) g_2(\delta_{e'})}{k l_u} \qquad (3)$$

2.2.2 Case II – Wanted and interfering networks sharing the same frequency band in opposite directions of transmission (bidirectional use)

The calculation method below only applies to interfering emissions between satellites.

Interference between earth stations using the same frequency band in opposite directions of transmission (bidirectional use) is to be dealt with by coordination procedures analogous to those used for coordination between earth and terrestrial stations.

All the equations relating to Case II shall use the geocentric angle θ_g.

MOD INS/105/6

2.2.2.1 Simple frequency-changing transponder on board the satellite

The noise temperature increase ΔT_s referred to the output of the receiving antenna of the satellite ~~of link A~~ is given by:

$$\Delta T_s = \textbf{Error!} \qquad (84)$$

The apparent increase in equivalent link noise temperature ΔT_{ss} is then given by:

$$\Delta T \Delta T_{ss} = \gamma \, \Delta T_s \qquad (95)$$

~~The increase $\Delta T'$ in the equivalent noise temperature of the link A′ caused by interfering emissions from the satellite associated with the link A is given by:~~

$$\Delta T' = \gamma' \, \Delta T'_s = \textbf{Error!} \qquad (10)$$

MOD INS/105/7

2.2.2.2 Cases requiring independent treatment of the uplink and downlink

In this case equation (84) is used directly with T_s to obtain the percentage increase. ~~The increase $\Delta T'_s$ in the noise temperature of link A′ caused by interfering emissions from the satellite associated with link A is obtained in a similar manner.~~

MOD INS/105/8

2.2.3 Consideration of polarization isolation

The polarization isolation factor described in this paragraph shall be considered only if the administration responsible for each network has consented to such a course and has notified its polarization or published it for coordination under No. **S9.6**~~/**1060**~~. In this case, the apparent increase in the ~~equivalent~~ satellite link noise temperature ~~shall be determined by the following expressions:~~

~~Case I~~ $\Delta T =$ **Error!** + **Error!**

~~Case II ΔT = **Error!**~~

~~where the values of~~ ΔT_s and ΔT_e are those given in § 2.2.1 and § 2.2.2 ~~and~~ shall be divided by the values of the factors of polarization isolation Y_u, Y_d and Y_{ss} ~~are those~~ given in the table below.

Polarization		**Factor of polarization isolation (numerical ratio) *Y***
network R	**network R′**	
LHC	RHC	4
LHC	L	1.4
RHC	L	1.4
LHC	LHC	1
RHC	RHC	1
L	L	1

Where: LHC = left-hand circular (anti-clockwise)
RHC = right-hand circular (clockwise)
L = linear
Y_u = uplink factor of polarization isolation
Y_d = downlink factor of polarization isolation
Y_{ss} = space-to-space factor of polarization isolation

MOD INS/105/9

2.3 Determination of the satellite links to be considered in calculating the increase in ~~equivalent~~ satellite link noise temperature (Case I only)

The greatest increase in ~~equivalent~~ satellite link noise temperature caused to any link of another satellite network, existing or planned, by interfering emissions of the proposed satellite network must be determined.

The most unfavourably sited transmitting earth station of the interfering satellite network should be determined for each satellite receiving antenna of the network subject to interference by superimposing the “Earth-to-space” service areas of the interfering network on the space station receiving antenna gain contours plotted on a map of the Earth's surface. The most unfavourably sited transmitting earth station is the one in the direction of which the satellite receiving antenna gain of the network subject to interference is the greatest.

The most unfavourably sited receiving earth station of the network subject to interference should be determined in an analogous manner for each “space-to-Earth” service area of that network. The most unfavourably sited receiving earth station is the one in the direction of which the satellite transmitting antenna gain of the interfering network is the greatest.

MOD INS/105/10

2.4 Use of information furnished under Appendix S4

When an administration elects to use information furnished under Appendix **S4** with the calculation procedures of § 2.2.1.1 and § 2.2.2.1 in order to formulate comments to the advance publication of a new network, the calculations need to be made for ~~both sets of~~ values of γ ~~and T furnished. The greater of the two values of $\Delta T/T$~~ resulting the greatest ~~from these calculations~~ is ~~the one~~ to be used.

3 Comparison between calculated percentage increase in noise temperature and the threshold value

MOD INS/105/11

3.1 Simple frequency-changing transponder on board the satellite

The calculated values of the ~~$\Delta T/T$ and $\Delta T'/T'$,~~ $\Delta T_s/T_s$, $\Delta T_e/T_e$, or $\Delta T_{ss}/T_s$, expressed as percentages, shall be compared with the threshold value of 6%[3].

– If the calculated value of ~~$\Delta T/T$,~~ $\Delta T_s/T_s$, $\Delta T_e/T_e$, or $\Delta T_{ss}/T_s$, expressed as a percentage, ~~due to any interfering emission from satellite link A′ to satellite link A,~~ is ~~no~~ not greater than the threshold value, coordination is not required ~~with respect to interference from link A′ to link A.~~

– If the calculated value of ~~$\Delta T/T$,~~ $\Delta T_s/T_s$, $\Delta T_e/T_e$, or $\Delta T_{ss}/T_s$, expressed as a percentage, is greater than the threshold value, coordination is required.

~~The comparison of $\Delta T'/T'$, with the threshold value, expressed as a percentage, shall be carried out in a similar manner.~~

MOD INS/105/12

3.2 Cases requiring independent treatment of the uplink and the downlink

a) In the case of interference into only one link, the uplink or the downlink, the value $\Delta T_e/T_e$ or $\Delta T_s/T_s$, expressed as a percentage, shall be compared with the threshold value of 6%[3].

b) In the case of interference into both the uplink and the downlink, between which there is a change of modulation on board the satellite, the values of $\Delta T_e/T_e$ ~~and~~ or $\Delta T_s/T_s$, expressed as a percentage, shall each be compared with the threshold value of 6%[3].

4 Consideration of narrow-band and FM-TV carriers

The method of calculation described in this Appendix may underestimate the interference from slow swept TV carriers into certain narrow-band (single channel per carrier (SCPC)) carriers.

In order to facilitate coordination between the satellite systems and to reduce the number of administrations involved in this procedure, the administrations whose SCPC assignments are either recorded in the Master International Frequency Register or are under coordination may inform an administration notifying its new assignment of the radio frequency channels used in their systems for SCPC transmission, so that the notifying administration may be able to avoid using these channels for FM-TV transmissions.

For this special case, administrations are referred to relevant ITU-R texts for guidance in facilitating subsequent coordination.

Conversely, administrations introducing new systems using SCPC transmissions may seek appropriate information from other administrations on their FM-TV transmissions.

[3] Values other than 6% are used in the application of Appendix **S30** and Appendix **S30A**.

NOC

ANNEX I

Calculation of the topocentric angular separation between two geostationary satellites

NOC

ANNEX II

Calculation of the free-space transmission loss

NOC

ANNEX III

Radiation patterns for earth station antennae to be used when they are not published

MOD INS/105/13

ANNEX IV

Example of an application of Appendix S8

1 General

In this example of Case I (see § 2.2.1), two identical satellite networks each with a simple frequency-changing transponder and a global coverage antenna are assumed.

All topocentric angles θ_t are assumed to be equal to 5°.

For this angular separation and for an earth station antenna with D/λ greater than 100, the reference radiation pattern ($32 - 25 \log \theta_t$) gives a gain of 14.5 dB in the direction of the satellite of the other network.

The input data are furnished in § 2 below and are expressed in decibels except for the parameters T_e, T_s and θ_t. In § 3 the calculations are performed in decibels.

It may be noted that since both satellites use global beams there is practically no antenna discrimination between wanted and unwanted signals at the satellite, and that this constitutes a worst case.

2 Input data

The values of the network parameters given in the table below are derived from those published in accordance with Appendix **S4**.

	Symbol*	Value	Unit
Uplink at 6 175 MHz	P'_e	–37	dB(W/Hz)
	$G'_1(\theta_t)$	14.5	dB
	$G_2(\delta_{e'})$	15.5	dB
	T_s	500	K
	L_u	200	dB
Downlink at 3 950 MHz	P'_s	–57	dB(W/Hz)
	$G'_3(\eta_e)$	15.5	dB
	$G_4(\theta_t)$	14.5	dB
	T_e	150	dB
	L_d	196	dB
	10 log γ	–15	dB
	~~*T*~~	~~105~~	~~K~~
	θ_t	5	degrees

* All capital symbols, except *T*, refer to parameters given in logarithmic units.

3 Calculation of ~~Error!~~ $\frac{\Delta T}{T_s}$ and $\frac{\Delta T}{T_e}$

From equation (1)

$$10 \log \Delta T_s = P'_{;e} + G'_{;1}(\theta_t) + G_2(\delta_{e'}) + 228.6 - L_u + \gamma$$
$$= -37 + 14.5 + 15.5 + 228.6 - 200 - 15 = \text{~~21.6~~ 6.6 dBK}$$

Therefore,

$$\Delta T_s = \text{~~145 K~~ } 10^{0.66} = 4.57 \text{ K}$$

From equation (2)

$$10 \log \Delta T_e = P';_s + G';_3 (\eta_e) + G_4 (\theta_t) + 228.6 - L_d$$
$$= -57 + 15.5 + 14.5 + 228.6 - 196 = 5.6 \text{ dBK}$$

Therefore;

$$\Delta T_e = 3.6 \text{ K}$$

~~From equation (3)~~

~~$\Delta T = \gamma \Delta T_s + \Delta T_e$~~
~~$= 0.032 \times 145 + 3.6 = 8.2$ K~~

Thus

~~**Error!** × 100 = **Error!** = 7.8%~~

$$\frac{\Delta T_s}{T_s} \times 100 = \frac{4.57 \times 100}{500} = 0.914\,\%$$

$$\frac{\Delta T_e}{T_e} \times 100 = \frac{3.6 \times 100}{150} = 2.4\,\%$$

4 Conclusion

~~In the example shown, the percentage increase in equivalent satellite link noise temperature is 7.8%. Since it exceeds the threshold value of 6%, coordination between the two networks is required.~~

Since the two satellite networks each with simple frequency changing transponder and a global coverage antenna are assumed and the percentage increase in both uplink and downlink less than the threshold value of 6%, the coordination between the two networks is not required.

Alternative approach for parameter notation of section 2.1

The following are suggested as the new parameter notations which would replace the parameter in section 2.1, and also formulae (1), (2), (3) and (4) accordingly.

2.1 Parameters

The parameters are defined as follows:

T: the receiving system noise temperature referred to the output of the receiving antenna (K);

p: maximum power density per Hz delivered to the antenna (averaged over the worst 4 kHz band for a carrier frequency below 15 GHz or over the worst 1 MHz band above 15 GHz) (W/Hz);

g: maximum antenna gain (numerical power ratio);

l: free space transmission loss;

Δ: apparent increase noise temperature of the receiving system;

k: Boltzmann's constant (1.38×10^{-23} J/K);

γ: transmission gain of a specific satellite link subject to interference evaluated from the output of the receiving antenna of satellite to the output of the receiving antenna of the earth station (numerical power ratio, usually less than 1);

θ: topocentric angular separation in degrees between the two satellites[1], taking the longitudinal station-keeping tolerances into account;

NOTE – Only the topocentric angle θ should be used in dealing with Case I.

δ: geocentric angular separation in degrees between the two satellites, taking the longitudinal station-keeping tolerances into account;

NOTE – Only the geocentric angle δ should be used in dealing with Case II.

η: exocentric angular separation in degrees seen from satellite between antenna boresight and an earth station or satellite station taking into account the longitudinal station-keeping.

Subscript notation:

s: satellite

e: earth station

w: wanted

i: interfering

t: transmitting station

r: receiving station

For antenna:

1: for earth station transmitting system

2: for satellite receiving system

3: for satellite transmitting system

4: for earth station receiving system.

[1] A method for calculation of the topocentric angular separation is given in Annex I.

NOTE 1 - Formulae (1), (2), (3) and (4) should be replaced by:

$$\Delta T_s = \frac{p_{ei} g_{1i}(\theta_t) g_{2w}(\eta_r)}{kl_{ui}} \gamma \quad (1)$$

$$\Delta T_e = \frac{p_{si} g_{3i}(\eta_t) g_{4w}(\theta_r)}{kl_{di}} \quad (2)$$

$$\Delta T_s = \frac{p_{ei} g_{1i}(\theta_t) g_{2w}(\eta_r)}{kl_{ui}} \quad (3)$$

$$\Delta T_s = \frac{p_{si} g_{3i}(\eta_{si}) g_{2w}(\eta_s)}{kl_{ss}} \gamma \quad (4)$$

NOTE 2 - a) The symbol $g_1(\theta_t)$ and $g_4(\theta_t)$ in section 2.2.1 should be replaced by $g(\theta_t)$ and $g(\theta_r)$, respectively.

b) The symbol θg in section 2.2.2 should be replaced by the symbol δ.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 106-E*
11 April 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Armenia (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

Further to the need of ensuring the operating and planned radio services development and improvement, keeping the profit balance and taking into account the ITU Member States technical and economic capability distinctions, as well as tending to consolidate the international cooperation for radiocommunication facilities and systems development, we submit the following proposals under agenda item 1.1:

1 Armenia be deleted from footnotes **S5.290, S5.387** and **S5.454.**

MOD ARM/106/1

S5.290 *Different category of service:* in Afghanistan, ~~Armenia,~~ Azerbaijan, Belarus, China, Japan, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 460-470 MHz to the meteorological-satellite service (space-to-Earth) is on a primary basis (see No. **S5.33**), subject to agreement obtained under No. **S9.21**.

MOD ARM/106/2

S5.387 *Additional allocation:* in ~~Armenia,~~ Azerbaijan, Belarus, Georgia, Kazakstan, Mali, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 1 770-1 790 MHz is also allocated to the meteorological-satellite service on a primary basis, subject to agreement obtained under No. **S9.21**.

MOD ARM/106/3

S5.454 *Different category of service:* in ~~Armenia,~~ Azerbaijan, Belarus, Bulgaria, Georgia, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 5 670-5 725 MHz to the space research service is on a primary basis (see No. **S5.33**).

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* Pursuant to Resolution 26 (Rev.WRC-97) the Secretariat notes that this contribution was received on 11 April 2000.

2 It is proposed to add a new footnote to the Table of Frequency Allocations (Article S5 of the Radio Regulations).

ADD ARM/106/4

S5.416A *Additional allocation:* in Armenia, the band 2 500-2 700 MHz is also allocated to the television programmes allocation broadcasting system (MMDS) on a primary basis.

With respect to the other agenda items for WRC-2000, the proposals of the Administration of Armenia for the work of the Conference are introduced in the joint document of the Plenary Meeting of the Regional Commonwealth of States' Administrations, forwarded to the ITU Secretary-General.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

Corrigendum 1 to Document 107-E
17 May 2000
Original: English

COMMITTEE 4

Australia, Korea (Republic of), Indonesia (Republic of), Japan, New Zealand

PROPOSALS FOR THE WORK OF THE CONFERENCE

Add Indonesia in the list of co-sponsors to this document **except** in the section addressing Appendix S8.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 107-E
11 April 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Australia, Korea (Republic of), Japan, New Zealand

PROPOSALS FOR THE WORK OF THE CONFERENCE

1 Resolution 86 - Coordination and notification procedures for satellite networks

1.1 Introduction

Resolution **86 (PP-98)** resolves to request WRC-2000 and subsequent WRCs to continually review and update the advance publication, coordination and notification procedures, including the associated technical characteristics, and the related Appendices of the Radio Regulations, so as to ensure that they reflect the latest technologies, as well as to achieve additional simplification and cost savings for the Radiocommunication Bureau and administrations.

1.2 Need to assist developing countries

Changes or simplifications to the procedures should not be made such that they prejudice the ability of small and developing countries, with potentially limited resources, to implement them effectively. For example, procedures which rely heavily on automated electronic processing, whilst overtly perhaps of benefit to developing countries, may actually be an obstacle if the countries lack the technical expertise to operate the procedures.

Additionally, small and developing countries often need to rely on the "safety-net" in the current procedures which is provided by the Bureau under the provisions of RR **S9.36**, in which the Bureau identifies affected administrations which may need to be included in the coordination process. In an effort to simplify the administrative workload of the Bureau some suggestions have been made that this activity of the Bureau might perhaps be ceased. If this were done, however, then the "safety-net" provided to small and developing countries would be lost. It is proposed that any simplification of the process which reduces the role of the Bureau must allow for the provision of the "safety-net" to those administrations which still require it.

1.3 An improved single step request for coordination process

General principle

A single step coordination process is supported. The simplification of the API stage at WRC-97 has left a procedure which is of limited regulatory benefit and essentially has become little more than an administrative overhead both for administrations and the Bureau.

A single step process in which the API stage is removed and the regulatory time-limits are measured from the date of receipt of the full coordination data would seem to be a logical way forward.

It is suggested, however, that in order to allow all administrations immediate access to the key parameters of the networks thus filed, before they are published, a single page summary of the filing giving only key parameters (network name, date of receipt, orbital position, frequency bands, coverage and service area, etc.) should *either* be made available on the internet *and/or* should be included in a modified Space Network List as soon as possible after receipt by the Bureau.

Transitional arrangements

If a single step coordination procedure is adopted by WRC-2000, it will be necessary to implement (probably through a Resolution) transitional arrangements that ensure that satellite networks being filed under the existing procedures are not adversely affected.

For example, an administration whose network is filed as an API on date "X", under the existing procedures just before the coming into effect of the new procedures, will have an earliest date of receipt of the coordination information as "X + 6 months" under the provisions of **S9.1**. An administration making a filing under the new procedures would proceed directly to the coordination stage and may therefore receive a date of receipt of this coordination information which falls within the "X + 6 months" window of the former network, for example "X + 3 months".

The determination of the administrations with which coordination must be effected is based on the date of receipt of the complete coordination information and thus, in the above scenario, the later filed network has "coordination priority" over the earlier filed network, which is unreasonable.

There will thus be a period of 6 months (i.e. the period when systems with an API received under the existing procedures may take their earliest opportunity to submit their coordination information) from the date of implementation of the new single step coordination process when transitional arrangements must be applied.

The kinds of transitional arrangements that might be required in order to overcome this difficulty are shown in the attached proposals.

Consequential changes may also be required in existing provisions (such as Resolution **49**).

1.4 Use of the ITU website to make public such requests as they are lodged

Australia, the Republic of Korea, Japan and New Zealand support such initiatives provided that alternate means are available so as to allow those administrations without access to computer and Internet facilities to participate fully in the regulatory process without impediment (i.e. the ability to file on paper and to access and retrieve data other than through the Internet should be preserved).

1.5 Recognition of the role of satellite operators in the coordination process

While no proposal is offered, Australia, the Republic of Korea, Japan and New Zealand recognize the right of administrations to determine the role of satellite operators within their jurisdiction.

1.6 Decoupling of the uplink and downlink filings

At the present time, the data requirements are complicated by the need to provide strapping tables to cover all of the possible combinations of the uplink and downlink frequencies, however, in the end it is necessary to identify separate coordination requirements for the two directions of transmissions. The decoupling of the uplink and downlink filings and the removal of the "overall link characteristics" data from the ApS4 is supported. This information is rarely taken into consideration when administrations are actually conducting coordination negotiations and thus its provision represents an administrative burden on administrations and the Bureau.

1.7 Use of the coordination arc concept

Australia, the Republic of Korea, Japan and New Zealand support the use of a coordination arc concept to remove from automatic coordination networks which are widely spaced from the network being coordinated, provided that such an approach is sufficiently developed to ensure adequate protection of networks, taking into account the differing technical characteristics of different frequency bands and of different services and systems.

In the event that such a procedure is implemented, however, it will be essential to allow an administration with prior status to request to be included in the coordination, even if the separation is wider than the coordination arc, provided that the potential for the receipt of harmful interference can be demonstrated. It will also be necessary to establish sufficient safeguards to ensure that developing countries, who may rely on the analysis currently made by BR to determine affected administrations, are able to ensure that their networks are adequately protected even from interferers located beyond the coordination arc.

1.8 Coordination trigger

In § 7.5.2.2 of the CPM Report dealing with determination methods of coordination requirements in view of simplicity of procedures and cost savings for both BR and administrations, especially reduction of processing backlog, an approach is shown that coordination would only be required with networks that are within a specified orbital separation and have a frequency overlap, regarding coordination between geostationary satellite networks in the fixed-satellite services, instead of the current $\Delta T/T$ approach. Australia, the Republic of Korea, Japan and New Zealand support the above approach and consider the following procedures should be included:

1) Identification of networks with which coordination is required.

2) When a network is outside the coordination angle and its calculation under Appendix **S8** shows that the $\Delta T/T$ of 6% is exceeded, there must be an opportunity that an administration responsible for the network may request BR to include the network in the coordination process in application of No. **S9.41**.

3) When a network would not affect a network inside the coordination angle because its calculation under Appendix **S8** shows that the $\Delta T/T$ of 6% is not exceeded, there must be an opportunity that the requesting administration may request BR to exclude the identified network from coordination process.

1.9 Multilateral coordination meetings

Australia, the Republic of Korea, Japan and New Zealand support the use of multilateral coordination meetings, where appropriate, to facilitate the rapid resolution of coordination difficulties. However, if the status of multilateral meetings is to be enhanced in the

Radio Regulations then the right of an administration to conduct bilateral coordination, if it so desires, must be preserved. It should be noted that if a multilateral meeting is organized, it should be open to all administrations and operators concerned with the subject.

1.10 Date of bringing into use of satellite frequencies

In the present Regulations, the phrase “date of bringing into use” is used but there is no definition as to what is meant by this phrase. During the past couple of years this lack of clarity has resulted in some problems.

1.11 Identification of networks subject to coordination

Under the present procedures, Appendix **S8** (formerly Appendix **29**) is used to identify the **networks**, with which coordination is required, but the procedures require the identification of the **administrations** affected and this results in some problems. Under the existing provisions in the application of No. **S9.7** plus others, BR is required to identify the administrations with which coordination is required. The trigger requirements under Appendix **S8** are based on individual networks. The present practice of BR is to stop the examination for networks of a particular administration, once one network is identified. This identified network may be an insignificant or very significant problem in the coordination process. In the publications of BR including the Special Sections and the MR, BR only identifies the administration with no identification of the networks involved. The reasons for including an administration in the coordination requirements are not public, as the networks are not listed.

When an administration receives the publication indicating that it is included in the coordination requirements for the network being published, it does not know which of its networks triggered the coordination requirement.

2 Resolution 88 - Implementation of processing charges for satellite network filings and administrative procedures

Resolution **88 (PP-98)** instructs WRC-2000 to consider whether, in the light of the Council decisions, any relevant amendments to the Radio Regulations may be necessary for the implementation of processing charges for satellite network filings.

Australia, the Republic of Korea, Japan and New Zealand are supportive of the approach for the cost recovery of the processing charges for satellite network filing and related procedures as implemented by Council. WRC-2000 needs to consider if any regulatory provisions are required in order to deal with the consequences of non-payment of these fees by an administration.

Australia, the Republic of Korea, Japan and New Zealand consider that any action arising out of non-payment should be proportionate and reasonable and propose that:

i) Invoices for cost-recovery fees should show a date by which payment is to be made.

ii) Sixty days before the expiry of this date, the Bureau shall remind the administration that payment is due within the 60-day period.

iii) In the event that payment is not received by the date shown in i) above, the filing shall be cancelled.

3 Possible modification of Articles S1, S8, S9 and S11 and Appendices S4, S5 and S8 of the Radio Regulations

Australia, the Republic of Korea, Japan and New Zealand support the ongoing simplification of the Radio Regulations, the reduction of processing backlogs in BR, and the application of cost recovery. Possible modifications to Articles **S1**, **S8**, **S9** and **S11**, Appendices **S4** and **S8** and Resolution **49 (WRC-97)** are shown below.

ARTICLE S1

Terms and definitions

Section VIII – Technical terms relating to space

MOD AUS/KOR/J/NZL/**107/1**

S1.185 *inclination of an orbit* (of an earth satellite)*:* The angle determined by the plane containing the *orbit* and the plane of the Earth's equator measured in degrees between 0 and 180 and in counter-clockwise direction from the Earth's equatorial plane at the ascending node of the orbit.

Reasons: In order to have a more precise definition and to be consistent with the work of the JTG 4-9-11.

ARTICLE S8

Status of frequency assignments recorded in the Master International Frequency Register

MOD **AUS/KOR/J/NZL/107/2**

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[1] **S8.1.1** The expression "frequency assignment", wherever it appears in this Chapter, shall be understood to refer either to a new frequency assignment or to a change in an assignment already recorded in the Master Register. Additionally, wherever the expression relates to a space station in the geostationary-satellite orbit or in a non-geostationary-satellite orbit, it shall be associated with § A.4 of Annex 2A to Appendix S4, as relevant and moreover wherever the expression relates to an earth station in the geostationary-satellite orbit or in non-geostationary orbit, it shall be associated with § A.4*c)* of Annex 2A, as relevant.

Reasons: Frequency assignment for earth station shall also be identified by associated space station.

ARTICLE S9

NOC AUS/KOR/J/NZL/107/3

Procedure for effecting coordination with or obtaining agreement of other administrations[1, 2, 3, 4, 5]

MOD AUS/KOR/J/NZL/107/4

Section I – Advance publication of information on satellite networks or satellite systems <u>that are not subject to coordination procedure under Section II</u>

General

Reasons: Section I of Article S9 now only applies to the Advance Publication Information for satellite networks or systems that are not subject to coordination. As all of the sub-sections in Section I are proposed for deletion, the heading "General" is no longer required.

MOD AUS/KOR/J/NZL/107/5

S9.1 ~~Before~~<u>When</u> initiating any action under <u>Section I of</u> this Article or under Article **S11** in respect of frequency assignments for a satellite network or a satellite system <u>that is not subject to coordination procedure under Section II</u>, an administration, or one[6] acting on behalf of a group of named administrations~~, shall, prior to the coordination procedure described in Section II of Article **S9** below~~, where applicable, send to the Bureau a general description of the network or system for advance publication in the Weekly Circular not earlier than five years and preferably not later than two years before the planned date of bringing into use of the network or system (see also Nos. **S11.44** and **S11.44B** to **S11.44I**). The characteristics to be provided for this purpose are listed in Appendix **S4**. ~~The coordination or notification information may also be communicated to the Bureau at the same time; it shall be considered as having been received by the Bureau not earlier than six months after the date of receipt of the information for advance publication where coordination is required by Section II of Article **S9**. Where coordination is not required by Section II, notification shall be considered as having been received by the Bureau not earlier than six months after the date of publication of the advance publication information.~~

Reasons: Confirms that the whole of Section I applies only to networks for which no coordination is required. The link to the provision of coordination information is no longer applicable in this section. The provision of notification information at the same time is included in a new No. S9.2.

ADD AUS/KOR/J/NZL/107/6

S9.1A Notification information may be communicated to the Bureau at the same time; however it shall be considered as having been received by the Bureau not earlier than six months after the date of publication of the advance publication information under No. **S9.2B**.

Reasons: Cut and pasted from original No. S9.1. Publication is described in No. S9.2B.

MOD AUS/KOR/J/NZL/107/7

S9.2 Amendments to the information sent in accordance with the provisions of No. **S9.1** shall also be sent to the Bureau as soon as they become available. The use of an additional frequency band will require the application of ~~the advance publication~~<u>this</u> procedure for this band.

Reasons: Consequential.

MOD AUS/KOR/J/NZL/107/8

S9.2B On receipt of the complete information sent under No~~s~~. **S9.1** ~~and~~ or **S9.2**, the Bureau shall publish it in a Special Section of its Weekly Circular within three months. When the Bureau is not in a position to comply with the time limit referred to above, it shall periodically so inform the administrations, giving the reasons therefore.

Reasons: Consequential.

ADD AUS/KOR/J/NZL/107/9

S9.2C If the Satellite Network Filing Cost Recovery payment is not received[6*bis*], the Bureau shall cancel the publication and inform all administrations of such action and this network shall no longer be taken into account by other administrations and shall not be recorded in the MIFR, after the administration concerned has been informed 60 days before the due date of the Satellite Network Filing Cost Recovery payment.

Reasons: A reference to cost recovery has been included in accordance with Council Decision 482.

ADD AUS/KOR/J/NZL/107/10

_____

6*bis* **S9.2C.1** In accordance with *decides* 6 of Council Decision 482 or the prevailing Council decision.

SUP AUS/KOR/J/NZL/107/11

Sub-Section IA – Advance publication of information on satellite networks or satellite systems that are not subject to coordination procedure under Section II

Reasons: Section I of Article S9 now only applies to the Advance Publication Information for satellite networks or systems that are not subject to coordination. This heading has therefore been moved to the beginning of the section.

MOD AUS/KOR/J/NZL/107/12

S9.4 In the case of difficulties, the administration responsible for the planned satellite network shall explore all possible means to resolve the difficulties without considering the possibility of adjustment to networks of other administrations. If no such means can be found, it may request the other administrations to explore all possible means to meet its requirements. The administrations concerned shall make every possible effort to resolve the difficulties by means of mutually acceptable adjustments to their networks. An administration on behalf of which details of planned satellite networks have been published in accordance with the provisions of No. **S9.2B** shall, after the period of four months, inform the Bureau of the progress made in resolving any difficulties. ~~If necessary, a further report shall be provided prior to the submission of notices to the Bureau under Article **S11**.~~

Reasons: The requirement for administrations to provide progress reports has been removed.

MOD AUS/KOR/J/NZL/107/13

S9.5 The Bureau shall inform ~~all~~ the notifying administrations of the list of administrations which have sent comments under No. **S9.3** ~~and provide a summary of the comments received~~.

Reasons: Reduces workload of the Bureau.

SUP AUS/KOR/J/NZL/107/14

S9.5A

Reasons: This statement seems no longer to be correct. The procedure of Section I is the ONLY publication for these networks, so it has much more significance than is implied by No. S9.5A.

SUP AUS/KOR/J/NZL/107/15

Sub-Section IB – Advance publication of information on satellite networks or satellite systems that are subject to coordination procedure under Section II

Reasons: The advance publication of information section of satellite networks or satellite systems that are subject to coordination is no longer required.

SUP AUS/KOR/J/NZL/107/16

S9.5B

Reasons: Consequential - Sub-Section IB has been suppressed.

SUP AUS/KOR/J/NZL/107/17

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[7] **S9.5B.1**

Reasons: Consequential - Sub-Section IB has been suppressed.

SUP AUS/KOR/J/NZL/107/18

S9.5C

Reasons: Consequential - Sub-section IB has been suppressed.

SUP AUS/KOR/J/NZL/107/19

S9.5D

Reasons: Consequential - Sub-section IB has been suppressed.

NOC AUS/KOR/J/NZL/107/20

Section II – Procedure for effecting coordination[8, 9]

NOC AUS/KOR/J/NZL/107/21

Sub-Section IIA – Requirement and request for coordination

MOD AUS/KOR/J/NZL/107/22

S9.30 Requests for coordination made under Nos. **S9.7** to **S9.14** and **S9.21** shall be sent by the requesting administration to the Bureau, together with the appropriate information listed in Appendix **S4** to these Regulations. Requests for coordination under Nos. **S9.7** to **S9.14** and **S9.21** shall be sent to the Bureau no earlier than five years and preferably not later than two years before the planned date of bringing into use of the network or system (see also Nos. **S11.44** and **S11.44B** to **S11.44I**)[13*bis*].

ADD AUS/KOR/J/NZL/107/23

13*bis* **S9.30.1** In the case of coordination under No. S9.21, any terrestrial station is not subject to the time limits referred to in No. S9.30.

Reasons: It is necessary to reproduce text from No. S9.1 relating to the time-frames to bring a satellite into use since it does not appear in Section II.

ADD AUS/KOR/J/NZL/107/24

S9.30*bis* Amendments to the information sent in accordance with the provisions of No. **S9.30** shall also be sent to the Bureau as soon as they become available. The use of an additional frequency band will require the restart of the coordination procedure for this band.

Reasons: It is necessary to reproduce text from No. S9.2 with suitable amendments since it does not appear in Section II.

MOD AUS/KOR/J/NZL/107/25

S9.36 *b)* identify in accordance with No. **S9.27** any administration with which coordination may need to be effected[14], [14*bis*];

Reasons: Implementation of the Procedure 1 as described in section 1.8 of the "Introduction".

ADD AUS/KOR/J/NZL/107/26

14*bis* **S9.36.2** In the case of coordination under Nos. **S9.7**, **S9.8**, **S9.9**, **S9.12** and **S9.13**, the Bureau shall also identify the specific satellite networks with which coordination may need to be effected. In the case of coordination under Nos. **S9.12** and **S9.13**, the list of the networks identified by the Bureau under No. **S9.27** is only for information purposes, to help administration comply with this procedure.

MOD AUS/KOR/J/NZL/107/27

S9.37 *c)* include their names and affected networks in the publication under No. **S9.38;**

Reasons: Identification of affected networks will ease the burden on administrations and speed up the coordination process. In case of the coordination under Nos. S9.7-S9.9, the work carried out by BR will have a meaning more than "information purpose", as coordination arc trigger concept is intended to apply on a network-by-network basis. In case of the coordination under Nos. S9.12 and S9.13, identification by BR is only for information purpose as provided in No. S9.36.1.

MOD AUS/KOR/J/NZL/107/28

S9.38 *d)* publish, as appropriate, the complete information in the Weekly Circular and electronically within four months. When the Bureau is not in a position to comply with the time limit referred to above, and receives a request from an administration on the progress of the publication, it shall ~~periodically so~~ inform ~~the~~that administration~~s~~, giving the reasons ~~therefore~~for the delay within [15 days].

Reasons: Use of electronic facilities such as the Web is encouraged. The requirement for the Bureau to advise the reasons for delay in publication has been reduced to those administrations that request the information.

MOD **AUS/KOR/J/NZL/107/**29

S9.39 ~~Not used.~~ *d)bis* include, within [2] months, the following items in a list, which shall be made available electronically and on paper on a quarterly basis to those administrations which request it:

- identity of the satellite network,
- country symbol of notifying administration,
- date of bringing into use,
- frequency range,
- class of station(s) and nature of service,
- orbital information,
- symbols of territories of administrations which are included in the service area (if supplied with the request for coordination), and
- date of receipt of the information by the Bureau.

MOD **AUS/KOR/J/NZL/107/**30

S9.40 *e)* inform the administrations concerned of its actions and communicate the results of its calculations, as appropriate, drawing attention to the relevant Weekly Circular.

Reasons: With the introduction of the coordination arc approach, BR will generally have no calculations to be communicated at this stage.

ADD **AUS/KOR/J/NZL/107/**31

S9.40*bis* If the Satellite Network Filing Cost Recovery payment is not received[14*ter*], the Bureau shall cancel the publication and inform all administrations of such action and this network shall no longer be taken into account by other administrations and shall not be recorded in the MIFR, after the administration concerned has been informed 60 days before the due date of the Satellite Network Filing Cost Recovery payment.

Reasons: Same as ADD S9.2C.

ADD **AUS/KOR/J/NZL/107/32**

14*ter* **S9.40*bis*.1** In accordance with *decides* 6 of Council Decision 482 or the prevailing Council decision.

ADD AUS/KOR/J/NZL/107/33

S9.43A Following receipt of the Weekly Circular referring to requests for coordination under Nos. **S9.7** to **S9.9**, a requesting administration believing that a network identified in accordance with **S9.36.2** should not have been included in the requests may inform the responsible administration of the identified network and the Bureau, giving its technical reason that the identified network will not be affected, and may request that the name of the identified network be excluded.

ADD **AUS/KOR/J/NZL/107/**34

S9.43B The Bureau shall study this information on the basis of Appendix **S5** and following consultation with the administrations of the identified networks shall inform these administrations of its conclusions. Should the Bureau agree to exclude the network in the requests, it shall publish an addendum to publication under No. **S9.38**.

Reasons: Implementation of the Procedure 3 as described in section 1.8 of the “Introduction”.

ARTICLE S11

NOC AUS/KOR/J/NZL/107/35

Notification and recording of frequency assignments[1, 2, 3]

NOC AUS/KOR/J/NZL/107/36

Section I – Notification

Section II – Examination of notices and recording of frequency assignments in the Master Register

MOD AUS/KOR/J/NZL/107/37

S11.44 The notified date of bringing into use of any assignment to a space station of a satellite network shall be no later than five years following the date of receipt by the Bureau of the relevant information under No. **S9.1** or **S9.30** as applicable (see also Resolution **TTT (WRC-2000)**. The notified date of bringing into use may be extended at the request of the notifying administration by not more than two years, only under the conditions specified under Nos. **S11.44B** to **S11.44I**. Any frequency assignment not brought into use within the required period shall be cancelled by the Bureau after having informed the administration at least three months before the expiry of this period.

Reasons: Consequential.

MOD AUS/KOR/J/NZL/107/38

S11.44A A notice not conforming to No. **S11.44** shall be returned within [15 days] to the notifying administration with a recommendation to restart the advance publication or coordination procedure, as appropriate.

Reasons: Consequential. There is currently no time-limit for the Bureau to respond.

MOD AUS/KOR/J/NZL/107/39

S11.44B The notified date of bringing into use will be extended by the Bureau in accordance with No. **S11.44** if due diligence information required by Resolution **49 (WRC-97)** is provided for the satellite network; if the ~~procedure~~coordination request for the network subject to the procedure for effecting coordination in accordance with Section II of Article **S9** as applicable has ~~commenced~~been published pursuant to No. **S9.38**; and if the notifying administration certifies that the reason for the extension is one or more of the following specific circumstances:

Reasons: Consequential.

MOD AUS/KOR/J/NZL/107/40

S11.44G *e)* delays in effecting coordination due to No. **S9.38** processing delays within the Bureau, or after the assistance of the Bureau was requested under No. **S9.59**.

Reasons: The delay in publication of the Weekly Circular could affect the coordination process and impact on the planned notified date of bringing into use.

MOD AUS/KOR/J/NZL/107/41

S11.48 If, after the expiry of the period of five years, plus the extension specified in No. **S11.44**, as appropriate, from the date of receipt of the complete information referred to in No. **S9.1**~~,~~ or **S9.30** as applicable (see also Resolution **TTT (WRC-2000)** the administration

responsible for the satellite network has not brought the frequency assignments to stations of the network into use, the corresponding information published under Nos. **S9.2B** and **S9.38**, as appropriate, shall be cancelled, but only after the administration concerned has been informed at least three months before the expiry date referred to in No. **S11.44**.

Reasons: Consequential.

APPENDIX S4

Consolidated list and tables of characteristics for use in the application of the procedures of Chapter SIII

ANNEX 2A

Characteristics of satellite networks or earth or radio astronomy stations[2]

MOD **AUS/KOR/J/NZL/107/**42

A.2 **Date of bringing into use**

a) The date (actual or foreseen, as appropriate) of bringing the frequency assignment (new or modified) into use. In the case of geostationary-satellite networks the date of bringing into use denotes the date at which the frequency is brought into regular operation in accordance with the technical characteristics notified to the Bureau. Whenever the assignment is changed in any of its basic characteristics (except in the case of a change in § A.1 *a)*, the date to be given shall be that of the latest change (actual or foreseen, as appropriate).

Reasons: The intent of this proposal is to clarify what is meant by this phrase and in so doing draw upon some elements of No. S13.6. In general, there are many kinds of telecommunication service in the notified document to the Bureau. At the early operational stage, some of notified services would be provided to the service area.

SUP **AUS/KOR/J/NZL/107/**43

D Overall link characteristics

SUP **AUS/KOR/J/NZL/107/**44

D.1 **Connection between Earth-to-space and space-to-Earth frequencies in the network**

SUP **AUS/KOR/J/NZL/107/**45

D.2 **Transmission gains and associated equivalent satellite link noise temperatures**

Reasons: The data requirements are complicated by the need to provide strapping tables to cover all of the possible combinations of the uplink and downlink frequencies. However, it is only necessary to identify separate coordination requirements for the two directions of transmission. In order to simplify the coordination between the satellite networks, the percentage increase in uplink and downlink would be separated.

ANNEX 2B

Table of characteristics to be submitted for space and radio astronomy services

A – General characteristics of the satellite network or the earth station

SUP AUS/KOR/J/NZL/107/46

2nd and 3rd columns.

B – Characteristics to be provided for each satellite antenna beam and for each earth station antenna

SUP AUS/KOR/J/NZL/107/47

2nd and 3rd columns.

C – Characteristics to be provided for each group of frequency assignments for a satellite antenna beam or an earth station antenna

SUP AUS/KOR/J/NZL/107/48

2nd and 3rd columns.

D – Overall link characteristics

SUP AUS/KOR/J/NZL/107/49

Entire table.

Reasons: Consequential.

APPENDIX S5

Identification of administrations with which coordination is to be effected or agreement sought under the provisions of Article S9

MOD AUS/KOR/J/NZL/107/50

1 *e)* included in the coordination procedure with effect from the date of receipt[3, 3*bis*] by the Bureau, in accordance with No. **S9.34**, of those characteristics specified in Appendix **S4** as mandatory or required, or from the date of dispatch, in accordance with No. **S9.29**, of the appropriate information listed in Appendix 17 **S4**; or

MOD AUS/KOR/J/NZL/107/51

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[3] See No. **S9.1A** concerning the date to be considered as the date of receipt by the Bureau of the information relating to ~~the coordination of a satellite network or~~ the notification of a frequency assignment for a network or system which is subject to coordination under Section II of Article **S9**.

ADD AUS/KOR/J/NZL/107/52

3*bis* See Resolution **TTT (WRC-2000)** concerning the date to be considered as the date of receipt by the Bureau of the information relating to the coordination of a satellite network which is subject to coordination under Section II of Article **S9**.

MOD **AUS/KOR/J/NZL/107/**53

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4 The associated space network characteristics must have been communicated to the Bureau under Nos. ~~**S9.2B**~~**S9.1**, **S9.2**, **S9.30** or **S9.30*bis*** (see also Resolution **TTT (WRC-2000)**), as appropriate.

Reasons: Consequential on the proposal for the new Resolution TTT (WRC-2000).

MOD AUS/KOR/J/NZL/107/54

TABLE S5-1

Technical conditions for coordination
(see Article **S9**)

Reference of Article S9	**Case**	**Frequency bands (and Region) of the service for which coordination is sought**	**Threshold/condition**	**Calculation method**	**Remarks**
No. **S9.7** GSO/GSO	A station in a satellite network using the geostationary-satellite orbit (GSO), in any space radio-communication service, in a frequency band and in a Region where this service is not subject to a Plan, in respect of any other satellite network using that orbit, in any space radiocommunication service in a frequency band and in a Region where this service is not subject to a Plan, with the exception of the coordination between earth stations operating in the opposite direction of transmission	In case of coordination between earth stations or space stations in the fixed-satellite services using the geostationary-satellite orbit in the following frequency range operating in the same direction of transmission: 3 400-4 200MHz 5 725-6 725 MHz 7 025-7 075 MHz 10.95-11.2 GHz 11.45-12.75 GHz 13.75-14.5 GHz 17.7-21.2 GHz 24.75-25.25 GHz 27-31 GHz otherwise; a~~A~~ny frequency band allocated to a space service, where this service is not subject to a Plan	i) Bandwidths overlap; and ii) geocentric inter-satellite angular separation within the coordination arc: [W]º for 3 400-7 075 MHz [Y]º for 10.95-14.5 GHz [Z]º for 17.7-31GHz Value of $\Delta T/T$ exceeds 6%	i) Check by using the assigned frequencies and bandwidths ii) Definition in § 2.1 of Appendix S8 Appendix **S8**	An administration may request, pursuant to **S9.41**, that the name of its own network be included in requests for coordination, giving the reason that the subject network may be affected because value of $\Delta T/T$ calculated by the method in Appendix **S8** exceeds 6%. When the Bureau studies this information pursuant to **S9.42**, the calculation method given in Appendix **S8** shall be used. An administration may request, pursuant to **S9.43A**, that a certain network be excluded in requests for coordination, giving the reason that the subject network will not be affected because value of $\Delta T/T$ calculated by the method in Appendix **S8** does not exceed 6%. When the Bureau studies this information pursuant to **S9.43B**, the calculation method given in Appendix **S8** shall be used.

MOD AUS/KOR/J/NZL/107/55

TABLE S5-1 (*continued*)

No. **S9.9** GSO/GSO	A station of the FSS in a frequency band shared on an equal primary basis with the feeder links of the BSS, which are subject to the Plans in Appendix **S30A**	17.7-18.1 GHz (Region 1) 17.7-18.1 GHz (Region 3) 17.7-17.8 GHz (Region 2)	i) Value of $\Delta T_s/T_s$ exceeds 4% (see Section I of Annex 4 of Appendix **S30A**); and ii) geocentric inter-satellite angular separation is less than 3° or greater than 150°	i) Case II of Appendix **S8** ~~ii) Annex 1 of Appendix **S8**~~ <u>Definition in § 2.1 of Appendix **S8**</u>	The threshold/conditions do not apply when the geocentric angular separation, between an FSS transmitting space station and a receiving space station in the feeder-link plan, exceeds 150° of arc and the free-space pfd of the FSS transmitting space station does not exceed a value of –137 dB(W/m^2/MHz) on the surface of the Earth at the equatorial limb. Application of this provision with respect to Articles 6 and 7 of Appendices **S30** and **S30A** is suspended pending the decision of WRC-99 on the revision of these two Appendices.

Reasons: Implementation of the Procedure 2 as described in section 1.8 of the “Introduction”. The modification of Calculation method of No. S9.9 is not directly related to the purpose of the proposal, but the current texts are confusing because the Threshold/condition shows “geocentric inter-satellite angular separation” and the Calculation method shows “topocentric angular separation” in Annex 1 of Appendix S8. Therefore, the modification is necessary to harmonize the calculation method with the Threshold/condition.

APPENDIX S8

Method of calculation for determining if coordination is required between geostationary-satellite networks sharing the same frequency bands

MOD AUS/KOR/J/NZL/107/56

1 Introduction

The method of calculation for determining if coordination is required under provision No. **S9.6/1060** is based on the concept that the noise temperature of a system subject to interference increases as the level of the interfering emission increases. It can, therefore, be applied irrespective of the modulation characteristics of these satellite networks, and of the precise frequencies used.

~~In this method, the apparent increase in the equivalent satellite link noise temperature resulting from an interfering emission of a given system is calculated (see § 2 below) and the ratio of this increase to the equivalent satellite link noise temperature, expressed as a percentage, is compared to a threshold value (see § 3 below).~~

MOD AUS/KOR/J/NZL/107/57

2.2 General method

In the following equations, the frequency to be used for the calculation of l_d, l_u, and l_s is the average frequency of the band common to both networks in the direction considered. If, in a given direction, there is no overlap of the assigned frequency bands of the two networks, the corresponding value (ΔT_s or ΔT_e) is taken to be equal to zero. For cases where the Appendix **S4** data have not been published, the assigned frequency band for that network shall be considered as being the frequency range as provided for in Appendix **S4**.

<u>The most unfavourably sited transmitting earth station of the interfering satellite network should be determined for each satellite receiving antenna of the network subject to interference by superimposing the “Earth-to-space” service areas of the interfering network on the space station receiving antenna gain contours plotted on a map of the Earth’s surface. The most unfavourably sited transmitting earth station is the one in the direction of which the satellite receiving antenna gain of the network subject to interference is the greatest.</u>

<u>The most unfavourably sited receiving earth station of the network subject to interference should be determined in an analogous manner for each “space-to-Earth” service area of that network. The most unfavourably sited receiving earth station is the one in the direction of which the satellite transmitting antenna gain of the interfering network is the greatest.</u>

Reasons: Moved from 2.3 which is proposed for suppression. Essential provision to define the procedure for finding the worst-case earth station locations at which interference is to be assessed.

SUP AUS/KOR/J/NZL/107/58

2.2.1.1 Simple frequency-changing transponder on board the satellite

MOD AUS/KOR/J/NZL/107/59

~~**2.2.1.2 Cases requiring independent treatment of the uplink and the downlink**~~

~~If there is a change of modulation in the satellite or if the transmission originates on board the satellite, then the apparent increase in the noise temperature must be related to the total receiving system noise temperature of the specific link being examined (the space station or the earth station, whichever is applicable). In this case, the equivalent noise temperature of the entire satellite link and the transmission gain are not used and~~ The equations (1) and (2) ~~above~~ are used separately as required (see § 3.2).

The parameters ΔT_s and ΔT_e are given by the following equations:

$$\Delta T_s = \frac{p'_e \, g'_1(\theta_t) \, g_2(\delta_{e'})}{kl_u} \quad (1)$$

$$\Delta T_e = \frac{p'_s \, g'_3(\eta_e) \, g_4(\theta_t)}{kl_d} \quad (2)$$

An example calculation for the application of the method of this Appendix in Case I is given in Annex IV.

MOD AUS/KOR/J/NZL/107/60

2.2.2 Case II – Wanted and interfering networks sharing the same frequency band in opposite directions of transmission (bidirectional use)

The calculation method below only applies to interfering emissions between satellites.

Interference between earth stations using the same frequency band in opposite directions of transmission (bidirectional use) is to be dealt with by coordination procedures analogous to those used for coordination between earth and terrestrial stations.

~~All t~~The equations relating to Case II shall use the geocentric angle θ_g.

SUP AUS/KOR/J/NZL/107/61

2.2.2.1 Simple frequency-changing transponder on board the satellite

MOD AUS/KOR/J/NZL/107/62

~~**2.2.2.2 Cases requiring independent treatment of the uplink and downlink**~~

In this case equation ~~(8)~~(3) is used directly with T_s to obtain the percentage increase. The increase $\Delta T'_s$ in the noise temperature of link A′ caused by interfering emissions from the satellite associated with link A is obtained in a similar manner.

The noise temperature increase ΔT_s referred to the output of the receiving antenna of the satellite of link A is given by:

$$\Delta T_s = \frac{p'_s \, g'_3(\eta_s) \, g_2(\delta_{s'})}{kl_s} \quad (3)$$

MOD AUS/KOR/J/NZL/107/63

2.2.3 Consideration of polarization isolation

The polarization isolation factor described in this paragraph shall be considered only if the administration responsible for each network has consented to such a course and has notified its polarization or published it for coordination under No. **S9.6/1060**. ~~In this case, the apparent increase in the equivalent satellite link noise temperature shall be determined by the following expressions:~~

~~Case I~~ $\Delta T = \frac{\gamma \Delta T_s}{Y_u} + \frac{\Delta T_e}{Y_d}$

~~Case II~~ $\Delta T = \frac{\gamma \Delta T_s}{Y_{ss}}$

~~where t~~The values of ΔT_s and ΔT_e which are ~~those~~ given in § 2.2.1 and § 2.2.2 shall be divided by ~~and~~ the values of the factors of polarization isolation Y_u, Y_d and Y_{ss} which are those given in the table below.

Polarization		Factor of polarization isolation (numerical ratio) *Y*
network R	**network R′**	
LHC	RHC	4
LHC	L	1.4
RHC	L	1.4
LHC	LHC	1
RHC	RHC	1
L	L	1

Where: LHC = left-hand circular (anti-clockwise)
RHC = right-hand circular (clockwise)
L = linear

SUP AUS/KOR/J/NZL/107/64

2.3 Determination of the satellite links to be considered in calculating the increase in equivalent satellite link noise temperature (Case I only)

MOD AUS/KOR/J/NZL/107/65

2.4 Use of information furnished under Appendix S4

When an administration elects to use information furnished under Appendix **S4** with the calculation procedures of § 2.2.1~~.1~~ and § 2.2.2~~.1~~ in order to formulate comments to the advance publication of a new network, ~~the calculations need to be made for both sets of values of γ and *T* furnished. T~~the greater of the two values of $\Delta T/T$ resulting from these calculations is the one to be used.

SUP AUS/KOR/J/NZL/107/66

3.1 Simple frequency-changing transponder on board the satellite

MOD AUS/KOR/J/NZL/107/67

~~**3.2 Cases requiring independent treatment of the uplink and the downlink**~~

~~*a)* In the case of interference into only one link, the~~ The uplink or the downlink, the value $\Delta T_e/T_e$ or $\Delta T_s/T_s$, expressed as a percentage, shall be compared with the threshold value of 6%[3].

~~*b)* In the case of interference into both the uplink and the downlink, between which there is a change of modulation on board the satellite, the values of $\Delta T_e/T_e$ and $\Delta T_s/T_s$, expressed as a percentage, shall each be compared with the threshold value of 6%[3].~~

ANNEX IV

Example of an application of Appendix S8

MOD **AUS/KOR/J/NZL/107**/68

2 Input data

The values of the network parameters given in the table below are derived from those published in accordance with Appendix **S4**.

	Symbol*	Value	Unit
Uplink at 6 175 MHz	P'_e	–37	dB(W/Hz)
	$G'_1(\theta_t)$	14.5	DB
	$G_2(\delta_{e'})$	15.5	DB
	L_u	200	DB
	T_S	500	K
Downlink at 3 950 MHz	P'_s	–57	dB(W/Hz)
	$G'_3(\eta_e)$	15.5	DB
	$G_4(\theta_t)$	14.5	DB
	L_d	196	DB
	T_e	200	K
	~~$10 \log \gamma$~~	~~–15~~	~~DB~~
	~~T~~	~~105~~	~~K~~
	θ_t	5	degrees

* All capital symbols, except ~~T~~ T_e *and* T_s, refer to parameters given in logarithmic units.

MOD **AUS/KOR/J/NZL/107**/69

3 Calculation of $\frac{\Delta T}{T}$

From equation (1)

$$10 \log \Delta T_s = P_e' + G_1'(\theta_t) + G_2(\delta_{e'}) + 228.6 - L_u$$
$$= -37 + 14.5 + 15.5 + 228.6 - 200 = 21.6 \text{ dBK}$$

Therefore,

$$\Delta T_s = 145 \text{ K}$$

From equation (2)

$$10 \log \Delta T_e = P_s' + G_3'(\eta_e) + G_4(\theta_t) + 228.6 - L_d$$
$$= -57 + 15.5 + 14.5 + 228.6 - 196 = 5.6 \text{ dBK}$$

Therefore;

$$\Delta T_e = 3.6 \text{ K}$$

~~From equation (3)~~

~~$$\Delta T = \gamma \Delta T_s + \Delta T_e$$~~
~~$$= 0.032 \times 145 + 3.6 = 8.2 \text{ K}$$~~

Thus

~~$$\frac{\Delta T}{T} \times 100 = \frac{8.2 \times 100}{105} = 7.8\%$$~~

$$\Delta T_S/T_S \times 100 = (145*100)/500 = 29\%$$

$$\Delta T_e/T_e \times 100 = (3.6*100)/200 = 1.8\%$$

MOD **AUS/KOR/J/NZL/107/**70

4 Conclusion

In the example shown, the percentage increase in ~~equivalent satellite~~ uplink noise temperature is 29~~7.8~~%. Since it exceeds the threshold value of 6%, coordination between the two uplink networks is required. However, since the percentage increase in downlink noise temperature is 1.8%, the coordination between the two downlink networks is not required.

ADD AUS/KOR/J/NZL/107/71

DRAFT RESOLUTION TTT (WRC-2000)

Provisional application and transitional arrangements relating to the simplification of the coordination and notification procedures for satellite networks

The World Radiocommunication Conference (Istanbul, 2000),

considering

a) that as a result of the review under Resolution **86** (Minneapolis, 1998), a number of provisions of Articles **S9** and **S11** have been modified to remove the requirement to provide advance publication information under No. **S9.2B** for satellite networks subject to coordination, and that these provisions need to be applied provisionally as soon as possible;

b) that there will be a number of satellite networks for which the advance publication information under Nos. **S9.1** and **S9.2** will already have been communicated to ITU prior to 2 June 2000, and it is necessary to provide for some transitional measures for the treatment of these networks by the Bureau,

resolves

1 that the provisions of Article **S9** and Article **S11** of the Radio Regulations, as revised by this Conference, shall be applied by the Radiocommunication Bureau and by administrations on a provisional basis as of 2 June 2000;

2 that the transitional arrangements established in *resolves* 3, 4 and 5 below shall not be applied to satellite networks for which the associated advance publication information under Nos. **S9.1** and **S9.2** has been received by the Radiocommunication Bureau prior to 2 June 2000 and that for these networks, coordination information under No. **S9.30** shall be considered as having been received by the Bureau not earlier than six months after the date of receipt of the advance publication information and that if the information under No. **S9.30** has not been received by the Bureau within a period of 24 months after the date of receipt by the Bureau of the relevant information under Nos. **S9.1** and **S9.2**, the information published under No. **S9.2B** shall be cancelled, after the administration concerned has been informed at least three months before the end of the 24-month period and that the Bureau shall publish a notice of the cancellation in its Weekly Circular;

3 that for those networks for which the complete coordination information under No. **S9.30** is received by the Radiocommunication Bureau between 2 June 2000 and 2 December 2000 inclusively, the date of receipt of the complete coordination information shall be taken to be 2 December 2000 and that this date shall be used in the application of No. **S9.27**, using the procedures of Appendix **S5**, except for the case in *resolves* 4 and 5 below;

4 that for those networks for which the complete coordination information under No. **S9.30** is received by the Radiocommunication Bureau between 2 June 2000 and 2 December 2000 inclusively, and in the application of No. **S9.27** with regard to other networks for which the complete coordination information under No. **S9.30** is also received by the Radiocommunication Bureau between 2 June 2000 and 2 December 2000 inclusively, the frequency

assignments to be taken into account in effecting coordination shall be determined, using the procedures of Appendix **S5**, taking into account the actual date of receipt of the complete coordination information and not the date established under *resolves* 3 above;

5 that for those networks for which the complete coordination information under No. **S9.30** is received by the Radiocommunication Bureau after 2 June 2000, the application of **S11.44** and **S11.48** shall be based on the actual date of receipt of the complete coordination information and not the date established under *resolves* 3 above;

6 that for those networks for which the complete coordination information under **S9.30** has been received but not yet published prior to [Y], the Bureau shall identify, in accordance with revised No. **S9.36** as modified by this Conference, any administration and/or network, as appropriate, with which coordination may need to be effected.

Reasons:

Transitional arrangements following the deletion of the API

a) Establish a mechanism for the implementation of a date for provisional application of the revisions to S9 and S11, which is likely to be earlier than the date of provisional application of the general Final Acts of WRC-2000.

This is done in *resolves* 1.

To grandfather the networks for which the API was submitted prior to the date [X] since the provisions of S9 that apply to these networks will have been deleted in the revisions of S9 (e.g. the final part of S9.1 - receivability of coordination data only after 6 months from the API - and S9.5D - cancellation if coordination data not submitted within 2 years of API) and also to ensure that these networks are removed from the transitional procedures.

This is done in *resolves* 2 which, although it looks a bit complex essentially just excludes these networks from the transitional approach and then repeats the relevant provisions of S9.1 and S9.5D which we are proposing to delete.

b) To determine that the date of receipt for the coordination information for networks received in the period [X] to [X + 6 months] inclusively will be taken to be [X + 6 months] and that this date shall be used for regulatory determination of the requirement to coordinate under S9.27 for all networks falling outside of the period [X] to [X + 6 months] inclusively (i.e. it is OK to use the date [X + 6 months] for these networks in regard of other networks either with API before [X] or coordination data after [X + 6 months].

This is done in *resolves* 3.

c) Finally, to establish how the regulatory determination of the requirement to coordinate under S9.27 for all networks falling inside of the period [X] to [X + 6 months] inclusively will be made; in this case it needs to be done on the basis of the actual date of receipt.

This is done in *resolves* 4.

Finally, note that these arrangements seem only appropriate to networks for which the coordination data is provided under S9.30 and the reference to S9.32 is suggested for deletion.

MOD AUS/KOR/J/NZL/107/72

RESOLUTION 49 (Rev.WRC-~~97~~2000)

Administrative due diligence applicable to some satellite communication services

The World Radiocommunication Conference (Istanbul~~Geneva~~, 2000~~1997~~),

considering

a) that Resolution 18 of the ITU Plenipotentiary Conference (Kyoto, 1994) instructed the Director of the Radiocommunication Bureau to initiate a review of some important issues concerning international satellite network coordination and make a preliminary report to WRC-95 and a final report to this Conference;

b) that the Director of the Radiocommunication Bureau provided a comprehensive report to this Conference including a number of recommendations for action as soon as possible and identifying areas requiring further study;

c) that one of the recommendations in the Director's Report was that administrative due diligence should be adopted as a means of addressing the problem of reservation of orbit and spectrum capacity without actual use;

d) that experience may need to be gained in the application of the administrative due diligence procedures adopted by this Conference, and that several years may be needed to see whether administrative due diligence measures produce satisfactory results;

e) that new regulatory approaches may need to be carefully considered in order to avoid adverse effects on networks already going through the different phases of the procedures;

f) that Article 44 of the Constitution (Geneva, 1992) sets out the basic principles for the use of the radio-frequency spectrum and the geostationary-satellite orbit, taking into account the needs of developing countries~~,~~;

g) that this Conference has adopted Resolution **TTT (WRC-2000)**,

considering further

that this Conference has decided to reduce the regulatory time-frame for bringing a satellite network into use,

resolves

1 that the administrative due diligence procedure contained in Annex 1 to this Resolution shall be applied as from 22 November 1997 for a satellite network or satellite system of the fixed-satellite service, mobile-satellite service or broadcasting-satellite service for which the following information as appropriate, has been received by the Bureau from 22 November 1997:

a) the advance publication information under No. **S9.2B**, or

b) the request for coordination under No. **S9.7** without prior submission of the advance publication information under No. **S9.2B** (see Resolution **TTT (WRC-2000)**, or ~~for which~~

c) the request for modifications of the Plans under Article 4, § 4.1 *b)* of Appendices **S30** and **S30A** that involve the addition of new frequencies or orbit positions, or ~~for which~~

d) the request for modifications of the Plans under Article 4, § 4.1 *a)* of Appendices **S30** and **S30A** that extends the service area to another country or countries in addition to the existing service area, or ~~for which~~

e) the submission of information of Annex 2 of Appendix **S30B** under supplementary provisions applicable to additional uses in the planned bands as defined in Article **2** of that Appendix (Section III of Article 6 of Appendix **S30B**) has been received by the Bureau from 22 November 1997;

2 that for a satellite network or satellite system within the scope of § 1, 2 or 3 of Annex 1 to this Resolution not yet recorded in the Master International Frequency Register (MIFR), for which the advance publication information under No. **1042** of the Radio Regulations or the request for a modification to the Plans of Appendices **30** and **30A** or for the application of Section III of Article 6 of Appendix **30B** has been received by the Bureau before 22 November 1997, the responsible administration shall submit to the Bureau the complete due diligence information in accordance with Annex 2 to this Resolution not later than 21 November 2003, or before the expiry of the notified period for bringing the satellite network into use, plus any extension period which shall not exceed three years pursuant to the application of No. **1550** of the Radio Regulations or the dates specified in the relevant provisions of Appendix **30** (§ 4.3.5), Appendix **30A** (§ 4.2.5 and 4.2.6) or Appendix **30B** (§ 6.57), whichever date comes earlier. If the date of bringing into use, including extension specified above, is before 1 July 1998, the responsible administration shall submit to the Bureau the complete due diligence information in accordance with Annex 2 to this Resolution not later than 1 July 1998;

3 that for a satellite network or satellite system within the scope of § 1, 2 or 3 of Annex 1 to this Resolution recorded in the MIFR, the responsible administration shall submit to the Bureau the complete due diligence information in accordance with Annex 2 to this Resolution not later than 21 November 2000;

4 that six months before the expiry date specified in *resolves* 2 or 3 above, if the responsible administration has not submitted the due diligence information, the Bureau shall send a reminder to that administration;

5 that if the due diligence information is found to be incomplete, the Bureau shall immediately request the administration to submit the missing information. In any case, the complete due diligence information shall be received by the Bureau before the expiry date specified in *resolves* 2 or 3 above, as appropriate, and shall be published by the Bureau in the Weekly Circular;

6 that if the complete due diligence information is not received by the Bureau before the expiry date specified in *resolves* 2 or 3 above, the request for coordination or request for a modification to the Plans of Appendices **S30/30** and **S30A/30A** or for application of Section III of Article 6 of Appendix **S30B/30B** as covered by *resolves* 1 above submitted to the Bureau shall be cancelled. Any modifications of the Plans (Appendices **S30/30** and **S30A/30A**) shall lapse and any recording in the MIFR as well as recordings in the Appendix **S30B/30B** List shall be deleted by the Bureau after it has informed the concerned administration. The Bureau shall publish this information in the Weekly Circular,

further resolves

that the procedures in this Resolution are in addition to the provisions under Article **S9** or **S11** of the Radio Regulations or Appendices **S30/30**, **S30A/30A** or **S30B/30B**, as applicable, and, in particular, do not affect the requirement to coordinate under those provisions (Appendices **S30/30**, **S30A/30A**) in respect of extending the service area to another country or countries in addition to the existing service area,

instructs the Director of the Radiocommunication Bureau

to report to WRC-99 and future competent world radiocommunication conferences on the results of the implementation of the administrative due diligence procedure,

instructs the Secretary-General

to bring this Resolution to the attention of the 1998 Plenipotentiary Conference.

ANNEX 1 TO RESOLUTION 49 (Rev.WRC-2000~~WRC-97~~)

1 Any satellite network or satellite system of the fixed-satellite service, mobile-satellite service or broadcasting-satellite service with frequency assignments that are subject to coordination under Nos. **S9.7**, **S9.8**, **S9.9**, **S9.11**, **S9.12** and **S9.13**, Resolution **33 (Rev.WRC-97)**, and Resolution **46 (Rev.WRC-97)** shall be subject to these procedures.

2 Any modifications of the Plans under Article 4, § 4.1 *b)* of Appendices **S30/30** and **S30A/30A** that involve the addition of new frequencies or orbit positions or modifications of the Plans under Article 4, § 4.1 *a)* of Appendices **S30/30** and **S30A/30A** that extend the service area to another country or countries in addition to the existing service area shall be subject to these procedures.

3 Any submission of information under Annex 2 of Appendix **S30B/30B** under supplementary provisions applicable to additional uses in the planned bands as defined in Article 2 of that Appendix (Section III of Article 6 of Appendix **S30B/30B**) shall be subject to these procedures.

4 An administration requesting coordination for a satellite network under § 1 above shall send to the Bureau as early as possible before bringing into use, but in any case to be received before the end of the 5-year period established as a limit to bringing into use in No. **S9.1** or **S9.30**, as appropriate (see also Resolution **TTT (WRC-2000)**, the due diligence information relating to the identity of the satellite network and the spacecraft manufacturer specified in Annex 2 to this Resolution.

5 An administration requesting a modification of the Plans of Appendices **S30/30** and **S30A/30A** under § 2 above shall send to the Bureau as early as possible before bringing into use, but in any case to be received before the end of the period established as a limit to bringing into use in accordance with Appendix **S30/30**, § 4.3.5, and with Appendix **S30A/30A**, § 4.2.5 and 4.2.6, the due diligence information relating to the identity of the satellite network and the spacecraft manufacturer specified in Annex 2 to this Resolution.

6 An administration applying Section III of Article 6 of Appendix **S30B/30B** relating to additional uses under § 3. above shall send to the Bureau as early as possible before the bringing into use, but in any case so as to be received before the bringing into use, the due diligence information relating to the identity of the satellite network and the spacecraft manufacturer specified in Annex 2 to this Resolution.

7 The information to be submitted in accordance with § 4, 5 or 6 above shall be signed by an authorized official of the notifying administration or of an administration that is acting on behalf of a group of named administrations.

8 On receipt of the due diligence information under § 4, 5 or 6 above, the Bureau shall promptly examine that information for completeness. If the information is found to be complete, the Bureau shall publish the complete information in a special section of the Weekly Circular within 30 days.

9 If the information is found to be incomplete, the Bureau shall immediately request the administration to submit the missing information. In all cases, the complete due diligence information shall be received by the Bureau within the appropriate time period specified in § 4, 5 or 6 above, as the case may be, relating to the date of bringing the satellite network into use.

10 Six months before expiry of the period specified in § 4, 5 or 6 above and if the administration responsible for the satellite network has not submitted the due diligence information under § 4, 5 or 6 above, the Bureau shall send a reminder to the responsible administration.

11 If the complete due diligence information is not received by the Bureau within the time limits specified in this Resolution, the networks covered by § 1, 2 or 3 above shall no longer be taken into account and shall not be recorded in the MIFR. The provisional recording in the MIFR shall be deleted by the Bureau after it has informed the concerned administration. The Bureau shall publish this information in the Weekly Circular.

With respect to the request for modification of the Plans of Appendices **S30/30** and **S30A/30A** under § 2 above, the modification shall lapse if the due diligence information is not submitted in accordance with this Resolution.

With respect to the request for application of Section III of Article 6 of Appendix **S30B/30B** under § 3 above, the network shall also be deleted from the Appendix **S30B/30B** List, if applicable.

12 Before the Bureau extends the date of bringing into use under No. **S11.44**, the complete due diligence information under § 4 above shall have been submitted by the responsible administration.

13 An administration notifying a satellite network under § 1, 2 or 3 above for recording in the MIFR shall send to the Bureau as early as possible before bringing into use, but in any case before the date of bringing into use, the due diligence information relating to the identity of the satellite network and the launch services provider specified in Annex 2 to this Resolution.

14 When an administration has completely fulfilled the due diligence procedure but has not completed coordination, this does not preclude the application of No. **S11.41** by that administration.

ANNEX 2 TO RESOLUTION 49 (Rev.WRC-2000~~WRC-97~~)

A Identity of the satellite network

a) Identity of the satellite network

b) Name of the administration

c) Country symbol

d) Reference to the advance publication information or reference to the request for modification of the Plans in Appendices **S30/30** and **S30A/30A**, or, in the case of networks for which the request for coordination information under No. **S9.7** is submitted without prior submission of the advance publication information under No. **S9.2B** (see also draft Resolution **TTT (WRC-2000)**, reference to the request for coordination information.

e) Reference to the request for coordination (not applicable for Appendices **S30/30** and **S30A/30A**)

f) Frequency band(s)

g) Name of the operator

h) Name of the satellite

i) Orbital characteristics.

B Spacecraft manufacturer*

a) Name of the spacecraft manufacturer

b) Date of execution of the contract

c) Contractual “delivery window”

d) Number of satellites procured.

C Launch services provider

a) Name of the launch vehicle provider

b) Date of execution of the contract

c) Anticipated launch or in-orbit delivery window

d) Name of the launch vehicle

e) Name and location of the launch facility.

Reasons: Consequential.

_____

* NOTE – In cases where a contract for satellite procurement covers more than one satellite, the relevant information shall be submitted for each satellite.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 108-E
10 April 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Indonesia (Republic of)

PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda item 1.18 - to consider the use of new digital technology for the maritime mobile service in the band 156-174 MHz and consequential revision of Appendix 18/S18, taking into account Resolution 342 (WRC-97)

1 Background

This agenda item is considered in recognition of the congestion problem identified in the present use of Appendix S18 which drive the use of the frequency spectrum in the VHF maritime mobile band more efficiently. The most likely solution to the problem is adoption of the technology that has already been implemented to the land mobile service.

During WRC-97 revisions were added to Appendix S18 to allow 12.5 kHz channel interleaving on a non-interference basis to the use of standard 25 kHz channels. The purpose of the revision is to accommodate the testing and future introduction of digital technology. Furthermore, the use of digital technology is considered for non-operational usage and subject to non-interference and no protection.

2 Proposal

As a maritime country, Indonesia supports in general the requirement and proposes the use of the VHF maritime band in an efficient manner provided that:

INS/108/1

a) the use of the new digital technology is permitted for operational purposes after relevant studies by ITU-R and related administrations and organizations have been completed with positive results;

b) the digital equipment has to have capability to accommodate existing systems;

c) the implementation of the new technology must reduce the unwanted economic impact to the existing systems to a minimum.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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12 April 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Indonesia (Republic of)

PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda item 1.9 - MSS spectrum requirement in the 1 to 3 GHz range

1 Background

Agenda item 1.9 is intended to respond to additional spectrum requirement for the MSS system in the space-to-Earth direction in a portion of the 1 559-1 567 MHz frequency range. That spectrum will be paired with the allocation of Earth-to-space direction in a portion of the 1 675-1 690 MHz frequency range.

It is clearly stated in the CPM Report for WRC-2000 that there is a requirement for additional MSS spectrum in 1-3 GHz frequency range as the current band is approaching saturation due to an increasing number of MSS systems. Also should be kept in mind the planning of satellite component of IMT-2000 to use the MSS spectrum that obviously will limit deployment of MSS in the current allocation.

Meanwhile, ITU-R study for the 1 559-1 567 MHz frequency range has concluded that sharing between ARNS/RNSS and MSS in the space-to-Earth direction is not feasible.

Based on that condition, a solution should be found to accommodate the requirement of additional MSS spectrum taking into account sharing possibilities with other services. WRC-2000 should consider an immediate decision for additional allocation and if an unsatisfactory solution still remains, the next WRC should continue to find the solution.

2 Proposal

Realizing the urgency to add the spectrum for MSS, Indonesia proposes to the Conference to:

INS/109/1

a) to allocate 1 518-1 525 MHz as alternative downlink for the MSS system as soon as possible;

b) to make global allocation for the proposed band to facilitate the development of the MSS system.

_____

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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COMMITTEE 3

Note by the Secretary-General

FINANCIAL RESPONSIBILITIES OF CONFERENCES

The attention of the World Radiocommunication Conference is drawn to the provisions of Article 34 of the Convention of the International Telecommunication Union which stipulate that:

> "1. Before adopting proposals or taking decisions with financial implications, the conferences of the Union shall take account of all the Union's budgetary provisions with a view to ensuring that they will not result in expenses beyond the credits which the Council is empowered to authorize.
>
> 2. No decision of a conference shall be put into effect if it will result in a direct or indirect increase in expenses beyond the credits that the Council is empowered to authorize."

Yoshio UTSUMI
Secretary-General

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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COMMITTEE 3

Note by the Secretary General

BUDGET OF THE WORLD RADIOCOMMUNICATION CONFERENCE (WRC-2000)

The budget of the World Radiocommunication Conference (WRC-2000) for the biennium 2000-2001, as approved by the Council at its 1999 session by its Resolution 1133 is annexed hereto for the information of the Budget Control Committee.

Yoshio UTSUMI
Secretary-General

Attachment: 1

ANNEX

World Radiocommunication Conference (WRC-2000)

Recapitulation	Budget 2000-2001 Swiss francs (000)
Staff costs	2 084
Other staff costs	96
Travel on duty	80
Contractual services	5
Rental & maintenance of premises and equipment	80
Materials and supplies	35
Acquisition of premises, furniture and equipment	0
Public and internal services	72
Miscellaneous	15
Sub-Total	**2 467**
Translation Pool Reprography	1 113 1 026 1 585
Documentation	**3 724**
TOTAL	**6 191**

World Radiocommunication Conference (WRC-2000)

	Swiss Francs (000)
Staff costs	
Interpretation (3 teams of 18 interpreters in 6 languages during 26 days)	918
Variable appropriations for the documentation	614
Precis-writers, support staff for typing	393
Other services (logistics, delegates registration, documents distribution, etc.)	159
Total staff costs	**2 084**
Other staff costs (travel expenses for non local staff, etc.)	**96**
Travel	**80**
Rental, furniture, machines	**85**
Materials, supplies	**35**
Postage costs	**72**
Miscellaneous	**15**
Total	**2 467**
Translation (8,474 pages)	1 113
Typing (23,017 pages)	1 026
Reprography (26,345,000 pages)	1 585
Documentation	**3 724**
Total costs	**6 191**

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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COMMITTEE 3

Note by the Secretary-General

CONTRIBUTION OF ORGANIZATIONS OF AN INTERNATIONAL CHARACTER AND SECTOR MEMBERS

No. 476 of the Convention of the International Telecommunication Union in force since 1st January 2000, provides that organizations of an international character (unless they have been exempted by the Council, subject to reciprocity) and Sector Members (except those attending a conference of their respective Sector) which participate in a world radiocommunication conference shall share in defraying the expenses of the Conference in question.

Council Decision No. 486 (Document C99/110) provides that pending the inclusion of the necessary amendments to the Financial Regulations to be made by the Council at its session of 2000, which have become necessary for the implementation of No. 476 of the Convention as amended in Minneapolis, the contribution per unit to defraying the expenses of the Conference shall be calculated on the basis of the same principles and calculation methods as those applied before the amendements made by the Minneapolis Plenipotentiary Conference to Nos. 476 and 481 of the Convention.

The amount of the contribution per unit shall therefore be set by dividing the budget (including the cost of documentation) of the Conference by the total number of units contributed by Member States as their share of Union expenses. The contributions shall be considered as Union income and shall bear interest from the sixtieth day following the day on which accounts are sent out.

The budget of the World Radiocommunication Conference (WRC-2000) amounts to 6 191 000 Swiss francs, including the cost of documentation. The total number of Member States' contributory units being 358 3/16, the contributory unit for non exempted international organizations and Sector Members (except ITU-R Sector Members) to defraying the expenses of the Conference amounts to 17 300 Swiss francs.

A list of these organizations and Sector Members will be published later.

Yoshio UTSUMI
Secretary-General

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Note by the Secretary-General

INVITATIONS

1 Member of the Union

In a letter dated 28 September 1999, the Secretary-General invited the Member States of the Union to send delegations to the Conference (Article 24 of the Convention).

The responses received to date are contained in Annex 1.

2 Resolution 99 (Minneapolis, 1998)

According to Resolution 99 (Minneapolis, 1998), the Secretary-General invited Palestine to participate as an observer to the Conference. Palestine has accepted the invitation.

3 Observers

In a letter also dated 28 September 1999 and in accordance with the relevant provisions of the ITU Convention (CV 258), the Secretary-General invited the following entities and organizations, Members of the Radiocommunication Sector, to send observers to the Conference:

- The United Nations (CV259)
- Regional telecommunication organizations (CV260)
- Intergovernmental organizations operating satellite systems (CV261)
- Specialized agencies of the United Nations and the International Atomic Energy Agency (CV262)
- Recognized operating agencies, scientific or industrial organizations and financial or development institutions (CV262A/229)
- Other entities dealing with telecommunication matters (CV262A/230)
- Regional and other international telecommunication, standardization, financial or development organizations (CV262A/231)
- Organizations of an international character representing Sector Members (CV262A).

The responses received to date are contained in Annex 2.

Yoshio UTSUMI
Secretary-General

ANNEX 1

Members who have announced their intention to participate in the Conference

(As of 7 May 2000)

X = Has announced its intention to participate in the Conference.
O = Has stated that it will be unable to participate in the Conference.

Afghanistan		Burundi	X
Albania		Cambodia	X
Algeria	X	Cameroon	X
Germany	X	Canada	X
Andorra	X	Cape Verde	X
Angola	X	Central African Republic	X
Antigua and Barbuda		Chile	
Saudi Arabia	X	China	X
Argentina	X	Cyprus	X
Armenia	X	Vatican	X
Australia	X	Colombia	X
Austria	X	Comoros	X
Azerbaijan	X	Congo (Republic of the)	X
Bahamas		Korea (Republic of)	X
Bahrain	X	Costa Rica	X
Bangladesh	X	Côte d'Ivoire	X
Barbados		Croatia	X
Belarus	X	Cuba	X
Belgium	X	Denmark	X
Belize		Djibouti	X
Benin	X	Dominican (Republic)	X
Bhutan	X	Dominica	
Bolivia	X	Egypt	X
Bosnia and Herzegovina	X	El Salvador	
Botswana	X	United Arab Emirates	X
Brazil	X	Ecuador	X
Brunei Darussalam	X	Eritrea	X
Bulgaria	X	Spain	X
Burkina Faso	X	Estonia	X

United States	X	Latvia	X
Ethiopia	X	The Former Yugoslav Rep. of Macedonia	X
Fiji		Lebanon	X
Finland	X	Liberia	X
France	X	Libya	X
Gabon	X	Liechtenstein	X
Gambia	X	Lithuania	X
Georgia	X	Luxembourg	X
Ghana	X	Madagascar	X
Greece	X	Malaysia	X
Grenada		Malawi	
Guatemala	X	Maldives	X
Guinea	X	Mali	X
Guinea-Bissau		Malta	X
Equatorial Guinea		Morocco	X
Guyana	X	Marshall Islands	
Haiti		Mauritius	X
Honduras	X	Mauritania	X
Hungary	X	Mexico	X
India	X	Micronesia	
Indonesia	X	Moldova	X
Iran (Islamic Republic of)	X	Monaco	X
Iraq		Mongolia	X
Ireland	X	Mozambique	X
Iceland	X	Myanmar	
Israel	X	Namibia	X
Italy	X	Nauru	
Jamaica	X	Nepal	X
Japan	X	Nicaragua	
Jordan	X	Niger	X
Kazakstan	X	Nigeria	X
Kenya	X	Norway	X
Kiribati		New Zealand	X
Kuwait	X	Oman	X
Lao P.D.R.	X	Uganda	X
Lesotho	X	Uzbekistan	X

Pakistan	X	Slovenia	X
Panama		Somalia	
Papua New Guinea	X	Sudan	X
Paraguay	X	Sri Lanka	X
Netherlands	X	South Africa	X
Peru		Sweden	X
Philippines	X	Switzerland	X
Poland	X	Suriname	X
Portugal	X	Swaziland	X
Qatar	X	Tajikistan	
Syria	X	Tanzania	X
Dem. Rep. of the Congo		Chad	X
Kyrgyzstan	X	Thailand	X
Dem. People's Rep. of Korea	X	Togo	X
Slovak Republic	X	Tonga	X
Czech Republic	X	Trinidad and Tobago	
Romania	X	Tunisia	X
United Kingdom	X	Turkmenistan	
Russia	X	Turkey	X
Rwanda		Tuvalu	X
Saint Lucia		Ukraine	X
San Marino	X	Uruguay	X
St-Vincent and the Grenadines		Vanuatu	
Solomon		Venezuela	X
Samoa		Viet Nam	X
Sao Tome and Principe		Yemen	X
Senegal	X	Yugoslavia	
Seychelles	X	Zambia	X
Sierra Leone		Zimbabwe	X
Singapore	X		

ANNEX 2

Sector Members who have announced their intention to participate in the Conference

(As of 7 May 2000)

The United Nations (CV259)

United Nations
Office for the Coordination of Humanitarian Affairs (OCHA)

Regional telecommunication organizations (CV260)

APT – Télécommunauté Asie-Pacifique
ATU – African Telecommunications Union
CEPT - Conférence européenne des administrations des postes et des télécommunications
CITEL – Comisión Interamericana de Telecomunicaciones
ETSI - Institut européen des normes de télécommunication
League of Arab States
RCC - Regional Commonwealth in the Field of Communications

Intergovernmental organizations operating satellite systems (CV261)

ARABSAT - Arab Satellite Communications Organization
ASE – Agence spatiale européenne
EUMETSAT – European Organisation for the Exploitation of Meteorological Satellites
EUTELSAT – European Telecommunications Satellite Organization
INTELSAT – International Telecommunications Satellite Organization
INTERSPUTNIK – International Organization of Space Communications
RASCOM – Regional African Satellite Communications Organization

Specialized agencies of the United Nations and the International Atomic Energy Agency (CV 262)

ICAO -International Civil Aviation Organization
IMO - International Maritime Organization
OMM – Organisation mondiale de la météorologie

Recognized operating agencies (CV262A/229)

Deutsche Telekom AG
Saudi Telecommunication Company (S.T.C.)
Telecom Argentina STET
Telefónica de Argentina S.A. (TASA)
Telekom Austria AG
Bell Canada
Telesat Canada
Empresa Nacional de Telecomunicaciones (TELECOM)
Telecom Egypt
The Egyptian Satellite Company (NILESAT)
Teledesic Communications Spain, S.L.
Telefónica, S.A.
Ellipso Corporation
Loral Skynet

Loral Space & Communications Ltd.
Teledesic Corporation
The Boeing Company
WorldSpace Corporation
Bouygues Télécom
Cegetel
France Télécom
Hellenic Telecommunications Organization SA (OTE)
Antenna Hungaria
PT Indosat (Persero) Tbk.
RAI – Radiotelevisione Italiana
Telecom Italia S.p.A.
Telespazio S.p.A.
Wind Telecomunicazioni SpA
Jordan Telecommunications Company (JTC)
Société Européenne des Satellites (S.E.S)
Satélites Mexicanos, SA de CV (SATMEX)
New Skies Satellites N.V.
Slovak Telecom
ICO Global Communications (Operations) Limited
Inmarsat Ltd.
Mobile Telephone Networks
Orbicom (Pty) Ltd.

Scientific or industrial organizations (CV262A/229)

Rohde & Schwarz GmbH und Co. KG
Siemens AG
Nortel Networks (Canada)
Samsung Electronics Co. Ltd.
Globalstar LP
Hughes Space & Communications Co.
Lockheed Martin Global Telecommunications
Nortel Networks (USA)
PanAmSat
RFC Holdings, Inc.
SkyBridge LP
WinStar Communications, Inc.
Nokia Networks Oy
Alcatel
Matra Marconi Space
Motorola SA
ELSACOM S.p.A.
Hitachi Ltd.
Nippon Telegraph and Telephone Corporation (NTT)
Nortel Networks (Europe)
Teledesic UK Ltd.
Vodafone Airtouch plc.

Other entities dealing with telecommunication matters (CV262A/230)

GE Capital Satellites Ltd.

Regional and other international telecommunication, standardization, financial or development organizations (CV262A/231)

ABU – Union de radiodiffusion Asie-Pacifique
APSCC – The Asia-Pacific Satellite Communications Council
ASBU – Union de radiodiffusion des Etats arabes
CE – Commission européenne
CICR - Comité international de la Croix-Rouge
COSPAS-SARSAT – Système international de satellites pour la recherche et le sauvetage
CRAF – Committee on Radio Astronomy Frequencies
ETNO - European Public Telecommunications Network Operators' Association
EUROCONTROL - European Organization for the Safety of Air Navigation
GCC – Cooperation Council for the Arab States of the Gulf
GSM Association
IAF – International Astronautical Federation
IARU – International Amateur Radio Union
IATA – Association du transport aérien international
IUCAF - Commission scientifique pour l'attribution de fréquences à la radioastronomie et à la science spatiale
SITA - Société internationale de télécommunications aéronautiques
UER – Union européenne de radio-télévision
URTNA - Union des radiodiffusions et télévisions nationales d'Afrique

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Note by the Secretary-General

PARTICIPATION REQUESTS SUBMITTED BY INTERNATIONAL ORGANIZATIONS

1 With the approval of the Council and in application of No. 273 of the Convention (Minneapolis, 1998), those international organizations which seemed likely to be interested in the work of the Conference were notified that the Conference was to be held.

2 Formal requests for admission to the Conference have been received from:

Mobile Satellite Users Association (MSUA)

Agency for the Safety of Air Navigation in Africa and Madagascar (ASECNA).

3 Pursuant to No. 275 of the Convention (Minneapolis, 1998), the Conference is requested to decide whether these organizations are to be admitted to participate as observers.

Yoshio UTSUMI
Secretary-General

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Kenya (Republic of), Uganda (Republic of), Tanzania (United Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

1 WRC-2000 agenda items of common concern

1.1 Agenda item 1.6 - issues related to IMT-2000

Considering:

- the candidate bands 470-806 MHz and 806-960 MHz are used for the broadcasting and mobile services, the bands 1 429-1 501 MHz, 1 710-1 885 MHz, 2 300-2 400 MHz and 2 520-2 670 MHz are used for the fixed services, and the band 2 700-2 900 MHz is used for aeronautical navigation services;
- that the bands 1 626.5-1 660.5 MHz, 1 610-1 626.5 MHz and 2 483.5-2 500 MHz are not heavily used;
- benefits that countries can derive from the introduction of the IMT-2000 applications,

Kenya, Uganda and Tanzania propose:

KEN/UGA/TZA/115/1

The candidate bands for the broadcasting, mobile and fixed services should not be allocated for IMT-2000 applications.

KEN/UGA/TZA/115/2

The candidate bands 1 626.5-1 660.5 MHz, 1 610-1 626.5 MHz and 2 483.5-2 500 MHz be considered for IMT-2000 applications.

1.2 Agenda item 1.7 - review of the use of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting operational, distress and safety communications, taking into account Resolution 346 (WRC-97)

Considering:

- the Recommendations of ITU Member States formulated in Resolution 346;
- the great need for the protection of distress and safety communications on frequencies 12 290 kHz and 16 420 kHz for safety of life at sea;

- frequent illegal use of HF bands which are used on international and domestic routes for communication by aircraft,

Kenya, Uganda and Tanzania propose:

KEN/UGA/TZA/115/3

Each country takes the necessary steps such as educating and sensitizing the users on why distress frequencies should not be used for routine calling.

KEN/UGA/TZA/115/4

These frequencies be strictly reserved for distress and safety calls.

1.3 Agenda item 1.8 - to consider regulatory and technical provisions to enable earth stations located on board vessels to operate in the fixed-satellite service (FSS) networks in the bands 3 700-4 200 MHz and 5 925-6 425 MHz, including their coordination with other services allocated in these bands

Considering:

- there is heavy use of the fixed services in the bands 3 700-4 200 MHz and 5 925-6 425 MHz and that any authorization of these stations can seriously affect the actual use and the future development of the fixed services in our countries;
- the complexity and high costs that may be involved in the coordination process,

Kenya, Uganda and Tanzania propose:

KEN/UGA/TZA/115/5

No provisions authorizing the use of FSS earth stations on board vessels be adopted until such a time when all technical and regulatory aspects are solved in accordance with the existing Radio Regulations.

1.4 Agenda item 1.9 - to take into account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-Earth direction to the mobile-satellite service (MSS) in a portion of the 1 559-1 567 MHz frequency range, in response to Resolutions 213 (Rev.WRC-95) and 220 (WRC-97)

Considering:

- the fact that ARNS/RNSS (aeronautical radionavigation service/radionavigation-satellite service) are used, among others, for aeronautical and maritime safety of life navigation;
- ITU-R studies which indicate that there is no possibility of sharing between the ARNS/RNSS and MSS in the 1 559-1 567 MHz band;
- ICAO GNSS (global navigation-satellite service) study results that indicate that no practical and safe sharing conditions can be established in these bands,

Kenya, Uganda and Tanzania propose:

KEN/UGA/TZA/115/6

No allocations should be made to the MSS in the band 1 559-1 567 MHz since sharing between MSS and ARNS/RNSS is not feasible.

KEN/UGA/TZA/115/7

Resolution 220, which addresses study on the feasibility of operating MMS (s-E) and safety requirements for aeronautical radionavigation services, should be suppressed/deleted.

KEN/UGA/TZA/115/8

ITU-R continues studies on the sharing criteria between MSS and the meteorological services in the band 1 675-1 710 MHz in accordance with Resolution 213.

1.5 Agenda item 1.11 - to consider constraints on existing allocations and to consider additional allocations on a worldwide basis for the non-geostationary (non-GSO) MSS below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolutions 214 (Rev.WRC-97) and 219 (Rev.WRC-97)

Considering:

- the fact that frequency bands below 1 GHz are heavily used by other services in our countries;
- the use of the band 117.795-137 MHz by the aeronautical services and the need to protect the meteorological sound system operating at 401 MHz,

Kenya, Uganda and Tanzania propose:

KEN/UGA/TZA/115/9

No additional frequency allocations be made for non-GSO/MSS.

KEN/UGA/TZA/115/10

All existing frequency allocations below 1 GHz for aeronautical maritime/meteorological services should be maintained without change.

1.6 Agenda item 1.13 - on the basis of the results of the studies in accordance with Resolutions 130 (WRC-97), 131 (WRC-97) and 538 (WRC-97)

Considering:

the issues such as power limits, frequency bands and sharing considerations relating to non-GSO FSS are still under study,

Kenya, Uganda and Tanzania propose:

KEN/UGA/TZA/115/11

ITU-R be urged to conduct appropriate studies.

KEN/UGA/TZA/115/12

The necessary regulatory procedures be developed to protect GSO FSS services from any harmful interference caused by non-GSO systems operating in the bands 10.7-12.75 GHz and 17.7-19.3 GHz.

1.7 Agenda item 1.15.1 - to consider new allocations to the radionavigation-satellite service in the range 1 GHz to 6 GHz required to support developments

Considering:

ITU-R studies are still going on and that these bands are still used by essential services such as aeronautical services that provide safety of life functions,

Kenya, Uganda and Tanzania propose:

KEN/UGA/TZA/115/13

Since the band 960-1 215 MHz is allocated on a worldwide basis for ARNS, the International Civil Aviation Organization (ICAO), ITU-R and Study Groups should carry out further studies and come out with suitable Recommendations before any allocations are made to the RNSS.

KEN/UGA/TZA/115/14

Protection for aeronautical systems operating in the band 5 030-5 091 MHz be ensured.

1.8 Agenda item 1.15.2 - to consider the addition of the space-to-space direction to the radionavigation-satellite service allocations in the bands 1 215-1 260 MHz and 1 559-1 610 MHz

Considering:

that ITU-R carried out the studies that justified that the addition of other space-to-space directions to the 1 215-1 260 MHz and 1 559-1 610 MHz RNSS bands may not cause interference to other services,

Kenya, Uganda and Tanzania propose:

KEN/UGA/TZA/115/15

ITU-R carries out studies to ascertain whether the addition of the space-to-space direction to RNSS allocations may cause any additional interference to other services.

1.9 Agenda item 1.18 - to consider the use of new digital technology for the maritime mobile service in the band 156-174 MHz and consequential revision of Appendix 18/S18, taking into account Resolution 342 (WRC-97)

Considering:

- that the marine VHF band is of great importance in safety of life at sea and consequently in maritime navigation;
- the studies being undertaken by ITU-R on this agenda item are not yet completed,

Kenya, Uganda and Tanzania propose:

KEN/UGA/TZA/115/16

ITU-R continues to carry out the studies as detailed in Question ITU-R 96/8 and Resolution 342 (WRC-97) that will enable the introduction of new digital techniques which will enhance the efficient use of the 156-174 MHz band.

KEN/UGA/TZA/115/17

Before introduction of the digital techniques, arrangements be made in accordance with the Radio Regulations to make it possible to use certain channels of Appendix 18/S18 in the simplex mode in addition to the use of duplex mode to minimize congestion within the band.

1.10 Agenda items 1.19, 1.19*bis* and 1.20

1.19 to consider the report of the inter-conference representative group (IRG) submitted by the Director of the Radiocommunication Bureau and determine the basis for replanning by the next conference so as to afford each country an amount of spectrum that permits the economical development of a broadcasting-satellite service system;

1.19*bis* in accordance with Article S14, to consider objections expressed by administrations with respect to the Radio Regulations Board's Rules of Procedure relating to the application of RR 2674/S23.13 in order for the Bureau to modify its findings in accordance with the conclusions of the Conference;

1.20 to consider the issues related to the application of Nos. S9.8, S9.9 and S9.17 and the corresponding parts of Appendix S5 with respect to Appendices S30 and S30A, with a view to possible deletion of Articles 6 and 7 of Appendices S30 and S30A, also taking into consideration Recommendation 35 (WRC-95)

Considering:

- the results of the IRG (Inter-conference Representative Group) of December 1999 showing the feasibility of a BSS Plan based on 10 channels for Region 1 and 12 channels for Region 3 with several criteria of Annex 1 to Resolution 532 (WRC-97);
- the debates held during WRC-97 and the Plenipotentiary Conference (Minneapolis, 1998) relating to the deadline for the adoption of the BSS Plan;
- that WRC-2000 is the only Conference which may adopt the new BSS Plan;
- that any delay in the adoption of a BSS Plan may serve to continue to overload the notification, coordination and filing of satellite systems;
- that any delay in the adoption of a BSS Plan (beyond 2000) will lengthen the list of satellite systems seeking coordination and may complicate the re-planning process and even make it impossible,

Kenya, Uganda and Tanzania propose:

KEN/UGA/TZA/115/18

The adoption of the draft BSS Plan at WRC-2000, on the basis of national coverage of 10 channels for Region 1 in a 400 MHz continuous band and 12 channels for Region 3 in a 500 MHz continuous band, as successfully computed by the Group of Technical Experts (GTE) at the present date.

KEN/UGA/TZA/115/19

That modifications which may become necessary, either by the existing systems or by systems already coordinated for, and for which information required according to Resolution 49 (WRC-97), has been submitted to ITU, or for regional systems which benefit all priority in consideration to their importance for the development of their coverage areas.

KEN/UGA/TZA/115/20

To maintain the provisions of Articles 6 and 7 as established in Appendices S30 and S30A.

2 Conclusion

The WRC-2000 agenda items, as detailed above, represent the positions of the Administrations of Kenya, Uganda and Tanzania to WRC-2000.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Note by the Secretary-General

REPORT ON THE CHANGES IN THE ALLOCATION OF CALL SIGNS BETWEEN WRC-97 AND WRC-2000

The provisions of No. S19.33 of the Radio Regulations stipulate that, between radiocommunication conferences, the Secretary-General is authorized to deal with questions relating to changes in the allocation of series of call signs, on a provisional basis, and subject to confirmation by the following conference.

The following provisional allocations have been made in accordance with No. S19.33 between the end of WRC-97 and the date of preparation of this Report (14 April 2000):

Call sign series	Allocated to
4WA-4WZ	United Nations
E4A-E4Z	Palestinian Authority (in response to Resolution 99 of PP-98)
VRA-VRZ	China (People's Republic of) - Hongkong

In accordance with No. S19.33 the Conference is invited to confirm these provisional allocations with a view to their definitive inclusion into the Table of allocation of international call sign series (Appendix S42 to the Radio Regulations).

Yoshio UTSUMI
Secretary-General

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Germany (Federal Republic of), Austria, Liechtenstein (Principality of), Switzerland (Confederation of)

PROPOSAL FOR THE WORK OF THE CONFERENCE

WORK TOWARDS THE POSSIBLE REVISION OF THE PLANS CONTAINED IN APPENDICES S30 AND S30A FOR REGIONS 1 AND 3 (AGENDA ITEM 1.19)

Identical beams for Germany, Austria, Liechtenstein and Switzerland

1 Introduction

Agenda item 1.19 stresses the need for the economical viability of the BSS assignments. Cooperation between neighbouring countries with similar cultural associations is a prime possibility to enhance the economical viability of national beams whilst not requesting additional transmission frequencies.

The studies undertaken by the IRG and BR demonstrate the technical feasibility of this identical beam approach for Germany, Austria, Liechtenstein and Switzerland. The agreement for the identical beams of these countries was established in March 1999 prior to the joint response of these Administrations to Circular Letter CR/117. The Administrations of these countries responded to CR/117 within the time period indicated and have thus made known this approach of cooperating neighbouring countries, which is both economical and frequency efficient, to the BSS community.

Germany, Austria, Liechtenstein and Switzerland are located within the same geographical area and have common borders. The people of these countries have strong cultural similarities. Resolution 532 (WRC-97) includes the possibility for such types of identical beams covering cooperating neighbouring countries, in its Annex 1, Principle 2, which states that planning should be based **mainly** on national coverage, which is a clear indication that the approach adopted is fully consistent with the guiding principles of Resolution 532.

2 Proposal

D/AUT/LIE/SUI/117/1

Should WRC-2000 decide to revise the current Plans of Appendices S30 and S30A with respect to Regions 1 and 3, it is proposed to include identical beams for Germany, Austria, Liechtenstein and Switzerland jointly covering the territories of these Administrations as demonstrated in the plan exercise established by the IRG and BR and submitted to this Conference by the Director, BR (see Document WRC2000/34).

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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Secretary-General

NOTE BY THE SECRETARY GENERAL

AGREEMENT BETWEEN THE GOVERNMENT OF TURKEY AND THE SECRETARY-GENERAL OF THE INTERNATIONAL TELECOMMUNICATION UNION

I have the honour to submit to the World Radiocommunication Conference (WRC-2000), in annex to this document, the Agreement between the Government of Turkey and the Secretary-General of the International Telecommunication Union relating to the organization, holding and financing of the Radiocommunication Assembly and the World Radiocommunication Conference as well as other meetings of the Radiocommunication Sector.

Yoshio UTSUMI
Secretary-General

Annex: 1

AGREEMENT

between the

GOVERNMENT OF TURKEY

and the

SECRETARY-GENERAL

of the

INTERNATIONAL TELECOMMUNICATION UNION

relating to

THE ORGANIZATION, HOLDING AND FINANCING
OF THE
RADIOCOMMUNICATION ASSEMBLY
AND THE
WORLD RADIOCOMMUNICATION CONFERENCE

as well as
OTHER MEETINGS OF THE RADIOCOMMUNICATION SECTOR

(Istanbul, 2000)

In accordance with Resolution 77 (§1.2 and §1.3) of the Plenipotentiary Conference (Minneapolis, 1998) of the International Telecommunication Union (hereinafter referred to as "the ITU"), on Future Conferences and Assemblies of the Union, Resolution 5 of the Plenipotentiary Conference (Kyoto, 1994), relating to invitations to hold conferences or meetings away from Geneva, and Resolution No. 83 (amended) of the ITU Council concerning the organization, financing and liquidation of the accounts of ITU conferences and meetings, the Government of Turkey (hereinafter referred to as "the Government"), and the Secretary-General of the ITU (hereinafter referred to as "the Secretary-General"), (collectively referred to as the "Parties"), have concluded the present Agreement relating to the organization, holding and financing of the Radiocommunication Assembly ("RA") and the World Radiocommunication Conference ("WRC") and other meetings of the Radiocommunication Sector as described below (hereinafter referred to collectively as "the Conference"), under the terms and conditions set forth below:

ARTICLE I

Seat and Dates of the Conference

1.1 The Conference shall be held at the Istanbul Convention and Exhibition Centre in Istanbul, Turkey during the period 1 May 2000 through 10 June 2000.

1.2 The official opening of the RA shall take place on Monday, 1 May 2000 and it shall conclude on Friday, 5 May 2000.

1.3 The official opening of the WRC shall take place on Monday, 8 May 2000 and the WRC shall, in principle, complete its work on Friday, 2 June 2000.

1.4 The Government shall make available space in the Convention and Exhibition Centre for the period 5 June through 10 June 2000 for other meetings of the Radiocommunication Sector, including the Conference Preparatory Meeting for the next World Radiocommunication Conference and the Meeting of the Chairpersons and Vice-Chairpersons of Study Groups.

ARTICLE II

Invitations and Admission

2.1 In accordance with Decision No. 304 of the Council, reconfirmed in its Resolution No. 1004, the Government shall apply to the Conference the provisions of the Constitution and Convention of the ITU (Geneva, 1992; as amended in 1994 and 1998) (hereinafter respectively referred to as the "Constitution" and the "Convention") without reservation with the exception of those made by the Turkish Delegation when signing the Final Acts of the Additional Plenipotentiary Conference (Geneva, 1992).

2.2 In accordance with the provisions of Article 24 of the Convention and of Resolution No. 741 of the ITU Council, invitations to take part in the WRC shall be sent directly by the Government to the ITU Member States with which the Government has diplomatic relations, and through the Secretary-General, on behalf of the Government, to the ITU Member States with which the Government does not have diplomatic relations, as well as to Sector Members and those organizations and entities which may participate in the WRC as observers. The Government shall provide the ITU with a list of ITU Member

States with which it does not have diplomatic relations within two (2) weeks following the date of entry into force of the present Agreement.

2.3 In accordance with the provisions of Article 25 of the Convention and of Resolution No. 741 of the ITU Council, invitations to take part in the RA shall be sent by the Secretary-General, after consultations with the Director of the Radiocommunication Bureau.

2.4 Invitations to take part in the meetings listed in section 1.4 above shall be sent by the Director of the Radiocommunication Bureau.

2.5 The Government, in its capacity as host Government, shall authorize Conference Participants and all participating ITU officials to enter Turkey and remain there throughout the duration of their duties or mission in connection with the Conference; such authorization shall also apply to their accompanying spouses and minor children.

ARTICLE III

Privileges and Immunities

3.1 In accordance with the relevant provisions of the International Telecommunication Regulations (Melbourne, 1988) and of No. 129 of the Rules of Procedures of Conferences and other Meetings of the ITU (formerly No. 467 of the Convention (Geneva, 1992)), the Government shall grant telegram, telephone (including fax) and telex franking privileges and facilities to all the persons referred to in those provisions, who shall, before the opening of the Conference, be notified of the specific conditions governing these privileges.

3.2 Within the framework of the present Agreement and its implementation, the Government shall apply for the Conference, by analogy, the provisions of the Convention on the Privileges and Immunities of the United Nations, adopted by the General Assembly of the United Nations on 13 February 1946 (hereinafter referred to as the "1946 Convention"), to which Turkey has been a Party since 22 August 1950 (see also ITU Council Resolution No. 1004, confirming its earlier Resolution No. 193).

3.3 Subject to the provisions of paragraph 3.4 below, the facilities, privileges and immunities specified in the 1946 Convention shall be granted mutatis, mutandis to all Conference Participants and participating ITU officials, including their accompanying spouses and minor children, as appropriate, for their stay in Turkey, for the duration of the Conference and for a period of ten (10) days prior to the Conference and five (5) days after the Conference.

3.4 Locally recruited staff performing functions for the Conference shall be under the supervision of the Secretary-General and shall enjoy all necessary facilities required for the independent exercise of their functions in connection with the Conference, including for any action performed or words spoken in their official capacity.

3.5 Within the framework of the present Agreement and its implementation, the term "Conference Participant" is understood to mean any delegate, representative or observer invited by the Government or the Secretary-General to attend the Conference (see Article II above), including those referred to in Resolution No. 741 of the ITU Council as well as the members of the Radio Regulations Board.

3.6 The ITU and the Government shall cooperate at all times to facilitate the proper administration of justice, secure the observance of relevant Turkish Laws and Regulations and prevent any abuse in connection with the privileges, immunities and facilities provided for in this Agreement.

ARTICLE IV

Financial Arrangements

4.1 In accordance with Resolution No. 5 of the ITU Plenipotentiary Conference (Kyoto, 1994), the Government shall bear any additional expenditures incurred as a result of the Conference being held in Turkey, as set forth in *Annex 1*, in particular such expenditures concerning the travel of ITU officials and the transport of any equipment and documentation required for the proper functioning of the Conference Secretariat, and any expenditures related to the staff, services and facilities listed in *Annex 2* to the present Agreement.

4.2 The Government shall deposit in Swiss Francs, not later than 15 February 2000, into a special account to be opened by the ITU at a bank in Geneva, a sum equivalent to ninety per cent (90%) of the estimated additional costs to be incurred by the ITU as a result of the Conference being held in Istanbul, as specified in *Annex 1* under the heading "Additional Expenditures".

4.3 The Government shall also bear any expenditures relating to receptions and other events organized by the Turkish authorities on the occasion of, and related to, the Conference.

4.4 All other expenditures directly related to the Conference, including salaries for all officials of the ITU and damage caused to Conference premises, persons or property, by participating ITU officials (excluding normal wear and tear), shall be borne by the ITU. Estimated ITU additional expenditures shall be specified in *Annex 1*. Such expenditures shall be recorded in special accounts, to be maintained by the General Secretariat of the ITU, which shall be responsible for managing the necessary funds, in accordance with the instructions issued to it by the Budget Control Committee of the Conference. These accounts shall be kept in Swiss Francs.

4.5 As soon as possible and at the latest five (5) months after the close of the Conference, the ITU shall prepare a statement of account indicating the sums paid by the Government to the ITU and the amounts paid by the ITU for facilities and services chargeable to the Government; the balance of this account shall be settled within three (3) months of receipt of the said statement by the Government or the ITU as the case may be. The Government shall have the right to seek and obtain justification for any amounts contained in the statement.

4.6 Except as provided in 4.4, the ITU shall not be held responsible for any damage or risk to the premises, persons or property of the Conference.

4.7 The payments provided for in 4.2 and 4.5 shall be made in Swiss Francs, unless otherwise requested by the ITU.

4.8 Subject to 4.1, the ITU shall submit to the Government for its approval the list of estimated additional expenditures in *Annex 1* not later than six (6) months prior to the commencement of the Conference. Subsequently, the ITU shall inform the Government

of any significant modifications to the additional expenditures listed in *Annex 1;* any such modifications shall be subject to the approval of the Government.

ARTICLE V

Staff, Facilities and Services to be Provided by the Government

5.1 The Government shall provide the ITU, free of charge, with the staff, facilities and services listed in *Annex 2* to the present Agreement.

5.2 Any Conference Participant or participating ITU official shall have access to the Istanbul Convention and Exhibition Centre at any time (day or night), including public holidays; such access may also be extended to other persons, subject to prior agreement between the competent Turkish authorities and the ITU. If necessary, the Parties to the present Agreement shall decide on the specific conditions applicable to such access.

5.3 Material, equipment and documents belonging to the ITU and required for the proper functioning of the Conference shall be imported into Turkey without taxes, customs duties, prohibitions or restrictions. The Government shall issue to the ITU, as soon as possible, any necessary import or export permits for this purpose.

ARTICLE VI

Travel and Transport Arrangements

6.1 The Secretary-General shall make all necessary arrangements for the travel of ITU officials detached to the Conference and for the transport to the site of the Conference of all material required for the efficient functioning of the Conference Secretariat, in accordance with the relevant provisions of the ITU Staff Regulations and Rules and the relevant decisions of the Council in that connection.

6.2 The Government shall bear the cost of transportation, lodging and subsistence for participating ITU officials.

ARTICLE VII

Arrangements Concerning Relations with the Media and the Press

7.1 All official relations with the media and the press with regard to the preparation, progress and follow-up of the Conference shall be the responsibility of the Secretary-General or his designated representative, in cooperation with the competent authorities designated by the Government.

7.2 The Secretary-General or his designated representative shall exercise this responsibility in conformity with the practice generally followed at other conferences and meetings of the ITU.

ARTICLE VIII

Cancellation, Postponement and Change of Venue of the Conference

8.1 In the event of cancellation, postponement or change of venue of the Conference as the result of a decision adopted by the ITU, the liability of the ITU towards the Government shall be limited to the obligations contracted or payments already incurred in connection with the organization and preparation of the Conference, insofar as such expenditures no longer serve any useful purpose and provided that they were essential and cannot be cancelled or reduced.

8.2 In the event of cancellation, postponement or change of venue of the Conference as a result of a decision of the Government, the liability of the Government towards the ITU shall be limited to the resulting expenditures for such action, in particular all expenses already committed or paid by the ITU in connection with the Conference, in so far as such expenditures no longer serve any useful purpose and provided that they were essential and cannot be cancelled or reduced.

8.3 In the event of a case of force majeure causing or likely to cause cancellation, postponement, interruption or change of venue of the Conference, the Parties undertake to enter into negotiations within five (5) days of receipt of written notice by either of the Parties of such an event, in order to reach agreement on the practical, financial and legal consequences of the said case of force majeure. Such agreement shall be concluded within seven (7) days from the beginning of negotiations and in accordance with the provisions of Article XIII below. Should the Parties fail to reach an agreement, the dispute shall be settled in accordance with the provisions of Article X below.

ARTICLE IX

Implementation of the Present Agreement

Arrangements for the implementation of the present Agreement shall be agreed between the Secretary-General or his designated representative and the competent authorities of the Government, or its designated liaison officer.

ARTICLE X

Settlement of Disputes

10.1 Any dispute arising between the Parties concerning the interpretation or implementation of the present Agreement which cannot be settled amicably by negotiation between the Parties or any other mutually-agreed means, shall be referred to a Board of three (3) arbitrators (hereinafter referred to as "the Board"). One of the arbitrators shall be nominated by the Secretary-General and another by the Government. The two arbitrators thus nominated shall nominate a third arbitrator as Chairman of the Board. Should either of the Parties fail to nominate its arbitrator within two (2) months of notification by the other Party of the name of its arbitrator, or should the two arbitrators so nominated fail to nominate a Chairman within two (2) months of the nomination of the second arbitrator, the missing arbitrator (or, as appropriate, the Chairman) shall be nominated by the President of the International Court of Justice.

10.2 The language of arbitration shall be English and the place of arbitration shall be Geneva.

10.3 Unless otherwise stipulated by the Parties in writing, the Board shall be fully responsible for deciding the procedures to be followed and for allocating between the Parties the costs related to the arbitration.

10.4 The Parties to the present Agreement agree that the Board's decision shall be final and binding upon them, and that no appeal of the decision may be brought before any national court or tribunal.

ARTICLE XI

Liability

11.1 The Government shall be responsible for dealing with any action, claim or other demand against the ITU or its officials and arising out of:

a) injury to persons or damage to or loss of property in the premises referred to in Article I that are provided by or are under the control of the Government, other than damage for which the ITU is responsible under the provisions of 4.4;

b) injury to persons, or damage to or loss of property caused by, or incurred in using, the transport services referred to in *Annex 2;*

c) the employment for the Conference of personnel provided by the Government under the present Agreement, including any actions or claims of any nature made by such personnel.

11.2 The Government shall indemnify and hold harmless the ITU and its officials in respect of any such action, claim or other demand.

ARTICLE XII

Use of Name, Title and Logo

12.1 The Parties agree that the name, title and logo for the RA and the WRC and the name, logo, flag and symbol of the ITU shall be used exclusively by the ITU and that they shall not be used by the Government without the prior written consent of the ITU.

12.2 The ITU shall retain all intellectual property rights to the name, title and logo of the RA and WRC.

12.3 The Government shall be authorized to use the title and logo of the Conference for the following purposes:

a) the RA and WRC Newsletter and Internet Home Page;

b) publications whose text is approved by the ITU prior to publication;

c) advertisements in local or international media, the contents of which shall be subject to prior approval by the ITU, aimed at informing potential participants of logistical arrangements for the Conference and other relevant information;

d) Conference-related press conferences, or other events, which may be necessary during the preparation of the RA or WRC.

ARTICLE XIII

Modification and Termination of the Present Agreement

The present Agreement, of which *Annexes 1* and *2* form an integral part, may not be modified or terminated except by written agreement between the Government and the Secretary-General. Any modification shall be considered an integral part of the present Agreement.

ARTICLE XIV

Provisional Application, Entry into Force and Duration of the Present Agreement

14.1 This Agreement shall enter into force when the Government has notified the Secretary-General of the ITU that the required national regulatory procedures have been completed.

14.2 The official date of entry into force shall be the date of receipt by the ITU of such notification.

14.3 The Parties agree to apply all the relevant clauses of this Agreement, on a provisional basis, as from the date of its signature.

14.4 The provisions of this Agreement shall remain applicable until the final settlement between the Parties, in accordance with the terms and conditions of the present Agreement, of all organizational, financial and related matters in connection with the Conference.

IN WITNESS THEREOF, the undersigned, duly authorized to that effect, have signed the present Agreement in two (2) original copies in English.

Geneva, 16 December 1999

For the Government of Turkey

Fatih YURDAL
Director General
Turk Telekom

For the International Telecommunication Union

Yoshio UTSUMI
Secretary-General

ANNEX 1

ADDITIONAL EXPENDITURE OCCASIONED BY THE HOLDING OF THE RADIOCOMMUNICATION ASSEMBLY AND THE WORLD RADIOCOMMUNICATION CONFERENCE

as well as

OTHER MEETINGS OF THE RADIOCOMMUNICATION SECTOR in ISTANBUL, 2000

	Expenditure of the Conference if held in Geneva	**Expenditure of the Conference in Istanbul**	**Difference**
		Swiss francs	
Staff costs			
- Salaries - Interpreters	1'371'000	1'218'000	- 153'000
- Travel for the recruitment of interpreters for Geneva	91'000	-	- 91'000
- Insurance	3'000	2'000	- 1'000
Total of staff costs	**1'465'000**	**1'220'000**	**- 245'000**
Travel on duty			
- Per diem	-	2'354'000	2'354'000
- Travel expenses	-	792'000	792'000
- Transport and dispatch costs	-	200'000	200'000
- Travel for the preparation of the Conferences	-	50'000	50'000
Total of travel on duty	**-**	**3'396'000**	**3'396'000**
Provision for miscellaneous and unforeseen	**10'000**	**60'000**	**50'000**
Sums to be credited to the Host Administration			
- Local staff (if provided by the Host Administration)	180'000	-	- 180'000
- Provision for equipment, premises, etc	86'000	-	- 86'000
Total to be credited to the Host Administration	**266'000**	**-**	**-266'000**
TOTAL	**1'741'000**	**4'676'000**	**2'935'000**

Basis: exchange rate at 1st November 1999: 1 US$ = 1.53 Swiss franc - Basic per diem: 160 US$

ANNEX 2

Staff, Facilities and Services to be Provided for the Conference by the Government of Turkey

In accordance with Articles I and V of this Agreement, the Government shall make available to the ITU, free of charge, the following staff, facilities and services as necessary and in a manner that the ITU considers adequate to ensure the proper functioning of the Conference:

1. The Government shall provide, in a timely manner, and maintain in good repair, the furniture, furnishings and equipment, including but not limited to sound equipment, PCs (recent-model PCs with audio capabilities) with software and keyboards in the languages required, printers, documents reproduction and printing facilities, photocopying machines for the Secretariat, telephones, fax machines and electrical connections for electronic terminals for the Conference premises at the Istanbul Convention & Exhibition Centre.

2. The Government shall provide the following premises and facilities for the Conference for the period 24 April - 10 June 2000, except as otherwise stated:

   a) A main conference room capable of accommodating at least two thousand (2000) persons (which can be divided into two (2) rooms of one thousand (1000) persons each), booths and equipment for simultaneous interpretation in six (6) languages, one microphone for every two (2) participants, a podium with twelve (12) seats, a public address system, a very big screen, one (1) PC and SVGA-compatible data/video projection facilities. At least two (2) video cameras, associated switching equipment, and a Betacam SP video recorder. Recording of the meetings: two (2) copies of the floor and one (1) copy of the English Channel. One (1) phone, local line, with ringing lamp. Connection to some offices for the audio/video system. Electronic Message Board. Equipment and connections needed for video/audio Internet Broadcast (IBS) of all languages in sound control booths or other place where audio is available from floor + interpreters. One (1) more PC for video, with network connections for all PCs and IBS equipment.
   Dates: 3 May - 3 June 2000 + one (1) room from 6 to 9 June 2000.

   b) One (1) conference room capable of accommodating approximately one thousand (1000) persons, booths and equipment for simultaneous interpretation in six (6) languages, one (1) microphone for every two (2) participants, a podium with eight (8) to ten (10) seats, a public address system, a big screen, one (1) PC and SVGA-compatible data/video projection facilities. At least two (2) video cameras, associated switching equipment, and a Betacam SP video recorder. Recording of the meetings: two (2) copies of the floor and one (1) copy of the English Channel. One (1) phone, local line, with ringing lamp. Connection to some offices for the audio/video system. Electronic Message Board. Equipment and connections needed for video/audio Internet broadcast (IBS) of all languages in sound control booths or other place where audio is available from floor + interpreters. One (1) more PC for video, with network connections for all PCs and IBS equipment.
   Dates: 28 April - 3 June 2000.

c) Two (2) other conference rooms, capable of accommodating approximately three hundred (300) persons each, booths and equipment for simultaneous interpretation in six (6) languages, one (1) microphone for every two (2) participants, a podium with six (6) seats. One (1) phone, local line, with ringing lamp. Electronic Message Board.
Dates: one (1) room from 29 April - 3 June 2000; the other from 5 May - 9 June 2000.

d) Four (4) meeting rooms, with a capacity of fifty (50) to one hundred (100) persons each, with microphones. One (1) phone, local line, with ringing lamp. Electronic Message Board.
Dates: 28 April - 3 June 2000.

e) Two (2) rooms, with a capacity of thirty (30) seats each, for the Editorial Committee.
Dates: 28 April - 3 June 2000.

f) One (1) room with a capacity of thirty (30) seats for COM 1.
Dates: 28 April - 3 June 2000.

All conference rooms shall be equipped with tables (desk-type) for Conference Participants; water pitchers and glasses shall be available on the podiums, at the entrances to the rooms and in the interpretation booths.

g) Offices for the Chairperson of the Conference, Vice-Chairs, Chairs and Secretaries of Committees, and for the elected officials of the ITU.

h) Offices for the ITU staff and the local Secretariat. The offices for the ITU staff and the spaces allotted for documents reproduction, documents distribution and participants registration shall be available one (1) week before the opening date of the RA.

i) Adequate space for a payable cafeteria service (at a prevailing market price) during morning and afternoon breaks and for luncheon, with seating, as well as “coffee islands”, from 8 a.m. to 6 p.m. and, if required, for evening/night sessions.

j) An area for the reception and registration of Conference Participants.

k) An area equipped with PCs with Internet access, laptop connections, printers, and modems for the use of Conference Participants.

l) Technical area for servers and networking equipment available at least two (2) weeks before start of the Conference.

m) Cloakrooms.

3. The Government shall provide the Conference with local staff, at no cost to the ITU, in accordance with the arrangements specified in the staffing table to be agreed by the Parties.

4. The Government shall also provide the following:

a) Local Area Network (LAN) equipment to be used at the Centre, including servers, hubs, switches, routers, network adapters, wiring and associated software, as needed. The LAN must include all ITU office areas, registration and document preparation areas in a single network. The network must be installed, tested and operational before the arrival of the first secretariat staff.

b) Redundant and space diverse international circuits to link ITU headquarters in Geneva with the LAN at the Centre.

c) Air-conditioning (or heating) at a constant temperature of twenty (20) degrees Celsius, lighting, water and cleaning of the Conference premises described above for the period 25 April - 10 June 2000.

d) Security measures to ensure the efficient functioning of the Conference in an atmosphere of security and tranquility, free from interference of any kind.

e) First-aid facilities within the Conference Centre; for emergency services, the Government shall ensure immediate transportation and admission to a hospital.

f) Entry visas and permits for all Conference Participants, ITU officials and staff, and their accompanying spouses and minor children, as promptly as possible.

g) A service for the reservation of hotel rooms for Conference Participants and for participating ITU officials, at reasonable commercial rates. It is understood that such reservations shall not entail any liability on the part of the Government or the ITU.

h) Telecommunication services (telephone, GSM phones for local communications (two (2) of them with international access), group 3 facsimiles, and Internet access) in accordance with the provisions of Article III of this Agreement.

i) Reception and information services for Conference Participants in English, French and Spanish.

j) Reception of Conference Participants and participating ITU officials at the airport.

k) A Travel Agent, with a temporary office in the Centre with functions to include reconfirming, rerouting and issuing air tickets.

l) Transport for ITU staff to and from the airport and their hotels and, on a daily basis, to and from their hotels and the Conference Centre.

m) Transport for the participants upon arrival at the airport to their hotels will be provided on: 29 and 30 April and on 6, 7 and 8 May 2000.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 119-E
18 April 2000
Original: French
English
Spanish

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

France

PFD LIMITS FOR THE RADIONAVIGATION-SATELLITE SERVICE

(AGENDA ITEM 1.15.1)

This document provides the background for the preliminary power flux-density levels proposed in Document WRC2000/13, Part 2B for:

- RNSS systems in the 1 151-1 215 MHz band in order to protect aeronautical radio navigation service systems.
- RNSS space stations in the 1 215-1 300 MHz band in order to protect radiolocation and other services in this band.
- Unwanted emission in the 4 990-5 000 MHz band from RNSS systems operating in the band 5 010-5 030 MHz in order to protect radio astronomy stations.

1 1 151-1 215 MHz

The preliminary power flux-density limit proposed is based on the protection requirement of Distance Measurement Equipment defined in ICAO Annex 10.

The calculation spreadsheet in the following table shows how the maximum power flux-density level (–111 dBW/m^2/MHz) proposed in the European Common Proposal for a single radionavigation-satellite system, has been derived from the protection requirement of DME. This value takes into account safety margin and apportionment of interference between the radionavigation-satellite service and the other services.

The DME protection ratio used in the calculation of the preliminary pfd limit for RNSS is the figure specified for the DME versus co-channel DME scenario. This is the worst-case DME planning scenario in which the unwanted DME signal is at the same frequency using the same pulse code and therefore synchronized with the wanted DME. It was assumed that RNSS interference into DME would not be any worse than that from such a synchronized DME signal.

		Units	Comment	Source
A	–89	dBW/m^2	DME minimum wanted signal everywhere in a DME transponder coverage	ICAO Annex 10 (section 3.5.4.1.5.3)
B	8	dB	Minimum (DME wanted signal)/(Interfering signal from unwanted DME)	ICAO Annex 10 (section 3.5.5.3.4.1)
C	6	dB	Safety margin	
D	–103	dBW/m^2	DME protection requirement	D=A-B-C
E	0	dB	DME antenna discrimination	
F	0	dB	Bandwidth factor, considering a maximum DME receiver bandwidth of 1 MHz	
G	–103	dBW/m^2/MHz	DME protection requirement in terms of spectral power flux-density	
H	3	dB	50% interference from RNSS 50% other services	
I	5	dB	Provision for a maximum three co-channel RNSS systems, if applicable	
J	–111	dBW/m^2/MHz	Maximum power flux-density per one RNSS system for DME protection	J=G-H-I

2 1 215-1 300 MHz

The sharing scenario in the band 1 260-1 300 MHz is considered to be similar to the band 1 215-1 260 MHz where radionavigation-satellite systems have been in operation successfully for several years for non-safety of life applications. Hence, any interference that may have occurred from present RNSS systems to radiolocation systems is obviously not harmful.

Therefore, the methodology to evaluate the preliminary limit proposed for the radionavigation-satellite space station in the 1 215-1 300 MHz band is to determine the current maximum power flux-density and to apply a 3 dB margin in order not to constrain existing signals. The value of –133 dBW/m^2/MHz for the maximum spectral power flux-density for one space station within any radionavigation-satellite service (space-to-Earth) system operating in the 1 215-1 300 MHz band, is therefore proposed in the European Common Proposals.

This pfd limit is fully compatible with existing RNSS systems, so radars operating below 1 260 MHz can be provided with the same protection as radars above 1 260 MHz without any constraint on existing GPS or Glonass.

The table below shows the calculation based on Glonass C/A code:

A	–167	dBW	Minimum received power level for Glonass C/A in L2	M.1317
B	–23.7	dBm²	Effective area of 0 dBi antenna	
C	–143.3	dBW/m²	Minimum pfd level for 1 satellite	C=A-B
D	10	dB	Maximum/minimum pfd ratio	(2 dB end-of-life margin, 2 dB implementation margin, 3 dB variation from isoflux) 3 dB additional margin in order not to constrain the existing signal
E	–133.3	dBW/m²	Maximum pfd level	E=C+D
F	0	dB	Ratio between total power and power in 1 MHz	
G				
H	–133.3	dBW/m²/MHz	Maximum pfd **per satellite** for **Glonass C/A** characteristics	

The table below shows the calculation based on GPS P code:

A	–166	dBW	Minimum received power level for GPS P code in L2	M.1088
B	–23.7	dBm²	Effective area of 0 dBi antenna	
C	–142.3	dBW/m²	Minimum pfd level for 1 satellite	C=A-B
D	10	dB	Maximum/minimum pfd ratio	(2 dB end-of-life margin, 2 dB implementation margin, 3 dB variation from isoflux) 3 dB additional margin in order not to constrain the existing signal
E	–132.3	dBW/m²	Maximum pfd level	E=C+D
F	9.9	dB	Ratio between total power and power in 1 MHz	
G				
H	–142.2	dBW/m²/MHz	Maximum pfd **per satellite** for **GPS P code** characteristics	

3 4 990-5 000 MHz

The protection requirement of radio astronomy is defined in Recommendation ITU-R RA.769-1. “Protection criteria used for radio astronomical measurements”.

A draft new Recommendation: “Levels of data loss to radio astronomy observations and percentage-of-time criteria resulting from degradation by interference for primary radio astronomy bands” has recently been approved by ITU-R Working Party 7D (Document ITU-R 7D/TEMP/59 (Rev.1)).

In the Annex to Recommendation ITU-R RA.769-1 the sensitivity of radio astronomy instrumentation is explained and sample values of interference threshold levels are given in tables. For the band in question, 4 990-5 000 MHz, a pfd limit of –171 dB(W/m^2/10 MHz) and –241 dB(W/m^2/Hz) are given for integration times of 2 000 s. The measurement bandwidth of radio astronomy assumed in Recommendation ITU-R RA.769 in this frequency band is 10 MHz so that the European proposal has been based on the figure of –171 dBW/m^2 in 10 MHz.

Recommendation ITU-R RA.769, however, does not define explicitly the percentage of time for which this level applies. A draft new Recommendation was approved during the last ITU-R Working Party 7D (Orlando, January 2000), which defines that the percentage of data loss caused by any system should be lower than two per cent. The relationship between the percentage of data loss (corresponding to an integration time of 2 000 s.) and the percentage of time is not evident. However, a conservative assumption is to consider that a system which would not exceed the protection criteria for more than two per cent of the time would not cause more than two per cent of the data to be lost.

Also, it is noted that further studies are ongoing in the framework of ITU. The following issues may need to be addressed:

– the analysis method (epfd, sky blockage);

– applicability of limits for GSO satellites.

It should be noted that Recommendation 66 also requires further studies.

The European Common Proposal therefore suggests the addition of the following footnote:

> "In order not to cause harmful interference to the radio astronomy service in the band 4 990-5 000 MHz, the aggregate power flux-density radiated in the 4 990-5 000 MHz band by all the space stations within any RNSS (space-to-Earth) system operating in the 5 010-5 030 MHz band shall not exceed the level of –171 dB(W/m^2) in a 10 MHz bandwidth into any radio astronomy observatory site for more than two per cent of time."

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

France

PROPOSALS FOR THE WORK OF THE CONFERENCE

DELETION OF COUNTRY NAMES FROM FOOTNOTES TO THE TABLE OF FREQUENCY ALLOCATIONS

(AGENDA ITEM 1.1)

Within the framework of agenda item 1.1 of WRC-2000, it is proposed to delete the country name "France" from the footnotes listed below.

MOD F/120/1

S5.112 *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Denmark, ~~France,~~ Greece, Iceland, Italy, Malta, Norway, Sri Lanka, Turkey and Yugoslavia, the band 2 194-2 300 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

Reasons: No longer required.

MOD F/120/2

S5.114 *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Denmark, ~~France,~~ Greece, Iraq, Italy, Malta, Norway, Turkey and Yugoslavia, the band 2 502-2 625 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

Reasons: No longer required.

MOD F/120/3

S5.117 *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Côte d'Ivoire, Denmark, Egypt, ~~France,~~ Greece, Iceland, Italy, Liberia, Malta, Norway, Sri Lanka, Togo, Turkey and Yugoslavia, the band 3 155-3 200 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

Reasons: No longer required.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

New Zealand

PROPOSAL FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 7.2

Agendas for future conferences

NZL/121/1

Proposal

It is proposed that an item be included in the Resolution referring to the agenda for WRC-05 as follows:

……

resolves to give the view

that the following items should be included in the preliminary agenda of WRC-05:

x to review the possibility for additional allocations for the fixed services in the bands above 3 GHz.

Reasons: Over the last few radiocommunication conferences there has been a number of allocation changes in support of the introduction of new mobile and satellite technologies that have severely impacted on the availability of the spectrum for the fixed services. At the same time the demand for spectrum in the fixed services has increased to the point where, in some countries, there are difficulties in finding suitable allocations for this service. The purpose of this agenda item is to facilitate the sharing studies leading up possible additional allocations to the fixed services.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Corrigendum 1 to Document 122-E 9 May 2000 Original: French

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

Cameroon (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

1 Delete the text of § 5 on pages two and three (English version) in its entirety.

2 On page three, delete proposal CME/122/6.

3 On page four, delete proposal CME/122/7.

4 On page six, delete proposal CME/122/8.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 122-E
20 April 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Cameroon (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

1 Introduction

For its development, Cameroon pins considerable hopes on international cooperation, in particular in the current age of globalization.

In today's international environment, liberalization of the economy is the order of the day. It is with this in mind that Cameroon decided to withdraw State involvement in productive sectors, one of the most important of these being telecommunications, particularly the operational side.

Thus, the restructuring of the telecommunication sector undertaken by the Cameroon Government has resulted in separation of the policy and regulatory functions from the operating function, and privatization of the latter.

The main aim of this restructuring is smooth development of the telecommunication sector in a competitive environment, securing private-sector participation, in order to ensure that the private sector contributes to the development of the national economy and to meeting the needs of users and of the country's population.

In view of Cameroon's relief and geographical situation, radiocommunications are destined to play a major role in the development of telecommunications planned within the institutional and legal framework that has been established.

It is in the midst of this wave of liberalization/privatization that Cameroon is participating in the 2000 World Radiocommunication Conference (WRC-2000), the first to take place in the third millennium, and makes the following proposals for the work of the conference:

2 Agenda item 1.1 - To consider and take appropriate action in respect of requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, in accordance with Resolution 26 (Rev.WRC-97)

Summary of Cameroon's views:

Consideration of footnotes concerning Cameroon not yet having been properly completed, no proposals are made to delete footnotes or Cameroon's name from such footnotes. It is desirable

that any administration proposing deletion of footnotes or of its country's name should first consult neighbouring administrations.

Cameroon supports any such deletions where they serve to improve safety of life and property, in particular in the field of radionavigation.

3 Agenda item 1.2 - To finalize remaining issues in the review of Appendix S3 to the Radio Regulations with respect to spurious emissions for space services, taking into account Recommendation 66 (Rev.WRC-97) and the decisions of WRC-97 on adoption of new values, due to take effect at a future time, of spurious emissions for space services

Summary of Cameroon's views:

Cameroon has no particular proposal to make on this item. However, the maximum permitted power levels of spurious emissions for space services adopted by WRC-2000 should be such as to ensure the protection of other services.

4 Agenda item 1.3 - To consider the results of ITU-R studies in respect of Appendix S7/28 on the method for the determination of the coordination area around an earth station in frequency bands shared among space services and terrestrial radiocommunication services, and take the appropriate decisions to revise this Appendix

Summary of Cameroon's views:

In respect of the revision of Appendix S7/28 of the Radio Regulations, Cameroon has an open mind on the five approaches proposed in the CPM Report. WRC-2000 might call for further studies after examining the results of Task Group 1/6 of ITU-R Study Group 1.

5 Agenda item 1.4 - To consider issues concerning allocations and regulatory aspects related to Resolutions 126 (WRC-97), 128 (WRC-97), 129 (WRC-97), 133 (WRC-97), 134 (WRC-97) and 726 (WRC-97)

Summary of Cameroon's views:

Cameroon has no specific proposals in respect of the use of the bands above 30 GHz addressed in the six resolutions under agenda item 1.4, except to underline the importance of high-density systems in the fixed service. Cameroon proposes that the band 31.8-33.4 GHz should be available for high-density fixed-service systems and should not be shared with the space research service.

SUP CME/122/1

S5.547A

MOD CME/122/2

S5.547B *Alternative allocation*: in the United States, the band 31.8-32 GHz is allocated to the radionavigation ~~and space research (deep space) (space-to-Earth)~~ services ~~on a primary basis.~~

MOD CME/122/3

S5.547C *Alternative allocation*: in the United States, the band 32-32.3 GHz is allocated to the inter-satellite~~,~~ and radionavigation ~~and space research (deep space) (space-to-Earth)~~ services on a primary basis.

MOD CME/122/4

29.9-34~~,~~.2 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
31.8-32	FIXED S5.547A RADIONAVIGATION ~~SPACE RESEARCH (deep space) (space-to-Earth)~~ S5.547 S5.547B S5.548	
32-32.3	FIXED S5.547A INTER-SATELLITE RADIONAVIGATION ~~SPACE RESEARCH (deep space) (space-to-Earth)~~ S5.547 S5.547C S5.548	

6 Agenda item 1.5 - To consider regulatory provisions and possible additional frequency allocations for services using high altitude platform stations, taking into account the results of ITU-R studies conducted in response to Resolution 122 (WRC-97)

Summary of Cameroon's views:

WRC-2000 should instruct ITU-R to continue studies on additional allocations for services using high altitude platform stations.

MOD CME/122/5

S5.552A The allocation to the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz is designated for use by high altitude platform stations. The use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz is subject to the provisions of Resolution **122 (Rev.WRC-~~97~~2000)**.

MOD CME/122/6

RESOLUTION 122 (Rev.WRC-~~97~~2000)

(See Annex CME/1.)

7 Agenda item 1.6

WRC-2000 agenda item 1.6 deals with issues related to International Mobile Telecommunications-2000 (IMT-2000).

Agenda item 1.6.1 - Review of spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Frequency Allocations as necessary

Summary of Cameroon's views:

Cameroon has some concerns and questions with regard to third-generation mobiles. Its concerns relate, among other things, to its low telephone penetration, the fact that the benefits of the spectacular boom in mobiles have not yet been felt, towns with scattered dwellings and sparsely populated rural areas. Is IMT-2000 an appropriate solution in this context? Are multimedia, high-speed data transmission and videoconferencing priorities?

Cameroon nevertheless believes that second-generation mobiles must evolve towards third-generation mobiles. Thus, the frequency bands identified for these services could be used in the future by IMT-2000. These bands include in particular 470-806 MHz and 806-960 MHz. WRC-2000 could instruct ITU-R to carry out the necessary studies.

Agenda item 1.6.2 - Identification of a global radio control channel to facilitate multimode terminal operation and worldwide roaming of IMT-2000

Summary of Cameroon's views:

Cameroon has an open mind on this issue.

8 Agenda item 1.7 - Review of the use of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting operational, distress and safety communications, taking into account Resolution 346 (WRC-97)

Summary of Cameroon's views:

In reviewing the use of the HF bands by the aeronautical-mobile (R) and maritime mobile services with a view to protecting operational, distress and safety communications, Cameroon proposes that Article S52 of the Radio Regulations be amended.

MOD CME/122/7

ARTICLE S52

(See Annex CME/2.)

9 Agenda item 1.8 - To consider regulatory and technical provisions to enable earth stations located on board vessels to operate in the fixed-satellite service (FSS) networks in the bands 3 700-4 200 MHz and 5 925-6 425 MHz, including their coordination with other services allocated in these bands

Summary of Cameroon's views:

Cameroon supports the African Group's proposal on this item. Nevertheless, the case of very small aperture terminals (VSAT) having a notifying administration could be given particular consideration.

10 Agenda item 1.9 - To take into account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-Earth direction to the mobile-satellite service (MSS) in a portion of the 1 559-1 567 MHz frequency range, in response to Resolutions 213 (Rev.WRC-95) and 220 (WRC-97)

Summary of Cameroon's views:

Cameroon supports the African Group's proposal on this item.

11 Agenda item 1.10 - To consider results of ITU-R studies carried out in accordance with Resolution 218 (WRC-97) and take appropriate action on this subject

Summary of Cameroon's views:

Cameroon has an open mind on this item.

12 Agenda item 1.11 - To consider constraints on existing allocations and to consider additional allocations on a worldwide basis for the non-geostationary (non-GSO) MSS below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolutions 214 (Rev.WRC-97) and 219 (WRC-97)

Summary of Cameroon's views:

Cameroon supports the African Group's proposal on this item.

13 Agenda item 1.12 - To consider the progress of studies on sharing between feeder links of non-GSO MSS networks and GSO FSS networks in the bands 19.3-19.7 GHz and 29.1-29.5 GHz, taking into account Resolution 121 (Rev.WRC-97)

Summary of Cameroon's views:

Cameroon proposes that WRC-2000 should adopt a recommendation on this issue.

ADD CME/122/8

RECOMMENDATION XXX (WRC-2000)

(See Annex CME/3.)

SUP CME/122/9

RESOLUTION 121 (Rev.WRC-97)

Continued development of interference criteria and methodologies for fixed-satellite service coordination between feeder links of non-geostationary satellite networks in the mobile-satellite service and geostationary-satellite networks in the fixed-satellite service in the bands 19.3-19.7 GHz and 29.1-29.5 GHz

14 Agenda item 1.13

Agenda item 1.13.1 - On the basis of the results of the studies in accordance with Resolutions 130 (WRC-97), 131 (WRC-97) and 538 (WRC-97), to review and, if appropriate, revise the power limits appearing in Articles S21 and S22 in relation to the sharing conditions among non-GSO FSS, GSO FSS, GSO broadcasting-satellite service (BSS), space sciences and terrestrial services, to ensure the feasibility of these power limits and that these limits do not impose undue constraints on the development of these systems and services

Summary of Cameroon's views:

Cameroon supports the African Group’s proposal on this item.

Agenda item 1.13.2 - To consider the inclusion in other frequency bands of similar limits in Articles S21 and S22, or other regulatory approaches to be applied in relation to sharing situations

Summary of Cameroon's views:

Cameroon supports the African Group’s proposal on this item.

15 Agenda item 1.14 - To review the results of the studies on the feasibility of implementing non-GSO MSS feeder links in the 15.43-15.63 GHz in accordance with Resolution 123 (WRC-97)

Summary of Cameroon's views:

Cameroon has an open mind on this item.

16 Agenda item 1.15

WRC-2000 agenda item 1.15 deals with issues related to the radionavigation-satellite service.

Agenda item 1.15.1 - To consider new allocations to the radionavigation-satellite service in the range from 1 GHz to 6 GHz required to support developments

Summary of Cameroon's views:

Cameroon supports the African Group’s proposal on this item.

Agenda item 1.15.2 - To consider the addition of the space-to-space direction to the radionavigation-satellite service allocations in the bands 1 215-1 260 MHz and 1 559-1 610 MHz

Summary of Cameroon's views:

Cameroon supports the African Group’s proposal on this item.

Agenda item 1.15.3 - To consider the status of allocations to services other than the radionavigation-satellite service (Nos. S5.355 and S5.359) in the band 1 559-1 610 MHz

Summary of Cameroon's views:

Cameroon supports the African Group’s proposal on this item.

17 Agenda item 1.16 - To consider allocation of frequency bands above 71 GHz to the Earth exploration-satellite (passive) and radio astronomy services, taking into account Resolution 723 (WRC-97)

Summary of Cameroon's views:

Cameroon has an open mind on this item.

18 Agenda item 1.17 - To consider possible worldwide allocation for the Earth exploration-satellite (passive) and space research (passive) services in the band 18.6-18.8 GHz, taking into account the results of the ITU-R studies

Summary of Cameroon's views:

Subject to requisite technical and regulatory conditions, Cameroon proposes a worldwide allocation to the Earth exploration-satellite (passive) service and the space research (passive) service in the band 18.6-18.8 GHz.

MOD CME/122/10

18.6-22.21 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile ~~Earth exploration-satellite (passive)~~ ~~Space research (passive)~~ SPACE RESEARCH (passive) S5.522	**18.6-18.8** EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile SPACE RESEARCH (passive) S5.522	**18.6-18.8** EARTH EXPLORATION-SATELLITE (passive) FIXED FIXED-SATELLITE (space-to-Earth) S5.523 MOBILE except aeronautical mobile ~~Earth exploration-satellite (passive)~~ ~~Space research (passive)~~ SPACE RESEARCH (passive) S5.522

19 Agenda item 1.18 - To consider the use of new digital technology for the maritime mobile service in the band 156-174 MHz and consequential revision of Appendix 18/S18, taking into account Resolution 342 (WRC-97)

Summary of Cameroon's views:

Cameroon supports the African Group’s proposal on this item.

20 Agenda items 1.19 and 1.19*bis*

Agenda item 1.19 - To consider the report of the inter-conference representative group (IRG) submitted by the Director of the Radiocommunication Bureau and determine the basis for replanning by the next conference so as to afford each country an amount of spectrum that permits the economical development of a broadcasting-satellite service system

Summary of Cameroon's views:

Cameroon supports the African Group’s proposal on this item.

Agenda item 1.19*bis* - In accordance with Article S14, to consider objections expressed by administrations with respect to the Radio Regulations Board's Rules of Procedure relating to the application of RR 2674/S23.13 in order for the Bureau to modify its findings in accordance with the conclusions of the Conference

Summary of Cameroon's views:

Cameroon has an open mind on this item.

21 Agenda item 1.20 - To consider the issues related to the application of Nos. S9.8, S9.9 and S9.17 and the corresponding parts of Appendix S5 with respect to Appendices S30 and S30A, with a view to possible deletion of Articles 6 and 7 of Appendices S30 and S30A, also taking into consideration Recommendation 35 (WRC-95)

Summary of Cameroon's views:

Cameroon supports the African Group’s proposal on this item.

22 Agenda item 1.21 - To consider the report from the Radiocommunication Bureau on results of the analysis in accordance with Resolution 53 (WRC-97) and take appropriate actions

Summary of Cameroon's views:

Cameroon has an open mind on this item.

23 Agenda item 2 - To examine the revised ITU-R recommendations incorporated by reference in the Radio Regulations in accordance with Resolution 28 (WRC-95); and decide whether or not to update the corresponding references in the Radio Regulations, in accordance with principles contained in the Annex to Resolution 27 (Rev.WRC-97)

Summary of Cameroon's views:

Nothing to report.

24 Agenda item 3 - To consider such consequential changes and amendments to the Radio Regulations as may be necessitated by the decisions of the Conference

Summary of Cameroon's views:

Nothing to report.

25 Agenda item 4 - In accordance with Resolution 95 (WRC-97), to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation

Summary of Cameroon's views:

Nothing to report.

26 Agenda item 5 - To review, and take appropriate action on, the report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the Convention (Geneva, 1992)

Summary of Cameroon's views:

Nothing to report.

27 Agenda item 6 - To identify those items requiring urgent action by the radiocommunication study groups in preparation for the next world radiocommunication conference

Summary of Cameroon's views:

Nothing to report.

28 Agenda item 7

Agenda item 7.1 - To consider and approve the report of the Director of the Radiocommunication Bureau on the activities of the Radiocommunication Sector since WRC-97

Summary of Cameroon's views:

Nothing to report.

Agenda item 7.2 - To recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent Conference and on possible agenda items for future conferences

Summary of Cameroon's views:

Nothing to report.

29 Conclusion

While being entirely committed to international cooperation, Cameroon reserves the right to revert to any of the items on the agenda of WRC-2000 in order, where necessary, to defend its legitimate interests.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Kenya (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

1 Regulatory matters

1.1 Agenda item 1.2 - to finalize remaining issues in the review of Appendix S3 to the Radio Regulations with respect to spurious emissions for space services, taking into account Recommendation 66 (Rev.WRC-97) and the decisions of WRC-97 on adoption of new values, due to take effect at a future time, of spurious emissions for space services

Proposal

KEN/123/1

The Administration of Kenya is of the view that ITU-R studies should continue and be conclusively completed. Meanwhile, retention of the design objectives as per Article S3 is supported until studies are concluded.

1.2 Agenda item 1.3 - to consider the results of ITU-R studies in respect of Appendix S7/28 on the method for the determination of the coordination area around an earth station in frequency bands shared among space services and terrestrial radiocommunication services, and take the appropriate decisions to revise this Appendix

Proposal

KEN/123/2

The Administration of Kenya supports method 2 as proposed in the CPM-99 Report which calls for replacement of text of Appendix S7 with text based on the Recommendation and to establish a permanent agenda item to update the table of parameters in Appendix S7 in response to allocation decisions, made at previous conferences.

1.3 Agenda item 2 - to examine the revised ITU-R recommendations incorporated by reference in the Radio Regulations in accordance with Resolution 28 (WRC-95); and decide whether or not to update the corresponding references in the Radio Regulations, in accordance with principles contained in the Annex to Resolution 27 (Rev.WRC-97)

Proposal

KEN/123/3

The Administration of Kenya supports the consideration of CPM-99, that a more formal mechanism should be adopted via a resolution at WRC-2000 which would list explicitly all ITU-R Recommendations that are incorporated by reference and which will be published in the Radio Regulations.

2 Allocation matters

2.1 Agenda item 1.4 - to consider issues concerning allocations and regulatory aspects related to Resolutions 126 (WRC-97), 128 (WRC-97), 129 (WRC-97), 133 (WRC-97), 134 (WRC-97) and 726 (WRC-97)

2.1.1 Resolution 126 (WRC-97) - Use of the frequency band 31.8-33.4 GHz for high-density systems in the fixed service

Proposal

KEN/123/4

The Administration of Kenya supports introduction of HDFS in the above frequency band so long as this will not hamper future introduction of other services. Protection of such services should be guaranteed.

2.1.2 Resolution 128 (WRC-97) - Allocation to the fixed-satellite service (space-to-Earth) in the 41.5-42.5 GHz band and protection of the radio astronomy service in the 42.5-43.5 GHz band

Proposal

KEN/123/5

The Administration of Kenya is of the view that studies are still being undertaken by ITU-R and propose this issue be handled by the next conference (WRC-03).

2.1.3 Resolution 129 (WRC-97) - Criteria and methodologies for sharing between the fixed-satellite service and other services with allocations in the band 40.5-42.5 GHz

Proposal

KEN/123/6

The Administration of Kenya supports the ITU-R further studies on the power flux-density (pfd) limits in the 40.5-42.5 GHz range and further supports the development of a comprehensive sharing approach for the 37.5-42.5 GHz band. Depending on the pfd limits proposed, a decision on the pfd limits, in particular frequency bands, may be taken at WRC-2000.

2.1.4 Resolution 133 (WRC-97) - Sharing between the fixed service and other services in the band 37-40 GHz

Proposal

KEN/123/7

The Administration of Kenya supports the studies by ITU-R and some administrations being currently undertaken and the proposed power flux-density limits may be taken at WRC-2000.

2.1.5 Resolution 134 (WRC-97) - Use of the frequency band 40.5-42.5 GHz by the fixed-satellite service

Proposal

KEN/123/8

The Administration of Kenya is of the view that ITU-R first concludes the sharing studies being conducted before a competent WRC takes the decision on this allocation including the date 1 January 2001.

2.1.6 Resolution 726 (WRC-97) - Frequency bands above 30 GHz available for high-density applications in the fixed service

Proposal

KEN/123/9

The Administration of Kenya supports the introduction of HDFS in this band and prefers method 1 as given in the CPM-99 Report.

2.2 Agenda item 1.5 - to consider regulatory provisions and possible additional frequency allocations for services using high altitude platform stations, taking into account the results of ITU-R studies conducted in response to Resolution 122 (WRC-97)

Proposal

KEN/123/10

The Administration of Kenya proposes that ITU-R continue with studies on the concept of HAPS and the results may be taken by a competent WRC, preferably WRC-03.

2.3 Issues related to IMT-2000

2.3.1 Frequency band 2 290-2 300 MHz

Proposal

KEN/123/11

The Administration of Kenya proposes that this band may be considered for use by IMT-2000.

2.3.2 Frequency band 2 500-2 520/2 670-2 690 MHz

Proposal

KEN/123/12

The Administration of Kenya has fixed services on this candidate band and should not be allocated for IMT-2000.

2.3.3 Agenda item 1.6.2 - identification of a global radio control channel to facilitate multimode terminal operation and worldwide roaming of IMT-2000

Proposal

KEN/123/13

The Administration of Kenya supports the conclusions of the ITU-R studies as per the CPM-99 Report that facilitation of multimode terminal operation and worldwide roaming of IMT-2000 has been determined to be possible without a specific physical global control channel.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Turkey

PROPOSALS FOR THE WORK OF THE CONFERENCE

WRC-2000 agenda item 1.1 - requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, in accordance with Resolution 26 (Rev.WRC-97)

Introduction

In Circular Letter CR/131, the Radiocommunication Bureau requests administrations to review those footnotes to the Table of Frequency Allocations (Article S5 of the Radio Regulations) where their country names appear in order to identify any footnotes that may be reduced in scope or deleted. The need for a regular review of footnotes was established by Resolution 26 at WRC-95 and reaffirmed at WRC-97.

Proposals

The Turkish Administration has reviewed the footnotes and makes the following proposals in respect of those footnotes which include explicit references to "Turkey".

NOC TUR/124/1

S5.98 *Alternative allocation:* in Angola, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bulgaria, Cameroon, the Congo, Denmark, Egypt, Eritrea, Spain, Ethiopia, Georgia, Greece, Italy, Kazakstan, Lebanon, Lithuania, Moldova, the Netherlands, Syria, Kyrgyzstan, Russian Federation, Somalia, Tajikistan, Tunisia, Turkmenistan, Turkey and Ukraine, the band 1 810-1 830 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

Reasons: Use in Turkey is planned to continue in line with the footnote.

MOD TUR/124/2

S5.112 *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Denmark, France, Greece, Iceland, Italy, Malta, Norway, Sri Lanka~~, Turkey~~ and Yugoslavia, the band 2 194-2 300 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

Reasons: Turkey submits the above proposal for deletion of its country name from S5.112.

MOD TUR/124/3

S5.114 *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Denmark, France, Greece, Iraq, Italy, Malta, Norway~~, Turkey~~ and Yugoslavia, the band 2 502-2 625 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

Reasons: Turkey submits the above proposal for deletion of its country name from S5.114.

MOD TUR/124/4

S5.117 *Alternative allocation:* in Bosnia and Herzegovina, Cyprus, Côte d'Ivoire, Denmark, Egypt, France, Greece, Iceland, Italy, Liberia, Malta, Norway, Sri Lanka, Togo~~, Turkey~~ and Yugoslavia, the band 3 155-3 200 kHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

Reasons: Turkey submits the above proposal for deletion of its country name from S5.117.

MOD TUR/124/5

S5.162A *Additional allocation:* in Germany, Austria, Belgium, Bosnia and Herzegovina, China, Vatican, Denmark, Spain, Estonia, Finland, France, Ireland, Iceland, Italy, Latvia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Lithuania, Luxembourg, Moldova, Monaco, Norway, the Netherlands, Poland, Portugal, Slovakia, the Czech Republic, the United Kingdom, Russian Federation, Sweden~~,~~ and Switzerland ~~and Turkey~~, the band 46-68 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution **217 (WRC-97)**.

Reasons: Turkey submits the above proposal for deletion of its country name from S5.162A.

NOC TUR/124/6

S5.164 *Additional allocation:* in Albania, Germany, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Côte d'Ivoire, Denmark, Spain, Finland, France, Gabon, Greece, Ireland, Israel, Italy, Jordan, Lebanon, Libya, Liechtenstein, Luxembourg, Madagascar, Mali, Malta, Morocco, Mauritania, Monaco, Nigeria, Norway, the Netherlands, Poland, Syria, the United Kingdom, Senegal, Slovenia, Sweden, Switzerland, Swaziland, Togo, Tunisia, Turkey and Yugoslavia the band 47-68 MHz, in Romania the band 47-58 MHz and in the Czech Republic the band 66-68 MHz, are also allocated to the land mobile service on a primary basis. However, stations of the land 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, existing or planned broadcasting stations of countries other than those mentioned in connection with the band.

Reasons: Use in Turkey is planned to continue in line with the footnote.

MOD TUR/124/7

S5.202 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, Bulgaria, United Arab Emirates, Georgia, the Islamic Republic of Iran, Jordan, Kazakstan, Latvia, Moldova, Oman, Uzbekistan, Poland, Syria, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan~~, Turkey~~ and Ukraine, the band 136-137 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service.

Reasons: Turkey submits the above proposal for deletion of its country name from S5.202.

NOC TUR/124/8

S5.211 *Additional allocation:* in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Bosnia and Herzegovina, Denmark, the United Arab Emirates, Spain, Finland, Greece, Ireland, Israel, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Liechtenstein, Luxembourg, Mali, Malta, Norway, the Netherlands, Qatar, the United Kingdom, Slovenia, Somalia, Sweden, Switzerland, Tanzania, Tunisia, Turkey and Yugoslavia, the band 138-144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis.

Reasons: Use in Turkey is planned to continue in line with the footnote.

NOC TUR/124/9

S5.221 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 operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo, the Republic of Korea, Croatia, Cuba, Denmark, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Ethiopia, Finland, France, Gabon, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, the Islamic Republic of Iran, Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakstan, Kenya, Kuwait, Latvia, The Former Yugoslav Republic of Macedonia, Lebanon, Libya, Liechtenstein, Luxembourg, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Mozambique, Namibia, Norway, New Zealand, Oman, Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, Philippines, Poland, Portugal, Qatar, Syria, Kyrgyzstan, Slovakia, Romania, the United Kingdom, Russian Federation, Senegal, Sierra Leone, Singapore, Slovenia, Sri Lanka, South Africa, Sweden, Switzerland, Swaziland, Tanzania, Chad, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Yugoslavia, Zambia, and Zimbabwe.

Reasons: Use in Turkey is planned to continue in line with the footnote.

NOC TUR/124/10

S5.276 *Additional allocation:* in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burkina Faso, Burundi, Egypt, the United Arab Emirates, Ecuador, Eritrea, Ethiopia, Greece, Guinea, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Malaysia, Malta, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Democratic People's Republic of Korea, 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.

Reasons: Use in Turkey is planned to continue in line with the footnote.

NOC TUR/124/11

S5.331 *Additional allocation:* in Algeria, Germany, Austria, Bahrain, Belgium, Benin, Bosnia and Herzegovina, Burundi, Cameroon, China, Croatia, Denmark, the United Arab Emirates, France, Greece, India, the Islamic Republic of Iran, Iraq, Kenya, The Former Yugoslav Republic of Macedonia, Liechtenstein, Luxembourg, Mali, Mauritania, Norway, Oman, Pakistan, the Netherlands, Portugal, Qatar, Senegal, Slovenia, Somalia, Sudan, Sri Lanka, Sweden, Switzerland, Turkey and Yugoslavia, the band 1 215-1 300 MHz is also allocated to the radionavigation service on a primary basis.

Reasons: Use in Turkey is planned to continue in line with the footnote.

MOD TUR/124/12

S5.508 *Additional allocation:* in Germany, Austria, Bosnia and Herzegovina, France, Greece, Ireland, Iceland, Italy, The Former Yugoslav Republic of Macedonia, Libya, Liechtenstein, Portugal, the United Kingdom, Slovenia, Switzerland~~, Turkey~~ and Yugoslavia, the band 14.25-14.3 GHz is also allocated to the fixed service on a primary basis.

Reasons: Turkey submits the above proposal for deletion of its country name from S5.508.

NOC TUR/124/13

S5.536B In Germany, Saudi Arabia, Austria, Belgium, Brazil, Bulgaria, China, the Republic of Korea, Denmark, Egypt, United Arab Emirates, Spain, Estonia, Finland, France, Hungary, India, Islamic Republic of Iran, Ireland, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Lithuania, Moldova, Norway, Oman, Uganda, Pakistan, the Philippines, Poland, Portugal, Syria, Slovakia, Czech Republic, Romania, the United Kingdom, Singapore, Sweden, Switzerland, Tanzania, Turkey, Viet Nam and Zimbabwe, earth stations operating in the Earth exploration-satellite service in the band 25.5-27 GHz shall not claim protection from, or constrain the use and deployment of, stations of the fixed and mobile services.

Reasons: Use in Turkey is planned to continue in line with the footnote.

NOC TUR/124/14

S5.546 *Different category of service:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, Bulgaria, Egypt, United Arab Emirates, Spain, Estonia, Finland, Georgia, Hungary, the Islamic Republic of Iran, Israel, Jordan, Kazakstan, Latvia, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Syria, Kyrgyzstan, Romania, the United Kingdom, Russian Federation, Tajikistan, Turkmenistan, Turkey and Ukraine, 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. **S5.33**).

Reasons: Use in Turkey is planned to continue in line with the footnote.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 125-E
17 April 2000
Original: French
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Spanish

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

France

PROPOSALS FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 1.15.1

COMPATIBILITY BETWEEN THE PROPOSED NEW RNSS ALLOCATION IN 1 260-1 300 MHz AND SYNTHETIC APERTURE RADAR (SAR) OF THE EARTH EXPLORATION-SATELLITE (ACTIVE) AND SPACE RESEARCH (ACTIVE) SERVICES IN THAT BAND

1 Introduction

Under agenda item 1.15.1, the 1 260-1 300 MHz band is supported by a number of countries for a new RNSS downlink allocation.

This band is also allocated on a primary basis to the Earth exploration-satellite (active) and to the space research (active) services, and planned to be used by the Japanese phased array L-band synthetic aperture radar (PALSAR).

This document aims at answering to a concern expressed during the last CPM regarding the compatibility between an RNSS system operated in the 1 260-1 300 MHz range and PALSAR.

The impact of PALSAR emissions on RNSS receivers, as well as the impact of RNSS emissions on PALSAR receiver, is assessed. This permits to conclude that the introduction of a downlink RNSS allocation in 1 260-1 300 MHz, as far as its compatibility with the Earth exploration-satellite and the space research services is concerned, is possible.

2 Interference of PALSAR transmitter into RNSS receiver

Possible interference from spaceborne active sensors into radionavigation-satellite service receivers has been studied by ITU-R in the 1 215-1 260 MHz band, which led to Recommendation ITU-R SA.1347 “Feasibility of sharing between radionavigation-satellite service receivers and the Earth exploration-satellite (active) and space research (active) services in the 1 215-1 260 MHz band”.

Characteristics of synthetic aperture radar used in this Recommendation as representative parameters for operational SAR are shown in Table 1, as well as characteristics of the PALSAR provided by the Administration of Japan.

It appears that PALSAR characteristics are in the same range as that of SAR 1/SAR 2.

TABLE 1

Technical characteristics of spaceborne synthetic aperture radar in the 1 215-1 300 MHz band

	Standard SAR 1	**Standard SAR 2**	**PALSAR**
Peak radiated power (W)	3 200	1 200	2 000
Pulse modulation	Linear FM chirp	Linear FM chirp	Linear FM chirp
Pulse bandwidth (MHz)	40.0	15.0	30.0
Pulse duration (μs)	33.8	35.0	Not available
Pulse repetition rate (pps)	1 736.0	1 607.0	Not available
Duty cycle (%)	5.9	5.6	Supposed <10
Maximum antenna gain (dBi)	36.4	33.0	Assessed < 38.0
Antenna orientation (degrees from Nadir)	20.0	35.0	10.0
Antenna polarization	Linear Vertical/Horizontal	Linear Horizontal	Linear Vertical/Horizontal
Orbital altitude (km)	400	568	690

Furthermore the characteristics of RNSS receivers in the band 1 260-1 300 MHz are expected not to be different from those used in the same study, except for the centre frequency, which will be assumed at PALSAR frequency centre as a worst case. These characteristics are summarized in Table 2.

TABLE 2

Characteristics and protection criteria for RNSS user equipment in 1 260-1 300 MHz

	RNSS receiver
Carrier frequencies (MHz)	1 270
RF 3 dB filter bandwidth (MHz)	±17.0 (TBC)
Polarization	RHC
Maximum antenna gain (dBi)	4.5
Preamplifier burnout level (average) (dBW)	0.0
Preamplifier burnout level (peak) (dBW)	10.0
Preamplifier limiting level (dBW)	–70.0

Pulsed emissions from PALSAR may affect an RNSS receiver in three different ways, depending on their peak power level:

- by causing preamplifier burnout (Pi peak > 10 dBW);
- by causing preamplifier saturation (Pi peak > –70 dBW);
- by causing ADC saturation (Pi peak < –70 dBW and Pi greater than thermal noise).

The peak signal power received at the antenna output of the RNSS receiver is first assessed, and then compared to the preamplifier burnout threshold, the preamplifier saturation threshold and the expected thermal noise respectively.

The maximum interfering signal power levels received from a spaceborne SAR occur when an RNSS receiver is located in the main beam of the SAR antenna. This configuration is therefore considered as a worst case.

The peak interfering signal power levels from PALSAR into an RNSS receiver operated within 1 260-1 300 MHz is calculated in Table 3. Co-frequency operation is considered as a worst case. For comparison, an equivalent calculation is shown in Table 3 for the cases of GPS and GLONASS receivers in 1 215-1 260 MHz.

TABLE 3

Maximum interfering signal power levels from SAR into RNSS receivers

	Interference to GPS Rx within 1 215-1 260 MHz	**Interference to GLONASS-M within 1 215-1 260 MHz**	**Interference to RNSS Rx within 1 260-1 300 MHz**
	SAR 1	**SAR 1**	**PALSAR**
Centre frequency (MHz)	1 227.6	1 250.0	1 270.0
Peak radiated power (dBW)	35.1	35.1	33.0
Transmitter antenna gain (dB)	36.4	36.4	38.0
Distance (km)	427.5	427.5	697.8
Space loss (dB)	146.8	147.0	151.4
Receiver antenna gain (dB)	0.0	0.0	4.5
Polarisation mismatch loss (dB)	3.0	3.0	3.0
Maximum received interference power (peak) (dBW)	**–78.3**	**–78.5**	**–78.9**

This evaluation shows that even under worst-case assumptions, PALSAR does not cause preamplifier saturation at the RNSS receiver.

Furthermore the value calculated in the case of PALSAR is slightly smaller than those calculated for GPS and GLONASS in the SAR 1 environment. This permits to consider that the conclusion of Recommendation ITU-R SA.1347 is applicable in the case of interference of PALSAR into RNSS receivers operated in 1 260-1 300 MHz.

This conclusion states:

- The incoming pulses will saturate the ADC but this will not lead to receiver performance unacceptable degradation from the operation of the AGC loop.
- This should be true only up to duty cycles around 10% for the SAR, where tracking noise of the RNSS receiver should be increased by 50%, due to a 4 dB signal-to-noise degradation.
- Beyond this duty cycle limit, the tracking noise increase will be larger, but may still be acceptable if we consider the filtering process that may be applied to navigation data.

Furthermore, it has to be remembered that the worst-case configuration of the PALSAR beam oriented towards the RNSS receiver has been assumed. Such a configuration has a very limited duration of a few seconds since the PALSAR beam is very sharp (1 degree in azimuth, or 7.5 km at ground level) and its ground velocity is close to 6 km/s.

3 Interference of RNSS transmitter into PALSAR receiver

The RNSS system considered in 1 260-1 300 MHz is based on a medium-Earth orbit constellation with an approximate altitude of 23 000 km. Each satellite of the constellation transmits a navigation signal with a global earth coverage. The transmitter antenna beam is considered to be shaped, with the aim to compensate free space losses on total earth covering, which results in a uniform power level at ground based RNSS receivers.

Taking into account the low-Earth orbit of PALSAR, and the orientation of its narrow antenna beam towards a local area on the Earth's surface, the PALSAR receiver antenna will never receive RNSS signals through its main beam, but only through its antenna side lobes. It is assumed that these side lobes have a gain of –10 dBi.

The new RNSS allocation proposed to be introduced within 1 260-1 300 MHz would be subject to a pfd limit of –133 dBW/m^2/MHz per each single satellite. This pfd limit permits to calculate a maximum flux received by the PALSAR receiver due to RNSS signals. It is assumed that the RNSS signal is 20 MHz wide, and that an average of 6 RNSS satellites are visible for a LEO satellite:

$$F = pfd\ \text{limit} + 20\log\left(\frac{R_0}{R}\right) + 10\log(6) + 10\log(B)$$

$$= -133 + 20\log\left(\frac{23000}{23000 - 690}\right) + 10\log 6 + 10\log(20)$$

$$= -112\ \text{dBW/m}^2$$

Assuming a reasonable side lobe antenna gain of –10 dBi, the equivalent antenna surface will be:

$$A = G * \lambda^2/4\pi = -33.5\ \text{dBm}^2$$

Thus the received power level is

$$\text{Pr} = F*A = -112 - 33.5 = -145.5\ \text{dBw}$$

This power is transmitted and received on the 20 MHz bandwidth. The equivalent increase in noise temperature at the SAR receiver can be deduced:

$$T_{eq} = \text{Pr}/kB$$

$$T_{eq}(\text{dBK}) = -145.5 - 73 - (-228.6) = 10.1$$

$$T_{eq} = 10\,\text{K}$$

Assuming a value of noise temperature of 500 K for a typical SAR receiver (noise figure of 2 dB and 2.4 dB of RF loss), RNSS leads to a SAR receiver noise degradation of 2%.

This value is obviously negligible, and shows that SAR receivers will not suffer any harmful interference due to RNSS, even under worst-case assumptions.

Furthermore this evaluation is applicable for all active LEO spaceborne sensors, since it is mainly based on the proposed pfd limit to be applicable to RNSS in 1 260-1 300 MHz.

4 Conclusion

The evaluations of:

- the level of interference into RNSS receivers due to PALSAR;
- the increase in equivalent noise temperature of SAR receiver due to RNSS emissions in 1 260-1 300 MHz;

were performed, and permit to conclude on the feasibility of sharing in 1 260-1 300 MHz.

The extension of the existing RNSS allocation in 1 215-1 260 MHz to 1 215-1 300 MHz is therefore possible, as far as its compatibility with the Earth exploration-satellite and the space research services is concerned.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Addendum 3 to Document 126-E*
22 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

Iran (Islamic Republic of)

PROPOSAL FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 1.1 - APPLICATION OF RESOLUTION 26 (Rev.WRC-97)

The Islamic Republic of Iran has reviewed footnotes to the Table of Frequency Allocations in Article S5 of the Radio Regulations and proposes the modification to footnotes S5.389F.

MOD IRN/126/57

S5.389F In Algeria, Benin, Cape Verde, Egypt, Iran (Islamic Republic of), Mali, Syria and Tunisia, the use of the bands 1 980-2 010 MHz and 2 170-2 200 MHz by the mobile-satellite service shall neither cause harmful interference to the fixed and mobile services, nor hamper the development of those services prior to 1 January 2005, nor shall the former service request protection from the latter services.

Reasons: *Resolves* 3 *d)* of Resolution 26.

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* Pursuant to Resolution 26 (Rev.WRC-97) the secretariat notes that this contribution was received on 22 May 2000.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

**Addendum 2 to Document 126-E*
19 May 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

Iran (Islamic Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 1.1 - APPLICATION OF RESOLUTION 26 (Rev.WRC-97)

The Islamic Republic of Iran has reviewed footnotes to the Table of Frequency Allocations in Article S5 of the Radio Regulations and proposes the modification to footnotes S5.312 and S5.323.

MOD IRN/126/55

S5.312 *Additional allocation*: in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, the Islamic Republic of Iran, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 645-862 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

MOD IRN/126/56

S5.323 *Additional allocation*: in Armenia, Azerbaijan, Belarus, Bulgaria, Hungary, the Islamic Republic of Iran, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 862-960 MHz is also allocated to the aeronautical radionavigation service on a primary basis. Such use is subject to agreement obtained under No. **S9.21** with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime.

Reasons: *Resolves* 3 *d)* of Resolution 26.

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* Pursuant to Resolution 26 (Rev.WRC-97) the secretariat notes that this contribution was received on 19 May 2000.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Addendum 1 to Document 126-E 11 May 2000 Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

Iran (Islamic Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda item 1.17 - to consider possible worldwide allocation for the Earth exploration-satellite (passive) and space research (passive) services in the band 18.6-18.8 GHz taking into account the result of the ITU-R studies

IRN/126/54

Because of the importance of frequency band (18.6-18.8) GHz for terrestrial systems and also passive sensors in EESS and SRS systems, this Administration supports ongoing sharing studies regarding FS and FSS with EESS systems in ITU-R study groups and accepts solution 3 identified in the CPM Report to offer a possible sharing situation.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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25 April 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Iran (Islamic Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

With regard to the agenda items of WRC-2000 in Resolution 721 (WRC-97), and taking into account the outcome of the ITU-R Study Groups and the CPM Report, the Administration of the Islamic Republic of Iran puts forward the following proposals for consideration by WRC-2000.

Agenda item 1.1 - requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, in accordance with Resolution 26 (Rev.WRC-97)

The Islamic Republic of Iran has reviewed footnotes to the Table of Frequency Allocations in Article S5 of the Radio Regulations and proposes the deletion of its name from footnotes S5.59, S5.65 and S5.355.

MOD IRN/126/1

S5.59 *Different category of service:* in Bangladesh~~, the Islamic Republic of Iran~~ and Pakistan, the allocation of the bands 70-72 kHz and 84-86 kHz to the fixed and maritime mobile service is on a primary basis (see No. **S5.33**).

MOD IRN/126/2

S5.65 *Different category of service:* in Bangladesh~~, the Islamic Republic of Iran~~ and Pakistan, the allocation of the bands 112-117.6 kHz and 126-129 kHz to the fixed and maritime mobile services is on a primary basis (see No. **S5.33**).

MOD IRN/126/3

S5.355 *Additional allocation:* in Bahrain, Bangladesh, the Congo, Egypt, the United Arab Emirates, Eritrea, Ethiopia~~, the Islamic Republic of Iran~~, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, Oman, Qatar, Syria, Somalia, Sudan, Sri Lanka, Chad, Togo, Yemen and Zambia, the bands 1 540-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis.

Agenda item 1.3 - to consider the results of ITU-R studies in respect of Appendix S7/28 on the method for the determination of the coordination area around an earth station in frequency bands shared among space services and terrestrial radiocommunication services, and take the appropriate decisions to revise this Appendix

To determine the method of coordination area around an earth station, among all proposed methods in the CPM Report, this Administration proposes that:

IRN/126/4

Method 3 is the preferred one and accordingly the following items should be done:

- the title of Appendix S7 be modified in such a way to cover the frequency bands from 100 MHz to 105 GHz;
- the text of Appendix S7 be replaced on the basis of draft new Recommendation ITU-R SM.[XX];
- section 3 of Annex 1 of Appendix S5 be moved to Appendix S7;
- a new WRC resolution be created to allow updating of the system parameter values as needed via an extraordinary agenda item on the basis of Resolution 60. This new Resolution should deal with the system parameter values instead of propagation issues.

MOD IRN/126/5

RESOLUTION 60 (Rev.WRC-2000)

Relating to ~~information on the propagation of radio waves~~the system parameter values used in the determination of the coordination area

(See Appendix **S7/~~28~~**)

The World ~~Administrative~~ Radiocommunication Conference, ~~Geneva, 1979~~(Istanbul, 2000),

considering

a) that Appendix **S7/~~28~~** to the Radio Regulations provides a method for the determination of the coordination area which incorporates certain material concerned with radiowave propagation;

b) that the propagation information contained in Appendix **S7/~~28~~** is based directly or indirectly on propagation data given in the texts of the ITU-R;

c) that ITU-R studies of radiowave propagation are continuing, and therefore the conclusions of these studies are subject to change and may in future show the need to revise those sections of Appendix **S7/~~28~~** which incorporate the ~~propagation information~~system parameter values;

d) that ~~no~~ radiowave propagation measurements have been carried out in some parts of the world,

recognizing

a) that a period of several years is generally required to accumulate sufficient data to form reliable conclusions concerning ~~radiowave propagation~~system parameter values;

b) that for administrative reasons it is desirable that the ~~propagation information~~system parameter values used for the determination of the coordination area should not be revised too frequently and, in any case, should be revised only if the effect of such revision on the size of the coordination area is significant;

c) that in Appendix **S7/~~28~~** the coordination area is determined without the need for detailed knowledge of the propagation characteristics of individual paths, and it is desirable that this approach be maintained,

invites the ITU-R

to continue to study propagation data concerned with the determination of the coordination area, and to maintain the relevant ITU-R texts in a format which would permit direct insertion into Appendix **S7/~~28~~** in place of the existing § ~~3, 4~~ and ~~6 or Annex III~~5,

resolves

1 that each Radiocommunication Assembly of the ITU-R should come to a conclusion as to whether, according to the propagation information given in the most recent ITU-R Recommendations, any revision ~~of § 3, 4 and 6 or Annex III of Appendix **S7/28**~~with respect to the system parameter values of Appendix **S7** to the Radio Regulations is warranted;

2 that when a Radiocommunication Assembly of the ITU-R has come to the conclusion that a revision of ~~paragraphs 3, 4 and 6 or Annex III of Appendix **S7/28**~~Appendix **S7** with respect to system parameter valves is warranted, the Director of the Radiocommunication Bureau shall so inform the Secretary-General of the ITU and send him the proposed amendments to Appendix **S7/~~28~~**,

requests

1 that the Council then place, as an extraordinary item, on the agenda of the next world radiocommunication conference, the consideration of the conclusion of the ITU-R;

2 that, if the said world radiocommunication conference decides that the propagation information used in Appendix **S7/~~28~~** is to be revised, the Secretary-General, in consultation with the Bureau, incorporate the amendments agreed at the said conference in a document which contains the new text of paragraphs ~~3, 4 and 6 or Annex III of Appendix **S7/28**~~4 and 5 of Appendix **S7** in a form suitable for direct substitution in the version of Appendix **S7/~~28~~** then in force, and send this document to all administrations,

decides

that from a date established by the said conference, the revised text shall form the basis of all subsequent determinations of the coordination area using Appendix **S7/~~28~~**.

Agenda item 1.4 - to consider issues concerning allocations and regulatory aspects related to Resolutions 126 (WRC-97), 128 (WRC-97), 129 (WRC-97), 133 (WRC-97), 134 (WRC-97) and 726 (WRC-97)

This Administration generally supports the applications of high density fixed services (HDFS) in the frequency bands listed in aforesaid Resolutions, considering appropriate sharing criteria to protect fixed service (HDFS) from the other services as described in the CPM-99 Report.

Agenda item 1.5 - to consider regulatory provisions and possible additional frequency allocations for services using high altitude platform stations, taking into account the results of ITU-R studies conducted in response to Resolution 122 (WRC-97)

IRN/126/6

Further studies are required by ITU-R before making any decisions in bands 47.2-47.5 GHz and 47.9-48.2 GHz and any additional allocation for HAPS in the band 18-32 GHz. In order to identify addition spectrum for HAPS below 47 GHz and specifically in the band 18-32 GHz range and use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz, the support of the example draft modification Resolution 122 (Rev.WRC-2000) (Annex 1 to Chapter 6 of the CPM Report) may be considered.

Reasons: Concerning the operation of high altitude platforms stations as recognized by WRC-97, since preliminary studies indicate that sharing between fixed service using HAPS and other fixed service systems in the same area will be difficult unless appropriate interference mitigation techniques are developed and implemented.

Agenda item 1.6 - issues related to IMT-2000

Bearing in mind the role of mobile telecommunications in the future this Administration has reviewed the possible candidate bands for the terrestrial and satellite component of IMT-2000 and due to the extensive use of suggested bands by different services, proposes:

IRN/126/7

Terrestrial component of IMT-2000:

NOC	470-806 MHz
NOC	806-960 MHz
NOC	1 429-1 501 MHz
NOC	1 710-1 885 MHz
Can be considered	2 290-2 300 MHz
NOC	2 300-2 400 MHz
60 MHz within this band can be considered	2 520-2 670 MHz
NOC	2 700-2 900 MHz

IRN/126/8

Satellite component of IMT-2000:

NOC	1 525-1 559/1 626.5-1 660.5 MHz
Can be considered	1 610-1 626.5/2 483.5-2 500 MHz
Can be considered	2 500-2 520/2 670-2 690 MHz

Agenda item 1.7 - review of the use of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting operational, distress and safety communications, taking into account Resolution 346 (WRC-97)

In relation to the use of HF assignments in the aeronautical (R) and maritime distress and safety channel, this Administration believes that the methods mentioned in the CPM-99 Report as follows would be more applicable.

IRN/126/9

Regarding problem A, method 3 is preferred since it considers the adoption or continuance of the study of interference mitigation techniques by making some modification to Resolution 207 or through the adoption of a new resolution.

IRN/126/10

Regarding problem B, method 1 is preferred since it proposes that the frequencies 12 290 kHz and 16 420 kHz be exclusively allocated to the GMDSS and ships not using these frequencies for non-safety routine call.

Agenda item 1.8 - to consider regulatory and technical provisions to enable earth stations located on board vessels to operate in the fixed-satellite service (FSS) networks in the bands 3 700-4 200 MHz and 5 925-6 425 MHz, including their coordination with other services allocated in these bands

IRN/126/11

The utilization of the bands 3 700-4 200 MHz and 5 925-6 425 MHz by earth stations on-board vessels for wideband services can be considered only after the completion of the ITU-R studies on defining the minimum predetermined coordination distance with the method of using a footnote references to a resolution that sets forth regulations not to cause unacceptable interference to existing and future fixed systems in the band 5 925-6 425 MHz. It should be noted that this Administration extensively uses these bands for FS systems. Part of the existing fixed station is located on top of mountain with high altitudes in coastal area. Therefore in order to define the minimum coordination distance, ITU-R is requested to consider it as the worst case in its studies.

Agenda item 1.9 - to take into account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-Earth direction to the mobile-satellite service (MSS) in a portion of the 1 559-1 567 MHz frequency range, in response to Resolutions 213 (Rev.WRC-95) and 220 (WRC-97)

This Administration is strongly of the view that sharing between MSS and RNSS in the band 1 559-1 567 MHz is not feasible as concluded in the CPM Report. Accordingly, this Administration supports NOC for the existing allocations in this band, except that to support the addition of the space-to-space direction to the RNSS allocation as per agenda item 1.15.2 and regarding the band 1 675-1 710 MHz, this Administration cannot support new allocation until the feasibility of sharing between MSS and all other services in this band is determined by ITU-R studies.

MOD IRN/126/12

(Refer to the frequency table for 1 559-1 610 MHz in relation to agenda item 1.15.2)

Reasons: Frequency sharing between MSS and RNSS in this band is not feasible.

IRN/126/13

NOC Frequency tables 1 675-1 710 MHz.

SUP IRN/126/14

RESOLUTION 220 (WRC-97)

Studies to consider the feasibility of use of a portion of the band 1559-1610 MHz by the mobile-satellite service (space-to-Earth)

Reasons: Resolution 220 can be suppressed, since ITU-R has completed its studies on this matter.

Agenda item 1.10 - to consider results of ITU-R studies carried out in accordance with Resolution 218 (WRC-97) and take appropriate action on this subject

IRN/126/15

This Administration recognizes that additional regulatory procedures and appropriate operational measures and further technical studies are required, as a matter of urgency, to ensure priority access to the spectrum in these bands, during the progress of operations, as well as in the coordination phase by AMS(R)S and GMDSS (operations only), consistent with the protection for these safety of life services. It is therefore required that Resolution 218 be appropriately modified.

Agenda item 1.11 - to consider constraints on existing allocations and to consider additional allocations on a worldwide basis for the non-geostationary (non-GSO) MSS below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolutions 214 (Rev.WRC-97) and 219 (WRC-97)

The simultaneous use of the MSS services and meteorological aids of the frequency band 405-406 MHz is not practicable and the allocation of this band to MSS requires the transfer of the meteorological aids service from this band. For the purpose of preventing any damage to the users of this service and not causing any constraints for utilization of it, and considering the extensive utilization of the terrestrial services in the 450-470 MHz frequency band within the territory of the Islamic Republic of Iran and non-completion of the ITU-R studies in some aspects related to MSS sharing in this band, and necessity of protection of the existing systems, this Administration considers that additional bands should not be allocated to the non-GSO MSS unless compatibility between the non-GSO MSS and services currently allocated to the bands is established and guaranteed.

NOC IRN/126/16

335.4-410 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
401-402	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	
402-403	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile	
403-406	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	

NOC

410-470 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
450-455	FIXED MOBILE S5.209 S5.271 S5.286 S5.286A S5.286B S5.286C S5.286D S5.286E	
455-456 FIXED MOBILE S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	**455-456** FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.286A S5.286B S5.286C S5.209 S5.271	**455-456** FIXED MOBILE S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E
456-459	FIXED MOBILE S5.271 S5.287 S5.288	
459-460 FIXED MOBILE S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	**459-460** FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.286A S5.286B S5.286C S5.209 S5.271	**459-460** FIXED MOBILE S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E
460-470	FIXED MOBILE Meteorological-Satellite (space-to-Earth) S5.287 S5.288 S5.289 S5.290	

Reasons: The frequency bands below 1 GHz are heavily used in many countries for the services such as mobile service, fixed service, broadcasting service, meteorological aids service and meteorological-satellite service to which the bands are allocated for use. In addition, the usage of these services is expected to increase, and sharing feasibility between the non-GSO MSS and services currently allocated to the bands below 1 GHz is to be clarified.

SUP IRN/126/17

RESOLUTION 219 (WRC-97)

Studies relating to consideration of the allocation to the non-geostationary mobile-satellite service in the meteorological aids band 405-406 MHz and the impact on primary services allocated in the adjacent bands

Reasons: Resolution 219 can be suppressed since the ITU-R studies have been completed on this matter.

Agenda item 1.13 - on the basis of the results of the studies in accordance with Resolutions 130 (WRC-97), 131 (WRC-97) and 538 (WRC-97)

Agenda item 1.13.1 - to review and, if appropriate, revise the power limits appearing in Articles S21 and S22 in relation to the sharing conditions among non-GSO FSS, GSO FSS, GSO broadcasting-satellite service (BSS), space sciences and terrestrial services, to ensure the feasibility of these power limits and that these limits do not impose undue constraints on the development of these systems and services

Agenda item 1.13.2 - to consider the inclusion in other frequency bands of similar limits in Articles S21 and S22, or other regulatory approaches to be applied in relation to sharing situations

In relation to agenda item 1.13, the regulatory comments of this Administration are as follows:

IRN/126/18

The following paragraph regarding the regulatory procedures for the implementation of aggregate and operational limits should be added as step h) of section 1 and as step j) of section 2 of Annex 8 to Chapter 3 in the CPM Report.

"In case the administration which fails to respond to the BR's request for information, the BR shall commence with proceedings to cancel the entry of the relevant non-GSO network(s) from the master register."

Sections 1 and 2 of Annex 8 to Chapter 3 in the CPM Report should stand alone as a new Article S15A.

IRN/126/19

Resolves 6 of Resolution 130 (WRC-97) should not be deleted. If there is a strong view to remove this *resolves* from Resolution 130, then it should be added as footnotes for all relevant shared bands between non-GSO FSS and GSO FSS as follows:

MOD IRN/126/20

S5.441 The use of the bands 4 500-4 800 MHz (space-to-Earth), 6 725-7 025 MHz (Earth-to-space) by the fixed-satellite service shall be in accordance with the provisions of Appendix **S30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by geostationary-satellite systems in the fixed-satellite service shall be in accordance with the provisions of Appendix **S30B**. The use of the bands 10.7-10.95 GHz (space-to-Earth), 11.2-11.45 GHz (space-to-Earth) and 12.75-13.25 GHz (Earth-to-space) by a non-geostationary-satellite system~~s~~ in the fixed-satellite service ~~shall be in accordance with the provisions of Resolution **130 (WRC-97)**~~is subject to the application of the provision of No. **S9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete notification information for the non-GSO FSS systems and of the complete coordination information for the GSO networks.

MOD IRN/126/21

S5.484A The use of the bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz

(Earth-to-space) by a non-geostationary~~- and geostationary-~~satellite systems in the fixed-satellite service is subject to application of the provisions of ~~Resolution **130 (WRC-97)**. The use of the band 17.8-18.1 GHz (space-to-Earth) by non-geostationary fixed-satellite service systems is also subject to the provisions of Resolution **538 (WRC-97).**~~No. **S9.12** for coordination with other non-geostationary-satellite systems in the fixed satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete notification information for the non-GSO FSS systems and of the complete coordination information for the GSO networks.

MOD IRN/126/22

S5.487A *Additional allocation:* in Region 1, the band 11.7-12.5 GHz, in Region 2, the band 12.2-12.7 GHz and, in Region 3, the band 11.7-12.2 GHz, are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis, limited to non-geostationary systems and subject to the provisions of ~~Resolution **538 (WRC-97)**~~No. **S9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete notification information for the non-GSO FSS systems and of the complete coordination information for the GSO networks.

MOD IRN/126/23

S5.516 The use of the band 17.3-18.1 GHz by geostationary-satellite systems in the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. For the use of the band 17.3-17.8 GHz in Region 2 by feeder links for the broadcasting-satellite service in the band 12.2-12.7 GHz, see Article **S11**. The use of the bands 17.3-18.1 GHz (Earth-to-space) in Regions 1 and 3 and 17.8-18.1 GHz (Earth-to-space) in Region 2 by non-geostationary-satellite systems in the fixed-satellite service is subject to the application of the provisions of ~~Resolution **538 (WRC-97)**~~No. **S9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete notification information for the non-GSO FSS systems and of the complete coordination information for the GSO networks.

NOC

S5.488 and **S5.491**

Reasons: As provided in option 2A of section 2.3 of Annex 6 to Chapter 3 of the CPM Report some administrations considered that there would be a national regulatory risk in changing the provisions.

IRN/126/24

As mentioned in section 3.1.4.1.1 of the CPM Report, elevation angle 0 and 0.2 degrees are used in the FS characteristics for the evaluation of pfd limits for non-GSO FSS satellite in the 10.7-12.75 GHz band. However, it should be noted that some fixed systems with elevation angles up to 3.8 degrees are utilized in the Islamic Republic of Iran, hence it is proposed that this should be taken into account for evaluation of pfd limits.

Agenda item 1.15 - issues related to the radionavigation-satellite service

NOC IRN/126/25

890-1 350 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
960-1 215	AERONAUTICAL RADIONAVIGATION S5.328	

Reasons: Considering that the frequency band 960-1 215 MHz is extensively used in the Islamic Republic of Iran for aeronautical radionavigation systems such as TACAN, DME and SSR, so this Administration objects with the assignment of part of the said band (1 164-1 188 MHz) for RNSS.

MOD IRN/126/26

1 525-1 610 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
1 559-1 610	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) S5.341 S5.355 S5.359 S5.363	

Reasons: To provide frequencies for space-to-space applications such as spacecraft positioning, velocity determination, leading to give better precision of timing and positioning for users according to the results of the ITU-R studies.

Agenda item 1.19 - to consider the report of the inter-conference representative group (IRG) submitted by the Director of the Radiocommunication Bureau and determine the basis for replanning by the next conference so as to afford each country an amount of spectrum that permits the economical development of a broadcasting-satellite service system

Introduction

The 1997 World Radiocommunication Conference (WRC-97) reviewed the broadcasting-satellite service (BSS) planning principles proposed by several administrations and those adopted by the 1995 World Radiocommunication Conference (WRC-95) in Resolution 531 (WRC-95) for the revision of Appendix 30/S30 and Appendix 30A/S30A by WRC-97. WRC-97 agreed to establish an Inter-conference Representative Group (IRG) to study the feasibility of increasing the minimum capacity for countries in Regions 1 and 3 to around the equivalent of ten analogue channels in accordance with the principles set out in Annex 1 to Resolution 532 (WRC-97).

The IRG carried out extensive studies on compatibility issues for preparing a draft plan on the basis of the eight principles in Annex 1 of Resolution 532 (WRC-97), the result of these studies indicate that the desired feasibility is realized in the prepared draft plan.

The Administration of the Islamic Republic of Iran has the following proposals related to consideration of BSS replanning at WRC-2000 under Resolution 532 (WRC-97):

A Proposed strategy for BSS replanning

IRN/126/27

WRC-2000 agrees in conformity with its agenda, to consider itself as a competent conference to adopt a plan.

Reasons: In its Resolution 532, WRC-97 resolved that "WRC-99 should consider the results of the above studies and, if the conclusion is that such replanning is feasible, initiate an appropriate revision for completion no later than 2001".

Also the draft Plan presented to the final meeting of the Inter-conference Representative Group (IRG-5) indicate that replanning is feasible on the basis of 12 channels in the 500 MHz continuous band for Region 3 countries and 10 channels in the 400 MHz continuous band for Region 1 countries.

IRN/126/28

The Islamic Republic of Iran supports the methodology in selecting the orbital position, channel arrangement and polarization that IRG has developed [Doc. IRG99-5/24(Rev.4)]. The draft Plan developed according to the IRG methodology should be the baseline Plan at the Conference.

IRN/126/29

Should WRC-2000 decide to adopt any revisions to the BSS Plans, consideration should be given to the need to develop an acceptable mechanism to deal with any "unresolved cases" of incompatibility identified during this replanning. The IRG should continue after WRC-2000 as a single group, the GTE becoming a part of it, if required, to consider unresolved cases and any modifications to the plan adopted by WRC-2000.

B Principles for consideration of BSS replanning

IRN/126/30

Number of channels: For Region 3 countries (with BSS downlink band 11.7-12.2 GHz) replanning should provide for 12 channels per country.

Reasons: IRG studies indicate that it is entirely feasible to provide 12 channels to all countries in Region 3. This allocations would lead to efficient use of the available frequency band (500 MHz).

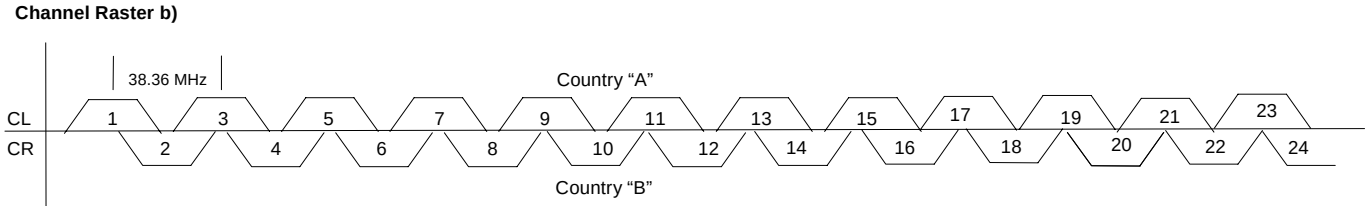
IRN/126/31

Beam coverage: Replanning should be limited to national coverage with 12 channels per country in Region 3 and 10 channels per country in Region 1.

IRN/126/32

Channel arrangement: According to the IRG Final Report, the raster b) type channel arrangement, as defined and shown in the following should be used for the replanning of the BSS Plan in Region 3. In some cases the use of channel raster d) might be necessary.

Raster b): 12 defined channels, with 38.36 MHz frequency spacing, grouped in a continuous band of 500 MHz with one predetermined type of polarization. The channel scheme assumes adjacent-channels;



IRN/126/33

Protection ratios: The existing BSS systems prior to WRC-97 should be protected at the same levels as adopted at WARC SAT-77 and the existing systems after WRC-97 prior to WRC-2000 should be protected at the level as adopted at WRC-97.

The reduced protection ratios for digital BSS systems, as provided by the IRG and shown in the following table, should be used for other systems.

Protection ratios for replanning

Category	**Type of wanted emission**	**Applicable protection ratios (overall/down/up in dB)**			
		Interfering analogue		**Interfering digital**	
		Co-channel	**Adjacent channel**	**Co-channel**	**Adjacent channel**
"Existing" systems prior to WRC-97 (i.e. prior to 27/10/97)	**Analogue**	30/31/40	14/15/21	30/31/40	14/15/21
	Digital	30/31/40	14/15/21	30/31/40	
"Existing" systems after WRC-97 Prior to WRC-2000	**Analogue**	23/24/30	15/16/22	23/24/30	15/16/22
	Digital	23/24/30	15/16/22	23/24/30	-
Plan assignments at WRC-2000	**Digital**	23/24/30	15/16/22	20/21/27	-

IRN/126/34

Channel bandwidth: Replanning should be mainly based on a reference bandwidth of 27 MHz and retaining the existing channel spacing (i.e. 38.36 MHz).

IRN/126/35

Principle 3 systems: Under Principle 3 of Annex 1 to Resolution 532 (WRC-97) existing systems should be protected in replanning process.

In addition, only those systems which have completed Part B of Appendices S30/S30A and which have provided due diligence information in accordance with Resolution 49 (WRC-97) prior to a cut-off date (to be defined at WRC-2000) could be taken into account in replanning. The cut-off date should be just prior to WRC-2000.

IRN/126/36

Composite beams: The Islamic Republic of Iran supports the use of composite beams for the purpose of BSS replanning on the basis of specific request of the concerned administrations.

C Specific requirement

IRN/126/37

The Islamic Republic of Iran requests the allocation of feeder-link channels in the 14 GHz band in addition to the 17 GHz band.

Reasons: At GTE-4, the Islamic Republic of Iran indicated its wishes to retain the use of the 14 GHz frequency band for its feeder-link assignments, in addition to the 17 GHz frequency band. The studies presented to IRG-5 indicated that the required channels can be assigned to the Islamic Republic of Iran in the 14 GHz feeder-link draft Plan without causing any excess interference to any other beam.

D Regions 1 and 3 compatibility issues

IRN/126/38

Compatibility between Region 1 BSS and Region 3 FSS

No additional BSS assignments of Region 1 in the band 12.2-12.5 GHz (after WRC-97) shall be located at orbital positions in the range from 34° E to 200° E.

Some limited exceptions might need to be made for additional assignments to a strictly limited number of Region 1 administrations viz. TKM, KAZ and KGZ (all at 44° E), MNG (74° E) and RUS (110° E) which already have WRC-97 Plan assignments in this frequency range and which may receive additional assignments under Resolution 532 (WRC-97). A limited additional number of Region 1 BSS assignments (i.e. SEY, POL and UAE as proposed by IRG99-5) may be accepted for the purpose of the replanning provided that these assignments are fully compatible with the existing Region 3 FSS assignments.

Reasons: Increasing BSS channel assignments in Region 1 could increase usage of the 12.2-12.5 GHz band. This will translate into more constraints on the use of FSS in this band in Region 3.

It is noted that application of this limitation would assist in reducing the number of potential Region 1 BSS-Region 3 FSS incompatibility cases identified in the Resolution 532 (WRC-97) replanning studies.

IRN/126/39

S5.487 In the band 11.7-12.~~5~~2 GHz in Regions 1 and 3 and in the band 12.2-12.5 GHz in Region 1, the fixed, fixed-satellite, mobile, except aeronautical mobile, and broadcasting services, in accordance with their respective allocations, shall not cause harmful interference to broadcasting-satellite stations operating in accordance with the provisions of Appendix **S30**.

Reasons: This footnote for Regions 1 and 3 appears to provide a “super-primary” status to the broadcasting-satellite service over the other primary services sharing the same band (FSS, BS, FS), in that they require the latter services not to cause harmful interference on the broadcasting-satellite stations operating in accordance with the provisions of Appendix S30. This footnote is also the

subject of a Rule of Procedure, which concludes that, if, despite the application of the procedures of Appendix S30, harmful interference is actually caused on a broadcasting-satellite station, the station in the other service shall cease this interference (see also S5.43).

On the other hand the provision No. 4.3.17 of Article 4 of Appendix S30 states that:

"…The frequency assignment concerned shall enjoy the same status as those appearing in the appropriate Regional Plan and will be considered as a frequency assignment in conformity with the Plan."

It is understood that footnote S5.487 is applicable to the modifications/additions to the BSS plans which are in conformity with Appendix S30 and provides super primary status for Region 1 BSS systems against Region 3 unplanned services (including FSS). This means that Region 1 Article 4 systems may cause more constraints for future Region 3 FSS (see also S5.43).

Agenda item 1.19*bis* - in accordance with Article S14, to consider objections expressed by administrations with respect to the Radio Regulations Board's Rules of Procedure relating to the application of RR 2674/S23.13 in order for the Bureau to modify its findings in accordance with the conclusions of the Conference

1 Rules of Procedures relating to the application of RR 2674/S23.13

Background

RR No. S23.13/2674, which is a general provision applicable to all BSS bands, planned and unplanned, in all three Regions, states:

"In devising the characteristics of a space station in the broadcasting-satellite service, all technical means available shall be used to reduce, to the maximum, the radiation over the territory of other countries unless an agreement has been previously reached with such countries".

WRC-95 when discussing the application of this provision, indicated that the agreement under No. S23.13/2674 and the agreement required in Article 4 of Appendices S30/30 and S30A/30A are separate agreements, the agreement under No. S23.13/2674 should be sought directly from the administration concerned or through the Bureau; in this latter case, the agreement under No. S23.13/2674 should be sought through the publication required under Article 4 of Appendices S30/30 and S30A/30A or through the publication required under Resolution 33 (Rev.WRC-97). In the case of a disagreement, and if the administrations concerned cannot reach an agreement, the Bureau shall modify the service area to exclude the territory of the objecting administration. In either case, the administration initiating the project is entitled to bring into use the modification after successful completion of Article 4 of Appendices S30/30 and S30A/30A procedures.

For implementation of RR No. S23.13/2674, the RRB in 1996 established a draft Rules of Procedure on the basis of paragraphs 4.3 and 5.3.1 of the Annex to Resolution 531 (WRC-95), which was circulated by the BR in CR/48 on 16 February 1996. In response to that letter, some countries proposed some modifications to the draft Rules of Procedure. The RRB in its subsequent meeting modified its draft, which was published in CR/60 dated 29 November 1996.

In accordance with this Rules of Procedure, for submissions received after 18 November 1995, the following procedure applies:

"2.1 When examining, for data completeness, the information related to a BSS space station, received by the Bureau, after 18 November 1995, for application in the Plan modification or coordination procedures in accordance with either Article 4 of Appendix **S30** or Section B (§ 3.2.1) of Resolution **33 (Rev.WRC-97)** or under No. **S9.11**, whose service area exceeds the territory of the notifying Administration, the Bureau shall require that the service area be defined in terms of other administrations (country/territory symbols) included in the service area. The notifying administration should therefore indicate whether a special (separate) agreement has been obtained from these administrations relating to the inclusion of their territories in the service area."

"2.3 If no comment is received either by the notifying administration or through the Bureau within the four month period mentioned in § 2.2 above, it is understood that there is no objection to the inclusion of the territory in the planned service area."

"2.4 In case of a disagreement on the inclusion of a territory in the service area, the Bureau shall modify the service area by excluding the test points (see item 7 of Annex 2 to Appendix **S30**) situated on the territory of the objecting administrations from the service area of the proposed Plan modification…."

The above procedure, however, shall be applied to the BSS systems communicated to the Bureau after 18 November 1995. It means that the above procedure shall not be applied to the BSS systems communicated to the Bureau prior to 18 November 1995, even though their service area exceeds the territory of the notifying administration. In fact, approximately 70 BSS systems have been communicated to the Bureau from 1 January 1995 to 18 November 1995. Most of their service areas include the territories of the other countries.

Since the Rules of Procedure concerning S23.13/RR 2674 may not be in accordance with the conclusions of WRC-95, the ITU Council at its 1998 meeting approved the additional agenda item 1.19*bis* for WRC-2000.

Therefore this Administration proposes that:

IRN/126/40

The current Rules of Procedure concerning RR S23.13/2674 should be applied to all BSS systems communicated to the Bureau prior to 18 November 1995 and their service area exceeding the territory of the notifying administration, except those assignments brought into use, notified and for which the date of bringing into use has been confirmed to the Bureau before 18 November 1995 and are in conformity with Appendices 30 and 30A.

Reasons: The licence of broadcasting service by satellite systems, as well as terrestrial relay systems (such as V/UHF systems) shall be controlled by any administration based on its national sovereignty (this concept is well consistent with RR S23.13/2674), therefore.

IRN/126/41

The notifying administration shall request an explicit agreement by the administrations within the service area before providing satellite broadcasting services to those other administrations. In other words, Rule of Procedure 2.3 shall be changed in such a way that, if no answer received, not to be interpreted as agreement.

Reasons: Resolution 536 (WRC-97), which was adopted in response to some concerns which raised at WRC-97, *resolves* that:

"in addition to observing No. **S23.13/2674**, and before providing satellite broadcasting services to other administrations, administrations originating the services should obtain the agreement of those other administrations."

2 Direct-to-home transmission/broadcasting-satellite service (section 5.5 of the CPM Report and section 10 of the IRG Final Report)

Background

Unplanned frequency bands, in particular the C-band around 4 GHz and the Ku bands around 11-12 GHz are allocated to the fixed-satellite service and governed by the coordination procedure.

The FSS was basically considered, as being used primarily, for the types of traffic traditionally carried by the FS (e.g. private two-way transmissions between specified fixed points such as trunk telephone traffic, and one-way feeds to broadcast stations and cable TV head ends).

With the advance of technology that permitted the use of smaller and smaller antennas, the FSS also was found to be well suited for point-to-multipoint networks using VSATs. In addition, it became possible to receive, directly to home, the point-to-point transmissions intended primarily as feeds to cable head ends. The aforesaid unplanned bands are now extensively used for television DTH applications.

The following definitions for the broadcasting-satellite service and the fixed-satellite service are given in the Radio Regulations respectively:

S1.39 *broadcasting-satellite service:* A *radiocommunication service* in which signals transmitted or retransmitted by *space stations* are intended for direct reception by the general public.

In the broadcasting-satellite service, the term "direct reception" shall encompass both *individual reception* and *community reception*.

S1.21 *fixed-satellite service:* A *radiocommunication service* between *earth stations* at given positions, when one or more *satellites* are used; the given position may be a specified fixed point or any fixed point within specified areas; in some cases this service includes satellite-to-satellite links, which may also be operated in the *inter-satellite service*; the fixed-satellite service may also include *feeder links* for other *space radiocommunication services.*

The definition of the BSS refers to an infinite number of reception points within the specified area (service area). In the current Radio Regulations, protection of receive BSS earth stations ensured by associated coordination methods, which are based on protection of whole service area. While protection of receive FSS/DTH earth stations are based on protection of specific stations at the specified fixed points, requiring notification and coordination of a large number of receive FSS/DTH earth stations (by notifying administration). If these stations are not notified and coordinated, protection from the other services can not be assured.

Based on these considerations, this Administration proposes that:

IRN/126/42

In the usage of the FSS bands for DTH broadcasting service, BSS constraints (RR **S23.13/2674**[1] and Resolution **536 (WRC-97)**[2]) should be observed.

Reasons: Considering the definition of the BSS and FSS, the DTH television application is deemed as a broadcasting service not intended for use in the FSS band.

IRN/126/43

To include in the forthcoming WRC agenda the "to review the possibility of combining the direct-to-home transmission services by satellite and satellite broadcasting services in the planned and non-planned bands and its implication on the relevant Articles of the Radio Regulations."

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[1] RR No. S23.13/2674 indicates that all technical measures available shall be used to reduce, to the maximum, the radiation by the broadcasting-satellite service over the territory of other countries unless an agreement has been previously reached with such countries.

[2] Resolution 536 (WRC-97) *resolves* "that, in addition to observing No. **S23.13/2674**, and before providing satellite broadcasting services to other administrations, administrations originating the services should obtain the agreement of those other administrations."

MOD IRN/126/44

RESOLUTION 536 (Rev.WRC-~~97~~2000)

Operation of ~~broadcasting~~ satellites systems serving other countries for broadcasting services

The World Radiocommunication Conference (~~Geneva, 1997~~Istanbul, 2000),

considering

a) the institutional nature of the ITU which is founded on an agreement between its Member States;

b) the radiation for broadcasting services by satellite shall not affect other countries unless an agreement has been previously reached with such countries;

~~*b*~~*c)* the treaty status of the Plans in Appendices **S30** and **S30A**;

~~*c*~~*d)* that these Plans were established on the basis of planning principles which included, *inter alia*, that the Plans should be based mainly on national coverage;

~~*d*~~*e)* the increasing number of applications under Article 4 of Appendices **S30** and **S30A** for modifications to the Plans, leading to many multinational systems;

f) that during recent years, unplanned bands are extensively used by television direct-to-home applications;

~~*e*~~*g)* that No. **S23.13**/**2674** requires that "In devising the characteristics of a space station in the broadcasting-satellite service, all technical means available shall be used to reduce, to the maximum, the radiation over the territory of other countries unless an agreement has been previously reached with such countries",

recognizing

a) that current technology provides opportunities to implement broadcasting-satellite systems with service areas that exceed national coverage;

b) that several such systems have been implemented and others are being planned;

c) that successful ~~Appendices **S30** and **S30A** Article 4~~ coordination of such systems does not in any way imply licensing authorization to provide a broadcasting service within the territory of a Member States,

resolves

that, in addition to observing No. **S23.13/2674**, and before providing ~~satellite~~ broadcasting services by satellite to other administrations, administrations originating the services should obtain the agreement of those other administrations.

Agenda item 1.20 - to consider the issues related to the application of Nos. S9.8, S9.9 and S9.17 and the corresponding parts of Appendix S5 with respect to Appendices S30 and S30A, with a view to possible deletion of Articles 6 and 7 of Appendices S30 and S30A, also taking into consideration Recommendation 35 (WRC-95)

1 Retention of Articles 6 and 7 of Appendices S30 and S30A

The main issue of WRC-2000 agenda item 1.20 is whether or not to delete Articles 6 and 7 of Appendices S30/S30A. In this regard the following three approaches were discussed in the CPM:

- Approach A - suppression of S9.8 and S9.9 and retention of Articles 6 and 7 of Appendices S30/S30A;
- Approach B - suppression of Articles 6 and 7 of Appendices S30/S30A and retention of S9.8 and S9.9; and
- Approach C - separating the modifications to the Plans from the original Plans.

Appendices S30 and S30A have been applied during the last 20 years, to date there have been no complaints, either by administrations or BR. With a careful consideration of the CPM Report to WRC-2000, it can be observed that deletion of Articles 6 and 7 of Appendices S30/S30A would increase the complexity of application of these Appendices and coordination procedures between the planned and unplanned services. Therefore, this Administration is against to the deletion of Articles 6 and 7 of Appendices S30/S30A and prefers that all cases related to the BSS plans be considered within the framework of Appendices S30 and S30A.

However, the application of the present articles of Appendices S30/S30A has shown that there are areas, which require some improvements in order to resolve the inconsistencies and also there are several interference situations that are not currently covered by the procedures in these Appendices.

Based on these considerations:

IRN/126/45

The Islamic Republic of Iran supports Approach A (suppression of S9.8 and S9.9 and retention of Articles 6 and 7 of Appendices S30/S30A) and believes that if there are real deficiencies which need to be resolved, Articles 6 and 7 of Appendices S30/S30A could be amended in such a way to resolve these deficiencies.

2 Deficiencies in the current procedures of Articles 4, 6 and 7 of Appendices S30 and S30A and Article S9 and possible modifications to these articles to correct these deficiencies

Several deficiencies in the current procedures of Articles 4, 6 and 7 of Appendices S30 and S30A and Article S9 of the Radio Regulations and possible modifications to these articles for correction of these deficiencies have been identified in the CPM Report (section 5.2.3). Some of these deficiencies have been considered and commented as follows:

2.1 Coordination, with unplanned services, of modifications to the BSS Plans before inclusion in the plans

In the current Radio Regulations, there is no possibility to get protection for assignments associated to an uncompleted modification to one of the BSS Plans in Appendices S30/S30A from stations in non-planned services (e.g. space stations, earth stations or terrestrial stations).

IRN/126/46

A simple solution to this difficulty has been proposed in the CPM-99 Report, that consists of replacing the terms "assignment in conformity with a Plan", wherever it appears in Articles 6 or 7 of Appendices S30/S30A, by the terms "assignment in conformity with the appropriate Regional Plan or for which the corresponding Plan modification procedure has been initiated".

2.2 Coordination between BSS receive earth stations and transmit terrestrial stations

All possible cases of interference that may be raised between BSS receive earth stations and transmit terrestrial stations are indicated in the following table.

Protected assignments/services	Interference source	RR provision	Criteria/methodology
Terrestrial service	Modifications to one of the BSS Plans	4.3.1.4 of Article 4 of APS30	pfd (sections 4, 8 of Annex 1 of APS30)
Assignments of BSS core plans or modifications to one of the BSS Plans which were successfully applied	Terrestrial service	6.1.1 of Article 6 of APS30	Frequency overlap and Annex 3 of APS30
Modifications to one of the BSS plans before inclusion in the plans	Terrestrial service	-	-

In this regard the following cases could be considered:

National coverage systems: The first problem that may arise, as indicated in the above table, is that Article 4 of Appendix S30 does not allow the proposed modifications of the BSS Plans to seek protection from transmitting terrestrial stations. This difficulty could be solved by a simple solution, which was proposed in the previous section.

Multinational coverage systems: The second and serious problem will be raised, when the service area associated to a modification of the plan, exceeds the national territory of the notifying administration. In this case, the protection/coordination of that part of the service area which is outside of the national territory of the space station (or notifying) administration, is complex; as Resolution 1 (Rev.WRC-97) and BSS constraints (RR S23.13/2674 and Resolution 536 (WRC-97)) would be involved.

- Resolution 1 (Rev.WRC-97) *resolves*

  "that, unless specifically stipulated otherwise by special arrangements communicated to the Union by administrations, any notification of a frequency assignment to a station shall be made by the administration of the country on whose territory the station is located."

- Resolution 536 (WRC-97) *resolves*

  "that, in addition to observing No. **S23.13/2674**, and before providing satellite broadcasting services to other administrations, administrations originating the services should obtain the agreement of those other administrations."

- RR No. S23.13/2674 indicates that all technical measures available shall be used to reduce, to the maximum extent practicable, the radiation by the broadcasting-satellite service over the territory of the other countries unless an agreement has been previously reached with such countries. It should be noted that the Rules of Procedure concerning RR S23.13/2674 state that in the case of agreement under this provision, it is understood that there is no objection to the inclusion of the territory in the proposed service area.

  On the other hand, section 1.1 of Annex 5 of Appendix S30 provided the following definition of the service area:

  > The area on the surface of the Earth in which the administration responsible for the service has the right to demand that the agreed protection conditions be provided.
  >
  > NOTE - In the definition of service area, it is made clear that within the service area the agreed protection conditions can be demanded. This is the area where there should be at least the wanted power flux-density and protection against interference based on the agreed protection ratio for the agreed percentage of time.

Based on this considerations, this Administration proposes that:

IRN/126/47

Since the notification and coordination of a very large number of BSS receive earth stations is practically impossible, the application of current procedures (protection of a modification to the BSS plans over the entire service area) should be continued.

IRN/126/48

1) If an administration, within the proposed service area, gives an explicit agreement under RR S23.13/2674, it should be considered in the service area[3], which is to be protected from transmitting terrestrial stations.

2) In order to protect the agreed service area from future transmitting terrestrial stations, Article 6 of Appendix S30 would be used with respect to this service area.

   This means that neighbouring countries with this service area should observe the pfd limit at the edge of the BSS service area. Also it is understood that those administrations which have given explicit agreement under RR S23.13/2674 should protect the associated receive BSS earth stations, even in their national territory.

3) Regarding the responsibility for protection/coordination of those BSS receive earth stations within the defined service area but outside the national territory of the notifying administration of space station, a possible solution is:

   > Unless specifically stipulated otherwise by special arrangements communicated to the Union by administrations, the space station administration is responsible for protection/coordination of the BSS receive earth stations within the service area.

[3] The Rules of Procedure concerning RR S23.13/2674 state that in the case of agreement under this provision, it is understood that there is no objection to the inclusion of the territory in the proposed service area.

2.3 Coordination between BSS receive earth stations and FSS transmit earth stations operating in opposite directions of transmission

The problem in this case is the same as the previous section and therefore it should be dealt with as section 2.2 [(to retain Article 7 of Appendix S30 with the necessary modifications)].

2.4 Coordination between planned transmit BSS feeder-link earth stations and receive terrestrial stations

In the case of coordination of transmit BSS feeder-link earth stations associated to a modification of the Plan with receive terrestrial stations (i.e. in the bands 14.5-14.8 GHz and 17.7-18.1 GHz in Regions 1 and 3, and in the band 17.7-17.8 GHz in Region 2), the following problems have been pointed out in the CPM Report:

1) Coordination area: the current procedure requires a global service area coordination (i.e. with typical BSS feeder-link earth stations) which is generally impossible to achieve,

2) Non-conformity with Resolution 1 (Rev.WRC-97): this coordination is currently sought by the administration which applied the procedure of modification of the Plan and which may not be the administration on whose territory the BSS feeder-link earth stations will be operated.

To resolve these inconsistencies, this Administration proposes that:

IRN/126/49

The coordination of BSS feeder-link earth stations could be limited to a case-by-case coordination, undertaken by the appropriate administration with the specific earth station.

IRN/126/50

Unless specifically stipulated otherwise by special arrangements communicated to the Union by administrations, the administration which applied the procedure of modification of the Plan is responsible for protection/coordination of the BSS feeder-link earth stations within the planned service area.

2.5 Coordination between planned transmit BSS feeder-link earth stations and FSS receive earth stations operating in opposite directions of transmission

In this case, the same procedure as identified in the previous section could be followed. Therefore, Article 7 of Appendix S30A should be retained with the necessary modifications.

2.6 Scope of footnotes S5.487 and S5.490

"**S5.487** In the band 11.7-12.5 GHz in Regions 1 and 3, the fixed, fixed-satellite, mobile, except aeronautical mobile, and broadcasting services, in accordance with their respective allocations, shall not cause harmful interference to broadcasting-satellite stations operating in accordance with the provisions of Appendix **S30**."

"**S5.490** In Region 2, in the band 12.2-12.7 GHz, existing and future terrestrial radiocommunication services shall not cause harmful interference to the space services operating in conformity with the broadcasting-satellite Plan for Region 2 contained in Appendix **S30**."

Footnotes S5.487 for Regions 1 and 3, and S5.490 for Region 2, appear to provide a super-primary status to the broadcasting-satellite service over the other primary services sharing the same band (FSS, BS, FS), in that they require the latter services not to cause harmful interference to the broadcasting-satellite stations operating in accordance with the provisions of Appendix S30. These footnotes are also the subject of a Rule of Procedure, which concludes that, if, despite the

application of the procedures of Appendix S30, harmful interference is actually caused on a broadcasting-satellite station, the station in the other service shall cease this interference.

On the other hand the provision No. 4.3.17 of Article 4 of Appendix S30 states that:

"The Bureau shall publish in a special section of its weekly circular the information received under § 4.3.14 together with the names of any administrations with which the provisions of this Article have been successfully applied. The frequency assignment concerned shall enjoy the same status as those appearing in the appropriate Regional Plan and will be considered as a frequency assignment in conformity with the Plan."

Therefore, this Administration is of the opinion that:

IRN/126/51

Footnote S5.487 for Regions 1 and 3, and S5.490 for Region 2 are applicable to the modifications/additions to the BSS Plans which are in conformity with Appendix **S30**.

Agenda item 2 - to examine the revised ITU-R recommendations incorporated by reference in the Radio Regulations in accordance with Resolution 28 (WRC-95); and decide whether or not to update the corresponding references in the Radio Regulations, in accordance with principles contained in the Annex to Resolution 27 (Rev.WRC-97)

SUP IRN/126/52

Recommendations ITU-R IS.847-1, IS.848-1 and IS.849-1

ADD IRN/126/53

DRAFT NEW RECOMMENDATION ITU-R SM.[XX]

Reasons: Regarding ITU-R studies, especially Study Group 1 (TG 1/6).

PP-98 issues

Resolution 86 - Coordination and notification procedures for satellite networks

Date of bringing into use of satellite frequencies (section 7.5.2.1 of the CPM99-2 Report)

This Administration is of the opinion that the proposed text for the definition of the date of bringing into use of satellite frequencies may prevent the utilization of satellite technology by developing countries, because of complexity and regulatory constraints. Therefore this Administration supports a definition for the date of bringing in to use, which denotes only to one service and believes that it needs further studies.

Resolution 88 - Implementation of processing charges for satellite network filings and administrative procedures

This Administration supports *decides* 3 of Council Decision 482, which entitles each Member State for publication in special sections of one satellite network each year, free of charge. Accordingly, this Administration proposes that suitable provision on this matter be added to the Radio Regulations.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 127-E
18 April 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Spain

PROPOSALS FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 7.2 (AGENDA FOR FUTURE CONFERENCES)

Identification of suitable spectrum for high-density fixed-satellite systems

Spain considers that future satellite systems will make much use of small, inexpensive, easy to install earth stations. Thus, coordination of such types of terminals will be extremely difficult if frequency bands are allocated on a primary basis to other services, particularly when other services are also of a high-density nature. Some of the optimum candidate bands for HDFSS are currently heavily used by fixed service systems, thus offering a limited number of options for identification of HDFSS in a short-term scenario.

However, Spain considers that the identification of HDFSS bands should be made bearing in mind a medium/long-term scenario, where some of the current applications may have evolved to use other techniques or more spectrum efficient applications.

This paper supports other similar proposals from CEPT countries, although stressing the need to find suitable spectrum on a long-term perspective.

In this regard and in the light of expected decisions by WRC-2000 on suitable spectrum identification, Spain considers that the future Radiocommunications Conference should include an agenda item as follows:

to consider regulatory provisions and possibly identification of spectrum above about 18 GHz for high-density systems in the fixed-satellite service.

Further reasons: Traditionally, a number of FSS bands have been shared with the FS in scenarios that have worked well with a limited number of terminals for both types of service. In recent years, many of these shared bands, and others not shared with FSS systems, have been identified for HDFS use, often involving fixed wireless access, multimedia wireless services, etc. Consequently, many bands available for future HDFSS use are becoming more difficult to share.

There are exclusive FSS bands (without FS) for the possible use of HDFSS in the range 10-30 GHz. Taking Region 1 as an example, these bands amount to 1.5 GHz in total, and they will be used in the first generations of interactive satellites, leaving no room for expansion of the high-density use of the fixed-satellite service in the exclusive FSS bands. There is a need to provide more spectrum for one-way or two-way services via satellites and for global harmonization of satellite spectrum,

for both GSO and non-GSO satellite systems. Spectrum for broadband satellite applications is particularly needed.

It should be noted that satellite systems in general have a longer preparation time than terrestrial systems, and that spectrum availability is a condition for the large investments needed for satellite systems. Furthermore, obtaining the required capital to initiate a space system in a new band requires a certainty that the band will be available across the whole of the coverage area when the network is brought into use.

If there is a diversity of usage allowed in the countries within the coverage area, with HDFSS allowed in only some of the area, then this would result in sub-optimum efficiency in the use of the spectrum. It is not practicable to change the frequency usage for a satellite network once the design has been started.

Thus consideration must be made to ensure that a sufficiently wide allocation (500-1 000 MHz for uplink as well as for downlink in the 20/30 GHz range, and 1-2 GHz in each direction in the 40/50 GHz range) in addition to that presently available is established for HDFSS on a global basis.

This matter has been considered by the CPM in sections 4.2, 6.1.4 and 6.1.5 of the Report.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

France, Netherlands (Kingdom of the), United Kingdom of Great Britain and Northern Ireland, Switzerland (Confederation of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 1.15.1

Introduction

Agenda item 1.15.1 requests WRC-2000 to consider new allocations to the radionavigation-satellite service in the range between 1 and 6 GHz required to support developments.

In response to this agenda item, numerous administrations have proposed to allocate the frequency band 5 010-5 030 MHz to the RNSS (space-to-Earth). This allocation is proposed together with proposed footnote S5.444B, stating that the pfd limits for out-of-band emissions of any RNSS system operating in this frequency band shall be below –171 dBW/m^2/10 MHz in the frequency band 4 990-5 000 MHz for 98% of the time, in order to protect the radio astronomy service operating in this band.

This pfd limit has been taken directly from Table 1 of Annex 1 of Recommendation ITU-R RA.769-1; it is considered to be provisional because this Recommendation had been developed for terrestrial sources of interference and does not provide guidance for non-GSO space stations although the sensitivity considerations of the Annex of this Recommendation apply.

The increased use of satellites in radiocommunications leads, for the radio astronomy service, to two problems:

- one, which may be described as a general problem: transmitters on board satellites, operating in bands near, or adjacent to, bands allocated to the radio astronomy service, may cause interference detrimental to radio astronomy observations, due to their unwanted emissions;
- one, which is to be considered as a short-term problem: there is no full consensus within ITU-R on the pfd limit required to protect the radio astronomy service in the band 4 990-5 000 MHz. The value now being proposed during this Conference has been taken from Table 1 of the Annex of Recommendation ITU-R RA.769-1; however, studies provided to ITU-R Working Parties 7D and 8D indicated that considerably lower pfd values may be obtained when RNSS satellites use advanced filtering technology; such will lead to improvements in the protection of the radio astronomy service. The level of protection required needs further study, as well as the application of the concept of 2% of loss of observing time, taking into account the dynamic nature of orbiting multiple non-GSO space stations.

It is recognized that RNSS systems operating in the band 5 010-5 030 MHz can protect the radio astronomy service below 5 000 MHz as reflected in the CPM Report to WRC-2000, but in order not to place undue constraints, either on RNSS systems or on radio astronomy, the appropriate pfd level necessary to protect radio astronomy needs further study.

It is therefore proposed that this Conference concludes, via a new Resolution, as proposed in the attachment, that future conferences consider the results of further studies by ITU-R regarding the problems, as identified above.

Attachment: 1

ATTACHMENT

ADD F/HOL/G/SUI/128/1

RESOLUTION ZZZ (WRC-2000)

Studies on compatibility between the space services, in particular the radionavigation-satellite service (RNSS) (space-to-Earth) operating in the frequency band 5 010-5 030 MHz, and the radio astronomy service (RAS), in particular for the RAS operating in the band 4 990-5 000 MHz

The World Radiocommunication Conference (Istanbul, 2000),

considering

a) that new radiocommunication services are developing, many of which require satellite transmitters, and need to be allocated sufficient spectrum;

b) that research in radio astronomy depends critically upon the ability to make observations at the extreme limits of sensitivity and/or precision;

c) that transmissions from space stations (space-to-Earth) in frequency bands adjacent to or near frequencies used by the radio astronomy service have the potential to cause interference harmful to the radio astronomy service;

d) that Recommendation ITU-R RA.769-1 recommends, *inter alia*, that all practicable steps be taken to reduce to the absolute minimum all unwanted emissions falling into RAS bands, particularly those emissions from aircraft, spacecraft and balloons;

e) that protection requirements of RAS are explained and interference threshold values detailed in the Annex to Recommendation ITU-R RA.769-1;

f) that different coupling mechanisms apply to interfering emissions from terrestrial transmitters or from transmitters on board GSO or non-GSO satellites;

g) that WRC-97 has revised Recommendation 66, which asks to study those frequency bands and instances where, for technical or operational reasons, out-of-band limits may be required to protect safety services and passive services such as radio astronomy, and the impact on all concerned services of implementing or not implementing such limits;

h) that studies in ITU-R, including the band-by-band study, might not conclude on out-of-band limits for space services nor other measures, sufficient to protect the RAS from interference detrimental to radio astronomy observations;

i) that provisional limits of pfd values for space service applications in several new footnotes have been agreed which require verification and possible amendment;

j) that administrations may require criteria to protect RAS from interference detrimental to radio astronomy observations from transmissions space-to-Earth by space stations,

noting

that this Conference has adopted footnote **S5.444B** specifying a provisional pfd limit in the band 4 990-5 000 MHz, for space-to-Earth out-of-band emissions of the RNSS operating in the band 5 010-5 030 MHz,

requests ITU-R

1 to conduct, or continue to conduct, as a matter of urgency and in time for consideration by WRC-03, the appropriate technical, operational and regulatory studies to review the provisional pfd limits concerning the operation of space stations in order to ensure that the space services (space-to-Earth) in the band 5 010-5 030 MHz will not cause interference detrimental to the RAS in the band 4 990-5 000 MHz;

2 to conduct, or continue to conduct, as a matter of urgency the appropriate technical, operational and regulatory studies on the overall compatibility between space services and the RAS in adjacent or nearby frequency bands;

3 to report to CPM-03 on the conclusions of the studies asked for under 1 above;

4 to report to a future competent conference on the conclusions of the studies asked for under 2 above,

urges administrations

1 to participate actively in the aforementioned studies by submitting contributions to ITU-R;

2 that systems designed to operate in the RNSS (space-to-Earth) frequency band 5 010-5 030 MHz shall implement interference avoidance techniques, such as filtering, to the extent feasible, and at least to guarantee compliance with the protection requirements of the RAS operating in the frequency band 4 990-5 000 MHz,

resolves

that WRC-03 be invited to review the provisional pfd limits of space service (space-to-Earth) allocations close to the RAS bands taking into account the results of ITU-R studies,

instructs the Radiocommunication Bureau

as of the end of WRC-03, to review and, if appropriate, revise any finding previously made on the compliance with the limits contained in frequency band 5 010-5 030 MHz of a space service (space-to-Earth) system for which notification information has been received before the end of WRC-03. This review shall be based on the values in the relevant frequency bands, as revised, if appropriate, by WRC-03.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Note by the Secretary-General

INFORMATION PAPER ON THE EUROCONTROL POSITION FOR THE CONFERENCE

I have the honour to bring to the attention of the Conference, at the request of the European Organization for the Safety of Air Navigation (EUROCONTROL), the annexed information paper.

Yoshio UTSUMI
Secretary-General

Annex: 1

EUROCONTROL

European Organisation for the Safety of Air Navigation
Organisation européenne pour la sécurité de la navigation aérienne

Information Paper

on the

EUROCONTROL Position

for the

International Telecommunications Union

World Radiocommunication Conference 2000

Istanbul, 8 May to 2 June 2000

EUROCONTROL

EXECUTIVE SUMMARY

Aviation, and in particular European aviation, needs to rely on adequate radio spectrum capacity to deploy its strategies. An important enhancement of the capacity, flexibility and safety of the ATM infrastructure can only accommodate the extraordinary growth of air traffic. The last ITU WRC in 97 seriously threatened the capacity of aviation to implement CNS/ATM strategies (ATM Strategy for the Years 2000+ in Europe).

It is therefore expected that the WRC 2000 will include in its final acts the aviation view. A summary of the items of critical importance is provided below under the heading of the frequency band or system affected (with reference to the relevant ITU WRC 2000 agenda item)

10 cm Radar Bands (Item 1.6.1)

Ensure the capability and flexibility of the operation of present and future 10 cm radar.

HF Aeronautical Frequencies (Item 1.7)

Support proposals which tighten the provisions relating to the removal of unauthorized transmissions on AM(R)S HF channels.

MSS allocation in the GNSS band (Item 1.9)

Ensure the operation of present and future satellite navigation systems for all phases of flights

AMS(R)S Frequencies (Item 1.10)

Ensure that access and capacity for present operation and future expansions are guaranteed.

Frequencies for GNSS (Item 1.15.1)

Support an allocation for new GNSS, subject to no adverse impact on present or planned terrestrial navigation services.

Fixed Services in GNSS Band (Item 1.15.3)

Support deletion of all country footnotes for fixed service use on frequencies between 1559-1610 MHz

1. CONTENT OF THIS DOCUMENT

Section 2 of the document highlights the importance to have adequate radio spectrum capacity to support ICAO CNS/ATM strategies world-wide and in particular the European aviation ATM Strategy for the Years 2000+, co-ordinated by EUROCONTROL on behalf of the ECAC (European Civil Aviation Conference) which comprises 38 States. Section 3 presents the aviation views for consideration and inclusion in ITU WRC 2000 decisions. The material is arranged in WRC Agenda Item order.

2. THE EUROPEAN AVIATION NEED FOR RADIO SPECTRUM

2.1 EUROCONTROL is the European Organisation for the Safety of Air Navigation. It has currently 30 Member States. The ATM Strategy for the Years 2000+, managed by the EUROCONTROL Agency, is a comprehensive gate-to gate strategy outlining the direction of the main Air Traffic Management (ATM) developments required during the period 2000 to 2015. The challenge is to generate extra capacity to meet the demand while reducing unit costs, and simultaneously increase safety levels.

2.2 During this period the traffic is expected to more than double compared with that in 1997, and the strategy outlines three steps to provide the necessary capacity:
Step 1: by 2005 – to increase capacity by 60% above 1995 levels;

Step 2: by 2010 – to increase capacity by 20% - 40% above those in Step1;

Step 3: by 2015 – to increase capacity by 20% - 40% above those in Step2;

The ATM Strategy for the Years 2000+ supports and supplement in Europe the ICAO CNS/ATM strategy, adopted by all ICAO members in 1990, which is planned to be globally implemented by the year 2010.

2.3 An important enhancement of the capacity, flexibility and safety of the ATM infrastructure is the only way to accommodate the extraordinary growth of air traffic (to be doubled in 2010 compared to 1997). The introduction of non-aviation services, already applied or foreseen, in the aeronautical service bands could significantly reduce the safety and the capacity of the Air Transport Industry. The ability of aviation to implement parts of the ATM Strategy for the Years 2000+ and CNS/ATM strategies, which rely on the availability of sufficient radio frequencies, will be exposed to serious risk.

2.4 The traffic, which grows considerably each year (approximately up to 7%), is restricted by the limited capacity of the ATM and airport infrastructure. As a consequence, passengers are confronted with growing delays, as seen in the table below:

Percentage of departures delayed more than 15 minutes (AEA International Short/Medium Haul)

1998	1997	1996	1995	1994	1993	1992	1991	1990	1989	1988
22.8	19.5	18.5	18.4	13.3	12.7	16.6	18.8	20.0	23.8	19.0

2.5 Aviation, due to its safety nature and world-wide harmonisation, needs long-term stability to develop and implement a strategy. The practice of reallocating bands to another sector, which is able to make use of faster, is obviously unacceptable to aviation. This practice simply prevents the aviation community from being able to develop and implement its strategic plans for the benefit of all users.

2.6 Aviation needs to operate the existing infrastructure when implementing the replacement infrastructure. This means that during a transition period, it is essential to preserve radio spectrum capacity for both the existing and the replacement systems.

2.7 The Air Traffic Service Organisations mainly provide services to the civil air transport industry, but they also control and manage some military flights. The European air transport industry plays an important socio-economic role. In the European Union alone, it currently employs more than 329000 personnel. Around 245 million passengers and 5 million tonnes of freights were transported in 1998[1]. Aviation is an indispensable enabler for the transport of people and goods. Tourism, which is the world's biggest industry in terms of employment and turnover, provides work for 250 million people world-wide, including many in Europe. Europe's carriers play an important role in transporting leisure passengers. In Europe, General Aviation operates more than 36000 airframes for business and leisure activities. Civil European ATM is also indispensable to the defence of European and NATO countries in so far as some military flights are controlled by civilian procedures. To give a comprehensive view of the importance of aviation activities, it is necessary to consider the commercial aspects of airports, the construction of infrastructure, ATC/ATM premises and airports, etc.

[1] The figures are relevant to the 27 airlines, members of AEA. They do not include airports, general aviation, charter, regional airlines and non-European airlines flying in Europe. The total figure is therefore consequently higher.

3. ITU WRC 2000 AGENDA ITEMS

3.1 AGENDA ITEM 1.6.1

Review of spectrum and regulatory issues for advanced mobile applications in the context of IMT2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Allocations.

3.1.1. Introduction

IMT-2000 (in Europe UMTS) services require an additional 160 MHz bandwidth located within the frequency range 1 to 3 GHz. The band 2.5-2.7 GHz is identified as the preferred candidate, while the band 2.7-2.9 GHz is considered by some administrations as a possible candidate. Both bands are directly above bands either used or planned for use by UMTS. Use of the first band might require the relocation of existing services (fixed, broadcast, mobile including ENG/OB services) to share with ARNS in the second band. Use of the second band would require co-sharing of the band with the ARNS i.e. primary radar.

An initial study, sponsored by mobile phone operators, indicates that a co-ordinated use between IMT2000 and radar may be feasible. The aviation, military, maritime and meteorological communities believe that the study is incomplete and misleading due to the incorrect assumptions that have been made regarding the characteristics of primary radar. EUROCONTROL is now sponsoring practical field trials using real IMT2000 equipment and real radar to establish the viability of co-sharing.

3.1.2. European Aviation Policy

The band 2.7-3.4 GHz is extensively used by civil, military, marine and meteorological agencies for surveillance using primary surveillance radar (PSR). PSR is used within ATC for medium-range, en-route surveillance and for terminal area surveillance and approach monitoring. Civil and military ATC often share radar data and both are major elements in the total European aviation structure.

The band is also of strategic importance for States and NATO in view of their responsibilities for the safeguarding of national security and to conduct operations in times of crisis. Air Defence radar covering land, air and sea operations, are located in the 2.7 – 3.4 GHz band. Air Defence relies totally on primary radar as it is the only totally independent means for the provision of radar surveillance data . The band is therefore a critical element in a State's security policy.

The band has been used for primary radar surveillance for over 50 years as it provides the best compromise between the various technical, performance and economic requirements for surveillance. Moving the radar frequencies into another, higher band will involve considerable expense and commercial risk as it would require costly re-design and development, considerable design proving trials, operational performance assessments and inter-operability trials all before

being utilised for operational service. In addition the solid state technology necessary to move to a higher frequency band is not readily available.

The EUROCONTROL European Surveillance Standard mandates the use of PSR for Terminal Manoeuvring Area (TMA) operations only. The requirement for primary radar in the TMA airspace is critical in that it does not rely on aircraft avionics always being serviceable. PSR safeguards navigation in the high density regions filled with climbing and descending aircraft. The requirement for Airport and TMA primary radar coverage is therefore planned to remain

In addition many States use, and plan to continue to use, primary radar as an additional safety net for en-route coverage. Hence the number of primary radar is not anticipated to reduce significantly.

Because of the safety related service provided by primary radar the problems of interference with other systems is critical. The sensitivity of the radar receivers is such that even relatively low levels of interference can cause false targets to be generated, loss of detection, or loss of positional accuracy. For these reasons alone the mutual sharing of common spectrum must be thoroughly analysed, and supported by practical field trials, prior to making any final decisions.

The band 1.5 - 1.6 GHz is considered as candidate for the satellite component of IMT-2000. It is necessary that introduction of IMT-2000 does not constraint the use of the bands 1544-1555 MHz and 1646-1657 MHz, intended for safety communications under the conditions of ITU article S5.357A.

3.1.3. EUROCONTROL Position

- **Insist on a comprehensive compatibility study to examine the technical, operational and safety aspects associated with the sharing of primary radar with other non-ARNS services**

- **Until such studies have clearly demonstrated the feasibility for future sharing of the band, WRC must oppose any proposed new allocation to the mobile (IMT-2000) services in the band 2.7 – 3.4 GHz.**

- **Consideration of the bands 1544-1555 MHz and 1646-1657 MHz for satellite component of IMT-2000 must not constrain access for AMS(R)S (See Agenda Item 1.10).**

3.2 AGENDA ITEM 1.7

Review the use of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting the operational, distress and safety communications, taking in to account Resolution 346.

3.2.1. Introduction and European aviation policy

The Appendix 27 to the Radio Regulations contains the Allotment Plan for the Aeronautical Mobile(R) Service for International routes (MWARAs) and Regional and Domestic routes (RDARAs). These HF aeronautical frequencies are used to preserve the "safety and regularity of flight ... along national or international air routes " in accordance with S43.1.

These HF safety communications are used for Air Traffic Control in areas where VHF communications are not possible.

Some areas of the world, where European airlines use the HF AM(R)S, are experiencing increasing cases of harmful interference from unauthorised radio sources.

Removal of these harmful interference is only possible through a monitoring of the radio environment and through regulatory controls and penalties enforced by the concerned countries.

3.2.2. EUROCONTROL position

- **Support any measures which tighten the provisions related to the removal of unauthorised transmissions on AM(R)S HF channels.**

3.3 AGENDA ITEM 1.9

Take in to account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-earth direction to the mobile satellite service in a portion of the 1559-1567 MHz frequency range, in response to Resolutions 213 and 220

3.3.1. Introduction

Following feasibility studies by ITU-R and by expert groups in ICAO, EUROCONTROL and in North America, it has been concluded that this allocation is not feasible. The reasons are based on consideration of operational safety and technical compatibility with current and future GNSS systems.

3.3.2. European Aviation Policy

GNSS is currently used for en-route operations and is expected to be approved for TMA operations from 2001. A satellite based augmentation system is planned to become operational around 2003. This is designed to support, and is expected to be approved for, en-route and TMA operations as well as for non-precision approach and CAT I precision approach operations.

GNSS has been identified by aviation as being a key enabler for the implementation of its navigation strategy for all phases of flight. The enhancement of existing GNSS systems and the

development of new GNSS systems capable of supporting precision approach operations are ongoing in various regions in the world. In Europe, the European Commission has proposed to develop a system called Galileo, to become operational in 2008, which is taking account of aviation requirements. The European implementation plan for the ATM Strategy for the Years 2000+, together with other world-wide aviation programmes, is focused on increasing airspace capacity whilst maintaining or improving safety. This planning has to be dependent upon GNSS systems with proven integrity and reliability.

3.3.3. EUROCONTROL Position

- **No allocation should be made to the MSS in the band 1559-1567 MHz, as the band sharing between MSS and GNSS has been demonstrated as not feasible.**
- **Ensure the operation of present and future satellite navigation systems for all phases of flights**
- **Delete Resolution 220**

3.4 AGENDA ITEM 1.10

To consider the results of ITU-R studies carried out in accordance with Resolution 218 and take appropriate action on the subject

3.4.1. Introduction

In many areas such as Europe, the North Atlantic, and North America, the current separation of aircraft has become a constraining factor. In these conditions every pilot must communicate and receive instructions on a minute by minute basis. All of such messages fall within Categories 1 to 6 of ITU Article 44 and are safety of life related. Aviation traffic has been consistently and constantly expanding since the late forties. This is predicted to continue, and estimates for the year 2010 show a doubling of present levels. Spectrum access must be an assured factor in this expansion.

ITU WRC 97 agreed to transform the exclusive AMS(R)S allocation into "generic" MSS band in 1.5 -1.6 GHz and to determine for WRC 2000 the feasibility of prioritisation and pre-emptive access for AMS(R)S. The technical feasibility of prioritisation and pre-emption between different networks has not been demonstrated.

The WRC 2000 should provide adequate access to AMS(R)S. Ideally this should be by an allocation in the Table of Frequency Allocations. Alternatively a regulatory mechanism which provides the same assurance at all points in the future is accepted.

3.4.2. European Aviation Policy

To meet the operational requirement for the safety and regularity of flight in a growing air traffic environment in Europe, more efficient ATM applications will need to be implemented. Examples include ADS (Automatic Dependant Surveillance), CPDLC (Controller to Pilot Data Link), ADAP (Automated Down-link of Airborne Parameters), and DYNAV (Dynamic route availability). These depend on data links, and in particular areas of use, on satellite support. The problems of congestion on VHF channels in Europe, together with coverage problems in the Eastern areas, will create the need for support by satellite means within the next decade.

3.4.3. EUROCONTROL Position

- **WRC must propose a strengthening of the Radio Regulations which will provide a positive and clear assurance that frequencies can be made available as required to meet the future expansions in the AMS(R)S**

- **Such regulatory reinforcement is made within the body of Article 5 of the Radio Regulations either by an amendment of S5.367A, or an additional Footnote.**

- **Maintain study and review the situation at a future WRC to consider any necessary adjustments.**

3.5 AGENDA ITEM 1.15.1

To consider new allocations to the radio navigation satellite service in the range 1 to 6 GHz required to support developments.

This Agenda item contains two separate elements :

(i) The proposal by US of allocating a new GPS L5 frequency in the ARNS band at 1166-1188 MHz. L5 has been specified and is intended to meet the more exacting Standards for civil aviation uses.

(ii) The European Galileo system which is examining the ARNS band at 1151-1215 MHz, the radar band 1260-1350 MHz and a part of the ARNS band at 5000-5150 MHz.

The principal aviation systems affected by these proposals are DME, TACAN, MLS and primary radar.

3.5.1. The Effect on Current and Planned Aviation Systems

3.5.1.1. Use of ARNS band (960-1215 MHz)

3.5.1.1.1 Introduction

The new allocations are proposed as co-primary allocations in the band 960 -1215 MHz, which are already allocated to the Aeronautical Radio-navigation Service (ARNS), and used in particular by the Distance Measurement Equipment (DME) and Tactical Air Navigation (TACAN). In addition, Secondary Surveillance Radar (SSR) and Anti-Collision Avoidance System (ACAS) use the frequencies 1030 - 1090 MHz and in some countries, military systems use the band on a non-interference basis (e.g. JTIDS/MIDS).

In European high-density areas, which are congested, studies by European aviation have demonstrated that a re-planning of DME/TACAN transponders operating or planned to operate in the sub-band 1151 -1215 MHz could not be accommodated in the remaining part of the band 960 - 1215 MHz. To allow compatibility between RNSS and DME, the concept of a PFD (power flux density) limit has been introduced. The value of PFD that may be allocated at WRC 2000 must protect the DME services and allow the development of RNSS services, such as Galileo. Appropriate studies need to be completed within aviation, as there is no certainty on the value(s) established in preparation for WRC 2000.

3.5.1.1.2 European Aviation Policy

The ECAC Navigation Strategy endorsed by the ECAC States in March 1999 requires DME operation until at least 2015 and that GNSS[2] will be supplemented by a terrestrial, positioning system based on multiple-DME. Therefore it is likely that more DME stations will be required to support future European navigation developments in the en-route and terminal area and that no decommissioning of DME is planned for Europe before 2015.

The availability of adequate spectrum to support the second generation GNSS or to enhance the current use of GNSS is fully supported by the aviation community. Nevertheless, assessing the compatibility between RNSS and the current use of the ARNS band, and ensuring the safe and continuing operation of the current systems are prime considerations.

Due to the uncertainty in the maximum aggregate value of PFD, ICAO AMCP is proposing a range of values between -115 to -120 dBW/m^2/MHz.

EUROCONTROL has decided not to state a maximum aggregate PFD value until further studies are completed.

[2] GNSS is the ICAO designation for an RNSS or ARNSS system which is specified and recognized for use in aviation, and developed for incorporation in ICAO Annex 10.

3.5.1.2. Use of ARNS Band (5030-5150 MHz)

3.5.1.2.1. Introduction

ICAO Annex 10 specifies the range 5030 to 5090 MHz as the initial frequency plan for MLS, with provision in the range 5090-5150 MHz for possible future expansion. Studies for the RNSS (Space to Earth) service have been made, principally at the lower end frequencies (just above 5000 MHz). For the protection of the Radio Astronomy service in the band below 5000MHz a 10 MHz guard band is needed, which only permits 20 MHz for RNSS. The band at 5090-5150 MHz has also been studied, with the possibility of a move or restriction to MLS.

3.5.1.2.2. European Aviation Policy

The ICAO and ECAC Navigation strategies state the need to maintain and guarantee the low visibility operations (Cat I/II/III Precision Approaches and departures), to at least today's standards. At present MLS is the only ICAO standardised system (apart from ILS) that can support this level of operation. MLS is recommended to be introduced for precision approach operations where operationally required and economically beneficial, to cater for the potential degradation of the ILS signal quality and for the operational limitation on the use of ILS in all weather conditions. Several European States have, in co-operation with airline operators, already committed themselves to MLS implementation and equipment is being manufactured and installed. Movement of MLS spectrum was considered but with global standards for MLS being agreed and implemented, it follows that it is not acceptable to move the MLS channel plan.

3.5.1.3. Use of the 1260 – 1350 MHz band

This band is used for long range primary radar and includes some Enroute ATC radar. These safety services require protection from interference. The proposed RNSS allocation for this band is a non-safety component, and will not be used by aviation. This RNSS allocation is acceptable provided they will not cause harmful interference nor claim protection from the primary radar. A maximum PFD of -133dBW/m2/MHz per satellite is considered by some administrations to protect the radiolocation and radionavigation systems. The aviation community has not accepted this value at this moment.

3.5.2. EUROCONTROL Position

3.5.2.1 Position for the Use of the ARNS Band (960-1215 MHz)

- **An allocation to the RNSS of the necessary minimum bandwidth to meet GNSS requirements in the upper portion of 960 – 1215 MHz band is supported, provided that the RNSS systems do not cause harmful interference to nor claim protection from the ARNS. ITU-R and ICAO studies must be carried out, after allocation of frequencies, to determine a maximum aggregate PFD limit to protect DME services in all phases of flight.**

3.5.2.2 Position for the ARNS Band (5000 - 5150 MHz)

- **WRC must oppose a new allocation in the band 5030 – 5150 MHz until the study under ITU Resolution No. 114 is completed, that is to say not before 2003.**
- **In the event where a RNSS is allocated in the 5000 – 5150 MHz band at WRC-2000, such allocation should be restricted to 5000 – 5030 MHz.**

3.5.2.3 Position for the use of the 1215 - 1350 MHz

- **An RNSS allocation in the band 1215-1350 MHz is acceptable under the conditions that the radar is protected and the RNSS does not claim protection from radar. Studies in ITU-R and ICAO must be undertaken to assess compatibility between RNSS and radar, and a maximum, aggregate PFD value should be determined, after allocation of frequencies, to protect the radar in the 1215 - 1300 MHz band from the RNSS down link.**

3.6 AGENDA ITEM 1.15.3

To consider the status of allocations to services other than the radio-navigation satellite service (S5.355 and S5.359) in the band 1559-1610 MHz.

3.6.1. Introduction

The present ITU footnotes S5.355 (Secondary service for 27 countries) and S5.359 (Primary service for 44 countries) allow the operation of fixed microwave links in the GNSS band. The original Fixed linked allocation was made in 1947, although several further country names were added at WRC95. A number of West European countries are involved. Studies indicate that these links can cause harmful interference to GPS and GLONASS within line of sight

3.6.2. European Aviation Policy

This band is allocated, on a primary basis, to the aeronautical radio-navigation service and the radio-navigation satellite service, and air navigation systems in this band must be protected from harmful interference. Two GNSS elements, GLONASS and GPS, are already in operation in this band. GNSS is currently used for en-route operations and expected to be approved for TMA operations in 2001. Augmentation systems to GNSS and the development of new GNSS systems capable of supporting precision approach operations are ongoing in various regions in the world. In Europe, the European Commission has proposed to develop a system called Galileo, to become operational in 2008.

The European programme for the implementation of the ATM 2000+ strategy and other aviation global programmes, such as ICAO CNS/ATM have identified GNSS as a key enabler for the implementation of their programmes for all phases of flight, including surface movement. GNSS will allow a safe implementation while accommodating the predicted increase in airspace capacity. The risk of interference to GNSS would therefore undermine global aviation strategies.

3.6.3. EUROCONTROL Position

- **These Fixed Links services should be removed from the band 1559-1610 MHz for the safe use of GNSS for aviation in Europe.**

- **This includes both Primary and Secondary allocations. The action should be immediate to permit the use of full capability of GNSS operation (initially GPS and GLONASS and later Galileo).**

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

Note by the Secretary-General

INTELSAT VIEWS ON WRC-2000 ISSUES

I have the honour to bring to the attention of the Conference, at the request of INTELSAT, the annexed information paper.

Yoshio UTSUMI
Secretary-General

Annex: 1

ANNEX

INTELSAT[1]

INTELSAT VIEWS ON WRC2000 ISSUES

1 INTRODUCTION

During the last ITU-R study period, INTELSAT actively participated in meetings conducting technical and regulatory studies in preparation for this Conference. In particular, INTELSAT was heavily involved in the technical discussions associated with the sharing between non-geostationary satellite systems and geostationary satellite networks. It was also involved with the studies related to the BSS re-planning issues in Regions 1 and 3, in the sharing issues connected with the use of the 37.5-42.5 GHz and 47.2-47.5/47.9-48.2 GHz bands, out of band emissions and the use of earth stations on board vessels. These discussions culminated in the compromises reached in Geneva at the second Conference Preparatory Meeting (CPM) which took place in November 1999.

INTELSAT supports the conclusions in the CPM Report and, in most cases, the example texts provided in the associated chapters. However, there are still some pending issues that may have an impact upon its use of the spectrum/orbit resources. This document is to provide to the delegates at the Conference INTELSAT's perspectives on these issues. Since INTELSAT is not entitled to make proposals to the Conference, these perspectives should be considered as recommendations that would best enable the continued efficient use of the GSO by the FSS while taking into account the needs of the other services sharing the spectrum.

INTELSAT views on different agenda items are given below, along with a concise statement of the recommended action. Many of the considerations behind these recommendations and example treatment of the associated regulatory texts, if needed, are given as Annexes to this document as part of INTELSAT's recommendations.

2 NGSO/GSO SHARING (Agenda Item 1.13)

It is noted that the CPM has developed four types of regulatory limits governing interference from non-GSO systems into GSO systems covering the FSS and BSS allocated portions of the band 10.7-30 GHz. These are: (a) validation limits, (b) operational limits, (c) additional operational limits, and (d) aggregate limits. It is understood that the specified limits given for a) and c) are required conditions for entry of any non-GSO FSS assignment in these bands into the master international frequency register (MIFR). Further, since some of the limits are to be met by NGSO systems after being brought into use, failure to comply would lead to appropriate regulatory actions which are to be determined by the Conference.

In order to give regulatory significance to the adopted limits, it is vitally important to associate with them procedures whereby administrations can demonstrate compliance with them. The CPM has identified the nature of such procedures, but did not finalize its recommendations on them. INTELSAT comments and recommendations on the procedures are given in the following sections.

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[1] This document contains the results of studies within INTELSAT and has been written in consultation with the Advisory Committee on Technical Matters of the INTELSAT Board of Governors, to be submitted to the WRC 2000 to contribute to the on-going considerations of the matters discussed therein.

2.1 Single Entry EPFD Limits

a) Validation Limits

The CPM results in Tables S22-1A, 1B, 1C, and 1D are appropriate for the use by the BR for validating potential NGSO entries. Although the limits themselves are higher in many cases than those found acceptable for INTELSAT carriers, INTELSAT supports these limits for validating proposed NGSO systems, with the caveat that the information required for the verification that these limits are met be submitted and published by the BR at the API stage. The reasons are given below.

INTELSAT considers that it is important that administrations be able to make independent verification that the validation limits will be met for their particular GSO FSS networks prior to notification of the NGSO systems.

In the bands 10.7-12.75 GHz, 17.8-18.6 GHz and 19.7-20.2 GHz, GSO administrations will be unable to comment on the proposed NGSO network prior to their notification since, at the API stage, insufficient information is provided per Appendix S4, while at the notification stage the BR makes an examination of the detailed data without opportunity for comments by administrations and enters the network in the MIFR via S11.31(a) and S11.36. INTELSAT considers that if the satellite pfd mask data is submitted in Appendix S4 at the API stage under S9.1, then this would give administrations early opportunity for commenting under S9.3 and S9.4.

The recommended modifications are as follows:

INTELSAT Recommendation: (Agenda item 1.13)

INT/1	MOD	Appendix S4 Annex 2A
	ADD	Section A.4b items 6 and 7, (See Chapter 3 Annex 9 of CPM Report)
	ADD	new Section A.14, (See Chapter 3 Annex 9 of CPM Report)
	ADD	Section C.9 item (d), (See Chapter 3 Annex 9 of CPM Report)
	MOD	Appendix S4 Annex 2B (Tables A and C) to include reference to above items at API stage as shown in Annex 1 to this contribution.

b) Operational Limits

§3.1.2.4.7 of the CPM text defines operational limits as being limits that the NGSO system must never exceed once in operation. These operational $EPFD_{down}$ limits are intended to protect GSO satellite systems from loss of synchronization or performance degradation caused by very short inline events where the NGSO satellite would pass within the main beam of the GSO earth station. The limits applicable to 10-12 GHz band antennas greater than 3m in diameter have been developed.

The CPM, in §3.1.2.4.7, noted 5 principles to be applied, two of which are of particular relevance in devising compliance procedures: (i) should the operating levels be exceeded, all necessary steps shall be taken by NGSO administrations to ensure that interference levels are reduced to the operational limit as expeditiously as possible; and (ii) individual administrations and their GSO system operators would make the determination of whether a NGSO FSS system is exceeding the operational limits. These principles were used in developing the procedures suggested in Section 2 of Annex 8 to Chapter 3 of the CPM report.

The CPM proposal describes a two-phased approach, the first of which calls for an immediate solution to the problem, such as a reduction in the non-GSO system $EPFD_{down}$ followed by a second stage where there will be further verification and discussion of solutions for reducing the interference to the $EPFD_{down}$ levels given in Article S.22. However, there are still open issues associated with the procedure to be followed in these cases, including the recommended response deadlines. INTELSAT's recommended procedures and the suggested text of a Recommendation requesting the ITU to develop a methodology to be used for the determination of excessive levels of $EPFD_{down}$ are given respectively in Annex 2 and 3 to this contribution.

INTELSAT Recommendation: (Agenda item 1.13)

INT/2 Due to the seriousness of this type of interference and its damaging effect on link availability, INTELSAT favors short response deadlines, such as 5 days for non-GSO operators to take immediate corrective action, followed by more detailed measurements and discussions on long term solutions for reducing the interference to acceptable levels within 30 days. The recommended detailed procedures for assuring compliance with the operational limits are given in Annex 2 to this contribution as an additional Section VII to Article S15.

INT/3 The WRC should invite the ITU-R to develop measurement techniques to determine if the NGSO EPFD levels into an operational GSO earth station is meeting the Article S22 operational limits. The Recommendation requesting the ITU-R develop such measurement techniques is given in Annex 3 to this contribution.

c) Additional Operational EPFD Limits

§3.1.2.4.8 of the CPM report describes these additional operational limits. These limits are lower than validation limits since the latter were derived based on a combination of worst case assumptions, whereas the former take into account the exact details of the beam switching, traffic loading and other details. Some of these may be proprietary and others subject to changes with the evolution of the system. The CPM has determined the additional operational limits for the 3 and 10-meter Ku-band antennas. These are given in Table S.22-4 of the CPM report. An administration notifying a NGSO FSS system would have to commit to ensuring that the proposed system will meet the limits in this table. Such a commitment should be given along with the data in Appendix S4.

No methods to verify the system's ability to meet these limits were identified by the CPM and the ITU-R would need to recommend appropriate methods. Suitable text for a Recommendation requesting the ITU-R to develop such a methodology is given in Annex 3.

In addition, Administrations may need to know the aggregate additional operational $EPFD_{down}$ that all non-GSO FSS network would produce into their GSO FSS networks and the ITU-R should be requested to develop methodologies for calculating the operational EPFD levels for specified percentages of time. Such a request is also contained in Annex 3 of this contribution.

Based on discussions held at the last WP4A meeting, a consensus emerged that this verification would be performed by simulation. An agreed software would need to be developed, or the BR software would have to be augmented to accept detailed carrier data rather than the maximum emissions alone. This data, which resides only within the notifying administration, would need to be divulged to the affected GSO party. This requires proprietary information about beam pointing and switching strategy of NGSO systems to be disclosed to the BR and the GSO FSS administration. A draft Resolution in this regard is given in Annex 4 to this contribution.

INTELSAT Recommendations: (Agenda item 1.13)

INT/4 The WRC should modify Appendix S4 data requirements to include explicit statement of certification that the AOP limits are met by the proposed system. A suggested text is as follows:

ADD to APPENDIX S4, ANNEX 2A, a new Section A.15

A.15 Commitment regarding compliance with additional operational $EPFD_{Down}$ Limits

For non-geostationary satellite systems operating in the fixed-satellite service in the bands 10.7-11.7 GHz (in all Regions), 11.7-12.2 GHz (Region 2), 12.2-12.5 GHz (Region 3), and 12.5-12.75 GHz (Regions 1 and 3), a commitment that the filed for system will meet the additional operational $EPFD_{DOWN}$ limits that are specified in Table **S22-4A** under No. **S22.5G**.

INT/5 The WRC should invite the ITU-R to develop measurement techniques to determine if the NGSO EPFD levels into an operational GSO earth station is meeting the Article S22 additional operational limits and to enable GSO FSS administrations to determine the aggregate operational EPFD levels into their operational earth stations for specified percentages of time. The Recommendation requesting the ITU-R develop such measurement techniques is given in Annex 3 to this contribution.

INT/6 The WRC should adopt a Resolution enabling GSO FSS administrations to verify that the non-GSO systems meet the additional operational $EPFD_{down}$ limits into their GSO FSS earth stations, with the non-GSO FSS data to be provided by the notifying administrations and a procedure to be followed in the event the AOP limits are exceeded. Draft text for a new Resolution is given in Annex 4 to this contribution.

2.2 Aggregate NGSO EPFD Limits

The CPM has proposed a Resolution WWW in which it is stated that NGSO systems collectively must not exceed the aggregate EPFD values given in its Annex 1, and that if these values should be exceeded at any operational earth station, the NGSO systems must take all steps to reduce the interference to the level given in that Annex. It should be noted that the values in Annex 1 were derived for the protection of GSO systems assuming the combination of worst case interference configurations of all NGSO networks. While the specific values do cause the 10% limit of increase in unavailability of INTELSAT transmissions to be exceeded, they were considered acceptable given that the actual operational values would be less since not all NGSO satellite beams point to any single location at the same time.

The current text of the proposed Resolution WWW on aggregate interference has been interpreted by some administrations to mean that actual (operational) aggregate interference from NGSO systems should not exceed the limits given in Annex 1 to that Resolution. INTELSAT believes that this is incorrect because it implies that NGSO systems can be brought into service until the aggregate of all the actual interference equals or exceeds the theoretical maximum, calculated based on worst case assumptions. In this case the actual interference into GSO networks would by then be well beyond the interference levels acceptable to the GSO systems.

To avoid this, INTELSAT believes that if the aggregation of worst-case validation EPFD values caused by the simultaneous operation of NGSO networks were compared to the values in Annex 1 of Resolution WWW, then the *actual* interference would be acceptable to GSO networks. Furthermore, a check of this nature has the virtue of simplicity, uses publicly

available data and will avoid future interference problems if applied before validation of the fourth or higher in order NGSO entry. It also allows for possible coordination or cooperation among all NGSO operators to ensure that the limits in Res. WWW are never exceeded. To implement such a procedure, the ITU-R should be requested to develop technical methods for aggregating EPFD from multiple NGSO networks based on their individual validation data.

If this approach cannot be implemented, the only available alternative is to modify the limits in Annex 1 of Resolution WWW to reflect the aggregation of the additional operational limits. In such a case the ITU-R will have to develop a methodology for calculating the aggregate of the actual $EPFD_{down}$ produced by the NGSO systems.

On a closely related point, there has been some interpretation that the language of Resolution WWW implies that such tests must be performed upon NGSO systems only after they come into operation. INTELSAT does not agree with this interpretation, and believes early detection of potential difficulties minimizes the possibility of excessive interference into existing GSO FSS systems. It is, therefore, preferable, that an administration or the Bureau apply this check for NGSO systems which have submitted due diligence information before they are brought into operation.

INTELSAT Recommendations: (Agenda item 1.13)

INT/7 The example modification to Resolution WWW is given in Annex 5 to this contribution.

INT/8 The ITU-R should be requested to advise on the method for aggregating EPFD of multiple NGSO networks for comparison with the limits given in Resolution WWW. This request to the ITU-R is also contained in Annex 5 to this contribution.

2.3 Consequential Modifications to RR S RR S5.484A, S5.487A

In order to ensure the application of the provisions of Resolution WWW the following recommended modifications to RR S5.484A, S5.487A are suggested.

INTELSAT Recommendations: (Agenda item 1.13)

INT/9 **MOD S5.484A** The use of the bands 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 13.75-14.5 GHz (Earth-to-space), 17.8-18.6 GHz (space-to-Earth), 19.7-20.2 GHz (space-to-Earth), 27.5-28.6 GHz (Earth-to-space), 29.5-30 GHz (Earth-to-space) by a non-geostationary ~~and geostationary~~ satellite system~~s~~ in the fixed-satellite service is subject to application of the provisions of ~~Resolution **130** (WRC-97). The use of the band 17.8 – 18.1 GHz (space-to-Earth) by non-geostationary fixed-satellite service systems is also subject to the provisions of Resolution **538(WRC-97)**~~ No. **S9.12** for coordination with other non-geostationary-satellite systems in the fixed-satellite service. In these bands, non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service. The provisions of Resolution **130 (MOD WRC-2000)** and Resolution WWW apply.

INT/10 **MOD S5.487A** *Additional allocation:* in Region 1, the band 11.7-12.5 GHz, in Region 2, the band 12.2-12.7 GHz and, in Region 3, the band 11.7-12.2 GHz, are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis, limited to non-geostationary systems and subject to the application of the provisions of ~~Resolution 538 (WRC-97)~~No. **S9.12** for coordination between non-geostationary-satellite systems in the fixed-satellite service. In these bands, non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from GSO networks in the broadcasting-satellite service. The provisions of Resolution 538 (MOD WRC-2000) and Resolution WWW apply.

2.4 Incorporation of Uplink Off-Axis e.i.r.p. Limits in Article S.22

INTELSAT agreed to the off-axis eirp density limits as given in the CPM report, Chapter 3, Sections 3.1.2.2.4 (12/14 GHz) and 3.1.2.2.5 (30 GHz), especially as it is recognized that the non-GSO FSS operators require some basis to estimate the expected interference into their satellites as they are operating more than ±3 degrees from the GSO orbit. However, INTELSAT is concerned that if these limits were incorporated into the Radio Regulations it would lead to additional costs to be incurred by antenna manufacturers and earth station operators to measure them as explained in Annex 6 to this contribution.

Three options for the regulatory and procedural considerations are given in Sections 3.1.2.4.5 of the CPM report, with the example text for these options given in Annex 6 of the CPM report. INTELSAT believes there is no need to incorporate the off-axis eirp density limits into the Radio Regulations, since the present off-axis eirp density limits have been successfully followed by GSO FSS operators for many years in their present form as an ITU-R Recommendation. Further discussion on the implications of including the off-axis eirp density limits into the Radio Regulation is given in Annex 6 to this contribution.

It is recommended that Radio Regulation text existing prior to WRC-97 be modified to accommodate the requirements of NGSO systems and adopted by WRC-2000.

INTELSAT Recommendation: (Agenda item 1.13)

INT/11 **REPLACE** the current Section VI of Article S22 by the following text:

Section VI – GSO Earth station off-axis power limitation in the Fixed-Satellite Service

MOD S22.26 §9 The level of equivalent isotropically radiated power (e.i.r.p.) emitted by an earth station in all directions off the main beam axis could have a significant impact on interference caused to other satellite networks. Enhanced utilization and easier coordination would be attained by minimizing such off-axis radiation and administrations are encouraged to achieve the lowest values practicable bearing in mind the latest ITU-R Recommendations. Minimizing such levels is particularly important in intensively used up-link bands.

3 BSS ISSUES (Agenda Item 1.19)

3.1 New BSS Plan for Regions 1 and 3

Compatibility between new BSS Plan assignments and the FSS Services

When WRC-97 approved a partial modification to the BSS Plan for Regions 1 and 3 to accommodate requirements of new countries emerging from recent geopolitical changes, it made it clear in the remarks column of Tables 2 and 3 of Article 11 of Appendix S30 that these new assignments would need to be coordinated with FSS networks before being brought into use in cases where the pfd limits are exceeded. If WRC-2000 approves a complete new BSS Plan for Regions 1 and 3, it is also extremely important that similar rules be adopted.

Furthermore, in light of new BSS parameters adopted for planning in Regions 1 and 3, it is necessary to adopt new inter-regional pfd criteria for triggering coordination of new FSS stations, which would be based upon these parameters.

INTELSAT Recommendation: (Agenda item 1.19)

INT/12 Assignments in any new BSS Plan for Regions 1 and 3, which were not in the original plan, should be required to protect FSS satellite networks before implementation of the assignments, if they exceed the allowable pfd limits, and not claim protection from FSS networks;

INT/13 There is a need to revise inter-regional pfd criteria for triggering coordination by new FSS networks on the basis of the new BSS parameters adopted for planning purposes. Based upon the analysis given in Annex 7 to this contribution, INTELSAT is of the view that, in order to facilitate frequency sharing between BSS and FSS networks in the 11.7-12.5 GHz band while still providing the required protection for BSS systems, the pfd values in Annex 4 may be revised as follows:

-147 dB (W/m^2 /27 MHz)	for $0° \le \theta < 0.233°$
$-135+19*\log(\theta)$ dB (W/m^2 /27 MHz)	for $0.233° \le \theta < 1°$
$-135+29*\log(\theta)$ dB (W/m^2 /27 MHz)	for $1° \le \theta < 40.1°$
-88.5 dB (W/m^2 /27 MHz)	for $\theta \ge 40.1°$

3.2 Annex 7 to Appendix S30

Annex 7 Orbital Limitations

Annex 7 to Appendix S30 prevents Article 4 modifications to the BSS plan from using certain portions of the orbital arc from 37°W to 10°E, which are currently occupied by INTELSAT satellite networks offering trans-Atlantic service in the FSS at Ku-band. INTELSAT has provided contributions to various JWP 10-11S and IRG meetings demonstrating that, in the absence of agreements on further technical means of constraining emissions of Region 1 BSS and Region 2 FSS networks, the removal of Annex 7 is detrimental to the provision of FSS services in this arc, mainly because it may inhibit Region 2 FSS access to this arc.

INTELSAT Recommendation: (Agenda item 1.19)

INT/14 INTELSAT supports retention of the orbital and E.I.R.P. limitations on the BSS in Annex 7, but recognizes that there may be a need for some flexibility, especially during re-planning.

4. EARTH STATIONS ON BOARD VESSELS (Agenda Item 1.8)

Minimum Distance to Coastal Areas for Earth Stations on Board Vessels

The provision of communications links to shore by means of earth stations on board vessels is a valuable service which makes efficient use of the spectrum/orbit resources. Although INTELSAT recognizes the importance of protecting FS services operating in these bands, INTELSAT is concerned that an overly conservative approach to protect the FS may impose limitations on the FSS that will unnecessarily restrict this fast growing service. The CPM has included in its output text the results of some studies indicating that the distance should be in the range of 150-370 km. There has been only one case of interference reported, and in this case the interference was due to equipment problems and occurred within the harbor itself. Adoption of an overly conservative large distance is not justified.

INTELSAT Recommendation: (Agenda item 1.8)

INT/15 Since there is only one case of interference reported, which was due to equipment problems, INTELSAT supports the adoption of a distance at the lower end of the range rather than a more conservative upper end of the range. In addition, INTELSAT feels that such a procedure is only helpful if the minimum distance to coastal areas for unrestricted ESV operations is not larger than 200 km. With this in mind, INTELSAT recommends the adoption of the Example Resolution ZZZ given in Annex 2 to Chapter 6 of the CPM Report.

5. SIMPLIFICATION OF THE FILING PROCEDURES (PP98 Res. 86)

Improvements in the Filing Procedures

The Plenipotentiary Conference of 1998 identified the need to resolve the BR backlog in processing coordination requests and notifications of FSS networks. INTELSAT is responsible for a large number of filings and is directly affected by the delays in processing by the BR. Therefore, INTELSAT has a major interest in having the process improved. WRC-2000 should adopt a resolution identifying measures to reduce the backlog of coordination requests and notifications and improve the filing procedures. Based on its own experience with satellite network filings, INTELSAT has identified several areas where improvement is possible and submitted its suggestions to an informal ITU group created to make proposals for consideration of administrations in preparation of their positions to the WRC-2000. INTELSAT's suggestions include the following:

a) Combining the API for Satellite Networks with the Coordination Request
b) Simplification of the Coordination Request Information
c) Simplification of the Coordination Request Forms
d) Identification of affected networks instead of affected administrations
e) Use of a Coordination arc as a trigger to identify affected networks
f) Separate $\Delta T/T$ threshold verification for up and down links for identification purposes
g) Simplification of the Notification Procedure for FSS Networks

INTELSAT believes that simplifying as much as possible this process and transferring the requirements for exchange of detailed information to the affected administrations will contribute significantly to improving the backlog.

INTELSAT Recommendation:

INT/16 WRC-2000 should adopt a resolution identifying measures to reduce the backlog of coordination requests and notifications and improve the filing procedures.

6. USE OF V BAND 37.5-40.5, 40.5-42.5, 47.2-49.1 GHz (Agenda item 1.4 (Resolutions 133 and 129))

FSS Spectrum Availability at V Band

INTELSAT is concerned at the progressive reduction of the V band spectrum which would be available for the FSS use of small ubiquitous terminals in the band 37.5-40.5 40.5-42.5 GHz, shared with the FS. The CPM has identified the possibilities for sharing when only one service is ubiquitously deployed, through the adoption of pfd limits and coordination criteria. However, when both services require ubiquitous deployments of antennas, then an option is to essentially give priority to each service in different band segments. Thus, each band segment would have different pfd limits and coordination criteria. INTELSAT would favor this approach provided further studies are undertaken to decide the segment sizes involved.

INTELSAT would also favor a world-wide allocation to the FSS in the 40.5-42.5 GHz in place of the WRC-97 result in which that allocation covered Regions 2, 3 and 22 countries in Region 1.

INTELSAT Recommendation: (Agenda item 1.4)

INT/17 Following Resolutions 133 and 129, WRC-2000 should adopt a Resolution for a future Conference to designate segments of the 37.5-42.5 GHz band on a world wide basis in a manner so as to permit either FSS or FS to deploy ubiquitous antennas in urban areas.

7. HIGH ALTITUDE PLATFORMS (Agenda item 1.5)

High altitude platforms fall within the fixed service, and INTELSAT considers that the radio stations on such platform can use the spectrum allocated to that service. However, the use of these stations in bands shared with the FSS could impose severe coordination constraints. Hence, any such use in shared bands should be limited to explicitly designated bands and the coordination methodology explicitly agreed.

ITU-R studies have found that sharing between HAPS and non-ubiquitous FSS uplink earth stations may be feasible with appropriate coordination. One candidate band pair for HAPS is 47.2-47.5/47.9-48.2 GHz, which, as of the end of WRC 97, is also provisionally allocated, through a footnote, to the FSS for feeder links to the BSS, but not to other FSS uplinks. INTELSAT is concerned that this exclusion of FSS uplink earth stations is unnecessary in view of the sharing possibilities discussed at the ITU-R WP 4-9S. Large earth stations in this band would be equally as few as the BSS feeder links.

CPM-99 noted that the studies done to date do not allow any conclusion to be drawn and propose that further studies be conducted. INTELSAT considers, therefore, that proposed modifications to footnote S5.552 to the table of allocations based on Resolution 122 should be postponed until the next Conference.

In addition, CPM-99 proposes that Resolution 122 should be modified to consider possible frequencies for HAPS in the band 18-32 GHz. The band from 18 to 20.2 GHz is currently allocated to the FSS in the space-to-Earth direction. The use of these bands for transmission by the HAPS platform would result in a geographic area in which FSS receivers would be unable to function due to excessive interference. The size of the area would depend on the HAPS altitude, HAPS EIRP, FSS EIRP, FSS receiver antenna characteristic and the interference threshold of the FSS receiver. The use of the band by HAPS terrestrial stations (HAPSTS) would result in a zone around the HAPSTS in which an FSS receiver could not operate due to excessive interference. The size of the exclusion zone would depend on the HAPSTS EIRP, FSS receiver antenna pattern, local geography and the FSS interference threshold.

As many FSS operators are using or plan to use this band in the near future for the ubiquitous deployment of small terminals, sharing with HAPS in these bands would not be possible. As such, it is suggested that the sharing studies of the ITU-R be focused on bands more likely to yield successful sharing scenarios. To this effect, the revisions to Resolution 122 in the CPM-99 should be modified in Considerings (n), (m) and Resolves (4) to read 20.2-32 GHz.

INTELSAT Recommendation: (Agenda item 1.5)

INT/18 Sharing studies between HAPS and other systems should continue within the ITU-R.

INT/19 That the direction given to the ITU-R in regards to sharing studies in a revision to Resolution 122 should exclude the band 18-20.2 GHz. See Annex 8 to this contribution.

8. SPURIOUS EMISSIONS (Agenda item 1.2)

WRC-00 Agenda Item 1.2 deals with making the spurious emissions of APS3 obligatory to the Fixed Satellite Service. INTELSAT supports converting the current design objectives into obligatory limits.

To accomplish this aim CPM-99 proposed regulatory text for APS3 that would, among other things, absolve spacecraft operators from having to meet spurious emission limits on adjacent channels and the accompanying guard bands. However, the proposed regulatory text does not provide a definition of guard band, thus creating a potential loophole in the regulation.

INTELSAT Recommendation: (Agenda item 1.2)

INT/20 That the current spurious emission limits be made mandatory.

INT/21 That the regulatory text from CPM-99 be modified as shown below in order to limit the meaning of guard band. A new Headnote **11*ter*** to Appendix **S3** can be added as follows:

"For satellites employing more than one transponder, and when considering the limits for spurious emission as indicated by Headnote **11** to Appendix **S3**, spurious emissions from one transponder may fall on a frequency at which a companion, second transponder is transmitting, or in the guard band between two transponders. In these situations, the level of spurious emission from the first transponder is well exceeded by fundamental emissions of the second transponder or by out-of-band emissions into the guard band. Therefore, the limits of Appendix **S3** should not apply to those spurious emissions on a satellite which fall either within the bands where there are transmissions from different transponders, on the same satellite, into the same service area or within the guard bands between the different transponders. This provision only applies in cases where the guard band is no larger than 100% of the bandwidth of the largest adjacent transponder."

9. APPLICATION OF RR No.S5.488

INTELSAT is of the view that if terrestrial services require protection from FSS in the band 11.7-12.2 GHz in Region 2, the limit currently in place for the band 12.2-12.75 GHz, i.e.,

-148	dBW(W/m2)/4 kHz for $\theta < 5°$
-148 + 0.5 (θ-5)	dBW(W/m2)/4 kHz for $5° < \theta < 25°$
-138	dBW(W/m2)/4 kHz for $25° < \theta < 90°$

should be used as a coordination trigger. This is due to the fact that a coordination threshold would still give the FS providers the possibility to limit interference from FSS to acceptable levels, while at the same time giving the FSS providers the ability to negotiate higher downlink e.i.r.p. levels in a frequency band which is currently unrestricted by the Radio Regulations.

INTELSAT Recommendation: (Agenda item 5)

MOD S5.488 The use of the bands 11.7 –12.2 GHz by the fixed-satellite service in Region 2 and 12.2 GHz by the broadcasting satellite service in Region 2 is limited to national and subregional systems. The use of the band 11.7-12.2 GHz by the GSO fixed-satellite service in Region 2 is subject to previous agreement between the administrations concerned and those having services, operating or planned to operate in accordance with the Table, ~~which may be affected (see Article S9 and S11)~~ over the territory of which the pfd limits given for that band in Table S21-4 are exceeded. For the use of the band 12.2-12.7 GHz by the broadcasting-satellite service in Region 2, see Appendix S30.

ANNEX 1

Table of characteristics to be submitted for space and radio astronomy services

A – General characteristics of the satellite network or the earth station

Items in Appendix	Advance publication of a geostationary-satellite network	Advance publication of a non-geostationary-satellite network subject to coordination under Section II of Article S9	Advance publication of a non-geostationary-satellite network not subject to coordination under Section II of Article S9	Notification or coordination of a geostationary-satellite network (including Appendix S30B)	Notification or coordination of a non-geostationary-satellite network
A.4.b.1		X	X		X
A.4.b.2		X	X		X
A.4.b.3		X	X		X
A.4.b.4		X	X		X
A.4.b.5					X
A.4.b.6			X		X
A.4.b.7			X		X
A.14			X		X
A.15			X		X

C – Characteristics to be provided for each group of frequency assignments for a satellite antenna beam or an earth station antenna

Items in Appendix	Advance publication of a geostationary-satellite network	Advance publication of a non-geostationary-satellite network subject to coordination under Section II of Article S9	Advance publication of a non-geostationary-satellite network not subject to coordination under Section II of Article S9	Notification or coordination of a geostationary-satellite network (including Appendix S30B)
C.9.a			O	C
C.9.b				
C.9.c			X	
C.9.d			X	
C.10.a			X	X

ANNEX 2

Procedures to be followed when the Operational $EPFD_{down}$ Limits are exceeded

ADD

Section VII - Procedures to be followed in the case of NGSO interference

S15.47 §35 When an Administration identifies $EPFD_{down}$ levels in excess of the applicable operational $EPFD_{down}$ limits of Tables S22-4A and S22-4B and footnote 3 to Table S22-1D of the Radio Regulations, it shall first attempt to identify the source of the excess $EPFD_{down}$ levels.

S15.48 §36 If the Administration operating the affected geostationary satellite network is able to identify the source of the excess $EPFD_{down}$ interference, the Administration may proceed to No. S15.56 below.

S15.49 §37 An Administration that is unable to determine the source of the excess $EPFD_{down}$ interference it is experiencing shall send a request for cooperation to all Administrations operating non-geostationary fixed-satellite service systems in the band(s) where excess $EPFD_{down}$ interference is experienced. The request should provide all relevant details, such as the location and operating frequencies of the affected geostationary earth station, dates, times and, if available, levels of the excess $EPFD_{down}$ interference experienced. A copy of the request shall be sent concurrently to the Bureau.

S15.50 §38 Each Administration receiving the request shall acknowledge receipt within 5 days. The Administration receiving the request is urged to provide, with its acknowledgement, any information that may be used to identify the source of the excess $EPFD_{down}$ interference. A copy of the acknowledgment and associated information shall be provided concurrently to the Bureau.

S15.51 §39 If any Administration fails to respond to a request made within 5 days, the Bureau shall send, by the close of the next business day, to each such non-responding Administration, the request for acknowledgment called for in No. S15.50 to be provided within 3 days thereafter. The Bureau shall provide copies of its request to the requesting Administration and all recipients of the initial request.

S15.52 §40 Once an Administration has acknowledged receipt of the request made in No. S15.49 above, it shall, within an additional 3 days thereafter, provide the requesting Administration, the Bureau, and all other recipients of the initial request pursuant to No. S15.49 above either with an admission that a non-geostationary fixed-satellite service system for which it is responsible is the cause of the excess $EPFD_{down}$ interference or with information demonstrating that no non-geostationary fixed-satellite service system for which it is responsible could have caused the excess $EPFD_{down}$ interference experienced by the network of the requesting Administration.

S15.53 §41 If any Administration receiving a request pursuant to No. S15.51 above fails to respond within the specified 3 day period, the Bureau shall immediately include the following statement in the “Remarks” column of the Master Register for the relevant frequency assignments for the subject non-geostationary fixed-satellite service system: “The use of these frequency bands by [name of system/name of Administration] is the subject of an unresolved complaint of excess interference.”

S15.54 §42 The statement shall remain in the Master Register until such time as the responsible Administration either provides information pursuant to No. S15.52 above indicating that its non-geostationary fixed-satellite system is not the cause of the excess interference or, if it is the source of the excess $EPFD_{down}$ interference, that it has complied with the obligations set forth in S15.57. The Bureau shall include notice of this entry in the Master Register in the Weekly Circular.

S15.55 §43 Once the source of the excess $EPFD_{down}$ interference has been identified, the Administration operating the affected satellite network shall inform the Administration operating the non-geostationary fixed-satellite service system causing the excess interference of the excess, and request immediate corrective action. The notification/request for corrective action should provide all relevant details such as the amount and source of the excess $EPFD_{down}$ interference received, and shall be copied to the Radiocommunication Bureau.

S15.56 §44 Upon receipt of a request for corrective action made pursuant to No. S15.55 above, the Administration operating the non-geostationary fixed-satellite service system causing the excess interference shall immediately reduce emissions of the subject system to the levels required in Table S22-4A or Table S22-4B or footnote 3 to Table S22-1D, as appropriate, and, within 5 days of receipt of the request, so advise the Administration whose network is affected. A copy of the acknowledgement and confirmation of the action taken shall be sent to the Bureau.

S15.57 §45 Within 5 days after receipt of a request for corrective action made pursuant to No. S15.55 above, in cases where the procedures in Nos. S15.49 through S15.54 above had not previously been applied, the Administration receiving the request may, as an alternative to reducing emissions in the manner set forth in No. S15.56, provide the requesting Administration and the Bureau with information demonstrating that no non-geostationary fixed-satellite service system for which it is responsible could have caused the excess $EPFD_{down}$ interference experienced by the network of the requesting Administration. In such a case, the procedures in Nos. S15.49 through S15.54 shall be applied before the procedures in Nos. S15.58 and S15.59 are applied.

S15.58 §46 If any Administration fails to comply with No. S15.56 above, the Bureau shall immediately include the following statement in the “Remarks” column of the Master Register for the relevant frequency assignments for the subject non-geostationary fixed-satellite service system: “The use of these frequency bands by [name of system/name of Administration] is in violation of Nos. S22.5G and S22.2 of the Radio Regulations. The Bureau shall include notice of this entry in the Master Register in the Weekly Circular. The statement in the “Remarks” column shall remain in the Master Register until such time as the responsible Administration complies with No. S15.56 above.

S15.59 §47 If after 30 days from the entry of the statement in the Master Register pursuant to No. S15.58, the Administration operating the non-geostationary fixed-satellite service system causing the excess interference has not reduced emissions of the subject system to the levels required in Table S22-4A or Table S22-4B or footnote 3 to Table S22-1D, as appropriate, the Bureau shall invite the administration concerned to cancel its entry in the MIFR.

ANNEX 3

RECOMMENDATION [OPS LIMITS]

DEVELOPMENT OF METHODOLOGIES FOR ASSURING COMPLIANCE BY NON-GEOSTATIONARY SATELLITE SYSTEMS IN THE FIXED-SATELLITE SERVICE IN CERTAIN FREQUENCY BANDS WITH THE OPERATIONAL $EPFD_{down}$ AND ADDITIONAL OPERATIONAL $EPFD_{down}$ LIMITS IN ARTICLE S22

The World Radiocommunication Conference (WRC-2000, Istanbul),

considering

a) that WRC-2000 adopted a number of EPFD limits that apply to non-geostationary satellite systems in the fixed-satellite service in certain frequency bands between 10.7 and 30.0 GHz;

b) that compliance with the validation EPFD limits adopted by WRC-2000 will be verified by the Radiocommunication Bureau before a non-geostationary fixed-satellite service system would be eligible for a favorable finding under the procedures in Article **S11** of the Radio Regulations;

c) that the operational $EPFD_{down}$ limits and additional operational $EPFD_{down}$ limits adopted by WRC-2000 in No. **S22.5G** of the Radio Regulations and associated Tables **S22-4A** and **S22-4B** and footnote 3 to Table **S22-1D** apply only to operational non-geostationary fixed-satellite service systems, and compliance with these limits is not subject to validation by the Radiocommunication Bureau in order for a non-geostationary fixed-satellite service system to receive a favorable finding under the procedures in Article **S11** of the Radio Regulations;

d) that the operational $EPFD_{down}$ limits and the additional operational $EPFD_{down}$ limits provide protection from unacceptable interference to operational geostationary fixed-satellite service and broadcasting-satellite service networks from co-frequency non-geostationary fixed-satellite service systems in the subject frequency bands;

e) that Administrations operating geostationary fixed-satellite service and/or broadcasting-satellite service networks in frequency bands where operational $EPFD_{down}$ limits and/or additional operational $EPFD_{down}$ limits have been established require reliable means of ascertaining that operational non-geostationary fixed-satellite service systems are in compliance with the applicable limits;

f) that Administrations operating non-geostationary fixed-satellite service systems in frequency bands where operational $EPFD_{down}$ limits and/or additional operational $EPFD_{down}$ limits have been established require reliable means of ascertaining the validity of assertions from Administrations operating geostationary fixed-satellite service and/or broadcasting-satellite service systems that a particular non-geostationary fixed-satellte service system is operating in violation of the applicable limits;

g) that studies within the ITU-R are an appropriate means for developing the methodologies and/or associated assessment techniques that Administrations may use to ascertain compliance by a non-geostationary fixed-satellite service system with the operational $EPFD_{down}$ limits and additional operational $EPFD_{down}$ limits;

h) that administrations may need to know the aggregate operational EPFDdown for various percentages of time, into their GSO networks.

recognizing

a) that geostationary satellite networks in the fixed-satellite service and broadcasting-satellite service are operational or will be operational in the frequency bands where operational $EPFD_{down}$ limits and additional operational $EPFD_{down}$ limits apply, and that non-geostationary fixed-satellite service systems subject to the limits are planned for operation in the same bands;

b) that No. **S22.5F** provides that non-geostationary fixed-satellite service system for which complete notification or coordination information, as appropriate, has been received by the Bureau after 21 November 1997 shall be subject to the power limits in Article **S22,** as adopted by WRC-2000;

c) that pursuant to No. **S22.5G** of the Radio Regulations, any exceedance of the operational $EPFD_{down}$ limits or additional operational $EPFD_{down}$ limits by a non-geostationary fixed-satellite service system to which the limits apply is a violation of No. **S22.2** of the Radio Regulations;

d) that in view of the importance of the protection that the operational $EPFD_{down}$ limits and additional operational $EPFD_{down}$ limits are intended to provide to geostationary satellite networks, and because there is to be no validation by the Bureau of compliance with these limits, it is important to discourage violations of the operational $EPFD_{down}$ limits and additional operational $EPFD_{down}$ limits by a non-geostationary fixed-satellite service system; if a violation nevertheless occurs, it should be corrected in the most expeditious manner;

resolves

1 to instruct the ITU-R to study and develop, as a matter of urgency, methodologies that permit Administrations operating geostationary fixed-satellite service, geostationary broadcasting-satellite service, or non-geostationary fixed-satellite service networks in the frequency bands to which the operational $EPFD_{down}$ limits and/or additional operational $EPFD_{down}$ limits in Article **S22** apply:

   a. to assess the interference levels (through either measurement or simulation) produced by operational non-geostationary fixed-satellite service systems in the same bands;

   b. to ensure that non-geostationary fixed-satellite service systems comply with the applicable limits; and

   c. to develop appropriate methods, such as software tools, to be used by administrations in determining whether a proposed non-geostationary fixed-satellite service system complies with the additional operational limits.

   d. To develop appropriate methods, such as software tools, to be used by administrations in determining the aggregate operational $EPFD_{down}$ levels for specified percentages of time

2 to instruct the ITU-R to develop, as a matter of urgency, an appropriate mechanism and format for Administrations operating NGSO FSS systems to make available their satellite ephemeris data and update such data on a regular basis.

ANNEX 4

RESOLUTION [AOP LIMITS]

VERIFICATION OF THE ADDITIONAL OPERATIONAL $EPFD_{down}$ LEVELS INTO OPERATIONAL GSO FSS EARTH STATIONS

The World Administrative Conference (Istanbul, 2000)

considering

a) that this conference has adopted, in Article S22, EPFD limits which would permit the Radiocommunication Bureau to validate the notification by Administrations of assignments to new or modified NGSO FSS systems,

b) that in order to provide additional assurance to GSO FSS systems that such NGSO systems would provide less interference into operational GSO FSS networks, this Conference has adopted additional operational limits (AOP),

c) that Administrations notifying such NGSO systems are required to commit their operators to being able to meet such AOP limits,

d) that such commitments will be provided along with other data submitted in Appendix S4,

e) that the data submitted in Appendix S4 is not sufficiently detailed for accurately determining the actual $EPFD_{down}$ generated at given operating earth stations,

f) that such data is provided in proprietary confidence by operators of NGSO FSS systems to their Notifying Administrations,

g) that this data is not normally provided to the Radiocommunication Bureau for publication,

h) that the Radiocommunications Bureau could assist in the resolution of any problems between the GSO and non-GSO Administrations,

i) that NGSO systems will provide services to Administrations other than the notifying Administration itself,

j) that the data mentioned in Considering f) would normally be made available to Administrations receiving this service,

k) that all Administrations have a right to assurance that the NGSO systems will meet the AOP limits at all operational earth stations over their territories,

resolves

1. that Administrations with concerns that the NGSO operations notified by other Administrations may exceed the AOP limits specified in Article S22 over their territory may request from the Notifying Administration detailed operational characteristics so as to be able to make such an assessment,

2. that Notifying Administrations receiving such a request shall not unreasonably withhold any such information and shall respond promptly,

3. that the Administration operating the non-GSO FSS system should cooperate with the Administrations operating GSO systems and the Radiocommunications Bureau to ensure that the AOP limits are not exceeded,

4. that the Administration receiving such information shall maintain this information in strict confidentiality and shall not divulge it to any GSO or NGSO operator within their territory or any other operator,

5. that in cases where the actual $EPFD_{down}$ levels received by a GSO network from a NGSO system exceed the additional operational $EPFD_{down}$ limits contained in Article S22, the procedures given in Annex XXX shall be followed.

ANNEX [AOP-1] of RESOLUTION [AOP]

Procedures to be followed when the Additional Operational $EPFD_{down}$ Limits are exceeded

§1 If Administration considers that the additional operational $EPFD_{down}$ limits of Tables S22-4A of the Radio Regulations could be exceeded at any of its earth stations based upon published Appendix S4 data, it shall send to the relevant Administration(s) a request for the computed $EPFD_{down}$ level for specified percentages of time, at specified earth station locations. A copy of the request shall be sent to the Bureau.

§2 Each Administration receiving the request shall acknowledge receipt within 5 days. The Administration receiving the request is urged to provide, with its acknowledgement, any information that may be available and useful to the requesting Administration to evaluate the $EPFD_{down}$ interference. A copy of the acknowledgment and associated information shall be provided to the Bureau.

§3 If any Administration fails to respond to a request made within 5 days, the Bureau shall send, by the close of the next business day, to each such non-responding Administration, the request for acknowledgment called for in §2 to be provided within 3 days thereafter. The Bureau shall provide copies of its request to the requesting Administration and all recipients of the initial request.

§4 Once an Administration has acknowledged receipt of the request made in §1 above, it shall, within an additional 3 days thereafter, provide the requesting Administration, the Bureau, and all other recipients of the initial request pursuant to §1 above, information demonstrating that no non-geostationary fixed-satellite service system for which it is responsible could cause the excess $EPFD_{down}$ interference into the network of the requesting Administration.

§5 If any Administration receiving a request pursuant to §3 above fails to respond within the specified 3 day period, the Bureau shall immediately include the following statement in the "Remarks" column of the Master Register for the relevant frequency assignments for the subject non-geostationary fixed-satellite service system: "The use of these frequency bands by [name of system/name of Administration] is the subject of an unresolved complaint of excess interference."

§6 The statement shall remain in the Master Register until such time as the responsible Administration provides information pursuant to §4 above indicating that its non-geostationary fixed-satellite system will comply with the obligations set forth in §7. The Bureau shall include notice of this entry in the Master Register in the Weekly Circular.

§7 If the responding Administration cannot demonstrate in §4 that the additional operational $EPFD_{down}$ limits are not exceeded, it shall immediately reduce emissions of the subject system to the levels required in Table S22-4A, as appropriate, and, within 35 days of receipt of the request under §1, so advise the Administration whose network is affected. A copy of the acknowledgement and confirmation of the action taken shall be sent to the Bureau.

§8 If any Administration fails to comply with §7 above, the Bureau shall immediately include the following statement in the "Remarks" column of the Master Register for the relevant frequency assignments for the subject non-geostationary fixed-satellite service system: "The use of these frequency bands by [name of system/name of Administration] is in violation of Nos. S22.5G and S22.2 of the Radio Regulations. The Bureau shall

include notice of this entry in the Master Register in the Weekly Circular. The statement in the "Remarks" column shall remain in the Master Register until such time as the responsible Administration complies with §7 above.

§9 If after 30 days from the entry of the statement in the Master Register pursuant to §8, the Administration operating the non-geostationary fixed-satellite service system causing the excess interference has not reduced emissions of the subject system to the levels required in Table S22-4A, as appropriate, the Bureau shall invite the administration concerned to cancel its entry in the MIFR.

ANNEX 5

MOD RESOLUTION WWW (WRC-2000)

Protection of GSO FSS and GSO BSS networks from the maximum aggregate equivalent power flux density produced by multiple NGSO FSS systems in frequency bands where EPFD limits have been adopted

The World Radiocommunication Conference (Istanbul, 2000),

considering

a) that WRC-97 has adopted, in Article S22, provisional EPFD limits to be met by NGSO FSS systems in order to protect GSO FSS and GSO BSS networks in parts of the frequency range 10.7-30 GHz;

b) that WRC-2000 has revised these limits to ensure that they provide adequate protection to GSO systems without causing undue constraints to any of the systems and services sharing these frequency bands;

c) that Article S22 includes single entry EPFD limits which apply to NGSO FSS systems in these bands;

d) that these single-entry limits have been derived from aggregate equivalent power flux density (EPFD) masks that are intended to protect GSO networks, assuming a maximum effective number of non-GSO FSS systems of 3.5;

e) that the aggregate interference caused by all co-frequency NGSO FSS systems in these bands into GSO FSS systems should not exceed the maximum interference levels that are necessary to protect these GSO systems;

f) that WRC-97 decided, and WRC-2000 confirmed, that NGSO FSS systems in these bands are to coordinate the use of these frequencies between themselves under the provisions of No. S9.12 of the Radio Regulations;

g) that the orbital characteristics of such systems are likely to be inhomogeneous;

h) that as a result of this likely inhomogeneity, the aggregate EPFD levels from multiple NGSO FSS systems are not directly related to the number of actual systems sharing a frequency band, and the number of such systems operating co-frequency is likely to be small;

j) that the possible misapplication of single entry limits should be avoided,

recognizing

a) that non-GSO FSS systems are likely to need to implement interference mitigation techniques to share frequencies among themselves;

b) that because the use of such interference mitigation techniques will likely keep the number of NGSO systems small, the aggregate interference caused by NGSO FSS systems into GSO systems will also likely be small;

c) that notwithstanding considering d), there may be instances where the aggregate interference from NGSO systems could exceed the interference levels given in Annex 1;

d) that administrations operating GSO systems may wish to ensure that the aggregate EPFD produced by all operating co-frequency NGSO FSS systems in the frequency bands referred to in considering a) above into GSO FSS and/or GSO BSS networks does not exceed the aggregate interference levels given in Annex 1,

resolves

1. that administrations operating or planning to operate NGSO FSS systems in the frequency bands referred to in considering a) above, individually or in collaboration, take all possible steps, including by means of appropriate modifications to their systems if necessary, to ensure that the aggregate interference into GSO FSS and GSO BSS networks caused by such systems operating co-frequency in these frequency bands does not cause the aggregate EPFD limits shown in Annex 1 to be exceeded;
2. that, in the event that an administration operating a GSO network identifies that the aggregate interference levels in Annex 1 are exceeded, administrations operating NGSO FSS systems in these frequency bands shall expeditiously take all necessary measures to reduce the aggregate EPFD levels to those compatible with the limits contained in Annex 1 or to reduce such interference to higher levels that are acceptable to the affected GSO administration,

requests ITU-R

1. to develop, as a matter of urgency, and complete, in time for consideration by the next WRC, a methodology for calculating from the individual NGSO systems' validation masks, derived using the BR software, the aggregate EPFD produced by all NGSO FSS systems operating or planning to operate co-frequency in the frequency bands referred to in considering a) above into GSO FSS and GSO BSS networks and for comparing the calculated levels with the aggregate power levels shown in Annex 1;
2. to continue its studies on the accurate modeling of interference from NGSO FSS systems into GSO FSS and GSO BSS networks in the frequency bands referred to in considering a) above in order to assist the administrations planning or operating NGSO FSS systems in their efforts to limit the aggregate EPFD levels produced by their systems into GSO networks,
3. to develop as a matter of urgency a recommendation that contains procedures to be used amongst administrations or by the Bureau to ensure that the aggregate EPFD limits contained in Annex 1 are not exceeded by the operation of non-GSO FSS systems;

requests the Director of the Radiocommunication Bureau

1. to assist in the development of the methodology referred to in requests ITU-R 1 above.
2. to report to WRC-2002/03 on the results of studies in requests ITU-R 1 and 3 above.

ANNEX 6

OFF-AXIS E.I.R.P. DENSITY LIMITS

INTRODUCTION

As stated in the INTELSAT position on the proposed options given in the CPM report to WRC-2000, the preferred option would be to revert back to the text on off-axis power density which was in the Radio Regulations prior to WRC-97, appropriately modified to take into account the concerns of non-GSO FSS systems.

INTELSAT and other GSO FSS operators have been diligently following the off-axis eirp density limits as given in ITU-R Recommendation 524 since 1978. In addition, since the RF emission limits for an earth station is a national matter, the exact procedures and limits to be used in testing for the off-axis eirp power density is set by administrations and INTELSAT is not aware of any administration that is not conforming to the levels given in Recommendation ITU-R S.524.

While Rec 524 off-axis eirp limits are specified over the entire frequency range, i.e. 12.75-13.25 GHz and 13.75-14.5 GHz (Ku band), and 29.5-30 GHz (Ka band) for all azimuth and elevation angles in the range of 2.5 to 180 degrees, its been recognised in the satellite industry that such off-axis eirp density levels can not be measured directly but are based on the antenna radiation pattern and the input power density of the carrier at the antenna flange. INTELSAT, as well as most GSO FSS operators, have adopted measurement procedures to verify the transmit antenna gain radiation pattern.

INTELSAT has two such methods. The first method, called ‘type approved antennas’, is for smaller antennas which can range from less than 1m up to some antennas as large as 6m. Antenna type acceptance verification means that each specific antenna type produced by an antenna manufacturer is tested at a special antenna range. Such antennas are usually taken at random from a manufacturer's assembly line and the antenna gain radiation pattern is verified through extensive testing.

The second method, which is used for larger antennas, in the range of 6m and greater, is a direct antenna verification testing of the transmit antenna gain radiation pattern. Testing of such large antennas at a range is not practical and would not be sufficiently representative of an operational antenna installed at a different location. The transmit antenna verification testing procedure developed by INTELSAT accurately measures the radiation pattern of a transmitting earth station over a limited number of frequencies near the upper, lower and mid points of the operating band, and over a limited azimuth or elevation angle range which is typically $\pm 12^{\circ}$. To obtain the Tx antenna gain radiation pattern for angles greater than $\pm 12^{\circ}$ INTELSAT assumes the Rx antenna pattern appropriately scaled by the frequency difference.

Incorporation of such off-axis eirp density limits into the Radio Regulations would require that off-axis eirp density measurements be taken on operational earth station antenna systems, which is impractical and impossible to do in almost all cases. The implications of such off-axis e.i.r.p. density limits are significant if one considers the required frequency range, the required number of azimuth and elevation cuts and the required number of degrees over which the tests must be completed. There are also physical limitations on the steerability of many antennas over a large variation in azimuth or elevation angles. Any new limits should not apply to existing earth stations.

In summary, INTELSAT believes that GSO FSS operators through their national regulations have developed appropriate measures to ensure their earth stations meet the off-axis eirp limits contained in Recommendation ITU-R S.524. New off-axis eirp density limits outside of the present $\pm 3^{\circ}$ if incorporated into the relevant ITU-R Recommendations could be met in a similar manner.

ANNEX 7

POWER FLUX DENSITY VALUES TO PROTECT BSS ASSIGNMENTS FROM FSS INTERFERENCE IN THE 11.7-12.5 GHz BAND

1. Introduction

Annex 4 of Appendix S30 contains power flux density (pfd) values which FSS networks in the band 11.7-12.5 GHz have to comply with according to Article 7 of Appendix S30, in order to avoid triggering coordination with Regions 1 and 3 BSS networks. These values are based on the characteristics of WARC-77 Plan assignments, which have since been revised at WRC-97 and are currently under consideration for further revisions.

This document addresses changes that may be required on the Annex 4 power flux density (pfd), if there is a re-planning of Regions 1 and 3 on the basis of the set of revised technical parameters developed by the Group of Technical Experts (GTE/ IRG). The proposed revisions of the power flux density values in Annex 4 would alleviate the incompatibilities between BSS Plan assignments and FSS networks, while still providing the required protection for BSS systems.

2. PFD requirements for the protection of Regions 1 and 3 BSS

The protection of BSS assignments from FSS interference is currently based on the following pfd mask contained in Annex 4 of Appendix S30:

-147 dB (W/m^2 /27 MHz) for $0° \le \theta < 0.44°$
$-138+25*\log(\theta)$ dB (W/m^2 /27 MHz) for $0.44° \le \theta < 19.1°$
-106 dB (W/m^2 /27 MHz) for $\theta \ge 19.1°$

where, θ is the orbital separation between the FSS satellite and the BSS satellite.

The above pfd mask is based on outdated parameters upon which the WARC-77 Plan was based, thus the necessity for reviewing these values to comply with changes made to the characteristics of Regions 1 and 3 Plan.

The pfd required for protecting a BSS carrier is related to the single entry protection ratio and the power flux density at the edge of the coverage area by the following formula:

$$Fi_{FSS}(\theta) = Fw_{BSS} - (C/I)_{SE} + D(\varphi) \qquad (1)$$

where,

$Fi_{FSS}(\theta)$: required pfd to protect against interference from an FSS satellite, θ degrees away

θ : Orbital separation between the FSS satellite and the BSS satellite

Fw_{BSS}: wanted power flux density [dB (W/m^2/27MHz)] at the edge of the BSS service area

$(C/I)_{SE}$: Protection Ratio between the wanted BSS and the interfering FSS signals

$D(\varphi)$: Angular discrimination (dB) provided by the radiation pattern of the Broadcasting Satellite Service receiving earth station antenna as a function of the topocentric orbital separation between the BSS and FSS satellites

φ : Topocentric angle between the FSS and BSS satellite at the BSS receiving antenna (For the purpose of this study, it is assumed that $\varphi \cong 1.1\theta$)

Equation (1) was used to derive power flux density values required for the protection of a standard Region 1 BSS carrier. The assumed characteristics for the standard BSS carriers are shown in Table 1 below. The resulting pfd mask is the curve labeled “Standard BSS Plan” shown in Figure 1.

Table 1. Characteristics of a standard WRC-97 BSS Plan assignment

Wanted pfd at the edge of coverage area, F_{BSS}	–108 dB (W/m^2/27 MHz)	
Aggregate downlink protection ratio $(C/I)_{AG}$ Corresponding single entry protection ratio $(C/I)_{SE}$	21 dB (value used by GTE and IRG) 21+5=26 dB	
Receiving antenna radiation pattern (Rec. ITU-R BO.1213)	$1.369\varphi^2$ 21.66 $6.5+25\log(\varphi)$ 40.5 35.5	for $0\le\varphi<3.66$ for $3.66\le\varphi<4.04$ for $4.04\le\varphi<22.9$ for $22.9\le\varphi<70$ for $70\le\varphi<180$

Equation (1) was also used to derive power flux density values required for the protection of 360 sensitive BSS carriers submitted by Administrations in Response to ITU-R Circular Letter CR-116. These are sensitive carriers filed in proposed modifications to the BSS Plans. The wanted pfd at the edge of the BSS coverage area and the C/I protection ratio were derived from the edge of coverage EIRP, the bandwidth and the clear sky C/N performance of these carriers. In so doing, the Interference-to-Noise ratio and spreading loss values assumed were identical to those which would be used to derive the pfd requirements to protect similar carriers transmitted in the same bands when designated for FSS use.

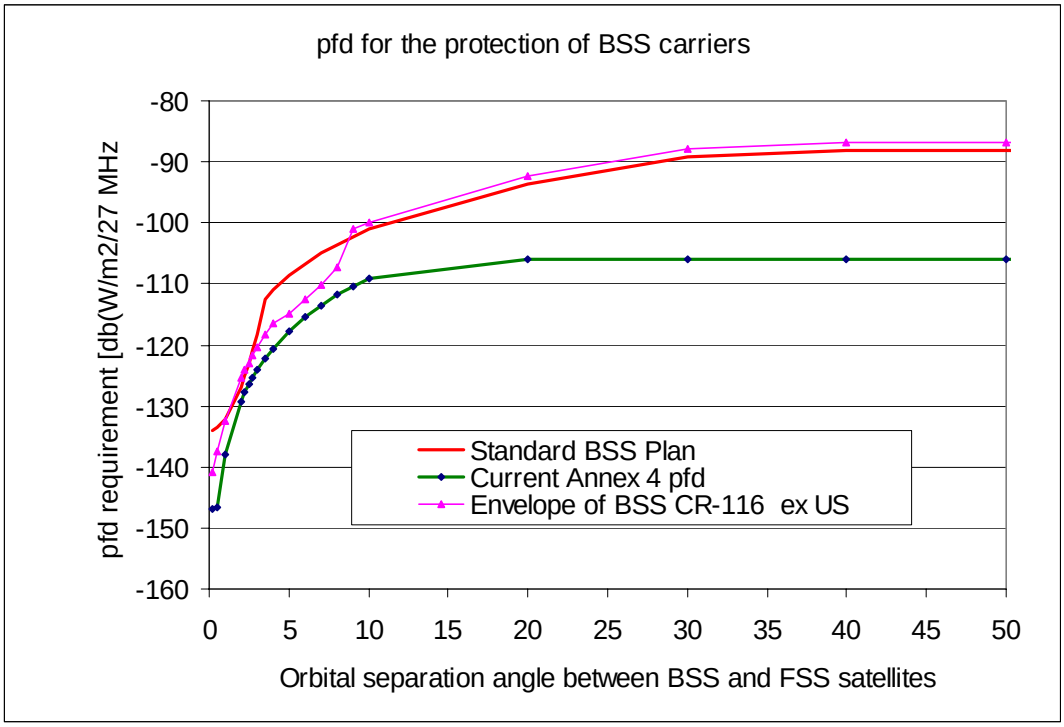
A pfd mask was thus derived for the protection of each of the 360 CR-116 carriers (a total of 360 pfd masks). An envelope pfd mask was then obtained by determining, for each angle of separation between BSS and FSS satellites, the pfd value that would protect all 360 carriers. The resulting pfd mask is the curve labeled “Envelope of BSS CR-116 carriers” shown in Figure 1.

Figure 1 contains the required pfd mask for protecting standard BSS Plan carriers, the required pfd mask for protecting typical sensitive (CR-116) carriers proposed in BSS Plan modifications, and the current Annex 4 pfd values.

For the purpose of this study, the following antenna radiation pattern was used from APS8 (assuming a 29-25log(φ) rather than a 32-25log(φ) factor as being more typical of present day antennas) for Region 1 BSS Vs Region 2 FSS sharing:

$G_{max}-2.5*10^{-3}(\varphi D/\lambda)^2$	for $0\le\varphi<\varphi_m$ with	$\varphi_m=20\lambda/D(G_{max}-G_1)^{0.5}$
G_1	for $\varphi_m\le\varphi<\max(\varphi_r,100\lambda/D)$	$G_1=2+15\log(D/\lambda)$
$29-25*\log(\varphi)$	for $\max(\varphi_r,100\lambda/D)\le\varphi<36.3$	$\varphi_r=15.85*(D/\lambda)^{-0..6}$
-10	for $36.3\le\varphi<180$	

Figure 1. Power flux density values required to protect standard WRC-97 BSS Plan assignments and CR-116 carriers



It can be seen from Figure 1 that the current Annex 4 pfd values are more protective than the required pfd values for the protection of current sensitive BSS carriers. For certain separation angles between BSS and FSS satellites the margin is higher than 15 dB.

In the interest of resolving some of the very large number of incompatibility cases between BSS Plan assignments and the FSS so far identified in the planning exercises reviewed by the Inter-Conference Representative Group, it is proposed that the power flux densities be adjusted to be consistent with the current protection requirements of BSS carriers. The constraints on FSS networks would be relaxed, while still ensuring the required protection of BSS carriers, and this would allow more equitable access to this band by the two services, one of which is planned and the other unplanned.

This would also help meet the objectives set forth in Principle 7 of Annex 1 of Resolution 532 (WRC-97), requiring that compatibility with other services be ensured during any Regions 1&3 BSS re-planning.

Proposed pfd mask for protecting Regions 1 & 3 BSS from FSS interference

In deriving the proposed revised pfd values, the following assumptions were made:

- Minimum single entry BSS Carrier-to-Interference ratio of 26 dB for a standard BSS Plan assignment with respect to an FSS network located anywhere,
- BSS earth station receiving antenna pattern defined in Table 1 for a standard BSS Plan assignment
- Protection of typical Plan modifications based on parameters of sensitive BSS links submitted by Administration in response to Circular Letter CR-116.

The following mask is proposed for the protection of BSS from interference caused by FSS systems in the 11.7-12.5 GHz band.

-147 dB (W/m^2 /27 MHz) for $0° \leq \theta < 0.233°$
-135+19*log(θ) dB (W/m^2 /27 MHz) for $0.233° \leq \theta < 1°$
-135+29*log(θ) dB (W/m^2 /27 MHz) for $1° \leq \theta < 40.1°$
-88.5 dB (W/m^2 /27 MHz) for $\theta \geq 40.1°$

The proposed mask is represented in Figure 2, and compared with the current Annex 4 pfd mask as well as the pfd masks required to protect typical BSS carriers. It can be seen from Figure 2 that the proposed pfd mask would provide the required protection to standard BSS and proposed Plan modifications.

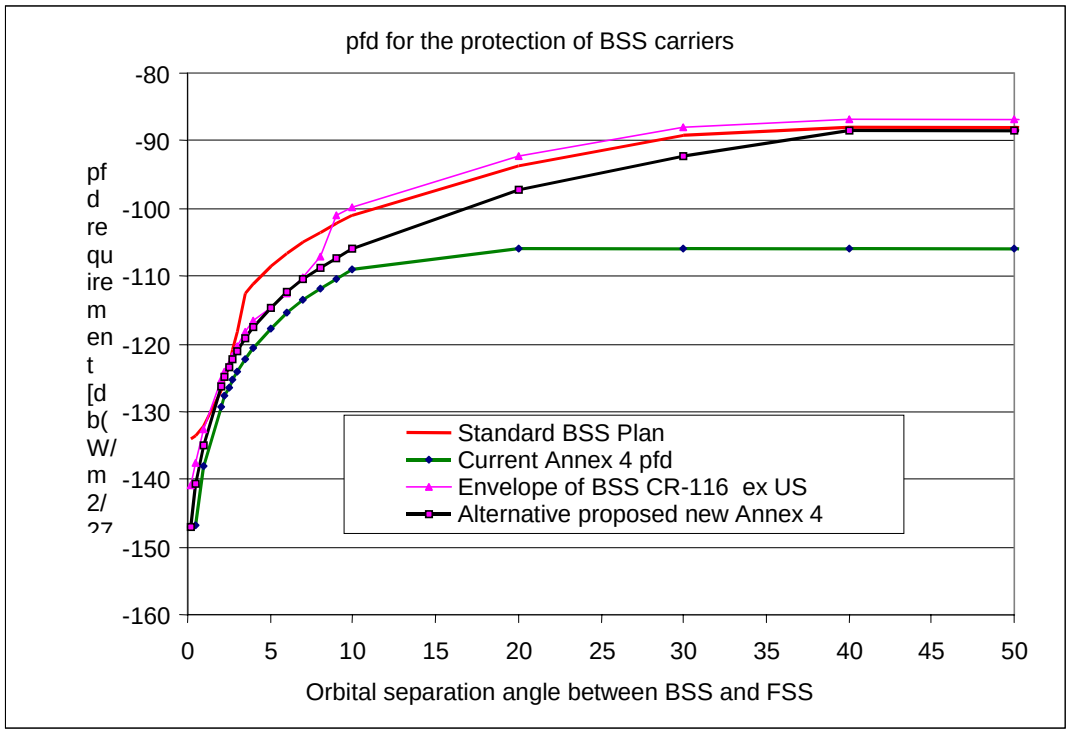
Conclusion

This study has shown that the recently introduced changes to the characteristics of BSS Plan assignments and BSS transmissions in general require updating the power flux density values in Annex 4 of Appendix S30.

INTELSAT is of the view that, in order to facilitate frequency sharing between BSS and FSS networks in the 11.7-12.5 GHz band, while still providing the required protection for BSS systems, the pfd values in Annex 4 of Appendix S30 may be revised as follows:

-147 dB (W/m^2 /27 MHz) for $0° \leq \theta < 0.233°$
-135+19*log(θ) dB (W/m^2 /27 MHz) for $0.233° \leq \theta < 1°$
-135+29*log(θ) dB (W/m^2 /27 MHz) for $1° \leq \theta < 40.1°$
-88.5 dB (W/m^2 /27 MHz) for $\theta \geq 40.1°$

Figure 2. Proposed power flux density values for Annex 4 of Appendix S30



ANNEX 8

CPM-99 modification to RESOLUTION 122 (REV. WRC-2000)

Use Of The Bands 47.2-47.5 GHz And 47.9-48.2 GHz
By High Altitude Platform Stations In The Fixed Service And By Other Services And
The Potential Use Of Bands Below 47 GHz By HAPS In The Fixed Service

The World Radiocommunication Conference (Istanbul, 2000),

considering

a) to m) NOC

n) that since 47 GHz bands are more susceptible to the rain attenuation in certain areas of Region 3, the ~~20.2~~18-32 GHz range has been proposed for possible identification of additional spectrum in ITU-R and preliminary studies are in progress for these bands;

o) that the ~~20.2~~18-32 GHz range is already heavily used by a number of different services,

resolves

1 to 3 NOC

4 to request ITU-R, taking into account the requirements of other fixed service systems and other services, to urgently conduct studies on the feasibility of identifying additional frequencies for the use of HAPS in the fixed service in the range ~~20.2~~18-32 GHz;

5 NOC

instructs the Director of the Radiocommunication Bureau

1 NOC

2 NOC

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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25 April 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Note by the Secretary-General

GSM ASSOCIATION VIEWS RELATING TO AGENDA ITEM 1.6.1

I have the honour to bring to the attention of the Conference, at the request of the GSM Association, the annexed information paper.

Yoshio UTSUMI
Secretary-General

Annex: 1

ANNEX

1. Introduction

The GSM Association would like to provide the following information to delegates concerning agenda item 1.6.1.

The GSM Association is the World's premier global body behind the world's leading wireless communications standard and joined the International Telecommunication Union in 1998. As of 1 May 2000 the Association comprises over 445 members from over 148 countries/areas, the majority of which are operators of GSM (Global System for Mobile) 900 MHz, 1800 MHz, 1900 MHz, mobile-satellite networks and IMT-2000 networks. National regulatory authorities are also eligible to join the Association, as are certain GSM industry entities in an associate capacity.

2. Spectrum Issues

The GSM Association realises the importance of a sustainable policy for evolving the GSM systems of today towards IMT-2000 and the broad-band multimedia and data services that will be offered by IMT-2000 networks from 2002. In terms of spectrum it is often postulated why developing countries should support the identification and subsequent implementation of additional frequency bands for IMT-2000?

The GSM Association believes that the mobile sector will have an important positive effect on the economical development of all countries. In the long term developing countries will benefit from a timely and adequate supply of spectrum for mobile communications. IMT-2000 will be a global system, permitting all countries to be integrated into the process of global economic development. Furthermore, the ability to 'roam' will be a key factor for IMT-2000 (as is the case today for GSM) for both developing and developed countries.

IMT-2000 will have the capability to provide similar services and facilities to those an IMT-2000 user will experience on his home IMT-2000 network. Therefore it is particularly important that in the World's congested traffic areas, sufficient globally harmonised IMT-2000 extension frequencies are identified to enable all IMT-2000 users from any country to receive a high quality IMT-2000 service anywhere in the world. The question of additional spectrum for IMT-2000 is thus truly a global issue.

The needs of the mobile sector have in the past been constantly underestimated; it is already clear that the 230 MHz identified for IMT-2000 will not be sufficient for the industry in the mid to latter years of this decade. The GSM Association would wish to inform WRC-2000 that it supports the views expressed in Chapter 1 of the CPM Report that *inter alia* an additional 160 MHz of spectrum should be identified for (the non-exclusive use of) IMT-2000 in addition to the frequencies identified at WARC-92 in number S5.388 of the Radio Regulations and in addition to the frequencies currently utilised for second generation mobile systems such as GSM.

3. Specific Points

The GSM Association would also wish to inform WRC-2000 that it believes the following specific points to be key issues for providing appropriate spectrum resources for IMT-2000, probably one of the most important global standardisation projects undertaken by the ITU:

- At least 160 MHz of identified additional spectrum is needed worldwide for terrestrial IMT-2000, to be available in some countries from the year 2005.
- Large frequency blocks are preferable – bands that permit global harmonisation by 2005-2010 should be given priority.
- Extension bands should be allocated on a primary basis to the Mobile Service in all ITU Regions and should be identified for IMT-2000 similarly to footnote S5.388.
- A new frequency arrangement resolution from WRC-2000 could facilitate the success of IMT-2000.
- Frequencies in the vicinity of 2.6 GHz appear to offer the best chance of success for an additional globally identifiable terrestrial frequency band for IMT 2000.
- Other candidate frequency bands could be acceptable to the industry for identification for IMT-2000 on a global or regional basis, particularly those candidate bands, which are lower in frequency that may be especially suitable for use in rural environments.

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WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

LOSS OF THE RIGHT TO VOTE

Under the Constitution of the International Telecommunication Union, a Member State loses its right to vote:

a) For a non-signatory (NS) Member State, if it has not yet acceded to the Constitution and Convention or, for a signatory Member State, if it has not deposited an instrument of ratification, acceptance or approval at the end of a period of two years from the date of entry into force of the Constitution and Convention.

b) When it is in arrears in its payments to the Union for so long as the amount of its arrears equals or exceeds the amount of the contribution due from it for the preceding two years (see No. 169 of the Constitution and Resolution No. 41 (Minneapolis, 1998)).

For one and/or the other of the above reasons and until such time as the situation is rectified, the following **32 Member States** would not be entitled to vote:

Country (in French alphabetical order)	**R = Signatory having <u>not</u> ratified, accepted or approved ***** A = non-Signatory having <u>not</u> acceded**	**In arrears in the payment of contributions**
AFGHANISTAN	R	X
ANGOLA	A	X
ANTIGUA AND BARBUDA	A	X
AZERBAIJAN	A	-
BOLIVIA	-	X
CAMBODIA	-	X
CONGO (REPUBLIC OF THE)	-	X
COSTA RICA	A	-

Country (in French alphabetical order)	**R = Signatory having not ratified, accepted or approved ***** A = non-Signatory having not acceded**	**In arrears in the payment of contributions**
DOMINICAN REPUBLIC	A	X
GEORGIA	-	X
GRENADA	R	X
GUINEA-BISSAU	A	X
EQUATORIAL GUINEA	A	X
HONDURAS	R	-
IRAQ	A	X
JAMAICA	-	X
KIRIBATI	A	-
LESOTHO	R	-
LATVIA	R	-
LIBERIA	R	X
LIBYA	A	X
NAURU	A	X
UZBEKISTAN	-	X
DEMOCRATIC REPUBLIC OF THE CONGO	A	X
RWANDA	A	X
SOLOMON	A	X
SIERRA LEONE	A	-
SOMALIA	A	X
TAJIKISTAN	-	X
CHAD	-	X
TURKMENISTAN	-	X
YUGOSLAVIA	-	X

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

LOSS OF THE RIGHT TO VOTE

(situation on 2 May 2000)

Under the Constitution of the International Telecommunication Union, a Member State loses its right to vote:

a) For a non-signatory (NS) Member State, if it has not yet acceded to the Constitution and Convention or, for a signatory Member State, if it has not deposited an instrument of ratification, acceptance or approval at the end of a period of two years from the date of entry into force of the Constitution and Convention.

b) When it is in arrears in its payments to the Union for so long as the amount of its arrears equals or exceeds the amount of the contribution due from it for the preceding two years (see No. 169 of the Constitution and Resolution No. 41 (Minneapolis, 1998)).

For one and/or the other of the above reasons and until such time as the situation is rectified, the following **33 Member States** would not be entitled to vote:

Country (in French alphabetical order)	**R = Signatory having <u>not</u> ratified, accepted or approved ***** A = non-Signatory having <u>not</u> acceded**	**In arrears in the payment of contributions**
AFGHANISTAN	R	X
ANGOLA	A	X
ANTIGUA AND BARBUDA	A	X
AZERBAIJAN	A	-
BOLIVIA	-	X
CAMBODIA	-	X
CONGO (REPUBLIC OF THE)	-	X
COSTA RICA	A	-

Country (in French alphabetical order)	**R = Signatory having not ratified, accepted or approved ***** A = non-Signatory having not acceded**	**In arrears in the payment of contributions**
DOMINICAN REPUBLIC	A	X
GEORGIA	-	X
GRENADA	R	X
GUATEMALA	A	-
GUINEA-BISSAU	A	X
EQUATORIAL GUINEA	A	X
HONDURAS	R	-
IRAQ	A	X
JAMAICA	-	X
KIRIBATI	A	-
LESOTHO	R	-
LATVIA	R	-
LIBERIA	R	X
LIBYA	A	X
NAURU	A	X
UZBEKISTAN	-	X
DEMOCRATIC REPUBLIC OF THE CONGO	A	X
RWANDA	A	X
SOLOMON	A	X
SIERRA LEONE	A	-
SOMALIA	A	X
TAJIKISTAN	-	X
CHAD	-	X
TURKMENISTAN	-	X
YUGOSLAVIA	-	X

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Addendum 1 to Document 133-E 16 May 2000 Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

WORKING GROUP 2 OF THE PLENARY

Japan

PROPOSAL FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 7.2 - AGENDA FOR FUTURE CONFERENCES

PART 8

Add the following to the WRC-02/03 agenda items:

ADD J/133/68

to consider the allocations of frequencies to the mobile service in the range 5 150-5 350 MHz and to the fixed service in the range 5 250-5 350 MHz;

Reasons: In many countries the band 5 150-5 350 MHz is already nationally used or considered to be used for broadband nomadic wireless access including RLANs in the mobile service. It is important to obtain harmonized frequency allocations to the mobile service on a worldwide basis, while ensuring the compatibility with other services sharing the same band.

In recent days fixed wireless access systems based on mobile technologies are becoming a popular application to provide economical media for high-speed Internet or other kind of multimedia services. In this respect both mobile and fixed allocations to the band 5 250-5 350 MHz is necessary. The preliminary studies in ITU-R Joint Rapporteur Group 8A-9B have shown that fixed wireless access systems and systems in other services could share this band under certain technical parameters.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Corrigendum 1 to Document 133-E 11 May 2000 Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Japan

PROPOSALS FOR THE WORK OF THE CONFERENCE

1 On page 1, last line in the **CONTENTS**, replace the words "Agenda item 7.1" with "Agenda item 7.2".

2 On page 39, third paragraph, replace the title of the agenda

"Agenda item 7.1 - to consider and approve the report of the Director of the Radiocommunication Bureau on the activities of the Radiocommunication Sector since WRC-97"

with

"**Agenda item 7.2 - to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent Conference and on possible agenda items for future conferences**"

3 On page 39, first line in the **Introduction** of corrected "Agenda item 7.2", replace the words "on agenda item 7.1" with "on agenda item 7.2".

4 On page 43, third paragraph from the bottom, last line, replace the words "so as to meet and progress speed of …" with "so as to meet the progress speed of …".

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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28 April 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Japan

PROPOSALS FOR THE WORK OF THE CONFERENCE

CONTENTS

Introduction

Japan has actively participated in various International Telecommunication Union activities including world radiocommunication conferences in order to contribute to further development of technology in the field of radiocommunications, one of the technologies that is moving very speedily ahead, and in order to foster efficient use of frequency spectrum, which is indispensable for the effective application of radiocommunications.

Aiming at supporting the global improvement of quality as well as enhancement of availability of radiocommunication, Japan made a number of proposals to the 2000 World Radiocommunication Conference. Some of the proposals have been included in the Asia-Pacific Telecommunity (APT) common proposals. Other proposals are presented herewith as Japan's contribution to the work of the 2000 World Radiocommunication Conference.

Summary of Japan proposals

Agenda item 1.1	Japan supports the APT common proposals on agenda item 1.1.
Agenda item 1.2	Japan supports the APT common proposals on agenda item 1.2.
Agenda item 1.3	Japan supports the APT common proposals on agenda item 1.3.
Agenda item 1.4	Japan supports the APT common proposals on agenda item 1.4. Japan also proposes suppression of Resolutions 133 and 726 and the establishment of appropriate sharing criteria in the bands 37-40 GHz and 40.5-42.5 GHz.
Agenda item 1.5	Japan supports the APT common proposals on agenda item 1.5.
Agenda item 1.6	Japan supports the APT common proposals on agenda item 1.6.
Agenda item 1.7	Japan supports the APT common proposals on agenda item 1.7.
Agenda item 1.8	Japan supports the APT common proposals on agenda item 1.8.
Agenda item 1.9	Japan supports the APT common proposals on agenda item 1.9. Japan also proposes no allocation for the MSS (Earth-to-space) in the band 1 683-1 690 MHz.
Agenda item 1.10	Japan supports the APT common proposals on agenda item 1.10.
Agenda item 1.11	Japan supports the APT common proposals on agenda item 1.11. Japan also proposes suppression of Resolution 219.
Agenda item 1.12	Japan supports the APT common proposals on agenda item 1.12.
Agenda item 1.13	Japan supports the APT common proposals on agenda item 1.13. Japan also proposes: 1) suppression of Resolutions 130 , 131 and 538; 2) modifications of footnotes S5.516 and S5.520; and 3) modifications of Section VI of Article S22.
Agenda item 1.14	Japan supports the APT common proposals on agenda item 1.14.
Agenda item 1.15	Japan supports the APT common proposals on agenda item 1.15. Japan also proposes: 1) allocation of 1 164-1 188 MHz to the RNSS (space-to-Earth); and 2) no additional allocation to the RNSS in the band 1 260-1 300 MHz, 5 030-5 150 MHz and 1 300-1 350 MHz.

Agenda item 1.16	Japan supports the APT common proposals on agenda item 1.16.
Agenda item 1.17	Japan proposes worldwide primary allocations for the EESS (passive) and SRS (passive) on condition that appropriate modification of footnotes S5.522 and S5.523 is made.
Agenda item 1.19	Japan supports the APT common proposals on agenda item 1.19. Japan also proposes grouped assignment of channels at 109.85º E grouped with channels at 110º E for Japanese BSS network.
Agenda item 1.20	Japan supports the APT common proposals on agenda item 1.20.
Agenda item 1.21	Japan supports the APT common proposals on agenda item 1.21.
Agenda item 4	Japan supports the APT common proposals on agenda item 4. Japan also proposes suppression of seven resolutions and a recommendation which need to be suppressed.
Agenda item 7.2	Japan supports the APT common proposals on agenda item 7.2, which should be discussed during WRC-2000. Japan provides additional information and/or draft resolutions for some of the common proposals on agenda items of WRC-02/03.
PP-98 Resolutions	Japan supports the APT common proposals on PP-98 Resolutions. Japan also submits common proposals with some APT countries on the resolutions.

Agenda item 1.4 - to consider issues concerning allocations and regulatory aspects related to Resolution 126 (WRC-97), 128 (WRC-97), 133 (WRC-97), 134 (WRC-97) and 726 (WRC-97)

Introduction

Japan generally supports the APT common proposals on agenda item 1.4 and additionally submits proposals.

WRC-97 made some provisions for the use of high-density applications in the fixed services (HDFS) above 30 GHz. The frequency bands 31.8-33.4 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are listed for HDFS in footnote S5.547 and in Resolution 726. Japan considers that these bands should be made available for high-density applications to the greatest extent possible. Furthermore, Japan considers that the bands 37-40 GHz and 40.5-42.5 GHz are also suitable for HDFS.

In Japan, the FWA (Fixed Wireless Access) system, one application of HDFS, has been deployed in the 38 GHz band. In the 40.5-42.5 GHz band, the MS to transfer broadcasting data and FS have been deployed. In order to protect these services sufficiently, it is necessary to establish appropriate sharing criteria between the services.

Proposals

MOD J/133/1

TABLE **S21-4** *(end)*

Frequency band	**Service***	**Limit in dB(W/m²) for angle of arrival (δ) above the horizontal plane**			**Reference bandwidth**
		0°-5°	**5°-25°**	**25°-90°**	
37.0-40.0 GHz	Space research (non-geostationary-satellite orbit)	–120	–120 + 0.75(δ – 5)	–105	1 MHz
	Space research (geostationary-satellite orbit)	–125			
	Fixed-satellite (non-geostationary-satellite orbit)	–120	–120 +0.75(δ – 5)	–105	
	Fixed-satellite (geostationary-satellite orbit)	–125	–125 + (δ – 5)	–105	
	Mobile-satellite	–115	–115 + 0.5(δ – 5)	–105	

* The references to services are those services which have allocations in Article **S5**

Reasons: To make the band 37-40 GHz available for high-density applications in the fixed service, appropriate pfd masks are needed to protect the fixed service from other services as mention in the section 6.1.2 of the CPM Report.

MOD J/133/2

S5.547 The bands 31.8-33.4 GHz, 37-40 GHz, 40.5-42.5GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are available for high-density applications in the fixed service ~~(see Resolution **726 (WRC-97)**)~~. Administrations should take this into account, when considering regulatory provisions in relation to these bands.

Reasons: Japan considers that the bands 37-40 GHz and 40.5-42.5 GHz are also suitable for HDFS. The study under Resolution 726 which requires ITU-R to study sharing criteria between the fixed service and other services in the bands 31.8-33.4 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz has been completed and the *resolves* of Resolution 726 should be transferred to footnote MOD S5.547. Sharing criteria between the fixed service and other services such as the fixed-satellite service are provided in Table S21-4 taking their uses into account.

SUP J/133/3

RESOLUTION 726 (WRC-97)

Frequency bands above 30 GHz available for high-density applications in the fixed service

Reasons: Japan considers that Resolution 726 is no longer needed (see also J/133/2).

SUP J/133/4

RESOLUTION 133 (WRC-97)

Sharing between the fixed service and other services in the band 37-40 GHz

Reasons: Major studies on sharing between fixed service and other services in the band 37-40 GHz have been completed, and the result of the studies can be reflected on Table S21-4. Therefore, Japan considers that Resolution 133 is no longer needed.

MOD J/133/5

TABLE **S21-4** *(end)*

Frequency band	**Service***	**Limit in dB(W/m²) for angle of arrival (δ) above the horizontal plane**			**Reference bandwidth**
		0°-5°	**5°-25°**	**25°-90°**	
40.5-42.5 GHz	Fixed-satellite (non-geostationary-satellite orbit)	–115	–115 + 0.5(δ – 5)	–105	1 MHz
	Fixed-satellite (geostationary-satellite orbit)	–120	–120 + (δ – 5) for 5°–15° –110 + 0.5(δ – 15) for 15°–25°	–105	

* The references to services are those services which have allocations in Article **S5**

Reasons: To make the band 40.5-42.5 GHz available for high-density applications in the fixed service, appropriate pfd masks are needed to protect the fixed service from other services as mentioned in section 6.1.5 of the CPM Report.

Agenda item 1.9 - to take into account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-Earth direction to the mobile-satellite service (MSS) in a portion of the 1 559-1 567 MHz frequency range, in response to Resolutions 213 (Rev.WRC-95) and 220 (WRC-97)

Introduction

The APT common proposal on agenda item 1.9 points out that the frequency range 1 559-1 567 MHz is not suitable for MSS downlink. Japan considers that there should not be allocated the additional frequency band for MSS uplink, as long as correspondence downlink is not identified for allocation.

Proposals

NOC J/133/6

1 660-1 710 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
1 675-1 690 METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.341	**1 675-1 690** METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) S5.341 S5.377	**1 675-1 690** METEOROLOGICAL AIDS FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.341
1 690-1 700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) Fixed Mobile except aeronautical mobile S5.289 S5.341 S5.382	**1 690-1 700** METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (Earth-to-space) S5.289 S5.341 S5.377 S5.381	**1 690-1 700** METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) S5.289 S5.341 S5.381
1 700-1 710 FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.289 S5.341	**1 700-1 710** FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile MOBILE-SATELLITE (Earth-to-space) S5.289 S5.341 S5.377	**1 700-1 710** FIXED METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile S5.289 S5.341 S5.384

Reasons: There is no need to allocate the frequency band for MSS uplink, as long as the corresponding downlink is not identified for allocation.

Agenda item 1.11 - to consider constraints on existing allocations and to consider additional allocations on a worldwide basis for the non-geostationary (non-GSO) MSS below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolutions 214 (Rev.WRC-97) and 219 (WRC-97)

Introduction

The CPM Report points out that operation of the MSS in the band 405-406 MHz is considered as not feasible in the foreseeable future. Therefore, Japan proposes suppression of Resolution 219 (WRC-97).

Proposals

SUP J/133/7

RESOLUTION 219 (WRC-97)

Studies relating to consideration of the allocation to the non-geostationary mobile-satellite service in the meteorological aids band 405-406 MHz and the impact on primary services allocated in the adjacent bands

Reasons: As pointed out in the CPM Report additional allocations for the non-GSO MSS in the band 405-406 MHz is not feasible.

Agenda item 1.13 - on the basis of the results of the studies in accordance with Resolutions 130 (WRC-97), 131 (WRC-97) and 538 (WRC-97):

1.13.1 to review and, if appropriate, revise the power limits appearing in Articles S21 and S22 in relation to the sharing conditions among non-GSO FSS, GSO FSS, GSO broadcasting-satellite service (BSS), space sciences and terrestrial services, to ensure the feasibility of these power limits and that these limits do not impose undue constraints on the development of these systems and services

Japan supports all of the APT common proposals on agenda item 1.13. Therefore, these proposals should be regarded as part of Japanese proposals.

PART 1

PROPOSED SUPPRESSION OF RESOLUTIONS 130, 131 AND 538

Introduction

The existing text in the RR (e.g. those Resolutions 130 (WRC-97), 131 (WRC-97), and 538 (WRC-97), and Articles S5, S9, S11, S21, S22, and Appendices S4 and S5) was reviewed and some possible options were identified for modifications to these provisions in the ITU-R.

Suppression of *resolves* 6 of Resolution 130 is raised in the APT common proposals provided that the suitable text is reflected in the relevant footnotes of Article S5.

Additionally, Japan proposes suppression of all the contents of Resolutions 130, 131 and 538.

Proposals

SUP J/133/8

RESOLUTION 130 (WRC-97)

Use of non-geostationary systems in the fixed-satellite service in certain frequency bands

Reasons: APT proposes suppression of *resolves* 6 of Resolution 130 provided that the suitable text is reflected in the relevant footnotes. Japan recognizes that other *resolves* and *instructs the BR* are transitional measures and these provisions could be suppressed (see CPM comments in Annex 5 to Chapter 3 of the CPM Report). Japan believes that *requests ITU-R* should be covered by Questions of ITU-R. Therefore, Resolution 130 is no longer needed.

SUP J/133/9

RESOLUTION 131 (WRC-97)

Power flux-density limits applicable to non-geostationary fixed-satellite service systems for protection of terrestrial services in the bands 10.7-12.75 GHz and 17.7-19.3 GHz

Reasons: Japan believes that *resolves* 1 would be adequately covered by Article S21 revised at WRC-2000. Studies that this Resolution requested ITU-R to perform have been finished before WRC-2000. Japan recognizes that *requests WRC-99* and *urges administrations* will be no longer required. Therefore, Resolution 131 will no longer be needed after WRC-2000.

SUP J/133/10

RESOLUTION 538 (WRC-97)

Use of the frequency bands covered by Appendices S30/30 and S30A/30A by non-geostationary-satellite systems in the fixed-satellite service

Reasons: Japan prefers suppression of *resolves* 1 of Resolution 538 provided that the suitable text is reflected in Article S22. Japan recognizes that other *resolves* and *instructs the BR* are transitional measures and these provisions could be suppressed (see CPM comments in Annex 5 to Chapter 3 of the CPM Report). Japan believes that *requests ITU-R* should be covered by Questions of ITU-R. Therefore, Resolution 538 is no longer needed.

PART 2

PROPOSED MODIFICATIONS TO FOOTNOTES IN ARTICLE S5

Introduction

The use by non-GSO FSS systems of the frequency bands subject to Appendices S30 and S30A Plans at 12 and 17 GHz was addressed by WRC-97 (Resolution 538 (WRC-97)). ITU-R has also examined the possibility of applying $epfd_{up}$ limits in the band 18.1-18.4 GHz in order to protect GSO BSS feeder links in this band from interference caused by non-GSO FSS systems operating in the Earth-to-space direction. Results of studies conducted by ITU-R are shown in sections 3.1.3 and 3.2.3 of the CPM Report. ITU-R has identified the possible modifications to Nos. S5.516 and/or S5.520 in sections 3, 4 and 5 of Annex 6 to Chapter 3 of the CPM Report.

Proposals

MOD J/133/11

S5.516 The use of the band 17.3-18.1 GHz by geostationary-satellite systems in the fixed-satellite service (Earth-to-space) is limited to feeder links for the broadcasting-satellite service. For the use of the band 17.3-17.8 GHz in Region 2 by feeder links for the broadcasting-satellite service in the band 12.2-12.7 GHz, see Article **S11**. The use of the bands 17.3-18.1 GHz (Earth-to-space) in Regions 1 and 3 and 17.8-18.1 GHz (Earth-to-space) in Region 2 by non-geostationary-satellite systems in the fixed-satellite service is subject to the application of the provisions of ~~Resolution **538 (WRC-97)**~~No. **S9.12** for coordiniation with other non-geostationary-satellite systems in the fixed-satellite service. Non-geostationary-satellite systems in the fixed-satellite service shall not claim protection from geostationary-satellite networks in the fixed-satellite service operating in accordance with the Radio Regulations, irrespective of the dates of receipt by the Bureau of the complete notification information for the non-geostationary-satellite systems in the fixed-satellite service and of the complete coordination information for the geostationary-satellite networks.

Reasons: A study presented to WRC-97 (Document CMR97/62) advised that the interference from Appendices S30 and S30A Plans into non-GSO FSS systems sharing the same bands would be acceptable. Japan has noticed that the off-axis e.i.r.p. density limits prescribed in Appendix S30A is enough to protect non-GSO FSS. When non-GSO FSS systems claim protection from off-axis emission of BSS feeder uplinks in all azimuthal directions, significant constraints could be imposed on the BSS feeder-link operation.

MOD J/133/12

S5.520 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 using the geostationary-satellite orbit.

Reasons: The band 18.1-18.4 GHz should be limited to geostationary FSS operations in the Earth-to-space direction in Regions 1, 2, and 3, especially since in Region 1 and 3 the band 17.3-18.1 GHz has been allocated to non-GSO FSS and the total bandwidth of 800 MHz is enough capacity for the use by non-GSO FSS.

The proposed modification to No. S5.520 is necessary in order to limit the use of the band by GSO fixed-satellite service (Earth-to-space) for feeder links for the broadcasting-satellite service.

PART 3

PROPOSED MODIFICATIONS TO SECTION VI OF ARTICLE S22

Introduction

Although ITU-R has identified three options for how the off-axis e.i.r.p. issue should be considered, ITU-R did not conclude the inclusion of these limits in the Radio Regulations. Japan supports Option 1 in Annex 7 to Chapter 3 of the CPM Report and believes that the provision contained in the pre-WRC-97 version of the Radio Regulations is needed to be retained to reduce interference among geostationary-satellite networks and non-geostationary-satellite networks with minimum constraints for geostationary-satellite networks.

Proposals

MOD J/133/13

Section VI – Earth station off-axis power limitations ~~in the fixed-satellite service~~[11]

SUP J/133/14

S22.26
to
S22.29

ADD J/133/14*bis*

S22.26 § 10 The level of equivalent isotropically radiated power (e.i.r.p.) emitted by an earth station off the main-beam axis has a significant impact on interference caused to other networks. Enhanced spectrum utilization and easier coordination would be attained by minimizing such off-axis radiation and administrations are encouraged to achieve the lowest values practicable bearing in mind the latest ITU-R Recommendations. Minimizing such levels is particularly important in intensively used bands.

Reasons:

a) ITU-R has reviewed Section VI of Article S22 of the Radio Regulations and concluded that, if they were to be included in the Radio Regulations, such limits should impose a minimum of constraints on existing and future GSO networks.

Japan believes that inclusion of Section VI would impose significant constraints on future GSO networks and could impose constraints on some existing GSO networks because of the following reasons:

– unnecessary constraint on future development of the GSO FSS (using future new tech. antennas); and

– great danger of accidental unforeseen impact on existing GSO networks e.g. change of national regulations affecting existing antennas.

~~[11] **S22.VI.1** The provisions of this section are suspended pending the review of the values in Nos. **S22.26**, **S22.27** and **S22.28** by WRC-99.~~

b) These limits could not actually protect non-GSO FSS networks because of the following reasons:

– limits cannot be applied retroactively to existing GSO FSS networks, so there is no real protection for non-GSO networks;

– ITU-R agreed that the inclusion in the RR of FSS earth station off-axis e.i.r.p. density limits in all the plane orientations with regard to the GSO should not lead to a situation where the GSO operators would have to provide information on the typical performance of their earth stations in more than two orthogonal planes.

c) ITU-R has developed Recommendation ITU-R S.524 [Doc. 4/66] which recommends off-axis e.i.r.p. levels based on studies between GSO systems. These levels may also be used to provide guidance to non-GSO system designers. Japan believes that the appropriate way to provide guidance for non-GSO designers is through ITU-R Recommendations, not through the Radio Regulations.

Therefore Japan considers that there is no reason to include Section VI of S22 in the Radio Regulations.

PART 4

PROPOSED MODIFICATIONS TO SECTION II OF ARTICLE S22

Introduction

Detailed review of the APT common proposals relating to Section II of Article S22 has indicated that there are a number of areas where minor modifications are desirable.

Proposals

J/133/15

Article S22 has very little text and many pages of tables. It would be very much easier to read and understand if all of the text were to be collected together at the beginning of the article, followed by the tables in numerical order.

MOD J/133/16

S22.5C § ~~5~~6 1) The equivalent power flux-density[2], at any point on the Earth's surface visible from the geostationary-satellite orbit, produced by emissions from all the space stations of a non-geostationary-satellite system in the fixed-satellite service in the frequency bands listed in Table **S22-1**, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed the limits given in Table **S22-1** for the given percentages of time. These limits relate to the equivalent power flux-density which would be obtained under free-space propagation conditions, into a reference antenna and in the reference bandwidth specified in Table **S22-1**, for all pointing directions towards the geostationary-satellite orbit.

Reasons: Editorial correction: § 5 should read § 6. This typographical error continues through the remainder of Article S22 in the current RR.

Footnote 3 to Table S22-1A (amendments shown relative to the text in the APT common proposal ASP/20/111).

ADD J/133/17

3 ~~In addition to the limits shown in this table, the epfd$_{down}$ limits in Table **S22-1A'** apply to~~For all antenna sizes greater than 60 cm operating in the frequency bands listed in ~~this table.~~Table **S22-1A**, the epfd$_{down}$ limit of Table **S22-1E** also applies in addition to the limits shown in Table **S22-1A**.

Footnote 2 to Table S22-1D (amendments shown relative to the text in the APT common proposal ASP/20/114).

ADD J/133/18

2 For BSS antenna diameters 180 cm, 240 cm and 300 cm~~, in addition to the single-entry limits shown~~ operating in the frequency bands listed in Table **S22-1D**, ~~the following single-entry 100% of~~ the epfd$_{down}$ limit of Table **S22-1E** also applies ~~in the frequency band listed~~ in addition to the limits shown in Table **S22-1D**.

Footnote 4 to Table S22-1D (amendments shown relative to a footnote below Table S22-1D in the APT common proposal ASP/20/114).

ADD J/133/19

4 The following transitional regime would be applicable only if the pfd limits in section 5c of Annex 1 to Appendix **S30** are sufficiently relaxed. For BSS antenna diameter 240 cm, ~~in addition to the above single-entry 100% of the time~~ epfd$_{down}$ ~~limit,~~ a –167 ~~(dB(W/m^2) per 40 kHz) single-entry~~ dB(W/(m^2·40 kHz))100% of the time operational epfd$_{down}$ limit ~~also~~ applies to receive antennas located in Region 2, west of 140° W, north of 60° N, pointing toward GSO BSS satellites at 91° W, 101° W, 110° W, 119° W and 148° W with elevation angles greater than 5°. [This limit is implemented during a transition period of [15] years.]~~*~~

~~* This transitional regime would be applicable only if the pfd limits in section 5c of Annex 1 to Appendix **S30** are sufficiently relaxed.~~

Add the following table below Table S22-1D (amendments shown relative to the table below Table S22-1D in the APT common proposal ASP/20/114).

ADD J/133/20

TABLE **S22-1E**

Limits to the epfd$_{down}$ radiated by non-GSO FSS systems at certain latitudes

100% of the time epfd$_{down}$ (dB(W/m^2) per 40 kHz)	**Latitude (North or South) (°)**
–160~~.0~~	0 < |Latitude| ≤ 57.5
–160~~.0~~ + 3.4~~ *~~ (57.5 – |Latitude|)/4	57.5 < |Latitude| ≤ 63.75
–165.3	63.75 ≤ |Latitude|

Reasons: Editorial work seems to be desirable for a number of reasons. There are separate tables for the BSS and FSS, but the contents appear to be identical. The FSS table number S22-1A could cause confusion since the “prime” symbol looks like the “footnote 1” reference which occurs in the titles of several other tables. The BSS footnote includes a table. The BSS footnote has a footnote. The main BSS footnote refers to single-entry, which may lead to confusion as it is the only time the term is used in Article S22 (the whole of S22, by definition, deals with the single-entry case). The second part of the main BSS footnote contains an operational limit, which seems out of place in the part of S22 dealing with validation limits. The asterisk used in the footnote-to-the-footnote to the BSS table could cause confusion as it seems likely to be printed on the same page of the RR as Table S22-2, which also uses an asterisk to refer to a note.

Add Tables S22-1B and S22-1C (amendments are shown relative to Tables S22-1B and S22-1C in the APT common proposals ASP/20/112 and ASP/20/113 and order of limits is reversed).

ADD J/133/21

TABLE **S22-1B**[1, 3]

Limits to the $epfd_{down}$ radiated by non-GSO FSS systems in certain frequency bands

Frequency band (GHz)	$epfd_{down}$ dB(W/m^2)	Percentage of time during which $epfd_{down}$ may not be exceeded	Reference bandwidth (kHz)	Reference antenna diameter, and reference radiation pattern[2]
17.8-18.6	–175.4 –175.4 –172.5 –167 –164 –164	0 90 99 99.714 99.971 100	40	1 m Recommendation ~~S.(4/57)~~S.1428
	–161.4 –161.4 –158.5 –153 –150 –150	0 90 99 99.714 99.971 100	1 000	
17.8-18.6	–178.4 –178.4 –171.4 –170.5 –166 –164 –164	0 99.4 99.9 99.913 99.971 99.977 100	40	2 m Recommendation ~~S.(4/57)~~S.1428
	–164.4 –164.4 –157.4 –156.5 –152 –150 –150	0 99.4 99.9 99.913 99.971 99.977 100	1 000	
17.8-18.6	–185.4 –185.4 –180 –180 –172 –164 –164	0 99. 8 99.8 99.943 99.943 99.998 100	40	5 m Recommendation ~~S.(4/57)~~S.1428
	–171.4 –171.4 –166 –166 –158 –150 –150	0 99. 8 99.8 99.943 99.943 99.998 100	1 000	

TABLE **S22-1C**[1, 3]

Limits to the $epfd_{down}$ radiated by non-GSO FSS systems in certain frequency bands

Frequency band (GHz)	$epfd_{down}$ dB(W/m^2)	Percentage of time during which $epfd_{down}$ may not be exceeded	Reference bandwidth (kHz)	Reference antenna diameter, and reference radiation pattern[2]
19.7-20.2	–187.4 –182 –172 –154 –154	0 71.429 97.143 99.983 100	40	70 cm Recommendation ~~S.(4/57)~~S.1428
	–173.4 –168 –158 –140 –140	0 71.429 97.143 99.983 100	1 000	
19.7-20.2	–190.4 –181.4 –170.4 –168.6 –165 –160 –154 –154	0 91 99.8 99.8 99.943 99.943 99.997 100	40	90 cm Recommendation ~~S.(4/57)~~S.1428
	–176.4 –167.4 –156.4 –154.6 –151 –146 –140 –140	0 91 99.8 99.8 99.943 99.943 99.997 100	1 000	
19.7-20.2	–196.4 –162 –154 –154	0 99.98 99.99943 100	40	2.5 m Recommendation ~~S.(4/57)~~S.1428
	–182.4 –148 –140 –140	0 99.98 99.99943 100	1 000	

19.7-20.2	–200.4 –189.4 –187.8 –184 –175 –164.2 –154.6 –154 –154	0 90 94 97.143 99.886 99.99 99.999 99.9992 100	40	5 m Recommendation ~~S.(4/57)~~S.1428
	–186.4 –175.4 –173.8 –170 –161 –150.2 –140.6 –140 –140	0 90 94 97.143 99.886 99.99 99.999 99.9992 100	1 000	

Reasons: The tabulated sets of epfd limits run down the page from 0 to 100% time in all cases except the FSS 20 GHz band tables. It seems logical to reformat the 20 GHz band tables to be compatible with all of the other tables of S22.

In the CPM Report, the heading of the right-hand column of the 20 GHz band tables is different from the equivalent heading in the other tables - the word “radiation” is missing. That correction has also been made in the revised tables.

The ITU-R Recommendation giving the FSS reference antenna radiation pattern is S.1428.

Footnote 4 to Table S22-1C (amendments shown relative to Table S22-1C in the APT common proposal ASP/20/113).

ADD J/133/22

4 A non-GSO system shall meet the limits of this table in both the 40 kHz and the 1 MHz reference bandwidth.

Reasons: The CPM Report proposed restoring the 1 MHz reference bandwidth in the 30/20 GHz band. However, the proposed regulatory text did not confirm that a non-GSO system must meet the limits in both of the reference bandwidths, and did not indicate whether the BR should check compliance in both of the reference bandwidths.

Footnote 2 to Table S22-2 (amendments shown relative to Table S22-2 in the APT common proposal ASP/20/116).

ADD J/133/23

2 Under this section, this reference pattern is to be used only for the calculation of interference from non-GSO FSS systems into GSO FSS systems.

Reasons: The marker for footnote 2 is already on the table, but the text of the note is missing.

Footnote 1 to Table S22-3 (amendments shown relative to footnote 1 to Table S22-3 in the APT common proposal ASP/20/117).

ADD J/133/24

1 Under this section, this reference pattern is to be used only for the calculation of interference from non-GSO FSS systems into GSO FSS systems. In applying the equations of Annex 1 of Recommendation ITU-R S.672, the parabolic main beam equation should start at zero.

Reasons: This text is necessary to fully define the use of Recommendation S.672 (see equivalent text already in Note 1 to S22-2).

(Amendments shown relative to the text given in the APT common proposal ASP/20/119.)

ADD J/133/25

S22.5~~I~~G 6) An administration operating a non-GSO FSS system which is in compliance with the limits in Nos. **S22.5B** to **S22.5D** (see also Resolution **WWW**) shall be considered as having fulfilled its obligations under No. **S22.2** with respect to any GSO ~~network~~system, irrespective of the dates of receipt by the Bureau of the complete coordination or notification information, as appropriate, for the non-GSO system and of the complete coordination information for the GSO ~~network~~system, provided that the $epfd_{down}$ radiated by the non-GSO FSS system into any operating GSO FSS earth station does not exceed the operational and additional operational limits given in Table **S22-4A** and **S22-4B**, when the gain of this earth station is equal to or greater than the corresponding value given in Table **S22-4A** and **S22-4B** for the corresponding orbital inclination of the GSO FSS satellite as given in Table **S22-4A** and **S22-4B**. Except as otherwise agreed between concerned administrations, an administration operating a non-GSO FSS system that is subject to the limits in No. **S22.5B** to **S22.5D** and which radiates $epfd_{down}$ into any operating GSO FSS earth station at levels in excess of the operational and additional operational limits given in Table **S22-4A** and **S22-4B**, when the gain of this earth station is equal to or greater than the corresponding value given in Table **S22-4A** and **S22-4B** for the corresponding orbital inclination of the GSO FSS satellite as given in Table **S22-4A** and **S22-4B**, shall be considered to be in violation of its obligations under No. **S22.2**.

Reasons: The Ku-band additional operational limits are defined through a footnote to Table S22-4A, and therefore any reference to “operational limits” or to “Table S22-4A” is understood to make an implicit reference to the additional operational limits. But that seems a potential cause of dispute in the future, and so an explicit reference to the additional operational limits is proposed.

The terms “GSO system” and “non-GSO system” are used throughout the revised draft of Article S22 with only two exceptions, both of which occur in the first sentence of S22.5G. For consistency with the remainder of the Article, the proposal is to change “network” to “system” in those two instances.

For consistency with the style of Article S22, there should be a paragraph number “6)” at the start of new S22.5G. (A similar correction should be made in each of the new sections S22.5E, S22.5F and S22.5H.)

Table S22-4A (amendments shown relative to the text given in the APT common proposal ASP/20/120).

MOD J/133/26

TABLE **S22-4A**[1, 3]

Operational limits to the $epfd_{down}$ radiated by non-GSO FSS systems in certain frequency bands

Frequency band (GHz)	**$epfd_{down}$ dB(W/m^2)**	**Percentage of time during which $epfd_{down}$ may not be exceeded**	**Reference bandwidth (kHz)**	**Receive GSO earth station antenna diameter[2] (m)**	**Orbital inclination of GSO satellite (degrees)**
10.7-11.7 in all Regions 11.7-12.2 in Region 2 12.2-12.5 in Region 3 and 12.5-12.75 in Regions 1 and 3 (prior to 31 December 2005)	–163 –166 –167.5 –169.5	100	40	3 6 9 ≥18	≤2.5
	–160 –163 –164.5 –166.5	100	40	3 6 9 ≥18	≤4.5
10.7-11.7 in all Regions 11.7-12.2 in Region 2 12.2-12.5 in Region 3 and 12.5-12.75 in Regions 1 and 3 (~~after~~ from 31 December 2005)	–161.25 –164 –165.5 –167.5	100	40	3 6 9 ≥18	≤2.5
	158.25 –161 –162.5 –164.5	100	40	3 6 9 ≥18	≤4.5

Reasons: For consistency with the “prior to” in the upper half of the table.

Footnote 1 to Table S22-4A (amendments shown relative to the text given in the APT common proposal ASP/20/120).

ADD J/133/27

1 For certain GSO FSS receive earth stations with very large antennas, see also ADD **S9.7A** and ADD **S9.7B**.

Reasons: To clarify the reason for the reference to S9. A similar change is to be made in Tables S22-1A, S22-1B, S22-1C and S22-4B.

Footnote 2 to Table S22-4A (amendments shown relative to the text given in the APT common proposal ASP/20/120).

ADD J/133/28

2 For antenna diameters between the tabulated values, the limits are given by linear interpolation using a linear scale for $epfd_{down}$ in decibels and a logarithmic scale for antenna diameter in metres~~Linear interpolation of epfd levels in decibels should be performed for other intermediate antenna diameters~~.

Reasons: To make the footnote consistent with 3.1.2.1.4 c) on page 13 of Chapter 3 of the CPM Report.

PART 5

PROPOSED MODIFICATIONS TO ARTICLE S9

Proposals

ADD J/133/29

S9.40B For non-GSO FSS systems subject to the provisions of No. **S9.12** for coordination with other non-GSO FSS systems (as determined by footnotes **S5.441**, **S5.484A**, **S5.487A**, and **S5.516**), the Bureau shall examine the information supplied under **S9.34** for its compliance with the epfd limits in Tables **S22-1** to **S22-3** inclusive. The Bureau shall communicate the results of this examination in its Weekly Circular.

Reasons:

a) The requirement for examination by BR is not specified at any other point.

b) Modifications to those four footnotes shall be as proposed in Option 1A in section 1 of Annex 6 to Chapter 3 of the CPM Report.

PART 6

RESOLUTION TO DEFINE THE FURTHER STUDIES RELATED TO THE FSS

Introduction

Chapter 3 of the CPM Report makes many proposals for further study by ITU-R, and it seems appropriate to convert these proposals into a resolution. Also, section 3.1.2.4.8 of the CPM Report calls for a resolution to define the further studies to be performed by ITU-R. An example Resolution FSS, defining the studies related to the FSS, is given below.

Proposals

ADD J/133/30

RESOLUTION FSS (WRC-2000)

Further studies required on the conditions required for sharing between GSO FSS networks and non-GSO FSS systems and between non-GSO FSS systems

The World Radiocommunication Conference (Istanbul, 2000),

considering

a) that ITU-R has conducted technical, operational and regulatory studies in order to determine the conditions under which sharing of the frequency bands 10-30 GHz which are allocated to the FSS and where No. **S9.11A** does not apply is feasible between GSO FSS and non-GSO FSS systems;

b) that WRC-97 has adopted, in Article **S22**, provisional epfd limits to be met by non-GSO FSS systems in order to protect GSO FSS networks in parts of the frequency range 10.7-30 GHz;

c) that WRC-2000 has revised these limits to ensure that they provide adequate protection to GSO FSS systems without causing undue constraints to any of the systems and services sharing these frequency bands;

d) that additional areas for study have been identified by WRC-2000,

resolves

that studies should be conducted as matter of urgency on the outstanding issues relating to the sharing between GSO FSS networks and non-GSO FSS systems and between non-GSO FSS systems,

requests ITU-R

1 to develop, as a matter of urgency, a methodology to permit administrations to check compliance of an individual non-GSO FSS network with the operational limits and additional operational limits contained in Article **S22**;

2 to develop a methodology for the generation of continuous curves of $epfd_{down}$ versus percentage time for a range of antenna diameters of the GSO FSS earth station to be protected, in order for designers of GSO FSS satellite networks to determine the expected single-entry and aggregate interference level in the case of antennas of sizes other than those given in Article **S22** and Resolution **WWW**;

3 to develop a methodology for the generation of values of $epfd_{up}$ for different antenna beamwidth of the GSO FSS space station to be protected, in order for designers of GSO FSS satellite networks to determine the expected single-entry and aggregate interference level in the case of antenna beamwidths other than those given in Article **S22** and Resolution **WWW**;

4 to conduct as a matter of urgency, and complete in time for consideration by the next WRC, the studies relating to the sharing criteria to be applied during the coordination between non-GSO FSS systems with a view to promoting efficient use of spectrum/orbit resources and equitable access to these resources by all countries;

5 to develop as a matter of urgency, and complete in time for consideration by the next WRC, a methodology for accurately calculating the aggregate epfd produced by all non-GSO FSS systems operating or planning to operate co-frequency in the frequency bands referred to in *considering a)* above into GSO FSS networks and for comparing the calculated levels with the permissible aggregate power levels of Resolution **WWW**,

requests the Director of the Radiocommunication Bureau

to assist in the studies referred to in *requests ITU-R* above.

PART 7

COORDINATION PROCEDURE BETWEEN NON-GSO FSS AND GSO FSS SERVICES HAVING VERY LARGE ANTENNAE

Introduction

WRC-97 adopted provisional equivalent power flux density down ($epfd_{down}$) limits for systems in a non-geostationary orbit (non-GSO) in certain frequency bands in the fixed-satellite service (FSS) in order to facilitate sharing with FSS networks in the geostationary orbit (GSO).

The Conference Preparatory Meeting (CPM) reported that:

"Some links with very large earth station antennas may not be adequately protected by the $epfd_{down}$ limits proposed in Annex 1. The following points were agreed regarding GSO FSS networks having earth stations with very large antennas:

- Transmissions to earth stations with very large antennas need to be protected, and thus it may be desirable that they be treated separately. A coordination procedure would be one possible mechanism to ensure this protection.
- Downlink transmissions to very large GSO earth station antennas are most sensitive to interference. This sensitivity is more related to the availability degradation than to the potential for synchronization loss (i.e. the 100% $epfd_{down}$ value).
- For very large GSO earth station antennas, the following factors would facilitate achieving mutually satisfactory coordination:
  - Non-GSO interference $epfd_{down}$ levels at or near the maximum are likely to occur over only a small proportion of the Earth's surface.
  - The locations of interference $epfd_{down}$ levels at or near the maximum are likely to differ from one non-GSO system to another.
- Coordination would be triggered for GSO FSS networks having very large earth station antennas meeting all of the following conditions:
  - Earth station antenna maximum isotropic gain (APS4/C.10 *c)* 2)) of 64 dBi or higher for the band 10.7-12.75 GHz and 68 dBi or higher for the bands 17.8-18.6 GHz and 19.7-20.2 GHz, which corresponds to approximately 18 metres.
  - G/T_l of 44 dB/K or higher, where G is earth station antenna maximum isotropic gain and T_l (APS4/C.10 *c)* 5)) is the lowest total system receiving noise temperature which includes the earth station noise temperature, retransmitted uplink noise, cross-polarization noise, inter-modulation noise, and any other

internal link noise sources. The link noise temperature as defined herein excludes external noise sources.

- Space station emission bandwidth (APS4/C.7 *a)*) of 250 MHz or higher for the band 10.7-12.75 GHz and 800 MHz or higher for the bands 17.8-18.6 GHz and 19.7-20.2 GHz.

- In addition to the conditions indicated in the preceding point, the coordination trigger should contain the condition of the $epfd_{down}$ level radiated by the non-GSO FSS system into the earth station employing the very large antenna considered when this earth station is pointed to the wanted GSO satellite. Two $epfd_{down}$ values in each band would be needed and exceeding either $epfd_{down}$ would trigger coordination. Coordination would be triggered if the $epfd_{down}$ exceeds:
  - either –174.5 dB(W/(m^2 · 40 kHz)) for any percentage of time or [x] dB(W/(m^2 · 40 kHz)) for [y]% of the time in the frequency band 10.7-12.75 GHz;
  - either –151 dB(W/(m^2 · MHz)) for any percentage of time or [x'] dB(W/(m^2 · MHz)) for [y']% of the time in the frequency bands 17.8-18.6 GHz and 19.7-20.2 GHz.

These $epfd_{down}$ threshold criteria would be sufficiently conservative to trigger coordination.
A reference to these $epfd_{down}$ thresholds is needed in Appendix S5.

- Based on the responses to CR/115, setting the threshold size of very large GSO earth station antennas at 64 dBi in the band 10.7-12.75 GHz and 68 dBi for the bands 17.8-18.6 GHz and 19.7-20.2 GHz clearly indicates that there would be few cases requiring coordination.
- Additional regulatory and procedural conditions (e.g. due diligence provisions) may be needed to reduce the number of cases requiring coordination.
- The conditions required to initiate coordination would be that the notifying administration provide the specific earth station location (APS4/C.10 *b)*) and satellite location (APS4/C.10 *a)*) and that BR check that all conditions required to initiate coordination are met."

The CPM was unable to agree on the values for the $epfd_{down}$ triggers and further studies have been performed within Study Group 4 to develop these values.

Subsequent studies have demonstrated that neither the WRC-97 provisional equivalent power flux-density ($epfd_{down}$) limits and associated percentages of time adequately protect existing fixed-satellite service (FSS) networks in geostationary-satellite orbit (GSO) with very large earth station antennas.

Working Party 4A has agreed the following text for inclusion in the WP 4A Chairperson's Report and the ITU-R SG 4 Chairperson's Report to RA-2000.

"Studies demonstrated that neither the WRC-97 provisional equivalent power flux-density ($epfd_{down}$) limits and associated percentages of time nor the proposed modifications agreed during ITU-R studies adequately protect existing fixed-satellite service (FSS) networks in geostationary-satellite orbit (GSO) with very large earth station antennas. Coordination triggers based on the characteristics of the satellite network using the GSO were agreed by ITU-R and confirmed by CPM-99. In addition to the GSO network triggers, it was decided to include the condition of the $epfd_{down}$ radiated by the non-GSO FSS system. CPM-99 proposed that two values would be needed in each band and that exceeding either $epfd_{down}$ value would trigger coordination, requesting that

WP 4A carry out studies to enable further advice to be given to RA-2000 on the issue of coordination triggers for very large earth station antennas (CPM Report section 3.1.2.1.2 e)).

On the basis of additional studies, WP 4A agreed that coordination should be triggered if the $epfd_{down}$ radiated by the non-GSO FSS system exceeds the following values:

- –174.5 dB(W/(m^2 · 40 kHz)) for any percentage of time for non-GSO systems with all satellites only operating at or below 2 500 km altitude, or –202 dB(W/(m^2 · 40 kHz)) for any percentage of the time for non-GSO systems with any satellites operating above 2 500 km altitude in the frequency band 10.7-12.75 GHz.
- –157 dB(W/(m^2 · MHz)) for any percentage of time for non-GSO systems with all satellites only operating at or below 2 500 km altitude, or –185 dB(W/(m^2 · MHz)) for any percentage of the time for non-GSO systems with any satellites operating above 2 500 km altitude in the frequency bands 17.8-18.6 GHz and 19.7-20.2 GHz.

It was agreed that the first trigger in each band would apply to non-GSO systems operating in low earth orbit and that the second trigger in each band would apply to non-GSO systems in other orbits. This solution has the advantage that it reflects the expected interference situation and eases the burden on BR to identify affected administrations and perform the necessary calculations. WP 4A also agreed that the trigger applying to non-GSO systems in low-Earth orbit in the frequency bands 17.8-18.6 GHz and 19.7-20.2 GHz should be reduced from –151 dB(W/(m^2 · MHz)) to –157 dB(W/(m^2 · M Hz))."

Proposals

Proposed coordination procedure between non-GSO FSS transmitting space stations and GSO receive earth stations with very large antennas

ARTICLE S9

Sub-Section IIA – Requirement and request for coordination

ADD J/133/31

S9.7A *a1)*[11*bis*, 11*ter*] for a specific earth station within a geostationary-satellite network in the fixed-satellite service in certain frequency bands in respect of a non-geostationary-satellite system in the fixed-satellite service;

ADD J/133/32

S9.7B *a2)*[11*bis*, 11*ter*] for a non-geostationary-satellite system in the fixed-satellite service in certain frequency bands in respect of a specific earth station within a geostationary-satellite network in the fixed-satellite service;

ADD J/133/33

[11*bis*] **S9.7A.1** and **S9.7B.1** The coordination of a specific earth station under **S9.7A** or **S9.7B** shall remain within the authority of the administration having this station located on its territory.

ADD J/133/34

[11*ter*] **S9.7A.2** and **S9.7B.2** Coordination information relating to a specific earth station received by the Bureau prior to [date to be established by WRC-2000] is considered as complete **S9.7A** or **S9.7B** information from the date of receipt of complete information of the associated satellite network under **S9.7** provided that the characteristics of the specific earth stations are within the parameters of any typical earth station included in the GSO FSS network coordination request.

NOC J/133/35

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[12] **S9.8.1** and **S9.9.1**

Reasons: GSO FSS earth stations with very large antennas may not be adequately protected by the $epfd_{down}$ limits contained in Table MOD S22-1 and case-by-case coordination of systems operating co-frequency, co-directional links in the space-to-Earth direction would then be required. The proposed ADD S9.7A and ADD S9.7B would require coordination between non-GSO FSS transmit satellites and GSO FSS receive earth stations with very large antennas. By referring to coordination provisions under S9.7A and S9.7B, the request for coordination would be sent by the requesting administration to the Bureau under S9.30. The Bureau would act under S9.34 to identify administrations with which coordination may need to be effected and publish the information in the Weekly Circular. Since coordination between a non-GSO FSS space station and very large GSO FSS earth stations is a new type of coordination that does not currently exist in Articles, it is necessary to add two new entry points in Article S9:

- One entry point to enable the non-GSO space station administration to request coordination with administrations having specific very large earth station antennas located on their territory.
- Another entry point to enable the reciprocal coordination to take place, i.e. the possibility for an administration planning to implement a specific very large GSO earth station stations located on their territory to request coordination with administrations having non-GSO FSS transmit space.

ARTICLE S11

Section II – Examination of notices and recording of frequency assignments in the Master Register

MOD J/133/36

S11.32A *c)* with respect to the probability of harmful interference that may be caused to or by assignments recorded with a favourable finding under Nos. **S11.36** and **S11.37** or **S11.38**, or recorded in application of No. **S11.41**, or published under Nos. **S9.38** or **S9.58** but not yet notified, as appropriate, for those cases for which the notifying administration states that the procedure for coordination under Nos. **S9.7, S9.7A** or **S9.7B** could not be successfully completed (see also No. **S9.65**);[10] or

MOD J/133/37

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[10] **S11.32A.1** The examination of such notices with respect to any other frequency assignment for which a request for coordination under Nos. **S9.7**, **S9.7A** or **S9.7B** has been published under No. **S9.38** but not yet notified shall be effected by the Bureau in the order of their publication under the same number using the most recent information available.

Reasons: The insertion of a coordination trigger related to $epfd_{down}$ level radiated by the non-GSO FSS system into the earth station employing the very large antenna considered when this earth station is pointed to the wanted GSO satellite provides a mechanism to examine the notice with respect to the probability of harmful interference that may be caused to or by above-listed assignments, and therefore S11.38 and S11.41 are applicable.

ANNEX 2B (TO APPENDIX **S4**)

Table of characteristics to be submitted for space and radio astronomy services

(The modifications in either column two or column three need to be incorporated into the full table.)

C – Characteristics to be provided for each group of frequency assignments for a satellite antenna beam or an earth station antenna

MOD J/133/38

Items in Appendix	Notification or coordination of a GSO network (including Appendix S30B)	Notification or coordination of an earth station
C.1		
C.2.a	X	X
C.2.b		
C.3.a	X	X
C.3.b		
C.4	X	X
C.5a	X	
C.5.b		~~X~~
C.5.c		
C.6	X	X
C.7.a	X[9]	X[9]
C.7.b	C[9]	C[9]
C.7.c	C[9]	C[9]
C.7.d	C	C
C.8.a	X[7]	C[8]
C.8.b	X[7]	X[7]
C.8.c	X[6]	X[6]
C.8.d	X[2]	
C.8.e	X[6]	X[6]
C.8.f		
C.8.g	C[4]	C[4, 5]
C.8.h		
C.8.i		

C.8.j		
C.9.a	C	
C.9.b		
C.9.c		
C.10.a	X[9]	C[9]
C.10.b	X[9]	C[9]
C.10.c.1	X[9]	C[9]
C.10.c.2	X[9]	C[9]
C.10.c.3	X	
C.10.c.4	X	
C.10.c.5	X[9]	C[9]
C.10.c.6		
C.11.a	X	
C.11.b		
C.11.c		
C.11.d		
C.12		
C.13		
C.14		

X Mandatory information

O Optional information

C This information need only be furnished when it has been used as a basis to effect coordination with another administration

[9] Information mandatory for coordination under No. ADD **S9.7A**.

NOTE - Additional characteristics to be provided may include A.4.c, A.1.e.1, A.1.e.2, C.4, B.5 and C.5.b. As a result of decisions that may be made at WRC-2000, these additional characteristics may replace C.10.a, C.10.b, C.10.c.1, C.10.c.2 and C.10.c.5 in the notification or coordination of an earth station column.

Reasons: This is consequential to ADD S9.7A and ADD S9.7B. Administrations will need to submit specific earth station information for earth stations associated with geostationary-satellite networks in the fixed-satellite service meeting the conditions in the proposed addition to Appendix S5.

D – Overall link characteristics

MOD J/133/39

(The modifications in either column two or column three need to be incorporated into the full table.)

Items in Appendix	Notification or coordination of a geostationary satellite network (including Appendix S30B)	Notification or coordination of an earth station
D.1	X	
D.2.a	X[9]	C[9]
D.2.b	X	

X Mandatory information

O Optional information

C This information need only be furnished when it has been used as a basis to effect coordination with another administration

[9] Information mandatory for coordination under No. ADD **S9.7A**.

Reasons: This is consequential to ADD S9.7A and ADD S9.7B and will be required when simple frequency-changing transponders are used on the space station.

APPENDIX **S5**

ADD J/133/40

TABLE **S5-1** *(continued)*

Reference of Article S9	**Case**	**Frequency bands (and Region) of the service for which coordination is sought**	**Threshold/condition**	**Calculation method**	**Remarks**
No. **S9.7A** GSO earth station/ non-GSO system	A specific earth station in a geostationary-satellite network in the fixed-satellite service in respect of a non-geostationary-satellite system in the fixed-satellite service	The following frequency bands: 10.7-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 17.8-18.6 GHz (space-to-Earth), and 19.7-20.2 GHz (space-to-Earth)	Conditions: i) the frequency bands overlap; and ii) the satellite network using the geostationary-satellite orbit has specific receive earth stations and meets all of the following conditions: a) earth station antenna maximum isotropic gain greater than or equal to 64 dBi for the frequency bands 10.7-12.75 GHz or 68 dBi for the frequency bands 17.8-18.6 GHz and 19.7-20.2 GHz;	i) compare frequency bands; ii) use the maximum antenna gain of the specific receive earth station (Appendix **S4** C.10 *c)* 2)), the lowest equivalent satellite link noise temperature (Appendix **S4** C.10 *c)* 5)), and the space station emission bandwidth (Appendix **S4** C.7 *a)*) in the geostationary-satellite network as given in Appendix **S4** data; and	The threshold/ condition for coordination do not apply to typical receive earth stations operating in satellite networks using the geostationary-satellite orbit

			b) G/T_1 of 44 dB/K or higher; c) space station emission bandwidth of 250 MHz or higher for the frequency bands 10.7-12.75 GHz or 800 MHz or higher for the frequency bands 17.8-18.6 GHz and 19.7-20.2 GHz; iii) the $epfd_{down}$ from the satellite system using the non-geostationary orbit exceeds: a) –174.5 dB(W/m^2) per 40 kHz for any percentage of time for non-GSO systems with all satellites only operating at or below 2 500 km altitude, or –202 dB(W/m^2) per 40 kHz for any percentage of the time for non-GSO systems with any satellites operating above 2 500 km	iii) use the $epfd_{down}$ radiated by the non-GSO FSS system into the earth station employing the very large antenna when this antenna is pointed towards the wanted GSO satellite	

			altitude in the frequency band 10.7-12.75 GHz b) either –157 dB(W/m^2) per 1 MHz for any percentage of time for non-GSO systems with all satellites only operating at or below 2 500 km altitude, or –185 dB(W/m^2) per 1 MHz for any percentage of the time for non-GSO systems with any satellites operating above 2 500 km altitude in the frequency bands 17.8-18.6 GHz and 19.7-20.2 GHz.		

No. **S9.7B** non-GSO system/GSO earth station	A non-geostationary-satellite system in the fixed-satellite service in respect of a specific earth station in a geostationary-satellite network in the fixed-satellite service	The following frequency bands: 10.7-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.75 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Region 1, 17.8-18.6 GHz (space-to-Earth), and 19.7-20.2 GHz (space-to-Earth)	Conditions: i) the frequency bands overlap; and ii) the satellite network using the geostationary-satellite orbit has specific receive earth stations and meets all of the following conditions: a) Earth station antenna maximum isotropic gain greater than or equal to 64 dBi for the frequency bands 10.7-12.75 GHz or 68 dBi for the frequency bands 17.8-18.6 GHz and 19.7-20.2 GHz; b) G/T_1 of 44 dB/K or higher;	i) compare frequency bands; ii) use the maximum antenna gain of the specific receive earth station (Appendix **S4** C.10 *c)* 2)), the lowest equivalent satellite link noise temperature (Appendix **S4** C.10 *c)* 5)), and the space station emission bandwidth (Appendix S4 C.7 *a)*) in the geostationary-satellite network as given in Appendix **S4** data; and iii) use the $epfd_{down}$ radiated by the non-GSO FSS system into the earth station employing the very large antenna when this antenna is pointed towards the wanted GSO satellite	The threshold/ condition for coordination do not apply to typical receive earth stations operating in satellite networks using the geostationary-satellite orbit

			c) space station emission bandwidth of 250 MHz or higher for the frequency bands 10.7-12.75 GHz or 800 MHz or higher for the frequency bands 17.8-18.6 GHz and 19.7-20.2 GHz; iii) the $epfd_{down}$ from the satellite system using the non-geostationary orbit exceeds: a) –174.5 dB(W/m^2) per 40 kHz for any percentage of time for non-GSO systems with all satellites only operating at or below 2 500 km altitude, or		

			–202 dB(W/m^2) per 40 kHz for any percentage of the time for non-GSO systems with any satellites operating above 2 500 km altitude in the frequency band 10.7-12.75 GHz b) –157 dB(W/m^2) per 1 MHz for any percentage of time for non-GSO systems with all satellites only operating at or below 2 500 km altitude, or –185 dB(W/m^2) per 1 MHz for any percentage of the time for non-GSO systems with any satellites operating above 2 500 km altitude in the frequency bands 17.8-18.6 GHz and 19.7-20.2 GHz		

Reasons: This is consequential to ADD S9.7A and S9.7B.

Agenda item 1.15.1 - to consider new allocations to the radionavigation-satellite service in the range from 1 GHz to 6 GHz required to support developments

Introduction

Japan recognizes the needs of appropriate new allocations for the RNSS in the range 1-6 GHz, considering the development of various RNSS applications and supports the APT common proposals. However, the operation of existing services such as the ARNS including TACAN/DME transponders, the radiolocation service and the Earth exploration-satellite service should be protected adequately from the new RNSS systems.

Proposal

1) 1 164-1 188 MHz

MOD J/133/41

890-1 350 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
960-1 215	AERONAUTICAL RADIONAVIGATION MOD S5.328	

MOD J/133/42

S5.328 The band 960-1 215 MHz is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based and satellite-borne facilities. In the 1 164-1 188 MHz portion of this band, the radionavigation-satellite service (space-to-Earth) is also allocated on a primary basis. In this band, stations of the radionavigation-satellite services but not the aeronautical radionavigation-satellite services, shall not cause harmful interference to or claim protection from stations of the aeronautical radionavigation and aeronautical radionavigation-satellite services.

Reasons: The operation of the ARNS in the band 960-1 215 MHz should be preserved in all with sufficient bandwidth for accommodating necessary frequency transition of the ARNS operating in the band which would be allocated to the new RNSS. The ITU-R study has also concluded that priority should be given to the ARNS over the RNSS in order to satisfy current and future requirements of the ARNS.

2) 1 260-1 300 MHz

NOC J/133/43

890-1 350 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
1 260-1 300	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION SPACE RESEARCH (active) Amateur S5.282 S5.330 S5.331 S5.332 S5.334 S5.335	

Reasons: This frequency band has not been discussed in sufficiency in ITU-R. When considering a new allocation for the RNSS in this band, stations of new RNSS shall not claim protection from or impose constraints on the operation or development of existing Earth exploration-satellite services.

3) 5 000-5 150 MHz

MOD J/133/44

4 800-5 830 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
5 000-5 150	AERONAUTICAL RADIONAVIGATION S5.367 S5.444 S5.444A ADD S5.444B	

ADD J/133/45

S5.444B The band 5 000-5 030 MHz is also allocated to the radionavigation-satellite service (Earth-to-space) on a primary basis.

Reasons: The band 5 010-5 150 MHz is reserved for the MLS on a primary basis in accordance with S5.444 and the ITU-R study shows that it is impossible for the MLS to be compatible with the RNSS. Therefore, Japan does not support any additional allocation except the band 5 000-5 030 MHz (Earth-to-space) in the range 5 000-5 150 MHz.

4) 1 300-1 350 MHz

NOC J/133/46

890-1 350 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
1 300-1 350	AERONAUTICAL RADIONAVIGATION S5.337 Radiolocation S5.149	

Reasons: There is potential interference from the existing service to the RNSS. Therefore, Japan does not support additional allocation in this band.

Agenda item 1.17 - to consider possible worldwide allocation for the Earth exploration-satellite (passive) and space research (passive) services in the band 18.6-18.8 GHz, taking into account the results of the ITU-R studies

Introduction

The band 18.6-18.8 GHz is allocated to the EES (passive) and SR (passive) services on a primary basis in Region 2 and on a secondary basis in Regions 1 and 3. The FS, MS and FSS (space-to-Earth) are allocated worldwide on a primary basis. Nos. S5.522 and S5.523 request administrations to limit the power of fixed-service transmitters and the pfd produced by FSS space stations as far as possible in order to reduce the risk of interference to passive sensors.

Based on the technical and operational studies that have been conducted by ITU-R, Japan proposes establishing common worldwide primary allocations for the Earth exploration-satellite and space research services in the 18.6-18.8 GHz band provided that pfd limits imposed on the FSS (space-to-Earth) will not give any significant impact on high data rate transmissions for high-speed satellite communications using small dish terminals and that appropriate modifications of footnotes S5.522 and S5.523 are made.

MOD J/133/47

18.6-22.21 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
18.6-18.8 EARTH EXPLORATION-SATELLITE (passive) FIXED MOD S5.522 FIXED-SATELLITE (space-to-Earth) MOD S5.523 MOBILE except aeronautical mobile SPACE RESEARCH (passive) ~~Earth exploration-satellite (passive)~~ ~~Space research (passive)~~ ~~S5.522~~	**18.6-18.8** EARTH EXPLORATION-SATELLITE (passive) FIXED MOD S5.522 FIXED-SATELLITE (space-to-Earth) MOD S5.523 MOBILE except aeronautical mobile SPACE RESEARCH (passive) ~~S5.522~~	**18.6-18.8** EARTH EXPLORATION-SATELLITE (passive) FIXED MOD S5.522 FIXED-SATELLITE (space-to-Earth) MOD S5.523 MOBILE except aeronautical mobile SPACE RESEARCH (passive) ~~Earth exploration-satellite (passive)~~ ~~Space research (passive)~~ ~~S5.522~~

MOD J/133/48

S5.522 ~~In making assignments to stations in the fixed and mobile services, administrations are invited to take account of passive sensors in the Earth exploration-satellite and space research services operating in the band 18.6-18.8 GHz. In this band, administrations should endeavour to limit as far as possible both the power delivered by the transmitter to the antenna and the e.i.r.p. in order to reduce the risk of interference to passive sensors to the minimum.~~The input power of each carrier frequency to an antenna or antennas of a station in the fixed service within the band 18.6-18.8 GHz shall not exceed 0 dBW.

Reasons: This solution permits the Earth exploration-satellite service to operate with acceptable data loss and at the same time it will still allow the orderly development of FS systems in the band.

MOD J/133/49

S5.523 ~~In assigning frequencies to stations in the fixed-satellite service in the direction space-to-Earth, administrations are requested to limit as far as practicable the power flux-density at the Earth's surface in the band 18.6-18.8 GHz, in order to reduce the risk of interference to passive sensors in the earth exploration-satellite and space research services.~~The power flux-density within the 18.6-18.8 GHz band produced by a fixed-satellite service space station at the point on the Earth's surface where the Earth exploration-satellite (passive) sensor antennas are providing its service shall not exceed –95 dB(W/m^2) for 95% of time during which the subject Earth exploration-satellite (passive) service network is operating toward the corresponding service area and shall not exceed –92 dB (W/m^2) for 100% of time during which the subject Earth exploration-satellite (passive) service network is operating toward the corresponding service area. Administrations operating or planning to operate Earth exploration-satellite (passive) services in this frequency band shall send the Bureau, together with Appendix **S4** information, detailed information on time-variant service area of each Earth exploration-satellite (passive) service network so that fixed-satellite service networks can meet the above limit. The limit of power flux-density prescribed above shall not apply to fixed-satellite service networks for which complete Appendix S4 coordination information is considered as having been received by the Bureau prior to 2 June 2000.

Reasons: The solution indicated in section 4.2.3 of the CPM Report permits the Earth exploration-satellite service to operate with acceptable loss of data, and permits the FSS to operate

in low and medium rain areas through the use of power control when needed. The modification proposed above will improve efficiency of spectrum utilization by reducing constraints to some types of the fixed-satellite service networks without increase in data loss in the Earth exploration-satellite measurements.

Agenda item 1.19 - to consider the report of the inter-conference representative group (IRG) submitted by the Director of the Radiocommunication Bureau and determine the basis for replanning by the next conference so as to afford each country an amount of spectrum that permits the economical development of a broadcasting-satellite service system

J/133/50

In replanning, 12 channels at 109.85º E should be assigned for Japanese BSS networks in addition to and grouped with its assignments at 110º E.

Reasons: Japan has already been operating a satellite at 109.85º E grouped with satellites at 110º E according to WRC-97 BSS Plan. These two existing systems are within 0.2º of orbital position and they do not cause harmful interference to other BSS networks. Therefore, Japan requests to assign 12 channels at 109.85º E and at 110º E for Japanese BSS networks.

Agenda item 4 - in accordance with Resolution 95 (WRC-97), to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation

Proposals

Introduction

In addition to the APT common proposals on agenda item 4, Japan proposes the following.

The proposals are based on the BR Director's preliminary report in Document CPM99-2/6 and some other contributions to CPM-99, and may require review depending on the Director's report which will be submitted to WRC-2000 on this issue.

SUP J/133/51

RESOLUTION 20 (Mob-87)

Technical cooperation with developing countries in the field of aeronautical telecommunications

Reasons: Obsolete in view of the ICAO activities.

SUP J/133/52

RESOLUTION 44 (Mob-87)

Compatibility of equipment used in the mobile-satellite service[1]

Reasons: Obsolete in view of the current situation.

SUP J/133/53

RESOLUTION 124 (WRC-97)

Protection of the fixed service in the frequency band 8 025-8 400 MHz sharing with geostationary-satellite systems of the Earth exploration-satellite service (space-to-Earth)

Reasons: ITU-R study completed. Draft new Recommendation ITU-R F.[Doc. 9/1019] submitted to RA-2000. If the result is acceptable to WRC-2000, Resolution 124 may be abrogated and the recommended pfd limits may be incorporated into No. S5.462A.

SUP J/133/54

RESOLUTION 406

Relating to the use of frequency bands higher than the HF bands in the aeronautical mobile (R) service and the aeronautical mobile-satellite (R) service for communication and for meteorological broadcasts

Reasons: Obsolete (technological improvements, current use). This is a very old Resolution adopted in 1979.

SUP J/133/55

RESOLUTION 412 (WARC-92)

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[1]

Reasons: Obsolete; all activities completed in April 1999.

SUP J/133/56

RESOLUTION 507

Relating to the establishment of agreements and associated plans for the broadcasting-satellite service

Reasons: Obsolete (in view of the undertaken activities).

SUP J/133/57

RESOLUTION 703 (Rev.WARC-92)

Calculation methods and interference criteria recommended by the ITU-R for sharing frequency bands between space radiocommunication and terrestrial radiocommunication services or between space radiocommunication services[1]

Reasons: The result of the recent consultation with Member States conducted by the Director of BR (see Circular Letters CR/49 of 12 February 1996 and CR/71 of 21 April 1997) shows that only 16 Member States replied to the consultation, indicating that they will agree to the application of all or some of the listed ITU-R Recommendations to bilateral coordination. This means that Resolution 703 is not effective, while the cost and human resources required for the implementation of this Resolution are very high. Therefore, Resolution 703 should not be maintained.

SUP J/133/58

RECOMMENDATION 405

Relating to a study of the utilization of the aeronautical mobile-satellite (R) service[1]

Reasons: Obsolete in view of current practices.

Agenda item 7.1 - to consider and approve the report of the Director of the Radiocommunication Bureau on the activities of the Radiocommunication Sector since WRC-97

Introduction

Japan basically supports the APT common proposals on agenda item 7.1, which should be discussed during WRC-2000.

This proposal presents additional information and/or draft resolutions for the following items which are included in the APT common proposals:

1) to consider Appendix S13 and Resolution 331 (Rev.WRC-97) with a view to their deletion and, if appropriate, consider related changes to Chapter SVII and other provisions of the Radio Regulations as necessary, taking into account the continued transition to the global maritime distress and safety system (GMDSS) and the review of the operational procedures after the introduction of the GMDSS;

2) to consider the possible allocations in the frequency bands above 275 GHz, taking into account Resolution [AAA] (see ASP/20/334);

3) to consider the preferred frequency bands and allocation for future mobile communication systems beyond IMT-2000, taking into account Resolution [UUU] (WRC-2000);

4) to consider regulatory provisions and possible frequency allocations for various services using high altitude platform stations, taking into account the results of ITU-R studies conducted in response to Resolution 122 (Rev.WRC-2000) and Resolution [XXX] (WRC-2000) relating to frequency bands above 3 GHz allocated exclusively for terrestrial radiocommunications;

5) to review footnote S5.332 in the frequency band of 1 215-1 300 MHz concerning Earth exploration-satellite (active) services and other services, taking into account Resolution [BBB] (see ASP/20/335);

6) to review all EESS and SRS allocations between 35-38 GHz in accordance with Resolutions [CCC], [DDD], and [EEE] (see ASP/20/336, 337 and 338);

7) to consider the results of ITU-R studies in accordance with Resolution [ZZZ] (WRC-2000) to ensure spectrum availability and protection for AMS(R)S and GMDSS and take appropriate action on this subject, keeping generic allocation for the mobile-satellite service.

Proposals

PART 1

Add the following to the WRC-02/03 agenda items:

ADD J/133/59

to consider Appendix **S13** and Resolution **331 (Rev.WRC-97)** with a view to their deletion and, if appropriate, consider related changes to Chapter **SVII** and other provisions of the Radio Regulations as necessary, taking into account the continued transition to the global maritime distress and safety system (GMDSS) and the review of the operational procedures after the introduction of the GMDSS.

Reasons: The GMDSS was fully implemented on 1 February 1999. However, false distress alerts and unnecessary relays resulting from the careless and misleading operation of satellite EPIRB and DSC equipment especially in the HF bands, frequently take place and the rescue coordination centre (RCC) have to pay too much attention to confirm such false distress alerts by sailors are heavily perplexed. Taking into account this situation, preliminary agenda item 2.10 in Resolution 722 should be modified to consider such problems appropriately in WRC-02/03 to ensure safety of life efficiently according to the result of SC meeting and IMO COMSAR4.

PART 2

Add the following to the WRC-02/03 agenda items:

ADD J/133/60

to consider the possible allocations in the frequency bands above 275 GHz, taking into account Resolution [**AAA**].

(See ASP/20/334 of the APT common proposals for Resolution [AAA])

Reasons: This item has already been considered by Working Party 7D (WP 7D) and WP 7D has concluded that studies will be completed by 2002. Japan has planned to construct the large millimeter and submillimeter array (LMSA) which uses the frequency range up to 850 GHz, and the

LMSA is supposed to start its operation by 2008. The detection technique by utilizing sensitive superconductor-insulator-superconductor (SIS) mixers has already been developed. There exists a small submillimeter radio telescope at the top of Mt. Fuji, operating in the bands 350 GHz, 500 GHz and 800-850 GHz. Because the incoming signals from the universe are quite weak, the radio astronomy service above 275 GHz should be protected from harmful interference.

Other passive services, such as EESS (passive), have plans to utilize some frequency bands above 275 GHz. Japan will launch the superconducting submillimeter-wave limb-emission sounder (SMILES) using the bands 624-629 GHz and 649-653 GHz to observe trace gases to study destruction processes of the ozone, and Japan has developed a ground-based passive sensor in frequency ranges 275-294 GHz, 624-629 GHz, and 649-653 GHz to observe atmospheric trace gases to complement the data taken by SMILES.

Japan has also identified that the frequency range above 275 GHz is useful for active services in the future. Although active services have no actual demands to use the frequency range above 275 GHz at present, frequency allocations should be made to those services so as to satisfy their purpose in a similar way below 275 GHz when active services have actual demands.

PART 3

Add the following to the WRC-02/03 agenda items:

ADD J/133/61

to consider the preferred frequency bands and allocation for future mobile communication systems beyond IMT-2000 taking into account Resolution **[UUU] (WRC-2000)**.

ADD J/133/62

RESOLUTION [UUU] (WRC-2000)

Studies to consider the frequency related matters of the systems beyond IMT-2000

The World Radiocommunication Conference (Istanbul, 2000),

considering

a) that the bands 1 885-2 025 MHz and 2 110-2 200 MHz were identified by WARC-92 as intended for use on a worldwide basis by administrations wishing to implement IMT-2000 and that such use would not preclude the use of these bands by other services to which they are allocated;

b) that WRC-2000 has identified additional frequency bands for IMT-2000;

c) that ITU-R WP 8F has created a draft new Question on the future mobile communication systems beyond IMT-2000;

d) that the evolution of telecommunication technologies is rapid;

e) that the spectrum requirement consideration is a prerequisite for the technological and economical success of the future mobile communication systems beyond IMT-2000;

f) that demands will continue to increase for mobile communication systems to support multimedia applications such as high-speed data, IP-packet and video;

g) that future mobile communication systems will require higher data rates than those planned in the initial implementation of IMT-2000;

h) that for international operation and economy of scale it is desirable to agree on the system technical, operational and spectrum related parameters;

i) that the initial standardization of IMT-2000 radio interface specifications has been completed in November 1999;

j) that it is anticipated that the initial implementation of IMT-2000 systems will be around 2001,

recognizing

a) the time-scales necessary to develop and agree on the technical, operational, spectrum and regulatory issues associated with the introduction of a new generation of advanced mobile services;

b) that the service functionalities in fixed and mobile networks are increasingly converging;

c) that higher data rate, greater than those associated with initially implemented IMT-2000 systems, are expected to be required to meet future needs;

d) that the characteristics of future systems beyond IMT-2000, with data rates higher than 2 Mbit/s, will require the adoption of more spectrally efficient techniques;

e) the considerable time-scales necessary to relocate the frequency bands for existing radio services,

considering further

that as administrations begin deploying third-generation communication systems it is relevant and timely to study spectrum and regulatory issues pertinent to the systems beyond IMT-2000,

resolves

1 to invite ITU-R to continue the studies of the overall objectives, service applications, technical, operational and associated studies as necessary for the systems beyond IMT-2000;

2 to invite ITU-R to study the initial frequency spectrum requirements and potential frequency bands suitable for the systems beyond IMT-2000 and in what time-frame would such spectrum be needed;

3 that the results of these studies be reported to WRC-02/03,

to urge administrations

to participate actively in the studies by submitting contributions to ITU-R.

Reasons: Standardization activities for IMT-2000, which were started in 1986, were successfully completed at the 18th ITU-R Task Group 8/1 (TG 8/1) meeting held in Helsinki, November 1999. The standardization of IMT-2000 needed more than ten years to produce the final Recommendation. Similar to the frequency band allocation for IMT-2000 at WARC-92, the early indication of appropriate frequency bands and bandwidths for the systems beyond IMT-2000 is necessary to make progress in the studies and to ensure their smooth deployment.

ITU-R Study Group 8 (SG 8) meeting agreed to establish a new Working Party 8F (WP 8F) for IMT-2000 and systems beyond IMT-2000. SG 8 has also drafted the terms of reference and the draft new Question for WP 8F. With regard to the systems beyond IMT-2000, the draft new Question covers not only technical and operational, but also spectrum-related requirements, including possible frequency bands of operation, and associated studies as necessary, to meet the objectives of the future systems beyond IMT-2000. Similar to the study activities of TG 8/1, the studies will be conducted intensively and promptly so as to meet and progress speed of the recent telecommunication technologies.

The IMT-2000 service is planed to start around the year 2001 subject to market considerations. IMT-2000 is expected to become the key mobile telecommunication infrastructure for providing multimedia services since it offers user bit rates of up to 2 Mbit/s. With the expansion of Internet services, data transmission in fixed services is increasing very rapidly. Therefore, higher transmission speed and capacity capabilities are expected from future mobile communication systems. Such demands will increase in line with the extension of IMT-2000. Considering this perspective, studies of the systems beyond IMT-2000 have already been started in various organizations. It is timely to start consideration on the studies and frequency issues for the systems beyond IMT-2000 at WRC-02/03.

At the last APT (Asia-Pacific Telecommunity) Conference Preparatory Group Meeting in Tokyo, February 2000, the common proposal to WRC-2000 was agreed as the collective opinion of APT member countries. In the APT common proposal, it is proposed that *to consider preferred frequency bands and allocation for future mobile communication systems beyond IMT-2000, e.g. the fourth generation system* should be included in the agenda for WRC-02/03.

PART 4

Add the following to the WRC-02/03 agenda items:

ADD J/133/63

to consider regulatory provisions and possible frequency allocations for various services using high altitude platform stations, taking into account the results of ITU-R studies conducted in response to Resolution **122 (Rev.WRC-2000)** and Resolution **XXX (WRC-2000)** relating to frequency bands above 3 GHz allocated exclusively for the terrestrial radiocommunications;

(See ASP/20/66 of the APT common proposals for Resolution 122 (Rev.WRC-2000) and ASP/20/67 for Resolution XXX (WRC-2000).)

Reasons: WRC-97 adopted Resolution 122 which permits the use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz by high altitude platform stations (HAPS) in the fixed service and agenda item 1.5 for WRC-2000 to consider regulatory provisions and possible additional frequency allocations for services using HAPS.

In relation to agenda item 1.5 for WRC-2000, in ITU-R sharing studies have been conducted between HAPS and systems of FSS, FS and RAS in the frequency range of 18-32 GHz, and operating procedures of HAPS in the bands allocated only for terrestrial radiocommunications has been considered.

ITU-R has concluded that not only the urgent additional allocations for HAPS in Region 3 but continuous sharing studies and regulatory considerations are needed.

Moreover, for the provision of a wide variety of services such as mobile communication, broadcasting and earth observation, appropriate frequency bands should be specified for HAPS in the next period.

PART 5

Add the following to the WRC-02/03 agenda items:

ADD J/133/64

to review footnote **S5.332** in the frequency band of 1 215-1 300 MHz concerning the Earth exploration-satellite (active) service and other services, taking into account Resolution [**BBB**] **(WRC-2000)**;

*(See ASP/20/335 of the APT common proposals for Resolution **[BBB] (WRC-2000).**)*

Reasons: ITU-R studies show that sharing between spaceborne synthetic aperture radar (SAR) and the radionavigation-satellite service is feasible and that sharing between spaceborne SAR and the radiolocation service (ground radar not including wind profiler radar (WPR)) is feasible. Recent ITU-R studies show that there is a possibility that mitigation techniques could be applied to WPR. This study will be completed by 2002.

Spaceborne SAR is a very important tool to monitor the Earth's environment, and disasters such as forestry, including the tropical rain forest, land use, earth resources, flood, sea ice, oil contamination in the ocean, deformation of land surface due to volcanic eruptions, earthquakes and others with day-and-night and all weather observation capability. In WRC-97, the band 1 215-1 300 MHz was allocated to EESS (active) as primary service with footnote S5.332. Based upon the CPM-97 Report, sharing between spaceborne SAR and ground radar not including WPR is feasible and

sharing between spaceborne SAR and the radionavigation-satellite service is feasible based upon Recommendation ITU-R SA.1347.

Based upon Recommendation ITU-R SA.1282, co-frequency sharing is not feasible with WPR and frequency modulated pulsed WPR (FM pulsed WPR) should be outside of 1 215-1 300 MHz. However, Japan considers that introduction of mitigation techniques such as filtering makes it possible to share between spaceborne SAR and WPR excluding FM pulsed WPR.

Therefore, existing footnote S5.332 should be considered to be revised in WRC-02/03. Japan will launch an advanced land observing satellite (ALOS) with Phased Array type SAR (PALSAR) in 2002 and plans to provide PALSAR data to all over the world with high quality. In order to operate spaceborne SAR with high quality, worldwide observation and continuity of observation, revision of footnote S5.332 is essential and this should be included in the agenda for WRC-02/03.

PART 6

Add the following to the WRC-02/03 agenda items:

ADD J/133/65

to review all EESS and SRS allocations between 35-38 GHz in accordance with Resolutions [**CCC**] **(WRC-2000)**, [**DDD**] **(WRC-2000)** and [**EEE**] **(WRC-2000)**;

(See ASP/20/336 of the APT common proposals for Resolution [CCC] (WRC-2000), ASP/20/337 for Resolution [DDD] (WRC-2000) and ASP/20/338 for Resolution [EEE] (WRC-2000).)

Reasons:

1 ITU-R studies have shown the feasibility of sharing between active spaceborne sensors (radio altimeters and scatterometers) and the radiolocation service. Currently, sharing conditions between spaceborne precipitation radars and the radiolocation service are being studied, and it is prospected that the study will be completed by 2002. It is necessary to review footnote S5.551A in the band 35.5-35.6 GHz where any restrictions for spaceborne radars did not exist before WRC-97.

The tropical rainfall measuring mission (TRMM) satellite was successfully launched in November 1997. After that, TRMM has been producing unique and useful global data sets of the rainfall distribution and demonstrating the potential benefits of such data in the field of climate, weather forecast, hydrology, etc. Based upon the results of TRMM, a TRMM follow-on satellite is now under investigation as a successor of TRMM.

It is required to increase the observation region and to achieve the more sensitive measurement in the TRMM follow-on from a scientific point of view. For this reason, a 35.5 GHz band spaceborne precipitation radar is planned to be aboard the TRMM follow-on satellite in addition to a 13.6 GHz spaceborne precipitation radar.

In order to make effective and stable observations with the 35.5 GHz band spaceborne precipitation radars, it is necessary to remove constraints given in S5.551A from the band 35.5-35.6 GHz. The band 35.5-35.6 GHz is a portion of the band 35.5-36.0 GHz which is allocated to EESS (active) on a primary basis.

2 ITU-R studies show that protection criteria for passive spaceborne sensors in the band 36.0-37.0 GHz are established. However, sharing conditions are not defined and the sensors are not properly protected. The study for sharing conditions will be completed by 2002.

The advanced microwave scanning radiometer (AMSR) mounted on advanced earth observing satellite II (ADEOS-II) and AMSR-E mounted on AQUA (a United States earth observing satellite) are very important tools for understanding the global water circulation.

Important physical quantities related with the global water circulation are provided by combined AMSR data measured in several frequency bands. The 36.0-37.0 GHz band data contribute to estimating the total amount of water vapour, the total amount of liquid water in clouds, sea surface wind speed, sea surface temperature, sea ice extent, snow depth and soil moisture.

This frequency band is allocated to EESS (passive), FS, MS and SRS (passive) on a primary basis. Sharing conditions are not included in the Radio Regulations. The interference to EESS (passive) from other services may occur in the near future. Therefore, the sharing conditions between EESS (passive) and other services in 36.0-37.0 GHz are needed.

3 ITU-R studies show that the pfd limit in the band 37.5-38.0 GHz defined by FSS and FS sides has much impact on some SRS earth stations. Sharing studies should be conducted in ITU-R and will be completed by 2002.

In the near future, the Moon-to-Earth high data rate Transmission System (METS), that connects between the Moon and the Earth with a data rate of over 500 Mbps, will be needed because space observations will be conducted by using the Moon-based optical/infrared telescopes and radio telescopes and because various activities for manned lunar exploration, the habitant module, the experiment module, and the production module on the Moon will be performed. METS will be planned under international cooperation because this is a large system and the data reception from the Moon can be realized at several SRS earth stations.

In this case, it is necessary to use the 37 GHz band because it is impossible to obtain a sufficient bandwidth in other spectrum regions allocated to SRS with less atmospheric attenuation. However, pfd limits in the 37.5-38.0 GHz band studied in JWP 4-9S under Resolution 133 has an impact on protection of some SRS earth stations. Section 6.1.2.3.1 (space research service) of Chapter 6 of the CPM-99 Report indicates that the pfd limit may not be adequate to protect some SRS earth stations from FSS and, if required, results of studies on mitigation technique shall be brought to the attention of a competent conference.

PART 7

Add the following to the WRC-02/03 agenda items:

ADD J/133/66

to consider results of ITU-R studies in accordance with Resolution **[ZZZ] (WRC-2000)** to ensure spectrum availability and protection for AMS(R)S and GMDSS and take appropriate action on this subject, keeping generic allocation for the mobile-satellite service;

ADD J/133/67

DRAFT NEW RESOLUTION [ZZZ] (WRC-2000)

Use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite service

The World Radiocommunication Conference (Istanbul, 2000)

considering

a) that prior to the World Radiocommunication Conference (Geneva, 1997) the bands 1 530-1 544, 1 545-1 555 MHz (space-to-Earth) and 1 626.5-1 645.5, 1 646.5-1 656.5 MHz (Earth-to-space) were allocated on an exclusive basis in most administrations to the mobile-maritime satellite service and the aeronautical-mobile satellite (route) service (AMS(R)S);

b) that the World Radiocommunication Conference (Geneva, 1997) allocated these bands to the generic mobile-satellite service (MSS);

c) that the World Radiocommunication Conference (Geneva, 1997) adopted footnotes No. **S5.353A** giving priority to accommodating the spectrum requirements for distress, urgency and safety communications, and protection from unacceptable interference, to the global maritime distress and safety service (GMDSS) in the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz and No. **S5.357A** giving priority to accommodating the spectrum requirements, and protection from unacceptable interference, to the AMS(R)S providing transmission of messages with priority 1 to 6 in Article **S44** in the bands 1 545-1 555 MHz and 1 646.5-1 656.5 MHz,

considering further

d) that global and regional mobile-satellite systems are being coordinated in the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz and that Section IIA of Article **S9** provides the international framework for coordination agreements;

e) that in these bands GSO satellite system operators presently use a capacity planning approach at multilateral coordination meetings, with the guidance and support of their administrations, to periodically coordinate access to the spectrum needed to accommodate their requirements, however, outside the multilateral process, coordination problems have occurred in some cases;

f) that in the bands to which Nos. **S5.353A** or **S5.357A** apply, the capacity planning approach, and other methods such as intra- and inter-system prioritization, pre-emption and interoperability may assist to accommodate the expanding spectrum requirements of the GMDSS and AMS(R)S;

g) that, as spectrum saturation is reached, MSS systems that do not carry GMDSS or AMS(R)S traffic and MSS systems that do not have the ability to provide prioritization, pre-emption within or between their networks or do not have interoperability with other MSS systems that are carrying GMDSS or AMS(R)S traffic, will be required to vacate these bands to conform with the requirements of Nos. **S5.353A** and **S5.357A**;

h) that the feasibility of prioritization, real-time pre-emptive access and interoperability between different mobile-satellite systems and systems providing GMDSS and AMS(R)S has yet to be adequately determined,

recognizing

a) that the Convention on International Civil Aviation requires that stations of the AMS(R)S shall be in compliance with the internationally agreed standards and recommended practices and procedures for air navigation services and that the ICAO has developed a global air traffic management system which requires interoperability between stations providing AMS(R)S communications with the priority message structure of Article **S44** and that each of these messages are safety related;

b) that the IMO may also place similar requirements of interoperability for those mobile-satellite systems providing GMDSS communications with the priority message structure of Article **S53**;

c) that Appendix **S15** of the Radio Regulations identifies the bands 1 530-1 544 MHz and 1 626.5-1 645.5 MHz for distress and safety purposes in the GMDSS as well as for routine non-safety purposes;

d) that priority access and immediate availability of spectrum for maritime distress, urgency and safety communications of the GMDSS and AMS(R)S communications with priority 1 to 6 of Article **S44** are of vital importance for the safety of life,

noting

a) that maritime general communications is defined under the International Convention for the Safety of Life at Sea (SOLAS) as operational and public correspondence, other than distress, urgency and safety, conducted by radio;

b) that maritime distress, urgency and safety communications of the GMDSS in the bands 1 530-1 545 MHz and 1 626.5-1 645.5 MHz include communications with priority 1 to 3 and safety-related communications carried under priority 4 of Article **S53**,

resolves

1 that in frequency coordination procedures and agreements for the mobile-satellite services in the bands 1 530-1 544, 1 545-1 555 MHz and 1 626.5-1 645.5, 1 646.5-1 656.5 MHz, administrations shall ensure prompt and equitable allocation of spectrum between operators in order to meet the spectrum requirements for all distress, urgency and safety communications of the GMDSS as defined in Articles **S32** and **S33** in the bands where No. **S5.353A** applies and the AMS(R)S communications with priority 1 to 6 of Article **S44** in the bands where No. **S5.357A** applies;

2 that techniques such as prioritization and real time pre-emptive access within a mobile-satellite network and between different mobile-satellite networks and interoperability between different mobile-satellite networks, for GMDSS or AMS(R)S communications over all other communications should be determined and, when necessary and where feasible, implemented in order to achieve the most flexible and practical use of the generic allocations;

3 administrations shall ensure that mobile satellite service operators carrying non-safety related traffic yield capacity as and when necessary to accommodate the needs of the GMDSS communications as defined in Articles **S32** and **S33** and AMS(R)S communications with priority 1-6 of Article **S44**. This could be achieved in advance by the coordination process at *resolves* 1 above or through the implementation of techniques at *resolves* 2 above,

requests ITU-R

1 to complete studies as a matter of urgency, to determine the feasibility of prioritization and real-time pre-emptive access between different networks of mobile-satellite systems and interoperability between different mobile-satellite networks as referred to in *resolves* 2 above;

2 to study and establish the conditions and requirements for prioritization, pre-emption and interoperability within and between mobile-satellite networks operating in bands where Nos. **S5.353A** and **S5.357A** apply,

requests WRC-02/03

to take into account the outcome of ITU-R studies and take appropriate action on this subject,

invites

ICAO, IMO, IATA, administrations and other organizations concerned to participate in the studies identified in *requests ITU-R* 1 and 2 above.

(See also ASP/20/101 of the APT common proposals for Resolution ZZZ (WRC-2000).)

Reasons: Japan fully supports agenda item 2.21 “to consider results of ITU-R studies in accordance with Resolution [ZZZ] and take appropriate action on this subject” in ASP/20/332. This proposal presents a more appropriate expression for the agenda item. Resolution [ZZZ] (WRC-2000) is also shown in ASP/20/101 as one of the APT common proposals.

CPM-99 could not sufficiently complete studies requested by Resolution 218 concerning spectrum availability and protection for AMS(R)S and GMDSS. It is necessary to continue those studies under Resolution [ZZZ] (WRC-2000) and to take necessary actions at WRC-02/03 to ensure spectrum availability and protection required for AMS(R)S in the bands where No. S5.357A applies and for GMDSS in the bands where No. S5.353A applies.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 134-E
1 May 2000
Original: French
English
Spanish

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

France

PROPOSAL FOR THE WORK OF THE CONFERENCE

RESOLUTION 86 (MINNEAPOLIS, 1998), RESOLUTION 30 (WRC-97)

This contribution presents a proposal in the framework of Resolution 86 of the Plenipotentiary Conference (Minneapolis, 1998) and of Resolution 30 of the World Radiocommunication Conference (Geneva, 1997), relating to the publication of the Weekly Circular and its Special Sections.

Under the present procedures, BR is required to identify administrations with whom coordination is required, this essential information is not available electronically in the database of the space radiocommunications stations (SRS), this information exists only in the paper publication of the Circular, which, since the beginning of the year 2000, is distributed on CD-ROM (IFIC) in the portable document format (PDF) readable by the royalty-in-full free Adobe®Acrobat®Reader.

The period during which the administrations have to consult these Special Sections published by the Radiocommunication Bureau, and covering the various stages of the regulatory procedures, is long. It requires access to documents on paper archived for many years.

The various governmental agencies and the operators are then facing a serious problem of accessing the correct information in a readily usable form.

Proposal

F/134/1

The Radiocommunication Bureau is invited to take the necessary measures to provide the administrations with the information published prior to 1 January 2000 in the Weekly Circulars and the Special Sections on electronic media:

– firstly, in making available on CD-ROM in the portable document format (PDF) all Circulars and Special Sections of the last ten years;

– secondly, in completing the database of the space radiocommunications stations (SRS) with the missing information and the notes provided by the administrations.

(In case the Conference adopts the proposal for identifying the networks with whom coordination is required, this information should be integrated to the database of the space radiocommunications stations (SRS) as well.)

Finally, the Radiocommunication Bureau is also invited to revise how the Special Sections are identified in case of modifications to a network as a result of the coordination procedures. Indeed, it is not always possible to unambiguously identify the latest modification incorporated.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Corrigendum 1 to Document 135-E
10 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

WORKING GROUP 2 OF THE PLENARY

Vatican City State, Netherlands (Kingdom of the), United Kingdom of Great Britain and Northern Ireland, Ukraine

PROPOSALS FOR THE WORK OF THE CONFERENCE

Please add the name of “Ukraine” to the countries co-sponsoring this document.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 135-E
28 April 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Vatican City State, Netherlands (Kingdom of the), United Kingdom of Great Britain and Northern Ireland

PROPOSALS FOR THE WORK OF THE CONFERENCE

WRC-2000 agenda item 7.2 - to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent Conference and on possible agenda items for future conferences

Introduction

These proposals address the actions required at WRC-2000 in support of the strategic development of HF broadcasting in a manner compatible with the changing needs of the other services sharing the HF spectrum.

The decisions of WRC-97 resulted in major advances in the development of international HF broadcasting through:

1) the rationalization and simplification of the international regime for planning international broadcasting schedules after 50 years of inconclusive debate;

2) the recognition of the coming need to modernize the HF broadcasting service in the digital age.

Short wave broadcasting has a vitally important role in informing, educating and expanding the cultural horizons of a worldwide audience and this is achieved without any direct charge to the listeners and with exceptionally modest equipment costs.

One of the objectives in introducing digital technology is to improve the audibility and ease of reception of broadcasts combined with the possibility of additional data stream to support ancillary services. However, one factor in the evaluation of potential new technologies is to ensure that equipment costs remain within reach of the audience, many of whom live in remote areas for which electricity supply and battery cost limitations are important factors in equipment design. The increasing use of clockwork radios for specific educational and cultural projects is a good example.

Many countries have a particular interest in maintaining and developing a range of informative, educational and entertainment programming for short wave broadcasting but experience severe scheduling difficulties in implementing effective schedules because of severe frequency congestion in the most widely used short wave bands below 10 MHz and most critically at 7 MHz and below.

PP-98 Resolution 80 aims to improve the efficiency of WRCs by such means as setting WRC agendas over two consecutive conferences so that the preliminary work of one WRC is brought to a swift conclusion by the following WRC, especially where study work on particular items is already in progress.

To this end, a structured action programme is recommended for the next two WRCs[1] in respect of frequency allocations in the HF bands with a view to matching the spectrum availability to broadcasting and the other services using the bands, more closely with the actual operational requirements.

When setting agenda items it is also appropriate to consider the degree of commitment of those supporting the work and promoting studies, and to assess the risks involved. The objective should be to ensure that the valuable time of WRCs is devoted to issues that can be brought to a rapid conclusion in a spirit of cooperation. The reasons presented for these proposals therefore provide considerable detail on the supporting rationale, the progress and expectations of studies and areas of uncertainty in order that Member States are in a position to make an informed choice on the scope of future WRC agendas.

[1] Within this text, references to WRC-[03] and WRC-[05] refer to the next two Conferences.

Proposals

PART 1 - PROVISIONAL AGENDA FOR WRC-[03] - RESOLUTION 722 (WRC-97)

NOC CVA/HOL/G/135/1

resolves to give the view

2.12 consideration of the need to realign the allocations to the amateur, amateur-satellite and broadcasting services around 7 MHz on a world-wide basis, taking into account Recommendation **718 (WARC-92)**;

Reasons: WRC-97 considered the need for action at a subsequent WRC to carry out a realignment of the bands around 7 MHz. The intention was to remedy the long-standing difficulties experienced by the amateur service and the limitations placed on the broadcasting service as a result of the changes made to the frequency bands around 7 MHz at the Atlantic City WARC in 1947.

For the amateur service the usefulness of the allocations around 7 MHz for worldwide links are severely limited because only 100 kHz of spectrum between 7 000 and 7 100 kHz is common between Region 2 and Regions 1 and 3. The 7 100-7 300 kHz band is allocated exclusively to the broadcasting service in Regions 1 and 3 and exclusively to the amateur service in Region 2. Although this geographical sharing is generally satisfactory, despite the large disparity in signal levels between the two services, broadcasting transmissions do cause serious interference to the sensitive receivers used in the amateur service during periods of good propagation between Regions 1 and 2. The degree of interference experienced in Region 2 varies with time of day, season, solar activity and distance from the Region 1 broadcasting stations.

In consideration of the needs of the three main services involved (amateur, broadcasting and fixed), WRC-97 agreed to include, under the provisions of Resolution 722 (WRC-97), an item covering the realignment of the broadcasting and amateur service allocations in the 7 MHz band on the preliminary agenda for the WRC now expected to be held between October 2002 and May 2003.

Furthermore, it was recognized that reaching a definitive conclusion on the question of the 7 MHz bands would be useful in the course of actions needed on a related future item to review the adequacy of the frequency allocations for HF broadcasting between 4 and 10 MHz.

At the time it was envisaged that the following factors will have to be addressed as part of achieving a viable solution:

- the amateur service cannot share satisfactorily with the broadcasting service on a regional or interregional basis;
- the fixed service allocations around 7 MHz support many important national and international applications, including those with a humanitarian dimension, which are particularly suited to the propagation characteristics of these bands and should not suffer a net reduction in spectrum;
- the characteristics of fixed service and amateur service use around 7 MHz are such that some overlapping allocations are feasible and consistent with use in emergency situations or for disaster relief;
- the realignment should involve the minimum necessary shift in allocation blocks in order to limit the economic impact on users, which implies that the boundary between the amateur and broadcasting services (the “pivotal frequency”) will have to

lie in the range 7 100 kHz and 7 200 kHz to avoid compromising equipment compatibility or downgrading the operational requirements of the three services involved;

- the realignment should secure worldwide allocation of at least 200 kHz for the amateur service;
- the introduction of a worldwide 7 MHz band allocation for broadcasting would help ease the pressure on adjacent HF broadcasting spectrum in Region 2.

Since WRC-97, several European countries have continued to study the 7 MHz realignment and the more general issues connected with broadcasting between 4 and 10 MHz. These studies indicate that significant changes have occurred since the agenda item was first proposed. The main users of HF fixed and mobile links in Europe find that their usage below 10 MHz has increased; so much so that extensive sharing between the amateur service and the fixed/mobile services could no longer offer a satisfactory solution for either service. Also, there needs to be more of a balance between the fixed and mobile spectrum available above and below 7 MHz. Pressure on the available spectrum for HF broadcasting below 10 MHz has also increased over the last few years as a result of a more cooperative political environment and economic factors, both of which have combined to increase the use of medium range single hop transmissions for programme delivery.

Studies are therefore continuing on the basis that:

- there is no real distinction between fixed and mobile equipment and use so that allocations in the Table of Frequency Allocations should be made generic;
- a total 540 x 3 kHz channels for fixed/mobile combined use is needed below 12 MHz in normal circumstances, rising to 1 000 in more difficult situations;
- a minimum allocation of 150 kHz is needed between either or both 6 765-8 000 kHz and 5 730-6 000 kHz;
- congestion in the broadcasting bands between 4 and 7 MHz continues the recent trend towards single hop, lower frequency coverage, as a result of greater sharing of broadcasting facilities between countries.

It is therefore considered essential that this agenda item be maintained on the provisional agenda for WRC-[03] in order to respond effectively to the changing pattern of use in the HF bands.

As noted above, studies are continuing into these important issue and a number of points can be identified where there are competing interests. Most importantly for reaching a successful conclusion, it will be necessary to establish the degree of sharing possible between the amateur and fixed/mobile services in all three Regions with particular emphasis on the situation in Region 2. It will, for example, be difficult to achieve a worldwide harmonization of the bands around 7 MHz without requiring major changes in Region 2 for the amateur service or other services in Regions 1 and 3. Other difficulties that may arise concern the continued importance of fixed HF communication links for sparsely populated regions in South America and Africa.

It is therefore essential that information on sharing between the services involved in the 7 MHz realignment is available to guide the discussions at WRC-[03]. Fortunately, much of the information on sharing scenarios in the HF bands is to be found in the Report of JIWP 10-6-8-9/1 (25 October 1990) concerning "*Compatibility considerations arising from the allocation of spectrum to HF broadcast*". This study, which formed section 5 of the CCIR Report to WARC-92 (Document 3), is still valid and was reproduced in the Report of the

Director to CPM-99 (see Attachment 1, Document CMR99-2/5). In particular, several existing sharing situations give rise to unacceptable levels of interference under certain conditions, notably between the broadcasting service and the amateur and fixed services.

MOD CVA/HOL/G/135/2

resolves to give the view

2.13 examination of the adequacy of the frequency allocations for HF broadcasting from about 4 MHz to 10 MHz, taking into account the seasonal planning procedures adopted by WRC-97~~, and to consider bringing forward the date of availability of the HF bands allocated by WARC-92 to the broadcasting service in response to Resolution **29 (WRC-97)** and Resolution **537 (WRC-97)**~~;

Reasons:

1) *Examination of HFBC spectrum requirements*

The spectrum available for HF broadcasting between 4-10 MHz, and particularly below 6 MHz already suffers severe congestion because of the following factors:

1 The bands are ideal for short- and medium-range coverage (up to 2 000 km) during daytime and are also needed to support longer-range services at night.

2 In recent years, there has been a tendency for many broadcasters to improve the reliability of their transmissions by using short distance, single hop transmissions in the lower frequency bands to replace their long distance, multi-hop services. This has usually been done by renting transmitter capacity or by exchanging transmission time with other broadcasters. As a side effect, this places further demands on the bands below 10 MHz.

3 Very little additional spectrum became available at the 6 and 7 MHz bands and none below the 6 MHz band at WARC-79 or WARC-92.

The imbalance of usage above and below 10 MHz is immediately obvious from the statistics (see the table and representative data below) on incompatible spectrum requirements now emerging from the Regional Coordination Groups endorsed through the new Article S12 procedures.

Available spectrum for broadcasting

Metre band	Including WARC-79 (kHz)	Including WARC-92 (kHz)
75 m	50	50
49 m	250	300
41 m	200	250
31 m	400	500
Below 10 MHz	**900**	**1 100**
25 m	400	500
22 m	200	300
19 m	500	700
16 m	350	420
15 m	0	120
13 m	400	300
11 m	430	430
Above 10 MHz	**2 280**	**2 870**
Total	**3 180 kHz**	**3 970 kHz**

**Regional Coordination Group HFCC, seasonal period B99,
end of Conference schedule data**

Coordination issues	Below 10 MHz	Above 10 MHz
No. of daily requirement hours	9 127 hrs.	6 858 hrs.
No. of daily co-channel collision hours	411 hrs.	127 hrs.
No. of daily adjacent channel collision hours	1 397 hrs.	424 hrs.
Total no. of incompatible frequency hours	1 808 hrs.	551 hrs.

Simply stated, the transmitter hour requirements below 10 MHz are 133% greater than in the range 10-30 MHz[2], whereas the available spectrum below 10 MHz is only 38% of the spectrum available above 10 MHz.

Below 10 MHz, the maximum amount of spectrum potentially available to HF broadcasting is 1 100 kHz, but this includes the WARC-92 bands and the 50 kHz at 4 MHz shared with the fixed service in Region 1. The coordination process shows, however, that between 1/5 to 1/3 of requirements remain unsatisfied. Even on the most simplistic basis, not taking account of continuity requirements, this equates to a shortfall in spectrum requirements of between 250 and 400 kHz.

In recognition of the legitimate concerns expressed by developing countries at WRC-97, the objective at WRC-[03] is to do no more than to nominate blocks of frequencies from which spectrum for HF broadcasting may be allocated in the expectation that the subsequent Conference will:

[2] 9 127 hours below 10 MHz versus 6 858 hours above 10 MHz.

a) decide what spectrum could be allocated for broadcasting; and

b) establish the conditions of use, e.g. regional factors, power limitations, modulation techniques, time sharing, etc.

Because of propagation, geographical and demographic factors, frequency congestion below 10 MHz is particularly severe in Europe, it may be that regionally-based solutions for the frequency bands below 6 MHz will turn out to be the most appropriate.

Studies are already in progress within the European Broadcasting Area and these show that the HF bands below 10 MHz continue to be very important for both broadcasting and military purposes, although the pattern of use has changed considerably over the past 20 years. One positive aspect is that administrations are now in a position to encourage increased sharing for the major European users of the HF spectrum through cooperative administrative measures. One important factor is that there is often little practical distinction between fixed and mobile uses of the HF spectrum. Therefore, a parallel strategy to simplify the Table of Frequency Allocations to provide for global allocations to the fixed and generic mobile services could aid the progress of the work needed at WRC-[03]. An additional agenda item for a future conference would of course be needed to accommodate any resulting proposals on changes to the Table of Frequency Allocations.

Progress on identifying additional spectrum for HF broadcasting in the 4-10 MHz bands, will be assisted by coming to a definitive conclusion for the future on the frequency allocations around 7 MHz under the related agenda item 2.12 for WRC-[03] contained in Resolution 722 (WRC-97). And as the bands below 10 MHz are still significantly congested, it is important that the more important action point envisaged in Resolution 722 (WRC-97), provisional agenda item 2.13, i.e. "*examination of the adequacy of the frequency allocations for HF broadcasting from about 4 MHz to 10 MHz, taking into account the seasonal planning procedures adopted by WRC-97*", is maintained as an agenda item for WRC-[03].

Although this agenda topic is listed for WRC-[03], it was originally placed by WRC-95 on the provisional agenda of WRC-99. WRC-97 subsequently moved this to the provisional agenda for WRC-[03].

2) *Removal of reference to the WARC-92 extension bands*

It is considered counter productive to reopen the subject of the WARC-92 extension bands for HF broadcasting given that no progress was made at WRC-95 or WRC-97, after extensive debate, and that the bands will nevertheless be available from 2007 whereas any changes that could be agreed at WRC-[03] would be unlikely to come into force before [2005].

In addition the Report of the Director of the Radiocommunication Bureau to CPM-99 in response to Resolution 29 (WRC-97) (Document CPM99-2/5) notes that although the use of the WARC-92 extension bands for HF broadcasting by the fixed and mobile services is declining, substantial use is expected to remain after 2007. This reinforces the view that no major change to the status of the WARC-92 extension bands could be expected to take effect in advance of the already set date of 2007.

It is therefore proposed to simplify agenda item 2.13 to remove reference to the WARC-92 bands and to concentrate effort at WRC-[03] on the more pressing issue of examining the future spectrum requirements for HF broadcasting between 4 and 10 MHz and assessing the impact on other services.

ADD CVA/HOL/G/135/3

resolves

2.13*bis* to review Resolution **517 (Rev.WRC-97)**, the related Resolution **537 (WRC-97)**, Recommendations **515 (Rev.WRC-97)**, **517 (HFBC-87)**, **518 (HFBC-87)** and **519 (WARC-92)** and Appendix **S11**, in the light of the studies and actions set out therein, having particular regard to the need to achieve the optimum balance between sound quality, bandwidth and circuit reliability in the use of the HF bands allocated to the broadcasting service;

Reasons: Resolution 517 (Rev.WRC-97) is the main instrument governing the introduction of new technology for HF broadcasting and, in particular, the transition from DSB to other forms of modulation. The Director of the Radiocommunication Bureau is charged with providing information on transmitter and receiver statistics to WRC-[03], but has promised to provide information in time for WRC-2000 to consider how to manage the introduction of modern modulation techniques in HF broadcasting.

However, other parts of the Radio Regulations are involved. Resolution 517 (Rev.WRC-97) refers to Recommendation 515 (Rev.WRC-97) and also to Resolution 537 (WRC-97), which in turn refers to Resolution 517 (HFBC-87) and Recommendations 515 (Rev.WRC-97) and 517 (HFBC-87). In addition Recommendation 517 (HFBC-87) refers to Resolution 517 (Rev.WRC-97) and Recommendation 515 (Rev.WRC-97), also to Resolution 514 which was suppressed at WRC-97. Furthermore Recommendation 519 (WARC-92) refers to Recommendation 515 (Rev.WRC-97) and Resolution 517 (HFBC-87). Recommendation 518 (HFBC-87) and Appendix S11 are also relevant.

Considering that significant progress in the development of digital modulation schemes is expected by 2002, it would be appropriate to conduct a thorough review of all these instruments at WRC-[03].

Also the Report of the Director of the Radiocommunication Bureau to the CPM-99 reviewing WARC/WRC Resolutions and Recommendations (Document CPM99-2/6) records that the Resolutions and Recommendations related to HF broadcasting are either under active study or have become partially or wholly obsolete. A review of all this material is therefore clearly overdue and, because of the complicated linkage between these Recommendations and Resolutions, the review will have to be comprehensive in nature.

PART 2 - PRELIMINARY AGENDA FOR WRC-[05]

ADD CVA/HOL/G/135/4

resolves

[XX] to review the allocations for the HF services taking account of the impact of new modulation and adaptive control techniques and any recommendations by WRC-[03] on the adequacy of the frequency allocations for HF broadcasting and the fixed and mobile services, from about 4 MHz to 10 MHz, and on the future use and requirements of the aeronautical mobile (R) and maritime-mobile services;

Reasons: WRC-[03] may be expected to recommend changes to the current allocations to the HF services as a result of the examination of several items related to the HF services already included on the preliminary agenda for WRC-[03]. There will therefore be a need for consequential changes at WRC-[05] to implement any recommended changes coming out of WRC-[03].

This is in line with PP-98 Resolution 80 which, in order to improve the efficiency of WRCs, requires WRC agendas to be set in two conference cycles so that the preliminary work of one WRC is brought to a swift conclusion by the following WRC.

Agenda item 2.12 proposed for WRC-[03] may result in a substantial rearrangement of the present allocations to the HF services around 7 MHz. In particular, the solution achieved for the realignment around 7 MHz will have a direct impact on the work related to WRC-[03] agenda item 2.13 on the future spectrum requirements in the range 4-10 MHz. Should WRC-[03] confirm the need for additional spectrum for HFBC, possibly including a worldwide allocation around 7 MHz, then these recommendations, together with any rearrangement resulting from agenda item 2.12, will need to be taken into account at a future WRC.

Other topics proposed for WRC-[03] involving HF services include item 3.6 on the use of adaptive systems in the MF/HF bands, and studies into the needs of the aeronautical mobile (R) and maritime-mobile services undertaken in response to agenda item 2.4 and possibly the agenda item 8.4 deferred from WRC-2000, either in addition to or in combination with item 2.4.

In addition, specific proposals directly related to the amateur and fixed services may emerge from WRC-[03] for consideration by WRC-[05]. It is therefore appropriate to provide for a preliminary agenda item for WRC-[05] referring to the need for a review of the allocations to the services involved following on from the work at WRC-[03].

The scope of the work under this proposal can only be indicative at this moment and will have to be kept under review in order to accommodate further development of the provisional WRC-[03] agenda in respect of HF services.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 136-E
29 April 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

United States of America

INFORMATION PAPER

HARMFUL INTERFERENCE TO THE AERONAUTICAL MOBILE (R) SERVICE (AM(R)S) IN THE HIGH FREQUENCY BAND

Agenda item 1.7 - review of the use of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting operational, distress and safety communications, taking into account Resolution 346 (WRC-97)

The aeronautical mobile (R) service[1] (AM(R)S) is allocated to high frequency (HF) spectrum between 2 850 kHz and 22 000 kHz. Presently, the HF bands allocated to the AM(R)S are nearly saturated by the use of analog voice communications. This spectrum must be maintained for the new digital high frequency data link (HFDL) communications. HFDL communications will provide a capability for the transfer of air traffic control and aeronautical operational control data to and from pilots operating over oceanic airspace, on polar routes, and in airspace over sparsely populated or undeveloped countries where other communication systems are not practical. The International Civil Aviation Organization (ICAO) has completed Standards and Recommended Practices for HFDL. Appendix S27 of the International Telecommunication Union - Radiocommunications Sector (ITU-R) Radio Regulations contain the Allotment Plan for the aeronautical use of HF aeronautical mobile (Route) service. Interference to HF AM(R)S appears to be the result of unauthorized non-aviation use of aeronautical mobile (R) frequencies. In some parts of the world the aeronautical mobile (R) HF are being used for land mobile, broadcast, fixed point-to-point communications and in maritime applications such as in support of fishing fleets. These unauthorized uses have resulted in frequent cases of harmful interference and have diminished the spectrum available for the aeronautical mobile (R) safety-of-life applications.

In the United States, the Federal Communications Commission (FCC) uses monitoring facilities to trace the sources of harmful interference that are caused to the AM(R)S in HF bands. The monitoring was prompted by the inordinately large number of unresolved interference situations reported by ARINC on ITU designated AM(R)S HF bands by non-compliant fishing vessels. It was reported that from 18 January to 29 February 2000 the FCC observed 551 emitters on 263 separate carrier frequencies. Also, from April through August 1999, the FCC observed 307 emitters on

[1] The ITU-R Radio Regulations define the aeronautical mobile (route) service as an aeronautical mobile service reserved for communications related to safety and regularity of flight, primarily along national or international civil air routes.

191 individual carrier frequencies by non-compliant fishing vessels. The geographical distribution of emitters were in all of the Pacific Ocean, the waters of the east and west coast of Central America, east coast of South America, and west coast of Africa. Several languages were identified. The majority of occurrences used frequencies in the bands 6 525-6 685 kHz and 8 815-8 965 kHz; however, unauthorized communications were observed on every AM(R)S HF band at various times. Charts depicting the locations of unauthorized use of AM(R)S HF bands worldwide, and in the Eastern Pacific, Atlantic and Western Pacific areas, during the period 1 January - 30 April 1999 and 2000 are enclosed (Attachments 1-4).

There is a WRC-2000 proposal by CITEL, that ten CITEL Administrations signed including the United States, that proposes that Appendix S27 be referenced by Article S15 to ensure special consideration is given to avoid interference to HF AM(R)S, modify Resolution 207 (MOB-87) to study the problem of HF interference and include this item on a future conference agenda, and add a new resolution to study the future technical and operational needs of the AM(R)S.

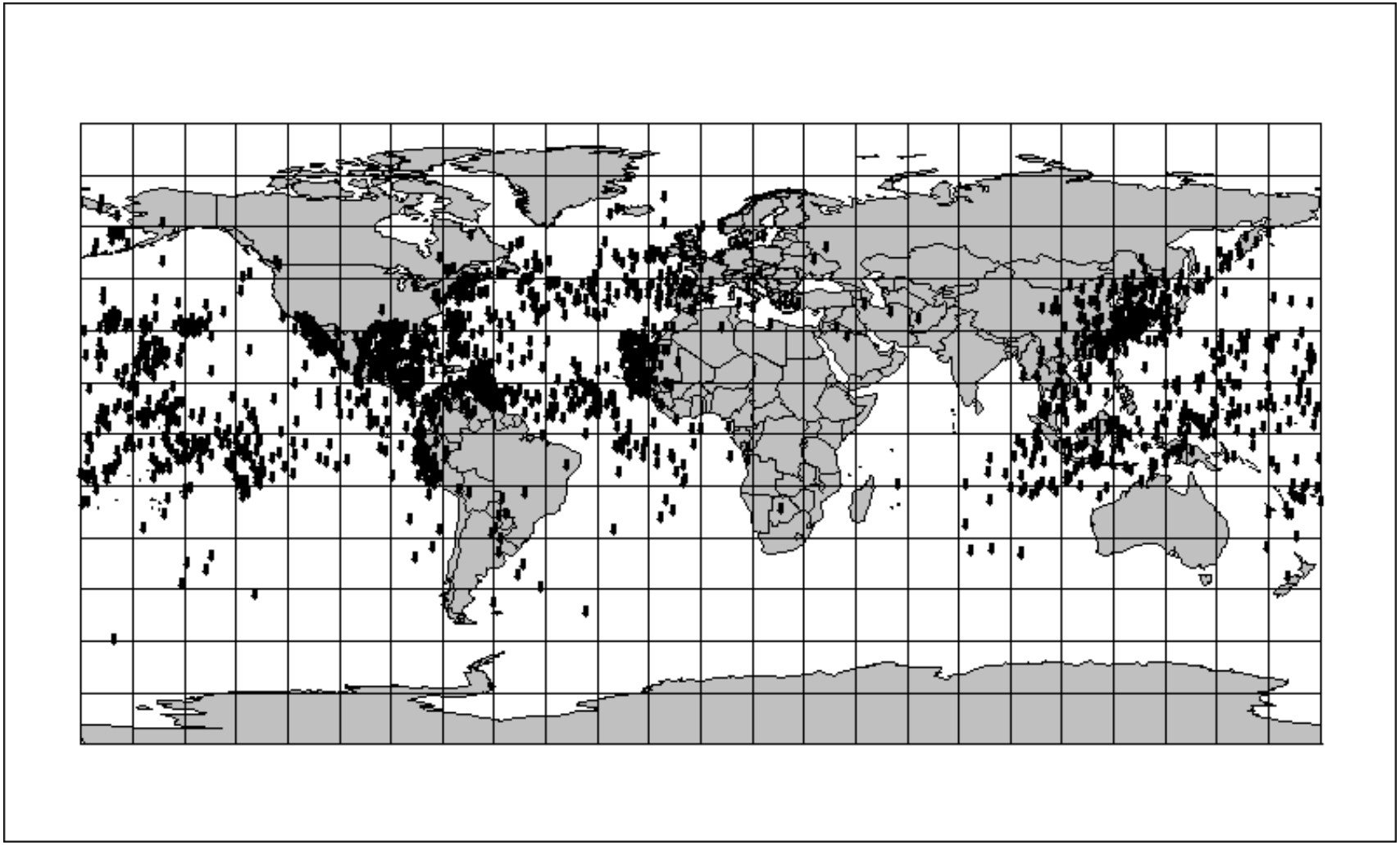
Administrations should ensure that stations of services other than the AM(R)S refrain from using frequencies in the bands allocated exclusively to the AM(R)S. Administrations should make every effort to identify and locate the source of any unauthorized emission causing harmful interference. Recognizing that such emissions are capable of endangering human life and property and the safe and regular conduct of aircraft operations, Administrations should take necessary measures to prevent stations from operating in contravention of ITU Radio Regulations. It is essential for the safety-of-life and property that these distress and safety channels are kept free from unauthorized use and harmful interference.

Attachments: 1-4

ATTACHMENT 1

CHART OF LOCATIONS OF UNAUTHORIZED USE OF AM(R)S HF BANDS WORLDWIDE

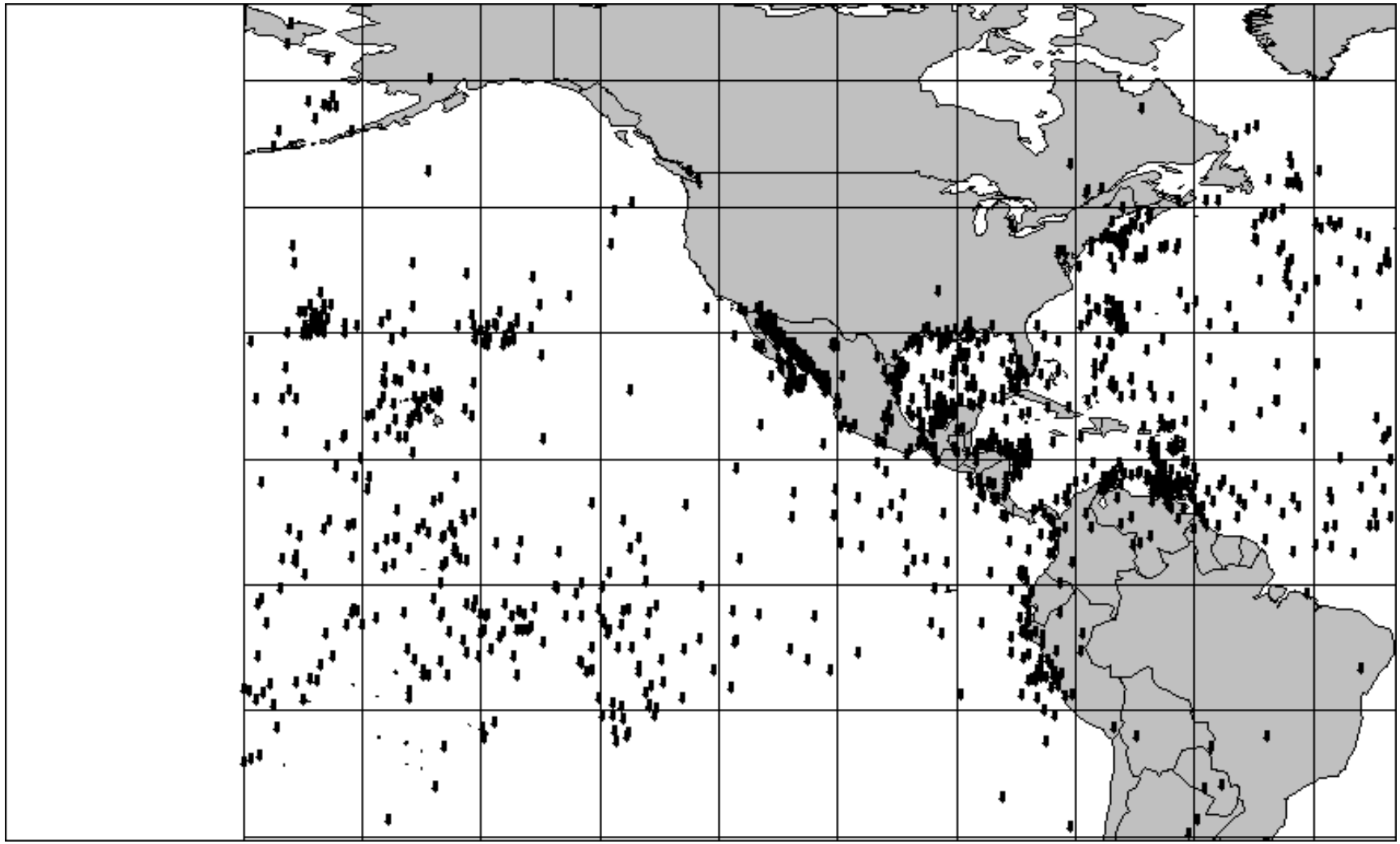
1 January - 30 April 1999 and 2000



ATTACHMENT 2

CHART OF LOCATIONS OF UNAUTHORIZED USE OF AM(R)S HF BANDS IN THE EAST PACIFIC

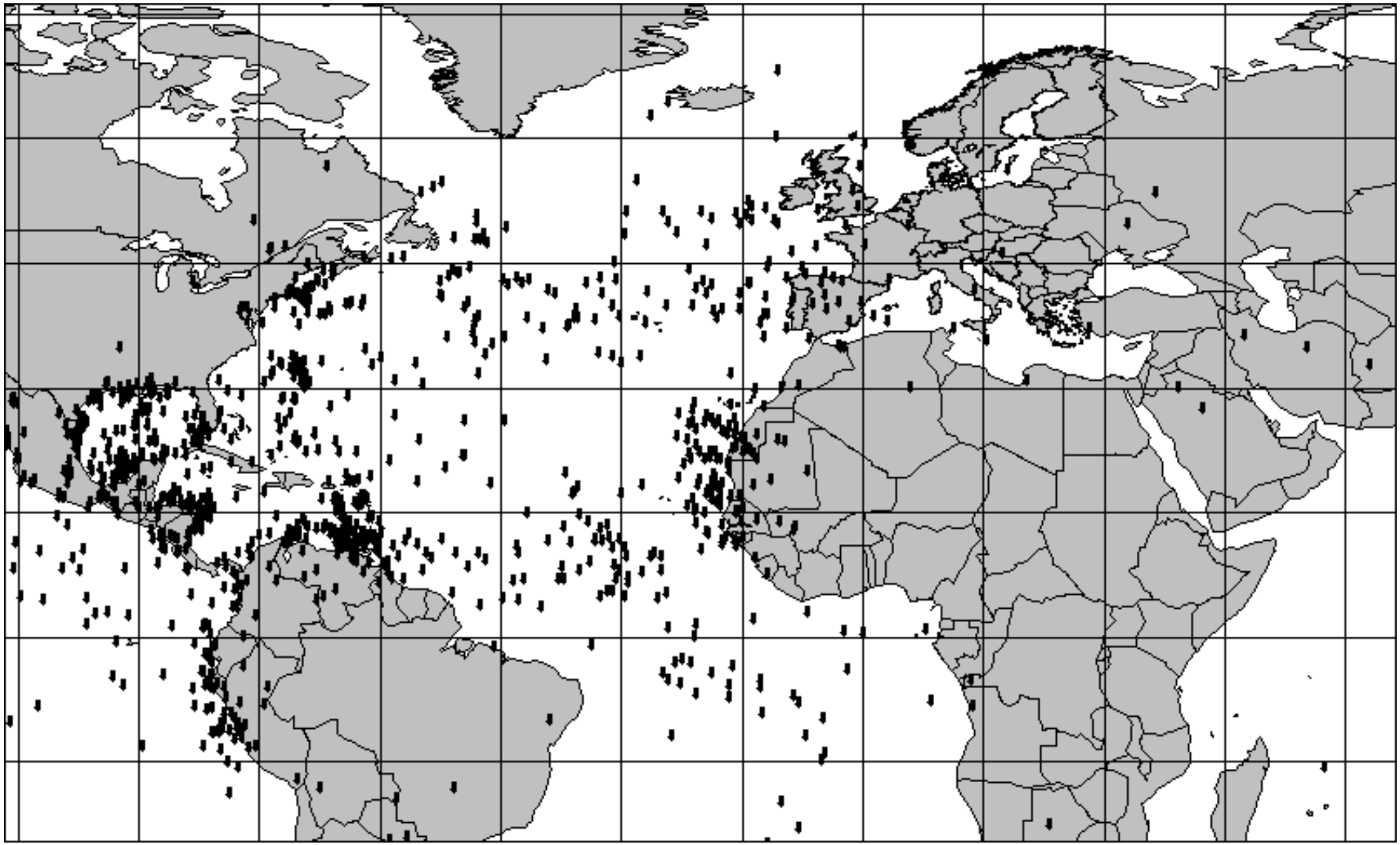
1 January - 30 April 1999 and 2000



ATTACHMENT 3

CHART OF LOCATIONS OF UNAUTHORIZED USE OF AM(R)S HF BANDS IN THE ATLANTIC

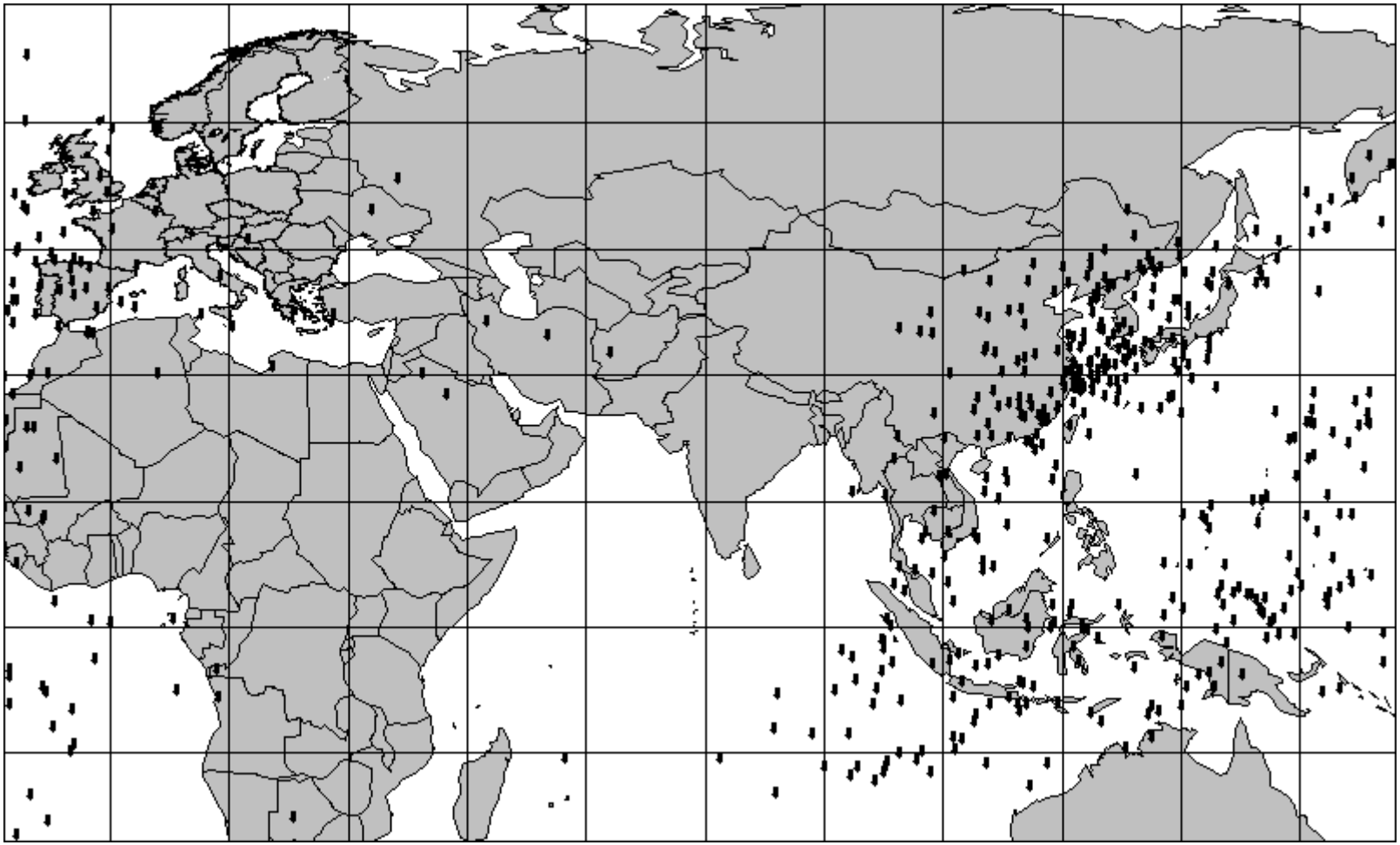
1 January - 30 April 1999 and 2000



ATTACHMENT 4

CHART OF LOCATIONS OF UNAUTHORIZED USE OF AM(R)S HF BANDS IN THE WEST PACIFIC

1 January - 30 April 1999 and 2000



INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

Corrigendum 5 to Document 137-E
25 May 2000
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COMMITTEE 4
COMMITTEE 5
WORKING GROUP 1
OF THE PLENARY

Mali (Republic of)

AFRICA GROUP COMMON PROPOSALS FOR THE WORK OF THE CONFERENCE

Add the name of "Comoros (Islamic Federal Republic of the)" to the countries co-sponsoring this document.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

Corrigendum 4 to Document 137-E
17 May 2000
Original: English

COMMITTEE 4
COMMITTEE 5
WORKING GROUP 1
OF THE PLENARY

Mali (Republic of)

AFRICA GROUP COMMON PROPOSALS FOR THE WORK OF THE CONFERENCE

Add the co-sponsor to this document as indicated in the Annex.

Annex: 1

ANNEX

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Nigeria (Federal Republic of)

Agenda item 1.8 (page 4)

Nigeria (Federal Republic of)

Agenda item 1.9 (page 5)

Nigeria (Federal Republic of)

Agenda item 1.11 (page 6)

Nigeria (Federal Republic of)

Agenda items 1.13, 1.13.1, 1.13.2 (page 7)

Nigeria (Federal Republic of)

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Nigeria (Federal Republic of)

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Nigeria (Federal Republic of)

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

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COMMITTEE 4
COMMITTEE 5
WORKING GROUP 1
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Mali (Republic of)

AFRICA GROUP COMMON PROPOSALS FOR THE WORK OF THE CONFERENCE

Add the name of "Lesotho (Kingdom of)" to the countries co-sponsoring this document.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

Corrigendum 2(Rev.1) to Document 137-E
12 May 2000
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COMMITTEE 4
COMMITTEE 5
WORKING GROUP 1
OF THE PLENARY

Mali (Republic of)

AFRICA GROUP COMMON PROPOSALS FOR THE WORK OF THE CONFERENCE

Add the co-sponsors to this document as indicated in the Annex.

Annex: 1

ANNEX

Agenda item 1.6.1 (page 2)

Dem. Rep. of the Congo, Senegal, Tunisia

Agenda item 1.7 (page 3)

Dem. Rep. of the Congo, Ethiopia, Senegal, Tunisia

Agenda item 1.8 (page 4)

Dem. Rep. of the Congo, Ethiopia, Senegal, Tunisia

Agenda item 1.9 (page 5)

Dem. Rep. of the Congo, Ethiopia, Tunisia

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Dem. Rep. of the Congo, Ethiopia, Tunisia

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Dem. Rep. of the Congo, Ethiopia, Senegal, Tunisia

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Agenda items 1.19, 1.19*bis*, 1.20 (page 12)

Dem. Rep. of the Congo, Ethiopia, Senegal, Tunisia

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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12 May 2000
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COMMITTEE 4
COMMITTEE 5
WORKING GROUP 1
OF THE PLENARY

Mali (Republic of)

AFRICA GROUP COMMON PROPOSALS FOR THE WORK OF THE CONFERENCE

Add the co-sponsors to this document as indicated in the Annex.

Annex: 1

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Congo, Senegal, Tunisia

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Congo, Ethiopia, Senegal, Tunisia

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

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9 May 2000
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COMMITTEE 4
COMMITTEE 5
WORKING GROUP 1
OF THE PLENARY

Mali (Republic of)

AFRICA GROUP COMMON PROPOSALS FOR THE WORK OF THE CONFERENCE

Modify the co-sponsors to this document as indicated in the Annex.

Annex: 1

ANNEX

Agenda item 1.6.1 (page 2)

Algeria, Benin, Burkina Faso, Burundi, Central African Republic, Côte d'Ivoire, Eritrea, Gabon, Ghana, Kenya, Mali, Namibia, Uganda, Rwanda, Tanzania, Chad

Agenda item 1.7 (page 3)

Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d'Ivoire, Eritrea, Gabon, Ghana, Kenya, Mali, Morocco, Namibia, Uganda, Rwanda, South Africa, Tanzania, Chad

Agenda item 1.8 (page 4)

Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d'Ivoire, Eritrea, Gabon, Ghana, Kenya, Mali, Namibia, Uganda, Rwanda, Tanzania, Chad

Agenda item 1.9 (page 5)

Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d'Ivoire, Eritrea, Gabon, Ghana, Kenya, Mali, Namibia, Uganda, Rwanda, Tanzania, Chad

Agenda item 1.11 (page 6)

Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d'Ivoire, Eritrea, Gabon, Ghana, Kenya, Mali, Morocco, Namibia, Uganda, Rwanda, South Africa, Tanzania, Chad

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Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d'Ivoire, Eritrea, Gabon, Ghana, Kenya, Mali, Morocco, Namibia, Uganda, Rwanda, South Africa, Tanzania, Chad

Agenda item 1.15.1 (page 8)

Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d'Ivoire, Eritrea, Gabon, Ghana, Kenya, Mali, Namibia, Uganda, Rwanda, Tanzania, Chad

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Agenda item 1.15.3 (page 10)

Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d'Ivoire, Eritrea, Gabon, Ghana, Kenya, Mali, Namibia, Uganda, Rwanda, Tanzania, Chad

Agenda item 1.18 (page 11)

Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d'Ivoire, Eritrea, Gabon, Ghana, Kenya, Mali, Morocco, Namibia, Uganda, Rwanda, South Africa, Tanzania, Chad

Agenda items 1.19, 1.19*bis*, 1.20 (page 12)

Algeria, Benin, Burkina Faso, Burundi, Cameroon, Central African Republic, Côte d'Ivoire, Eritrea, Gabon, Ghana, Kenya, Mali, Namibia, Uganda, Rwanda, Tanzania, Chad

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 137-E
2 May 2000
Original: French/ English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Mali (Republic of)

AFRICA GROUP COMMON PROPOSALS FOR THE WORK OF THE CONFERENCE

Introduction

This common contribution by African countries intended for WRC-2000 was drafted by the Preparatory Meeting held in Abidjan from 28 February to 3 March 2000.

The document summarizes proposals by African countries on the major items of interest to them.

Agenda item 1.6.1

1.6.1 review of spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Frequency Allocations as necessary

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/1

The above countries propose:

1) that each country perform an audit to determine its short- and long-term spectrum needs in respect of IMT-2000;

2) that no additional satellite and terrestrial allocations be made by WRC-2000 for IMT-2000 in the time-frame 2000-2010, but the spectrum requirement be met within the existing mobile service allocations should the market demand of the respective country require so;

3) that the candidate extension bands contained in the CPM Report should be studied within ITU-R as to the feasibility of their use. The suitable extension bands should be confirmed at the next WRC following WRC-2000;

4) that no existing or essential aeronautical space services are compromised by the introduction of IMT-2000 applications;

5) that any constraints that the satellite component of IMT-2000 may be subject to cannot be less stringent than the existing regulatory constraints governing the MSS.

Agenda item 1.7

1.7 review of the use of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting operational, distress and safety communications, taking into account Resolution **346 (WRC-97)**

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/2

The above countries propose:

1) that such frequencies be reserved only for distress and safety calls;

2) that precautions are taken by radiotelephony distress communications operators in order to avoid interferences;

3) that each administration take the necessary steps to prohibit the use of such frequencies for ordinary calls;

4) no revision to Appendix S27 in the near future;

5) preserve existing allocations to the aeronautical-mobile service (R) in the HF band for the near/intermediate future.

Agenda item 1.8

1.8 to consider regulatory and technical provisions to enable earth stations located on board vessels to operate in the fixed-satellite service (FSS) networks in the bands 3 700-4 200 MHz and 5 925-6 425 MHz, including their coordination with other services allocated in these bands

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/3

The above countries propose:

that no provisions authorizing the use of FSS earth stations on board vessels be adopted until such time that all necessary technical, regulatory and legal aspects are solved, including the identification of responsible authorities to which such stations respond to, and that all costs relating to any coordination process be borne by concerned responsible administrations.

Agenda item 1.9

1.9 to take into account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-Earth direction to the mobile-satellite service (MSS) in a portion of the 1 559-1 567 MHz frequency range, in response to Resolutions **213 (Rev.WRC-95)** and **220 (WRC-97)**

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/4

The above countries propose:

1) that no allocations should be made to the MSS in the band 1 559-1 567 MHz;

2) that Resolution 220 should be suppressed;

3) that for Resolution 213, the proposed footnote supplementing the provisions of No. S5.377 should be added so as to give protection to the MetSat service in the band 1 683-1 690 MHz before sharing with the MSS should be considered.

Agenda item 1.11

1.11 to consider constraints on existing allocations and to consider additional allocations on a worldwide basis for the non-geostationary (non-GSO) MSS below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolutions **214 (Rev.WRC-97)** and **219 (WRC-97)**

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/4*bis*

The above countries propose:

no new allocations to the MSS in the band below 1 GHz.

Agenda items 1.13, 1.13.1 and 1.13.2

1.13 on the basis of the results of the studies in accordance with Resolutions **130 (WRC-97)**, **131 (WRC-97)** and **538 (WRC-97)**:

1.13.1 to review and, if appropriate, revise the power limits appearing in Articles **S21** and **S22** in relation to the sharing conditions among non-GSO FSS, GSO FSS, GSO broadcasting-satellite service (BSS), space sciences and terrestrial services, to ensure the feasibility of these power limits and that these limits do not impose undue constraints on the development of these systems and services;

1.13.2 to consider the inclusion in other frequency bands of similar limits in Articles **S21** and **S22**, or other regulatory approaches to be applied in relation to sharing situations

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/5

The above countries propose:

1) that the necessary regulatory procedures be developed to protect GSO FSS, GSO MSS and FS services from any harmful interference caused by non-GSO FSS systems operating in these bands;

2) that ITU-R be requested to conduct appropriate studies.

Agenda item 1.15.1

1.15.1 to consider new allocations to the radionavigation-satellite service in the range from 1 GHz to 6 GHz required to support developments

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/6

The above countries propose:

1) that since the 960-1 215 MHz band is allocated on a worldwide basis for ARNS, the International Civil Aviation Organization (ICAO), ITU and others should carry out further studies and come out with suitable recommendations before any allocations are made to the RNSS;

2) that adequate spectrum should be available for GNSS systems.

Agenda item 1.15.2

1.15.2 to consider the addition of the space-to-space direction to the radionavigation-satellite service allocations in the bands 1 215-1 260 MHz and 1 559-1 610 MHz

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/7

The above countries propose:

the addition of the space-to-space direction to RNSS in both the 1 215-1 260 MHz and 1 559-1 610 MHz bands as analyses of studies carried out show that there would not be any additional interference to other services.

Agenda item 1.15.3

1.15.3 to consider the status of allocations to services other than the radionavigation-satellite service (Nos. **S5.355** and **S5.359**) in the band 1 559-1 610 MHz

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/8

The above countries propose:

that the operation of fixed services should continue until 2015 in the bands concerned by No. S5.355 and S5.359 of the Radio Regulations.

Agenda item 1.18

1.18 to consider the use of new digital technology for the maritime mobile service in the band 156-174 MHz and consequential revision of Appendix **18**/**S18**, taking into account Resolution **342 (WRC-97)**

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/9

The above countries propose:

1) that ITU-R should continue the studies to adopt new digital techniques that help to enhance the efficiency of this band;

2) pending the operationalization of these digital technologies, that arrangements should be made, in relation with the application of the Radio Regulations, to make it possible to use certain channels of Appendix 18/S18 in simplex mode, in addition to the duplex mode to minimize congestion.

Agenda items 1.19, 1.19*bis* and 1.20

1.19 to consider the report of the inter-conference representative group (IRG) submitted by the Director of the Radiocommunication Bureau and determine the basis for replanning by the next conference so as to afford each country an amount of spectrum that permits the economical development of a broadcasting-satellite service system;

1.19*bis* in accordance with Article **S14**, to consider objections expressed by administrations with respect to the Radio Regulations Board's Rules of Procedure relating to the application of RR 2674**/S23.13** in order for the Bureau to modify its findings in accordance with the conclusions of the Conference;

1.20 to consider the issues related to the application of Nos. **S9.8**, **S9.9** and **S9.17** and the corresponding parts of Appendix **S5** with respect to Appendices **S30** and **S30A**, with a view to possible deletion of Articles 6 and 7 of Appendices **S30** and **S30A**, also taking into consideration Recommendation **35 (WRC-95)**

Proposal submitted by the following administration:

Mali (Republic of)

AFR/137/10

The above countries propose:

1) the adoption of the new BSS Plan at WRC-2000, on the basis of national coverage of 10 channels for Region 1 in a 400 MHz continuous band and 12 channels for Region 3 in a 500 MHz continuous band, as successfully computed by the GTE at the present date;

2) that modifications which may become necessary, either by existing systems, or by systems already coordinated and for which information required according to Resolution 49 (WRC-97) has been submitted to ITU, or for regional systems which benefit a priority in consideration to their importance for the development of their coverage areas, be included in a list attached as an annex to the MIFR, with a limited duration of inscription in this annex;

3) to maintain the provisions of Articles 6 and 7 as established in Appendices S30 and S30A;

4) that the adoption of a new plan will be done in connection with the revision of the actual procedures and will necessarily imply the revision of certain articles of Appendices S30 and S30A.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Argentine Republic, Cameroon (Republic of), Chile, Costa Rica, El Salvador (Republic of), Guatemala (Republic of), Guyana, India (Republic of), Mexico, Suriname (Republic of), Trinidad and Tobago

PROPOSAL FOR THE AGENDA OF WRC-03 (AGENDA ITEM 7.2)

"IDENTIFICATION OF GLOBALLY HARMONIZED FREQUENCY BANDS FOR PUBLIC SAFETY"

Add the following countries to the list of co-sponsors to this document, section: agenda item 7.2: "Cameroon" and "Mexico".

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Corrigendum 3 to Document 138-E 26 May 2000 Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Argentine Republic, Chile, Costa Rica, El Salvador (Republic of), Guatemala (Republic of), Guyana, India (Republic of), Suriname (Republic of), Trinidad and Tobago

PROPOSAL FOR THE AGENDA OF WRC-03 (AGENDA ITEM 7.2)

"IDENTIFICATION OF GLOBALLY HARMONIZED FREQUENCY BANDS FOR PUBLIC SAFETY"

Add the following countries to the list of co-sponsors to this document, section: agenda item 7.2:

Argentina, Chile, Costa Rica, El Salvador, Guatemala, Guyana, India, Suriname and Trinidad and Tobago.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Corrigendum 2 to Document 138-E 26 May 2000 Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Argentine Republic, Costa Rica, El Salvador (Republic of), Guatemala (Republic of), Guyana, India (Republic of), Suriname (Republic of), Trinidad and Tobago

PROPOSAL FOR THE AGENDA OF WRC-03 (AGENDA ITEM 7.2)

IDENTIFICATION OF GLOBALLY HARMONIZED FREQUENCY BANDS FOR PUBLIC SAFETY

Add the following countries to the list of co-sponsors to this document, section: agenda item 7.2:

Argentina, Costa Rica, El Salvador, Guatemala, Guyana, India, Suriname and Trinidad and Tobago.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Corrigendum 1 to Document 138-E 17 May 2000 Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Costa Rica, El Salvador (Republic of), Guatemala (Republic of), Guyana, India (Republic of), Suriname (Republic of), Trinidad and Tobago

PROPOSAL FOR THE AGENDA OF WRC-03 (AGENDA ITEM 7.2)

"IDENTIFICATION OF GLOBALLY HARMONIZED FREQUENCY BANDS FOR PUBLIC SAFETY"

Add the following countries to the list of co-sponsors to this document, section: agenda item 7.2: Costa Rica, El Salvador, Guatemala, Guyana, India, Suriname and Trinidad and Tobago.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 138-E*
2 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

India (Republic of)

PROPOSAL FOR THE AGENDA OF WRC-03 (AGENDA ITEM 7.2)

"IDENTIFICATION OF GLOBALLY HARMONIZED FREQUENCY BANDS FOR PUBLIC SAFETY"

1 Frequency bands were identified by WARC-92 as intended for use on a worldwide basis by administrations intending to implement IMT-2000 and that such use would not preclude the use of these bands to other services to which they are allocated.

2 With respect to satisfying future spectrum needs of IMT-2000, WRC-2000 agenda item 1.6.1 addresses the need to consider "spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000...".

3 At WRC-97, in a footnote to the Table of Frequency Allocations, spectrum was designated for administrations intending to implement HAPS, high altitude platform systems.

4 Therefore, at two conferences, administrations, operators, manufacturers and users have reconfirmed the regulatory approach of identifying globally harmonized frequency bands for critical services while allowing the use of these bands for other services.

5 Public safety applications in the mobile service include:

a) emergency and disaster response;

b) day-to-day protection of public life and property;

c) specialized undercover investigative operations.

6 Future public safety systems will contain advanced high data rate and multimedia features, such as:

a) increased access to and customized queries of centralized database information from mobile and portable units deployed in the field;

b) use of mobile and portable imaging to share critical information among emergency response team members at the scene of an incident or disaster situation;

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* Pursuant to Resolution 26 (Rev.WRC-97) the Secretariat notes that this contribution was received on 2 May 2000.

c) deployment of mobile and portable imaging communications devices, which first responders can use to communicate critical information back to dispatch operations or more specialized personnel at a headquarters location;

d) untethered transmission of specialized video imaging and data gathered by mobile robotic devices used by emergency response personnel.

7 The benefits of globally harmonized frequency bands for public safety include:

a) equipment economics of scale, lowering the costs of specialized telecommunications systems to publicly funded entities that protect life and property;

b) availability of high data rate and multimedia systems designed to meet the specific needs of public safety agencies including, police firefighters and emergency medical personnel;

c) improved potential for communications interoperability when a country receives assistance from its global village partners during times of disaster;

d) increased potential for cooperation among public safety entitles from various countries during incidents of criminal activity spanning multiple countries.

8 Therefore, given that all administrations would benefit from such a regulatory approach, the Republic of India proposes that the following item be placed on the agenda of the WRC and recommends adoption of the enclosed draft new Resolution XXX (WRC-2000):

- "Based on ITU-R studies, review the spectrum, regulatory and sharing considerations of designating globally harmonized frequency bands for administrations intending to implement future public safety systems in the range of 150 MHz to 5 GHz and make adjustments to the Table of Frequency Allocations and Radio Regulations as necessary."

ADD IND/138/1

RESOLUTION XXX (WRC-2000)

Global spectrum for public safety services

The World Radiocommunication Conference (Istanbul, 2000),

considering

a) the importance of public safety applications in the mobile service including:

i) maintenance of law and order;

ii) emergency and disaster response;

iii) protection of public life and property.

b) that future public safety systems will contain advanced high data rate and multimedia features, such as:

i) increased access to and customized queries of centralized database information from mobile and portable units deployed in the field;

ii) use of mobile and portable imaging to share critical information among emergency response team members at the scene of an incident or disaster situation;

iii) deployment of mobile and portable imaging communications devices, which first responders can use to communicate critical information back to dispatch operations or more specialized personnel at a headquarters location;

iv) untethered transmission of specialized video imaging and data gathered by mobile robotic devices used by emergency response personnel;

c) that the World Administrative Radiocommunication Conference (Geneva, 1992) and subsequent conferences as well as administrations, operators, manufacturers and users have confirmed the regulatory approach of identifying globally harmonized frequency bands for critical services while allowing the use of these bands for other services, by identifying frequency bands as intended for use on a worldwide basis by administrations intending to implement IMT-2000;

d) at WRC-97, in a footnote to the Table of Frequency Allocations, spectrum was designated for administrations intending to implement HAPS, high altitude platform systems for IMT-2000,

recognizing

a) the importance of wireless communications to the public safety;

b) that the aeronautical and maritime safety users have ITU-recognized services and associated spectrum;

c) the urgent need to provide at least the same level of support for services used to protect life and property as is being provided for public communications;

d) the benefits of globally harmonized frequency bands for public safety including:

i) equipment economies of scale, lowering the costs of specialized telecommunications systems to publicly funded entities that protect life and property;

ii) availability of high data rate and multimedia systems designed to meet the specific needs of public safety agencies including, police, firefighters and emergency medical personnel;

iii) improved potential for communications interoperability when a country receives assistance from its global village partners during times of disaster;

e) the increased potential for cooperation among public safety entities from various countries during incidents of criminal activity spanning multiple countries;

f) that the coordinated use of telecommunication equipment in globally harmonized bands for public safety operations is indispensable for the provision of effective and appropriate humanitarian assistance during disasters;

g) that the coordinated use of telecommunication equipment in globally harmonized bands for public safety operations is indispensable for the provision of effective and appropriate law enforcement,

invites ITU-R

1 to identify frequency bands, preferably below 5 GHz, that could be designated on a global basis for use by administrations intending to implement public mobile safety systems;

2 to review the regulatory considerations of designating globally harmonized frequency bands for administrations intending to implement such public safety systems;

3 to study the sharing considerations of designating globally harmonized frequency bands for administrations intending to implement such public safety systems; and

4 to study methods to promote harmonized use and rapid deployment of such public safety systems,

instructs the Radiocommunication Bureau

to report on the results of these studies to the CPM of WRC-03,

urges administrations

to participate actively in the aforementioned studies by submitting contributions to ITU-R,

and requests

WRC-03 to review the spectrum, regulatory and sharing considerations of designating globally harmonized frequency bands for administrations intending to implement future public safety systems in frequency bands below 5 GHz and make adjustments to the Table of Frequency Allocations and Radio Regulations as necessary.

MOD IND/138/2 Agenda item 1.6.1

S5.415A *Additional allocation*: in Japan and India, subject to agreement obtained under No. **S9.21**, the band 2 515-2 535 MHz may also be used for the aeronautical mobile-satellite service (space-to-Earth) for operation limited to within ~~its~~ their national boundar~~y~~ies from 1 January 2000.

Reasons: To remove the constraints on AMSS so that MSS requirements on national basis can be catered to adequately and MSS systems for national use can be implemented efficiently in view of the proposed additional bands for IMT-2000.

MOD IND/138/3 Agenda item 1.6.1

S5.420A *Additional allocation:* in Japan and India, subject to agreement obtained under No. **S9.21**, the band 2 670-2 690 MHz may also be used for the aeronautical mobile-satellite service (Earth-to-space) for operation limited to within ~~its~~ their national boundar~~y~~ies from 1 January 2000.

Reasons: To remove the constraints on AMSS so that MSS requirements on national basis can be catered to adequately and MSS systems for national use can be implemented efficiently in view of the proposed additional bands for IMT-2000.

IND/138/4 Agenda item 4

Resolution 716 (WRC-95) requested ITU-R to make available the necessary planning tools in a timely manner and also assessing the financial and economic impact for transferring services from the bands intended for use for IMT-2000. Higher priority is needed to be accorded for completing studies and to set a specific time-frame for completing the task of making the necessary tools available to the administrations as well as to assess financial and economic impact of transferring of services. Resolution 716 (WRC-95) should accordingly be modified to set a specific time-frame for completing the task if necessary though setting up of a special Task Group or Joint Task Group.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

Ukraine

PROPOSALS FOR THE WORK OF THE CONFERENCE

According to agenda item 1.1 of WRC-2000: "requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, in accordance with Resolution 26 (Rev.WRC-97)" Ukraine requests to delete its name from the following footnotes: S5.55, S5.58, S5.67, S5.271, S5.338, S5.349, S5.350, S5.387, S5.412, S5.418, S5.428, S5.430, S5.448, S5.496 and S5.501.

The Administration of Ukraine wishes to make the following proposals for the work of the Conference:

MOD UKR/139/1

S5.55 *Additional allocation:* in Armenia, Azerbaijan, Bulgaria, Russian Federation, Georgia, Kazakstan, Kyrgyzstan, Tajikistan~~,~~ and Turkmenistan ~~and Ukraine~~, the band 14-17 kHz is also allocated to the radionavigation service on a primary basis.

MOD UKR/139/2

S5.58 *Additional allocation:* in Armenia, Azerbaijan, Bulgaria, Georgia, Kazakstan, Kyrgyzstan, Russian Federation, Tajikistan~~,~~ and Turkmenistan ~~and Ukraine~~, the band 67-70 kHz is also allocated to the radionavigation service on a primary basis.

MOD UKR/139/3

S5.67 *Additional allocation:* in Azerbaijan, Bulgaria, Mongolia, Kyrgyzstan, Romania~~,~~ and Turkmenistan ~~and Ukraine~~, the band 130-148.5 kHz is also allocated to the radionavigation service on a secondary basis. Within and between these countries this service shall have an equal right to operate.

MOD UKR/139/4

S5.271 *Additional allocation:* in Azerbaijan, Belarus, China, Estonia, India, Latvia, Lithuania, Kyrgyzstan~~,~~ and Turkmenistan ~~and Ukraine~~, the band 420-460 MHz is also allocated to the aeronautical radionavigation service (radio altimeters) on a secondary basis.

MOD UKR/139/5

S5.338 In Azerbaijan, Bulgaria, Mongolia, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania~~,~~ and Turkmenistan ~~and Ukraine~~, existing installations of the radionavigation service may continue to operate in the band 1 350-1 400 MHz.

MOD UKR/139/6

S5.349 *Different category of service:* in Saudi Arabia, Azerbaijan, Bahrain, Bosnia and Herzegovina, Cameroon, Egypt, the United Arab Emirates, France, the Islamic Republic of Iran, Iraq, Israel, Kazakstan, Kuwait, The Former Yugoslav Republic of Macedonia, Lebanon, Morocco, Mongolia, Oman, Qatar, Syria, Kyrgyzstan, Romania, Turkmenistan, ~~Ukraine,~~ 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. **S5.33**).

MOD UKR/139/7

S5.350 *Additional allocation:* in Azerbaijan, Kyrgyzstan~~,~~ and Turkmenistan ~~and Ukraine~~, the band 1 525-1 530 MHz is also allocated to the aeronautical mobile service on a primary basis.

MOD UKR/139/8

S5.387 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Georgia, Kazakstan, Mali, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan~~,~~ and Turkmenistan ~~and Ukraine~~, the band 1 770-1 790 MHz is also allocated to the meteorological-satellite service on a primary basis, subject to agreement obtained under No. **S9.21**.

MOD UKR/139/9

S5.412 *Alternative allocation:* in Azerbaijan, Bulgaria, Kyrgyzstan~~,~~ and Turkmenistan ~~and Ukraine~~, the band 2 500-2 690 MHz is allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

MOD UKR/139/10

S5.418 *Additional allocation:* in Bangladesh, Belarus, China, Rep. of Korea, India, Japan, Pakistan, Russian Federation, Singapore, Sri Lanka~~,~~ and Thailand ~~and Ukraine~~ 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. Such use is limited to digital audio broadcasting and is subject to provisions of Resolution **528 (WARC-92)**. The provisions of No. **S5.416** and Article **S21**, Table **S21-4**, do not apply to this additional allocation.

MOD UKR/139/11

S5.428 *Additional allocation:* in Azerbaijan, Bulgaria, Cuba, Kazakstan, Mongolia, Poland, Kyrgyzstan, Romania~~,~~ and Turkmenistan ~~and Ukraine~~, the band 3 100-3 300 MHz is also allocated to the radionavigation service on a primary basis.

MOD UKR/139/12

S5.430 *Additional allocation:* in Azerbaijan, Bulgaria, Cuba, Mongolia, Poland, Kyrgyzstan, Romania~~,~~ and Turkmenistan ~~and Ukraine~~, the band 3 300-3 400 MHz is also allocated to the radionavigation service on a primary basis.

MOD UKR/139/13

S5.448 *Additional allocation:* in Austria, Azerbaijan, Bulgaria, Libya, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Romania~~,~~ and Turkmenistan ~~and Ukraine~~, the band 5 250-5 350 MHz is also allocated to the radionavigation service on a primary basis.

MOD UKR/139/14

S5.496 *Additional allocation:* in Austria, Azerbaijan, Kyrgyzstan~~,~~ and Turkmenistan ~~and Ukraine~~, 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 listed in this footnote. Coordination of these earth stations is not required with stations of the fixed and mobile services of the countries listed in this footnote. The power flux-density limit at the Earth's surface given in Article **S21**, Table **S21-4**, for the fixed-satellite service shall apply on the territory of the countries listed in this footnote.

MOD UKR/139/15

S5.501 *Additional allocation:* in Austria, Azerbaijan, Bulgaria, Hungary, Japan, Mongolia, Kyrgyzstan, Romania, the United Kingdom~~,~~ and Turkmenistan ~~and Ukraine~~, the band 13.4-14 GHz is also allocated to the radionavigation service on a primary basis.

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WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

Note by the Secretary-General

SECRETARIAT OF THE CONFERENCE

Secretary of the Conference	:	Mr Y. Utsumi Secretary-General
Executive Secretary	:	Mr P. Capitaine
Conference Coordinator	:	Ms H. Laugesen
Plenary Meeting and Committee 1 (Steering)	:	Mr R. Smith
Committee 2 (Credentials)	:	Mr D. Schuster
Committee 3 (Budget Control)	:	Mr G. Eidet
Committee 4 (Regulatory and associated issues)	:	Mr P. Lundborg
Committee 5 (Allocations and associated issues)	:	Mr J. Lewis
Committee 6 (Editorial)	:	Mr C. Langtry
Working Group 1 of the Plenary	:	Mr G. Mesias
Working Group 2 of the Plenary	:	Mr A. Nalbandian

Yoshio UTSUMI
Secretary-General

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

CHAIRPERSONS AND VICE-CHAIRPERSONS OF THE CONFERENCE

(as established by the first Plenary Meeting)

Chairperson of the Conference	:			Mr F.M. Yurdal (Turkey)
Vice-Chairpersons of the Conference	:			H.E. Mrs G. Schoettler (United States) Mr J.S. Strick (Germany) H.E. Mr L. Reyman (Russia) Mr I. Samake (Mali) Mr H. Ishihara (Japan) Mr A. Berrada (Morocco)
Committee 1 (Steering)	:	(composed of the Chairperson and Vice-Chairpersons of the Conference and of the Chairpersons and Vice-Chairpersons of the Committees and Working Groups of the Plenary)		
Committee 2 (Credentials)	:	Chairperson	:	Mr A.M.T. Abu (Nigeria)
		Vice-Chairperson	:	Mr R. Chen (China)
Committee 3 (Budget Control)	:	Chairperson	:	Mr B. Gracie (Canada)
		Vice-Chairperson	:	H.E. Mr M. Tabeshian (Iran (Islamic Republic of))
Committee 4 (Regulatory and Associated Issues)	:	Chairperson	:	Mr H. Railton (RRB)
		Vice-Chairpersons	:	Mr N. Kisrawi (Syria) Mr L. Petzer (South Africa)

.../...

Committee 5 (Allocations and) Associated Issues)	: Chairperson	:	Mr C. van Diepenbeek (Netherlands)
	Vice-Chairpersons	:	Mr H.K. Al-Shankiti (Saudi Arabia) Mr H. Fernandez Macbeath (Cuba)
Committee 6 (Editorial)	: Chairperson	:	Mr L. Bourgeat (France)
	Vice-Chairpersons	:	Mr M. Johnson (United Kingdom) Mr C. Menendez Argüelles (Spain)
Working Group 1 of the Plenary	: Chairperson	:	Mr R. Zeitoun (Canada)
	Vice-Chairpersons	:	Mr S. Djematene (Algeria) Mr A. Frederich (Sweden)
Working Group 2 of the Plenary	: Chairperson	:	Mr E. George (Germany)
	Vice-Chairperson	:	Mr A. Zourmba (Cameroon)

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

United Arab Emirates

PROPOSALS FOR THE WORK OF THE CONFERENCE

PROPOSALS FOR AGENDA ITEM 7.2

ADD UAE/142/1

RESOLUTION XXX (WRC-2000)

Preliminary agenda for the 2002/03 World Radiocommunication Conference

The World Radiocommunication Conference (Istanbul, 2000),

considering

a) that, in accordance with Nos. 118 and 126 of the Convention of the International Telecommunication Union (Geneva, 1992), the general scope of the agenda for the 2002/03 World Radiocommunication Conference (WRC-02/03) should be established four years in advance and a final agenda should be established two years before the conference;

b) Article 13 of the Constitution of the International Telecommunication Union (Geneva, 1992) regarding the competence and scheduling of world radiocommunication conferences and Article 7 of the Convention (Geneva, 1992) regarding their agendas;

c) the relevant resolutions and recommendations of previous world administrative radio conferences (WARCs) and world radiocommunication conferences (WRCs),

resolves

to recommend the council that a world radiocommunication conference be held in 2003/03 for a period of four weeks with the following agenda:

1 to take appropriate action in respect of those urgent issues that were specifically requested by WRC-2000;

2 on the basis of proposals from administrations and the Report of the Conference Preparatory Meeting, and taking account of the results of WRC-2000, to consider and take appropriate action in respect of the following topics;

2.1 requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, taking into account Resolution **26 (Rev.WRC-97)**;

2.2 consideration of Article **S25** concerning the amateur and amateur-satellite services;

2.3 to consider the results of studies regarding the boundary between spurious and out-of-band emissions, and the possible inclusion of general limits for out-of-band emissions in the Radio Regulations;

2.4 review of the frequency and channel arrangements in the MF and HF bands allocated on a primary basis to the maritime mobile service, taking into account the use of new digital technology, in accordance with Resolution **347 (WRC-97)**;

2.5 sharing between the fixed-satellite service (FSS) and fixed service in the 19 GHz band, when used bidirectionally by the FSS to provide feeder links for non-geostationary-satellite orbit (non-GSO) mobile-satellite service (MSS) systems;

2.6 review of allocations to the space-research service (deep space) (space-to-Earth) and the inter-satellite service in the frequency range 32-32.3 GHz with a view to improving the sharing conditions between these services;

2.7 to consider Appendix **S13** and Resolution **331 (Rev.WRC-97)** with a view to their deletion and, if appropriate, consider related changes to Chapter SVII and other provisions of the Radio Regulations as necessary, taking into account the continued transition to the Global Maritime Distress and Safety System (GMDSS);

2.8 to consider the results of studies, and take necessary actions relating to:

2.8.1 the exhaustion of the maritime mobile service identity numbering resource (Resolution **344 (WRC-97)**);

2.8.2 shore-to-ship distress communication priorities (Resolution **348 (WRC-97)**);

2.9 examination of the adequacy of the frequency allocations for HF broadcasting from about 4 MHz to 10 MHz, taking into account the seasonal planning procedures adopted by WRC-97, and to consider bringing forward the date of availability of the HF bands allocated by WARC-92 to the broadcasting service in response to Resolution **29 (WRC-97)** and Resolution **537 (WRC-97)**;

2.10 to consider the regulatory and technical provisions for the quasi-geostationary-satellite networks;

2.11 to consider prefered frequency bands and allocation for future mobile communication systems, i.e. fourth-generation systems (beyond IMT-2000);

2.12 to consider results of ITU-R studies in accordance with Resolution **[ZZZ] (WRC-2000)** and take appropriate action on this subject;

Reasons: It is necessary to take appropriate actions by WRC-2000 in accordance with Resolution [ZZZ] to ensure spectrum availability and protection for AMS(R)S in the bands where No. S5.357A applies and GMDSS in the bands where No. S5.353A applies;

2.13 to consider additional allocation to MSS in the 1-3 GHz band, taking into account Resolution **213 (Rev.WRC-97)**;

2.14 to review the technical and regulatory provisions for enabeling the earth station on board vessels (ESV) to operate in the fixed satellite service (FSS) band 3 700-4 200 MHz and 5 925-6 425 MHz;

2.15 to review the sharing conditions between different services in the band 13.75-14 GHz in accordance with Resolution **[DDD] (WRC-2000)**;

Reasons: A Resolution is proposed at WRC-2000 asking for further studies in order to review the sharing conditions set out in No. S5.502 and Recommendation ITU-R S.1068.

3 to consider the results of the studies related to the following with a view to considering them for inclusion in the agendas of future conferences:

3.1 Resolution **528 (WARC-92)**;

3.2 possible allocations in the frequency bands above 275 GHz;

3.3 allocations on a worldwide basis for feeder links in bands around 1.4 GHz to the non-GSO MSS with service links operating below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolution **127 (WRC-97)**;

3.4 use of frequency adaptive systems in the MF/HF bands in accordance with Resolution 729 (WRC-97);

3.5 allocation of the frequency band 14.5-14.8 GHz to the FSS (Earth-to-space) in Region 3 (expansion of FSS to include other than feeder links of the broadcasting-satellite service);

4 to examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations which have been communicated by the 2001 Radiocommunication Assembly, in accordance with Resolution 28 (WRC-95); and decide whether or not to update the corresponding references in the Radio Regulations, in accordance with the principles contained in the Annex to Resolution 27 (Rev.WRC-97);

5 to consider such consequential changes and amendments to the Radio Regulations as may be necessitated by the decisions of the Conference;

6 in accordance with Resolution 95 (WRC-97), to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

7 to review, and take appropriate action on, the Report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the Convention (Geneva, 1992);

8 to identify those items requiring urgent action by the radiocommunication study groups;

9 in accordance with Article 7 of the Convention (Geneva, 1992):

9.1 to consider and approve the Report of the Director of the Radiocommunication Bureau on the activities of the Radiocommunication Sector since WRC-2000;

9.2 to recommend to the Council items for inclusion in the agenda for the 2003 World Radiocommunication Conference,

invites the Council

to consider the views given in this Resolution,

instructs the Director of the Radiocommunication Bureau

to make the necessary arrangements to convene meetings of the Conference Preparatory Meeting and to prepare a Report to WRC-01,

instructs the Secretary-General

to communicate this Resolution to concerned international and regional organizations.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

United Arab Emirates

PROPOSALS FOR THE WORK OF THE CONFERENCE

PROPOSAL FOR AGENDA ITEM 1.13.1
SHARING CONDITIONS IN 13.75-14 GHz

Introduction

On the basis of the results of the studies in accordance with Resolutions **130 (WRC-97)**, **131 (WRC-97)** and **538 (WRC-97)**, agenda item 1.13.1 requires WRC-2000: "to review and, if appropriate, revise the power limits appearing in Articles **S21** and **S22** in relation to the sharing conditions among non-GSO FSS, GSO FSS, GSO broadcasting-satellite service (BSS), space sciences and terrestrial services, to ensure the feasibility of these power limits and that these limits do not impose undue constraints on the development of these systems and services;".

In accordance with the above, technical studies have been carried out within the framework of ITU during the period between WRC-97 and WRC-2000. Those studies were carried out to develop criteria for sharing among different services in different frequency bands. One of the potential bands is 13.75-14 GHz.

The 13.75-14 GHz band is allocated on a co-primary basis to the fixed-satellite service (FSS) and the radiolocation service (RLS) under the sharing conditions prescribed in footnote S5.502. Geostationary systems in the space research service (GSO SRS) use this band under footnote S5.503.

Footnote S5.502, prescribes sharing conditions based on a minimum e.i.r.p. transmission of +68 dBW for fixed-satellite service earth stations with minimum antenna diameter of 4.5 m and a maximum e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation services towards the geostationary orbit of 59 dBW. These sharing conditions were set to provide adequate protection and compatibility for the radiolocation services (RLS) and fixed-satellite services (FSS) in the band. However, technical studies carried out in the relevant ITU study groups and working parties have shown that it is possible to maintain the protection currently afforded to RLS and FSS while reducing the constraints imposed in the sharing conditions for these services. The studies have also considered the accommodation of non-GSO fixed-satellite service (non-GSO FSS) systems in the band 13.75-14 GHz.

A number of studies, submitted to the Conference Preparatory Meeting (CPM-99) on sharing conditions between GSO FSS and RLS in the band 13.75-14 GHz, referred to the possibility of reducing the minimum antenna diameter of 4.5 m set in footnote S5.502.

In the view of the above, the Administration of the United Arab Emirates proposes modifications to footnote S5.502 (Annex 2) since the limits for the FSS are not technically justified. This

Administration is also of the opinion that a Resolution (Annex 1) should be adopted by this Conference asking the ITU to conduct further studies to develop criteria and sharing conditions that will lead to efficient use of the band by different services. Furthermore, the Resolution would ask for the suppression of the current constraint set in S5.502 and proposes the sharing conditions in S5.503 to be adopted instead.

Annexes: 2

ANNEX 1

ADD UAE/143/1

RESOLUTION XXX (WRC-2000)

Technical and operational conditions for sharing between the geostationary fixed satellite services (FSS) and the radiolocation services (RLS)

The World Radiocommunication Conference (Istanbul, 2000),

considering

a) that the band 13.75-14 GHz is allocated on a co-primary basis to the fixed-satellite services (FSS) and radiolocation services (RLS), subject to the sharing conditions set out in No. **S5.502**;

b) that the band 13.75-14 GHz is also allocated on a co-primary basis to the geostationary space stations in the space research service (GSO SRS) whose information for advance publication was received by the Bureau prior to 31 January 1992, under conditions set in No. **S5.503**, until they cease operation;

c) that the conditions set in No. **S5.502** are based on technologies, technical characteristics and applications that existed at the time footnote No. **S5.502** was adopted (WARC-92 and WRC-95);

d) that, since WRC-95, new technologies and applications have been introduced and implemented that would improve the sharing conditions between different services in the band 13.75-14 GHz;

e) that the purposes of ITU (set the definition and purpose of the Radio Regulations and ITU),

noting

a) that studies have shown that the sharing conditions set in No. **S5.502** impose severe constraints on efficient use of the band 13.75-14 GHz for existing and future satellite networks;

b) that studies have shown that, for the fixed-satellite service, adopting off-axis e.i.r.p. spectral density masks as specified for space transmissions in Section VI of Article **S22** of the Radio Regulations would provide the radiolocation service greater protection than that resulting from the sharing conditions set out in No. **S5.502**;

c) that there is an urgent need to enable economical and efficient use of the band 13.75-14 GHz by the fixed-satellite service, while maintaining the protection of the radiolocation and space research services,

resolves

1 that, with effect from the last day of WRC-2000, the limits set in No. **S5.502** relating to a minimum antenna diameter of 4.5 m and a minimum e.i.r.p. of 68 dBW applied to the fixed-satellite service in the band 13.75-14 GHz shall be suppressed, and studies are to be carried out by ITU to revise the limits at a competent conference;

2 that, with effect from the last day of WRC-2000, the off-axis e.i.r.p. density of any emission of the fixed-satellite service shall comply with the limits provided in Section VI of Article **S22**;

3 that, until the revision referred to in *resolves* 1 takes place, the sharing conditions set out in No. **S5.503** applicable to the fixed-satellite service shall continue to apply,

instructs ITU-R

1 as a matter of urgency, to carry out studies and develop sharing conditions worldwide that will lead to more efficient use of the band 13.75-14 GHz by the radiolocation, space research and fixed-satellite services, taking into account the introduction of non-GSO FSS in the band;

2 to report on the results of those studies to the Conference Preparatory Meeting for WRC-03.

ANNEX 2

ARTICLE S5

Frequency allocations

MOD UAE/143/2

S5.502 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 m~~. In addition the e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation services towards the geostationary-satellite orbit shall not exceed 59 dBW.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

Philippines (Republic of the)

PROPOSALS FOR THE WORK OF THE CONFERENCE

PHILIPPINE VIEWS FOR THE WORLD RADIOCOMMUNICATION CONFERENCE (WRC-2000)

1.1 requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, in accordance with Resolution **26 (Rev.WRC-97)**;

PHL/144/1

As reviewed, the Philippine Administration proposes the retention of its name in all related footnotes to which the Philippines is included.

1.3 to consider the results of ITU-R studies in respect of Appendix **S7/28** on the method for the determination of the coordination area around an earth station in frequency bands shared among space services and terrestrial radiocommunication services, and take the appropriate decisions to revise this Appendix;

PHL/144/2

The Philippines supports the revision of Appendix S7.

1.4 to consider issues concerning allocations and regulatory aspects related to Resolutions **126 (WRC-97)**, **128 (WRC-97)**, **129 (WRC-97)**, **133 (WRC-97)**, **134 (WRC-97)** and **726 (WRC-97)**;

PHL/144/3

The Philippines, in principle, supports the introduction of high density fixed services (HDFS) above 30 GHz and supports the need for further studies on sharing between fixed-satellite services (FSS) and other services.

1.5 to consider regulatory provisions and possible additional frequency allocations for services using high altitude platform stations, taking into account the results of ITU-R studies conducted in response to Resolution **122 (WRC-97)**;

PHL/144/4

The Philippines is of the opinion that the time-frame of Resolution 122 should be extended to the next WRC and recognizes the need for further urgent studies related to the use of HAPS in the range 18-32 GHz. The Philippines also shares the view on the need to identify additional spectrum for HAPS below 47 GHz in Region 3 to reduce the potential impact of rain attenuation on HAPS.

1.6 issues related to IMT-2000;

1.6.1 review of spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Frequency Allocations as necessary;

PHL/144/5

The Philippines recognizes the importance of providing sufficient spectrum for IMT-2000.

1.6.2 identification of a global radio control channel to facilitate multimode terminal operation and worldwide roaming of IMT-2000;

PHL/144/6

The Philippines supports the current CPM text.

1.8 to consider regulatory and technical provisions to enable earth stations located on board vessels to operate in the fixed-satellite service (FSS) networks in the bands 3 700-4 200 MHz and 5 925-6 425 MHz, including their coordination with other services allocated in these bands;

PHL/144/7

The Philippines, in principle, supports the introduction of earth stations on board vessels (ESV) provided that coordination distances and the minimum distance from coastlines are carefully studied. The Philippines also supports the continuation of technical work in ITU-R on the introduction of ESV considering that fixed stations are presently operating in this band.

1.9 to take into account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-Earth direction to the mobile-satellite service (MSS) in a portion of the 1 559-1 567 MHz frequency range, in response to Resolutions **213 (Rev.WRC-95)** and **220 (WRC-97)**;

PHL/144/8

The Philippines supports no change in the band 1 559-1 567 MHz until such time that ITU-R studies show conclusively that sharing between MSS and RNSS is feasible. The Philippines likewise supports the suppression of Resolution 220.

1.10 to consider results of ITU-R studies carried out in accordance with Resolution **218 (WRC-97)** and take appropriate action on this subject;

PHL/144/9

The Philippines supports generic allocations for MSS specifically in the bands 1 530-1 559 MHz and 1 631-1 660 MHz provided there is appropriate protection of GMDSS and AMS(R) in regard to distress and safety communications.

1.11 to consider constraints on existing allocations and to consider additional allocations on a worldwide basis for the non-geostationary (non-GSO) MSS below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolutions **214 (Rev.WRC-97)** and **219 (WRC-97)**;

PHL/144/10

Taking into account that the band below 1 GHz is used extensively, the Philippines is of the opinion that further study needs to be done on sharing with existing services and that adequate measures must first be in place before any new service is introduced in this band. The Philippines recognizes the need to review Resolution 219 at WRC-2000 to allow the continuation of studies on sharing between MSS and the meteorological aids band before additional allocations for MSS could be proposed.

1.15 issues related to the radionavigation-satellite service:

1.15.1 to consider new allocations to the radionavigation-satellite service in the range from 1 GHz to 6 GHz required to support developments;

PHL/144/11

The Philippines supports the view on the need for appropriate new allocation for RNSS and supports the bands 960-1 215 MHz and 5 000-5 030 MHz as candidate bands.

1.15.2 to consider the addition of the space-to-space direction to the radionavigation-satellite service allocations in the bands 1 215-1 260 MHz and 1 559-1 610 MHz;

PHL/144/12

The Philippines supports the addition of the space-to-space direction to the RNSS in the 1 215-1 260 MHz and 1 559-1 610 MHz bands, subject to the provision that spaceborne radionavigation receivers shall not seek protection from other existing RNSS systems or existing terrestrial radiolocation systems operating in accordance with the Table of Frequency Allocations.

1.15.3 to consider the status of allocations to services other than the radionavigation-satellite service (Nos. **S5.355** and **S5.359**) in the band 1 559-1 610 MHz;

PHL/144/13

The Philippines shares the view requesting administrations permitting the use of the band 1 559-1 610 MHz by non-RNSS services to review such use with a view to relocating these non-RNSS services to other appropriate bands.

1.17 to consider possible worldwide allocation for the Earth exploration-satellite (passive) and space research (passive) services in the band 18.6-18.8 GHz, taking into account the results of the ITU-R studies;

PHL/144/14

The Philippines, in principle, supports the allocation of the band 18.6-18.8 GHz for the Earth exploration-satellite (passive) and space research (passive) services provided that sufficient protection is provided to existing fixed stations and provided further that the same shall not constrain the development of planned and existing stations in the fixed service.

2 to examine the revised ITU-R recommendations incorporated by reference in the Radio Regulations in accordance with Resolution **28 (WRC-95)**; and decide whether or not to update the corresponding references in the Radio Regulations, in accordance with principles contained in the Annex to Resolution **27 (Rev.WRC-97)**;

PHL/144/15

The Philippines supports the principle of incorporation by reference [Resolutions 27 (Rev.WRC-97) and 28 (WRC-95)].

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 145-E
3 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Indonesia (Republic of)

PROPOSAL FOR THE WORK OF THE CONFERENCE

IMT-2000

Agenda item 1.6.1

Indonesia recognizes the importance of IMT-2000 for its future national and global requirements. This new powerful system will provide a range of broadband services, which the present 2G systems are not able to provide.

However, we also have to recognize the limited accessibility of the national telecommunication networks in developing countries - which would reduce the operational effectiveness of new broadband service such as the 3G mobile systems. Hence, our first preoccupation would be to widen the access of the national telecommunication network throughout the country, while recognizing that satellite communication systems will have a more crucial role to play until it has reached a certain traffic density that terrestrial means would become effective.

Implementing new technologies that would not reach the majority of our population will only widen the gap already existing between the metropolitan areas and the other parts of the country, which would be contrary to our goal of creating a cohesive and integrated network.

While recognizing the need of more developed regions of the globe, we should not at this juncture force ourselves to adopt global allocations that would rapidly depreciate the economic life of the existing systems - thereby burdening the developing countries with untimely additional investments.

Concerning the terrestrial component, Indonesia concurs with the conclusion relating to the identified core bands for the terrestrial part amounting to a total of 230 MHz, i.e.:

1 885-2 025 MHz;

2 110-2 200 MHz.

This amount of spectrum is considered appropriate for satisfying the main requirements of IMT-2000. It is recognized, however, that there may be situations requiring identification of additional spectrum amounting to a total of 160 MHz. It is also a fact that there is greater need to use the satellite component of the IMT-2000 for the vast areas of one’s country compared to the terrestrial part. Hence, more studies should also be devoted to the requirements of the satellite component, which is typical of the field requirements in many developing regions.

Taking into account the above considerations and the interests of the global community requiring diverse stages of developments, Indonesia proposes:

INS/145/1

Further studies are required before additional global allocations could be decided for IMT-2000. Any additional allocation should not be done before WRC-03/04, and provided that *inter alia* the following studies are taken into account:

a) the various stages of development of the existing mobile services in various regions and subregions of the world;

b) the different future requirements for the regions and subregions mentioned in point a) for their short-, medium- and long-term needs;

c) the various constraints on the existing frequency bands allocated to other services;

d) the optimum balance between the satellite and terrestrial components of the IMT-2000 system for the different requirements of each region or subregion;

e) the optimization of the use of the existing bands allocated for mobile services; and

f) the operation of IMT-2000 services in those bands, with minimum constraints to the existing services, providing sufficient time for those services to migrate from those bands, if required.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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8 May 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Pakistan (Islamic Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

PAKISTAN'S VIEWS FOR WRC-2000

Agenda item 1.2 - to finalize remaining issues in the review of Appendix S3 to the Radio Regulations with respect to spurious emissions for space services, taking into account Recommendation 66 (Rev.WRC-97) and the decisions of WRC-97 on adoption of new values, due to take effect at a future time, of spurious emissions for space services

PAK/146/1

The Pakistan Administration supports the removal of design objectives from the space services spurious emission limits and recommends to test the lowest practicable power of spurious emission. Pakistan also supports amateur earth stations operating below 30 MHz under the limits applying to other amateur terrestrial services.

Agenda item 1.3 - to consider the results of ITU-R studies in respect of Appendix S7/28 on the method for the determination of the coordination area around an earth station in frequency bands shared among space services and terrestrial radiocommunication services, and take the appropriate decisions to revise this Appendix

PAK/146/2

Pakistan supports method five of ITU-R studies, which suggests incorporating the Recommendation by reference. (It would need to be in Appendix S7 and introductory statements referring to Annex 1 of Recommendation SM.(XX) which provides the methods for determining the coordination area and to Annex 2 of Recommendation SM.(XX) which provides the system parameter table.)

Agenda item 1.4 - to consider issues concerning allocations and regulatory aspects related to Resolutions 126 (WRC-97), 128 (WRC-97), 129 (WRC-97), 133 (WRC-97), 134 (WRC-97) and 726 (WRC-97)

PAK/146/3

Support for the provisions for the use of HD applications in the fixed service (HDFS) above 30 GHz. The frequency bands 31.8-33.4 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz are listed for HDFS in footnote S5.547 and in Resolution 726. These bands should be made available for HD applications to the greatest extent possible. Furthermore, the bands 37-40 GHz and 40.5-42.5 GHz are also suitable for HDFS. Therefore, appropriate sharing criteria to protect the fixed service from other services to which these bands are allocated should be established.

Agenda item 1.5 - to consider regulatory provisions and possible additional frequency allocations for services using high altitude platform stations, taking into account the results of ITU-R studies conducted in response to Resolution 122 (WRC-97)

PAK/146/4

Frequency assignments in the 30 GHz range for high altitude platform stations (HAPS) can be preferred compared to the 47 GHz range, being less vulnerable to rain attenuation. However, in the event of using the fixed service in the band 47 GHz, there is a need to study further the sharing possibilities with terrestrial fixed services in the frequency bands 47.2-47.5 GHz and 47.9-48.2 GHz.

Agenda item 1.6.1 - review of spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Frequency Allocations as necessary

PAK/146/5

Pakistan supports the availability of additional bandwidth 160 MHz in a frequency other than that presently occupied by the second-generation mobile service. In order to facilitate the global operation of IMT-2000 a harmonized channelling plan needs to be developed by developing the facility of multiband terminals capable of operating within the initial bands (2 520-2 670 and 1 710-1 885).

Pakistan’s preferred bands

Terrestrial

2 300-2 400 MHz

2 700-2 900 MHz

Satellite

1 610-1 626 MHz

2 483.5-2 500 MHz

Agenda item 1.6.2 - identification of a global radio control channel to facilitate multimode terminal operation and worldwide roaming of IMT-2000

PAK/146/6

Pakistan supports the result of the study by ITU-R, which concludes that worldwide roaming of IMT-2000 is possible without a specific physical global radio control channel.

Agenda item 1.7 - review of the use of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting operational, distress and safety communications, taking into account Resolution 346 (WRC-97)

PAK/146/7

Frequencies of 12 290 kHz and 16 420 kHz should be exclusively allocated for distress and safety communications. Calling on radiotelephony should be employed by following strictly the Radio Regulations, i.e. first listen then call. The digital selective calling which promotes implementation of GMDSS should be encouraged.

Agenda item 1.8 - to consider regulatory and technical provisions to enable earth stations located on board vessels to operate in the fixed-satellite service (FSS) networks in the bands 3 700 - 4 200 MHz and 5 925 - 6 425 MHz, including their coordination with other services allocated in these bands

PAK/146/8

Fixed-satellite services are coordinated and no harmful interference is caused but earth stations located on board vessels keep on changing the direction both in azimuth and elevation planes. Therefore harmful interference can be caused to terrestrial fixed service and fixed-satellite services. In the light of recommendation by ITU-R studies, WRC-2000 should consider the adoption of provisional administrative numbers for the applicable distance.

Agenda item 1.9 - to take into account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-Earth direction to the mobile-satellite service (MSS) in a portion of the 1 559 - 1 567 MHz frequency range, in response to Resolutions 213 (Rev.WRC-95) and 220 (WRC-97)

PAK/146/9

ITU study on the behaviour of pseudolites should be encouraged, as these will enhance the availability and reliability of positioning information especially when the application involves safety of critical services.

Pseudolites operate in the band 1 559-1 567 MHz. Sharing between MSS and RNSS is not feasible in the band 1 559-1 567 MHz because of the importance of the radionavigation-satellite system operating in this band. Suppression of S220 is proposed.

Agenda item 1.10 - to consider results of ITU-R studies carried out in accordance with Resolution 218 (WRC-97) and take appropriate action on this subject

PAK/146/10

Pakistan supports generic allocations for MSS in the bands 1 525-1 559 MHz and 1 626.25-16 660.5 MHz provided there is appropriate protection of GMDSS and AMS(R)S.

Agenda item 1.11 - to consider constraints on existing allocations and to consider additional allocations on a worldwide basis for the non-geostationary (non-GSO) MSS below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolutions 214 (Rev.WRC-97) and 219 (WRC-97)

PAK/146/11

Because of the heavy use of frequencies below 1 GHz in Pakistan, additional frequency allocations for non-GSO MSS below 1 GHz could create sharing problems, which needs to be studied further before considering the real demand of frequency for MSS below 1 GHz.

Agenda item 1.12 - to consider the progress of studies on sharing between feeder links of non-GSO MSS networks and GSO FSS networks in the bands 19.3-19.7 GHz and 29.1-29.5 GHz, taking into account Resolution 121 (Rev.WRC-97)

PAK/146/12

ITU-R studies on mitigation techniques of interference are supported for facilitating frequency sharing between feeder links of non-GSO MSS networks and GSO FSS networks in the bands 19.3-19.7 GHz and 29.1-29.5 GHz. Resolution 121 (Rev.WRC-97) is therefore proposed to be suppressed.

Agenda item 1.13.1 - to review and, if appropriate, revise the power limits appearing in Articles S21 and S22 in relation to the sharing conditions among non-GSO FSS, GSO FSS, GSO broadcasting-satellite service (BSS), space sciences and terrestrial services, to ensure the feasibility of these power limits and that these limits do not impose undue constraints on the development of these systems and services

PAK/146/13

Pakistan supports the agreement reached at CPM regarding assessment of the limits. In case WRC-2000 deems fit to continue further studies on the conditions for sharing between GSO and non-GSO systems, *resolves* 6 of Resolution 130 should be retained.

Agenda item 1.13.2 - to consider the inclusion in other frequency bands of similar limits in Articles S21 and S22, or other regulatory approaches to be applied in relation to sharing situations

PAK/146/14

Pakistan supports that sharing criteria among services should be established. However, the criteria should not impose restrictions on existing systems.

Agenda item 1.14 - to review the results of the studies on the feasibility of implementing non-GSO MSS feeder links in the 15.43-15.63 GHz in accordance with Resolution 123 (WRC-97)

PAK/146/15

Non-GSO MSS networks should restrict out-of-band emissions in the range 15.35-15.40 so that the radio astronomy service is available for at least 98% of the time.

In future non-GSO MSS systems using the space-to-Earth allocation at 15.43-15.63, mitigation techniques suggested in the CPM Report are recommended to be adopted as these would substantially suppress the harmful interference to the radio astronomy service. Suppression of Resolution 123 is also proposed.

Agenda item 1.15 - issues related to the radionavigation-satellite service

Agenda item 1.15.1 - to consider new allocations to the radionavigation-satellite service in the range from 1 GHz to 6 GHz required to support developments

PAK/146/16

The band 960-1 215 MHz is a candidate band for an allocation to RNSS (space-to-Earth), which will augment GNSS. However, further consideration is required to investigate the potential interference mechanisms between RNSS and existing services in other bands proposed for new allocations to RNSS. In addition, there should be no restriction on existing services operating in accordance with the Table of Frequency Allocations.

Agenda item 1.15.2 - to consider the addition of the space-to-space direction to the radionavigation-satellite service allocations in the bands 1 215-1 260 MHz and 1 559-1 610 MHz

PAK/146/17

Pakistan supports the allocation of additional frequency to RNSS in the space-to-space direction in the 1 215-1 260 MHz and 1 559-1 610 MHz bands, subject to the provision that spaceborne radionavigation receivers shall not seek protection from other existing radionavigation-satellite systems or existing terrestrial radiolocation systems operating in accordance with the Table of Frequency Allocations.

Agenda item 1.15.3 - to consider the status of allocations to services other than the radionavigation-satellite service (Nos. S5.355 and S5.359) in the band 1 559-1 610 MHz

PAK/146/18

Administrations permitting use of the band 1 559-1 610 MHz by services other than RNSS are strongly urged to review such use with a view to relocating non-RNSS services to other appropriate frequency bands.

Agenda item 1.16 - to consider allocation of frequency bands above 71 GHz to the earth exploration-satellite (passive) and radio astronomy services, taking into account Resolution 723 (WRC-97)

PAK/146/19

In order to create a plan of the frequency allocation above 71 GHz, it is important to coordinate with those services which do not restrict their usage of frequency bands, as much as practicable.

Agenda item 1.17 - to consider possible worldwide allocation for the earth exploration-satellite (passive) and space research (passive) services in the band 18.6-18.8 GHz, taking into account the results of the ITU-R studies

PAK/146/20

Pakistan considers that the Earth exploration-satellite service (passive) and space research service (passive) should not be upgraded to primary status in the 18.6-18.8 GHz range unless sharing criteria between these services and FSS is established and no restrictions are imposed on high data-rate transmission in FSS. If primary allocation worldwide is to be made to EESS in the band 18.6-18.8 GHz then appropriate limits and protection must be required for the ESS, FS, MS and SRS systems.

Agenda item 1.18 - to consider the use of new digital technology for the maritime mobile service in the band 156-174 MHz and consequential revision of Appendix 18/S18, taking into account Resolution 342 (WRC-97)

PAK/146/21

Pakistan supports the adoption of the proposal. Using a single frequency channel instead of two frequency channels can enhance the spectrum efficiency in the maritime VHF band.

Agenda item 1.19 - to consider the report of the inter-conference representative group (IRG) submitted by the Director of the Radiocommunication Bureau and determine the basis for replanning by the next conference so as to afford each country an amount of spectrum that permits the economical development of a broadcasting-satellite service system

Agenda item 1.19*bis* - in accordance with Article S14, to consider objections expressed by administrations with respect to the Radio Regulations Board's Rules of Procedure relating to the application of RR 2674/S23.13 in order for the Bureau to modify its findings in accordance with the conclusions of the Conference

PAK/146/22

Pakistan does not support change in the Rules of Procedure. The Radiocommunication Bureau in this way will avoid reopening cases of systems for which information was received before 18 November 1995 and were examined/processed in accordance with these Rules of Procedure.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 147-E
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

United Kingdom of Great Britain and Northern Ireland

PROPOSALS FOR THE WORK OF THE CONFERENCE

WRC-2000 agenda item 7.2 - to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent Conference and on possible agenda items for future conferences

Introduction

The purpose of this proposal is to permit the use of the band 108-117.975 MHz for transmitting radionavigation satellite differential correction signals from ground-based augmentation systems operating in conformance with international aviation standards.

Satellite radionavigation systems can provide aircraft with information sufficiently accurate to navigate from point-to-point along the desired route. In order to provide an integrated avionics environment, civil aviation also requires landing facilities operable down to zero visibility based on satellite radionavigation systems. The present generation of satellite radionavigation systems cannot, however, provide positional information to the degree of accuracy necessary for this purpose directly to aircraft.

Landing facilities at most major airports now include the Instrument Landing System (ILS), which is based on intersecting radio beams. The ILS has been developed over several decades and in the Category III configuration does provide sufficient accuracy for zero visibility landings. However, ILS installations require constant monitoring and regular calibration to ensure that accuracy is maintained. It will certainly be to the long-term advantage of civil aviation if the accuracy of satellite radionavigation systems can be brought up to the required standard, thereby allowing any landing area to be adapted for zero visibility operations without the cost and complication of installing a full specification Category III ILS.

A simple means of enhancing accuracy of the existing satellite radionavigation systems in the vicinity of an airport is to install a Ground-Based Augmentation System (GBAS). By providing corrections to the information directly available from satellite radionavigation systems, a GBAS installation will ensure that the necessary degree of high accuracy positional information is available to support approach and landing under all conditions.

ICAO has been working for a number of years on GBAS to develop the appropriate Standards and Recommended Practices (SARPS). ICAO has also identified the band 108-117.975 MHz, allocated to the aeronautical radionavigation service, as the most appropriate to accommodate such a system. During the development of the SARPS, compatibility tests were carried out and planning criteria agreed which would allow GBAS to operate alongside the existing systems deployed in this band. The band is currently used by ILS guidance beacons at airports and

VHF Omnidirectional Radio Range (VOR) beacons for en-route navigation and terminal approach.

GBAS transmissions do not provide a direct radio guidance function. Instead, they are used for the transmission of supplementary information, in the form of differential corrections to the information obtainable from radionavigation-satellite systems. As such, GBAS transmissions cannot be considered to fall within the scope of the aeronautical radionavigation service as defined in the Radio Regulations (see Nos. S1.46, S1.42, S1.40, S1.10 and S1.9). Therefore, some appropriate amendments to the Radio Regulations are needed in order to facilitate the widescale introduction of GBAS installations. Some Administrations have already modified their national laws in order to allow the operation of GBAS in this band.

Proposal

Provisional agenda for WRC-[03] - Resolution 722 (WRC-97)

ADD G/147/1

resolves

2.8*bis* to permit the use of the band 108-117.975 MHz for transmitting radionavigation satellite differential correction signals by international aviation standard ground-based systems;

Reasons: There is a growing worldwide demand for extending the use of the aeronautical radionavigation band 108-117.975 MHz, currently used by ILS and VOR navigational aids, to include the provision of supplementary navigational information so that aircraft can determine their position and course with sufficient accuracy to land under zero visibility conditions.

To facilitate the use of the band 108-117.975 MHz to provide the additional navigational information needed to augment that directly available from satellite radionavigation systems, appropriate conditions of use for the band have to be defined. The supplementary information will be transmitted by ground-based augmentation systems, operating to ICAO standards, and will be in the form of differential corrections to the data derived from radionavigation-satellite systems. Such transmissions will be carried out in such a way that existing use of the band by the standard aeronautical radionavigation systems remains fully protected.

It is not envisaged that this additional agenda item would have an adverse impact on Conference resources since the required action may be implemented quite simply through an additional footnote modelled on No. S5.73, which was adopted at WRC-97 to achieve a similar purpose in respect of aids to maritime navigation.

An example of how the agenda item could be satisfied is shown in the following footnote and related definition:

ADD G/147/2

[S5.197A] The band 108-117.975 MHz in the aeronautical radionavigation service may be used to transmit supplementary navigational information, using ground-based augmentation systems conforming to recognized international aviation standards, on condition that no harmful interference is caused to ILS localizer stations or VOR guidance beacon stations operating in the aeronautical radionavigation service.

ADD G/147/3

[S1.107A] *VHF Omnidirectional Radio Range system (VOR):* A *radionavigation* system which provides aircraft with a continuous and automatic presentation of bearing information from a known ground location.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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COMMITTEE 5
COMMITTEE 4

Gabonese Republic

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda item 1.6 - issues related to IMT-2000

Agenda item 1.6.1 - terrestrial component of IMT-2000

This proposal is fully in keeping with the position of the Africa Group as expressed in the first paragraph of its proposal AFR/137/1, as well as with that of the 27 administrations (including Gabon) that are signatories to Document 154.

In accordance with these two documents, administrations could choose from among the frequency bands referred to in this regard in the CPM Report, namely 470-806 MHz, 806-960 MHz, 1 429-1 501 MHz, 1 710-1 885 MHz, 2 290-2 300 MHz, 2 300-2 400 MHz, 2 520-2 670 MHz and 2 700-2 900 MHz, bearing in mind the associated advantages and disadvantages, the additional spectrum (identified as 160 MHz) needed to meet the terrestrial component requirements for IMT-2000 in the implementation of their national plan.

ADD GAB/148/2

S5.XXX *Additional allocation*: In Gabon, the bands 806-960 MHz and 2 520-2 670 MHz are also intended to be used for the implementation of IMT-2000. However, the use of these bands by the services to which they are allocated in accordance with Article **S5** of the Radio Regulations remains a priority.

Agenda item 1.6.2 - identification of a global radio control channel to facilitate multimode terminal operation and worldwide roaming of IMT-2000

GAB/148/3

Gabon supports the view of CPM to the effect that no decision needs to be taken by WRC-2000 in this regard.

Agenda item 1.8 - to consider regulatory and technical provisions to enable earth stations located on board vessels to operate in the fixed-satellite service (FSS) networks in the bands 3 700-4 200 MHz and 5 925-6 425 MHz, including their coordination with other services allocated in these bands

GAB/148/4

Gabon favours option 2 proposed by CPM to the effect that no change be made to the existing Radio Regulations with respect to this agenda item on account of the amount of legal and technical work that would have to be done and of the complexity of the treaty status provisions that comprise the Radio Regulations and the United Nations Convention on the Law of the Sea, including those relating to treatment of fixed stations on off-shore structures and platforms outside the territorial sea.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Addendum 1 to Document 148-E 11 May 2000 Original: French

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

Gabonese Republic

PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda item 1.6 - issues related to IMT-2000-05-11

1.6.1 review of spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Frequency Allocations as necessary

This proposal is fully in keeping with the position of the Africa Group as expressed in the first paragraph of its proposal AFR/137/1, as well as with that of the 27 administrations (including Gabon) that are signatories to Document 154.

In accordance with these two documents, administrations could choose from among the frequency bands referred to in this regard in the CPM report, namely 470-860 MHz, 806-960 MHz, 1 429-1 501 MHz, 1 710-1 885 MHz, 2 290-2 300 MHz, 2 300-2 400 MHz, 2 520-2 670 MHz and 2 760-2 900 MHz, bearing in mind the associated advantages and disadvantages, the additional spectrum (identified as 160 MHz) required for the introduction of IMT-2000 in their national plan.

ADD GAB/148/2

S5.XXX *Additional allocation*: In Gabon, the bands 470-860 MHz, 806-960 MHz and 2 520-2 670 MHz are also intended to be used for the implementation of IMT-2000. However, the use of these bands by the services to which they are allocated in accordance with Article **S5** of the Radio Regulations is not precluded.

Agenda item 1.6.2 - identification of a global radio control channel to facilitate multimode terminal operation and worldwide roaming of IMT-2000

GAB/148/3

Gabon supports the view of CPM to the effect that no decision needs to be taken by WRC-2000 in this regard.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

Gabonese Republic

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda item 1.1 - requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, in accordance with Resolution 26 (Rev.WRC-97)

At WARC-92, Gabon submitted a proposal confirming that the band 430-440 MHz was allocated to the fixed service on a primary basis in Gabon.

At the time, several low-capacity analogue radio-relay stations were in operation in Gabon in that band.

Now, these stations have gradually been replaced by digital radio-relay stations operating in the bands allocated to the fixed service under the Radio Regulations (Article S5).

MOD GAB/148/1

S5.277 *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Cameroon, the Congo, Djibouti, ~~Gabon,~~ Georgia, Hungary, Kazakstan, Latvia, Mali, Moldova, Mongolia, Uzbekistan, Pakistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Rwanda, Tajikistan, Chad, Turkmenistan and Ukraine, the band 430-440 MHz is also allocated to the fixed service on a primary basis.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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Note by the Secretary-General

CONFERENCE STRUCTURE OF THE WORLD RADIOCOMMUNICATION CONFERENCE (WRC-2000)

Istanbul, 2000

(Approved at the first Plenary Meeting)

The agenda of the Conference appears in Council Resolution 1130. Bearing in mind Nos. 18 to 29 inclusive of the Rules of Procedure of Conferences and other Meetings of the International Telecommunication Union, Minneapolis, 1998 (hereafter, Rules of Procedure), the following committees with their terms of reference are suggested. These terms of reference have been drawn up within the framework of the basic texts of the Union, the Conference agenda and in the light of experience at previous conferences.

Committee 1 - Steering Committee

Terms of reference:

To coordinate all matters connected with the smooth execution of work and to plan the order and number of meetings, avoiding overlapping wherever possible in view of the limited number of members of some delegations (No. 22 of the Rules of Procedure, Minneapolis, 1998).

Committee 2 - Credentials Committee

Terms of reference:

To verify the credentials of delegations and to report on its conclusions to the Plenary Meeting within the time specified by the latter (No. 23 of the Rules of Procedure, Minneapolis, 1998).

Committee 3 - Budget Control Committee

Terms of reference:

To determine the organization and the facilities available to the delegates, to examine and approve the accounts for expenditure incurred throughout the duration of the Conference, and to report to the Plenary Meeting the estimated total expenditure of the Conference, as well as an estimate of the costs that may be entailed by the execution of the decisions taken by such a Conference (Nos. 26 to 28 of the Rules of Procedure, Minneapolis, 1998).

Committee 4 - Regulatory and Associated Issues

Terms of reference:

On the basis of proposals by administrations and the Report from the Conference Preparatory Meeting, taking account of the results of the 1997 World Radiocommunication Conference (WRC-97), and with due regard to the requirements of existing and future services in the bands under consideration, to consider and take appropriate action in respect of the following topics:

1 requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, in accordance with Resolution **26 (Rev.WRC-97) (*item 1.1)**;

2 to finalize remaining issues in the review of Appendix **S3** to the Radio Regulations with respect to spurious emissions for space services, taking into account Recommendation **66 (Rev.WRC-97)** and the decisions of WRC-97 on adoption of new values, due to take effect at a future time, of spurious emissions for space services **(*item 1.2)**;

3 to consider the results of ITU-R studies in respect of Appendix **S7/28** on the method for the determination of the coordination area around an earth station in frequency bands shared among space services and terrestrial radiocommunication services, and take the appropriate decisions to revise this Appendix **(*item 1.3)**;

4 to consider regulatory and technical provisions to enable earth stations located on board vessels to operate in the fixed-satellite service (FSS) networks in the bands 3 700-4 200 MHz and 5 925-6 425 MHz, including their coordination with other services allocated in these bands **(*item 1.8)**;

5 at the request of GT PLEN-1 to consider any issue related to the application of Nos. **S9.8**, **S9.9** and **S9.17** and the corresponding parts of Appendix **S5** with respect to Appendices **S30** and **S30A**, with a view to possible deletion of Articles 6 and 7 of Appendices **S30** and **S30A**, also taking into consideration Recommendation **35 (WRC-95) (*item 1.20)**;

6 to examine the revised ITU-R recommendations incorporated by reference in the Radio Regulations in accordance with Resolution **28 (WRC-95)**; and decide whether or not to update the corresponding references in the Radio Regulations, in accordance with principles contained in the Annex to Resolution **27 (Rev.WRC-97) (*item 2)**;

7 in accordance with Resolution **95 (WRC-97)**, to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation **(*item 4)**;

8 Resolutions 80, 85, 86, 87 and 88 of the Plenipotentiary Conference (Minneapolis, 1998);

9 to consider any other item submitted to the Committee by the Plenary.

Committee 5 - Allocations and Associated Issues

Terms of reference:

On the basis of proposals by administrations and the Report from the Conference Preparatory Meeting, taking account of the results of the 1997 World Radiocommunication Conference (WRC-97), and with due regard to the requirements of existing and future services in the bands under consideration, to consider and take appropriate action in respect of the following topics:

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* References in parentheses relate to WRC agenda item numbers, according to Council Resolution 1130.

1 to consider issues concerning allocations and regulatory aspects related to Resolutions **126 (WRC-97)**, **128 (WRC-97)**, **129 (WRC-97)**, **133 (WRC-97)**, **134 (WRC-97)** and **726 (WRC-97) (*item 1.4)**;

2 to consider regulatory provisions and possible additional frequency allocations for services using high altitude platform stations, taking into account the results of ITU-R studies conducted in response to Resolution **122 (WRC-97) (*item 1.5)**;

3 issues related to IMT-2000:

3.1 review of spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Frequency Allocations as necessary **(*item 1.6.1)**;

3.2 identification of a global radio control channel to facilitate multimode terminal operation and worldwide roaming of IMT-2000 **(*item 1.6.2)**;

4 review of the use of the HF bands by the aeronautical mobile (R) and maritime-mobile services with a view to protecting operational, distress and safety communications, taking into account Resolution **346 (WRC-97) (*item 1.7)**;

5 to take into account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-Earth direction to the mobile-satellite service (MSS) in a portion of the 1 559-1 567 MHz frequency range, in response to Resolutions **213 (Rev.WRC-95)** and **220 (WRC-97) (*item 1.9)**;

6 to consider results of ITU-R studies carried out in accordance with Resolution **218 (WRC-97)** and take appropriate action on this subject **(*item 1.10)**;

7 to consider constraints on existing allocations and to consider additional allocations on a worldwide basis for the non-geostationary (non-GSO) MSS below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolutions **214 (Rev.WRC-97)** and **219 (WRC-97) (*item 1.11)**;

8 to consider the progress of studies on sharing between feeder links of non-GSO MSS networks and GSO FSS networks in the bands 19.3-19.7 GHz and 29.1-29.5 GHz, taking into account Resolution **121 (Rev.WRC-97) (*item 1.12)**;

9 on the basis of the results of the studies in accordance with Resolutions **130 (WRC-97)**, **131 (WRC-97)** and **538 (WRC-97)**:

9.1 to review and, if appropriate, revise the power limits appearing in Articles **S21** and **S22** in relation to the sharing conditions among non-GSO FSS, GSO FSS, GSO broadcasting-satellite service (BSS), space sciences and terrestrial services, to ensure the feasibility of these power limits and that these limits do not impose undue constraints on the development of these systems and services **(*item 1.13.1)**;

9.2 to consider the inclusion in other frequency bands of similar limits in Articles **S21** and **S22**, or other regulatory approaches to be applied in relation to sharing situations **(*item 1.13.2)**;

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* References in parentheses relate to WRC agenda item numbers, according to Council Resolution 1130.

10 to review the results of the studies on the feasibility of implementing non-GSO MSS feeder links in the 15.43-15.63 GHz in accordance with Resolution **123 (WRC-97) (*item 1.14)**;

11 issues related to the radionavigation-satellite service:

11.1 to consider new allocations to the radionavigation-satellite service in the range from 1 GHz to 6 GHz required to support developments **(*item 1.15.1)**;

11.2 to consider the addition of the space-to-space direction to the radionavigation-satellite service allocations in the bands 1 215 -1 260 MHz and 1 559-1 610 MHz **(*item 1.15.2)**;

11.3 to consider the status of allocations to services other than the radionavigation-satellite service (Nos. **S5.355** and **S5.359**) in the band 1 559-1 610 MHz **(*item 1.15.3)**;

12 to consider allocation of frequency bands above 71 GHz to the earth exploration-satellite (passive) and radio astronomy services, taking into account Resolution **723 (WRC-97) (*item 1.16)**;

13 to consider possible worldwide allocation for the earth exploration-satellite (passive) and space research (passive) services in the band 18.6-18.8 GHz, taking into account the results of the ITU-R studies **(*item 1.17)**;

14 to consider the use of new digital technology for the maritime-mobile service in the band 156-174 MHz and consequential revision of Appendix **18/S18**, taking into account Resolution **342 (WRC-97) (*item 1.18)**;

15 to consider any other item submitted to the Committee by the Plenary.

Committee 6 - Editorial Committee

Terms of reference:

To perfect the form of the texts to be included in the Final Acts of the Conference without altering the sense, for submission to the Plenary Meeting (Nos. 24 and 25 of the Rules of Procedure, Minneapolis, 1998).

Working Group 1 of the Plenary

Terms of reference:

1 to consider the report of the Inter-conference Representative Group (IRG) submitted by the Director of the Radiocommunication Bureau and determine the basis for replanning so as to afford each country an amount of spectrum that permits the economical development of a broadcasting-satellite service system **(*item 1.19)**;

2 in accordance with Article **S14**, to consider objections expressed by administrations with respect to the Radio Regulations Board's Rules of Procedure relating to the application of RR2674/S23.13 in order for the Bureau to modify its findings in accordance with the conclusions of the Conference **(*item 1.19*bis*)**;

3 to consider the issues related to the application of Nos. **S9.8**, **S9.9** and **S9.17** and the corresponding parts of Appendix **S5** with respect to Appendices **S30** and **S30A**, with a view to possible deletion of Articles 6 and 7 of Appendices **S30** and **S30A**, also taking into consideration Recommendation **35 (WRC-95) (*item 1.20)**;

4 to consider the report from the Radiocommunication Bureau on results of the analysis in accordance with Resolution **53 (WRC-97)** and take appropriate actions **(*item 1.21)**;

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* References in parentheses relate to WRC agenda item numbers, according to Council Resolution 1130.

5 to consider any other item submitted to the Working Group by the Plenary.

Working Group 2 of the Plenary

Terms of reference:

1 to review, and take appropriate action on those items of the report from the Radiocommunication Assembly submitted in accordance with Nos. 135 and 136 of the Convention (Geneva, 1992) **(*item 5)**;

2 to identify those items requiring urgent action by the radiocommunication study groups in preparation for the next world radiocommunication conference **(*item 6)**;

3 in accordance with Article 7 of the Convention (Geneva, 1992);

3.1 to consider and approve the report of the Director of the Radiocommunication Bureau on the activities of the Radiocommunication Sector since WRC-97 **(*item 7.1)**;

3.2 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent Conference and on possible agenda items for future conferences **(*item 7.2)**;

4 to consider any other item submitted to the Working Group by the Plenary.

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* References in parentheses relate to WRC agenda item numbers, according to Council Resolution 1130.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 150-E
16 May 2000
Original: French/ English/ Spanish

ISTANBUL, 8 MAY – 2 JUNE 2000

LIST OF DOCUMENTS ISSUED
(Documents 101 – 150)

DOCUMENT NUMBER	***SOURCE***	***TITLE***	***DESTINATION***
101	INS	Proposals for the work of the Conference	C4
102	POL	Proposals for the work of the Conference	C4
103	BUL	Proposals for the work of the Conference	C4
104	SG	ABU information paper	C4, C5, WG PLEN-1
105	INS	Proposals for the work of the Conference	C4
106	ARM	Proposals for the work of the Conference	C4
107	AUS/KOR/ J/NZL	Proposals for the work of the Conference	C4
108	INS	Proposal for the work of the Conference	C5
109	INS	Proposal for the work of the Conference	C5
110	SG	Financial responsibilities of Conferences	C3
111	SG	Budget of the World Radiocommunication Conference (WRC-2000)	C3
112	SG	Contribution of organizations of an international character and Sector Members	C3
113	SG	Invitations	C2
114	SG	Participation requests submitted by international organizations	C2
115	KEN/UGA/ TZA	Proposals for the work of the Conference	C4, C5, WG PLEN-1

DOCUMENT NUMBER	*SOURCE*	*TITLE*	*DESTINATION*
116	SG	Report on the changes in the allocation of call signs between WRC-97 and WRC-2000	C4
117	D/AUT/ LIE/SUI	Proposal for the work of the Conference	WG PLEN-1
118	SG	Agreement between the government of Turkey and the Secretary-General of the International Telecommunication Union	C3
119	F	PFD Limits for the radionavigation-satellite service	C5
120	F	Proposals for the work of the Conference	C4
121	NZL	Proposal for the work of the Conference	WG PLEN-2
122 + Corr.1	CME	Proposals for the work of the Conference	C4, C5, WG PLEN-1, WG PLEN-2
123	KEN	Proposals for the work of the Conference	C4, C5
124	TUR	Proposals for the work of the Conference	C4
125	F	Proposals for the work of the Conference	C5
126 + Add.1	IRN	Proposals for the work of the Conference	C4, C5, WG PLEN-1
127	E	Proposals for the work of the Conference	WG PLEN-2
128	F/HOL/G/SUI	Proposals for the work of the Conference	C5
129	SG	Information paper on the EUROCONTROL position for the Conference	C5
130	SG	INTELSAT views on WRC-2000 issues	PL
131	SG	GSM Association views relating to agenda item 1.6.1	PL
132(Rev.1)	SG	Loss of the right to vote	C2
133 + Add.1 + Corr.1	J	Proposals for the work of the Conference	C4, C5, WG PLEN-1, WG PLEN-2
134	F	Proposal for the work of the Conference	C4

DOCUMENT NUMBER	*SOURCE*	*TITLE*	*DESTINATION*
135 + Corr.1	CVA/HOL/ G/UKR	Proposals for the work of the Conference	WG PLEN-2
136	USA	Information paper	C5
137 + Corrs	AFR	Africa Group common proposals for the work of the Conference	C4, C5, WG PLEN-1
138	IND	Proposal for the agenda of WRC-03 (agenda item 7.2)	C4, C5, WG PLEN-2
139	UKR	Proposals for the work of the Conference	C4, C5
140	SG	Secretariat of the Conference	PL
141	SG	Chairpersons and Vice-Chairpersons of the Conference	PL
142	UAE	Proposals for the work of the Conference	WG PLEN-2
143	UAE	Proposals for the work of the Conference	C5
144	PHL	Proposals for the work of the Conference	C4, C5, WG PLEN-1
145	INS	Proposal for the work of the Conference	C5
146	PAK	Proposals for the work of the Conference	C4, C5, WG PLEN-1
147	G	Proposals for the work of the Conference	WG PLEN-2
148 + Add.1 + Add.1(Rev.1)	GAB	Proposals for the work of the Conference	C4, C5
149	SG	Conference Structure of the World Radiocommunication Conference (WRC-2000)	PL
150	BR	List of documents issued (101 - 150)	-

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 151-E
8 May 2000
Original: French
English
Spanish

ISTANBUL, 8 MAY – 2 JUNE 2000

WORKING GROUP 1
OF THE PLENARY

Croatia (Republic of), Hungary (Republic of), Slovak Republic, Czech Republic

PROPOSAL FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 1.19

Review and possible revision of the 1997 Broadcasting-Satellite Service Plans contained in the RR Appendices S30 and S30A for Regions 1 and 3

Identical beams for Croatia, Hungary, Slovakia and Czech Republic

1 Introduction

Agenda item 1.19 emphasizes the need for economical viability of the BSS assignments. Cooperation between neighbouring countries with similar cultural associations is a prime possibility to enhance the economical viability of national beams whilst not requesting additional transmission frequencies.

Based on the multilateral agreement between the Administrations of Croatia, Hungary, Slovakia and Czech Republic, and the common request to IRG to investigate the inclusion of the four national beams (hereinafter joint coverage beams), each of them covering the composite territory of HRV, HNG, SVK, CZE from the common orbital position in the revision of the 1997 BSS Plans, IRG decided to investigate the proposal and asked the Bureau to perform the study.

Results of the studies undertaken by IRG and BR (Document WRC2000/34 and its Addendum 5) demonstrated that it is feasible to accommodate the proposed joint coverage beams for the Administrations of Croatia, Hungary, Slovakia and Czech Republic without creating more interference than national coverage beams (i.e. no EPM excess).

Croatia, Hungary, Slovakia and Czech Republic are located within the same geographical area and have common borders. The people of these countries have strong cultural similarities. Resolution 532 (WRC-97) includes the possibility for such types of identical beams covering cooperating neighbouring countries in its Annex 1, Principle 2, which states that planning should be based mainly on national coverage, which is a clear indication that the approach adopted is fully consistent with the guiding principles of Resolution 532.

2 Proposal

HRV/HNG/SVK/CZE/151/1

If WRC decides to revise the 1997 Broadcasting-Satellite Service Plans contained in the RR Appendices S30 and S30A for Regions 1 and 3, the Administrations of Croatia, Hungary, Slovakia and Czech Republic request to include in the revised BSS Plans the joint coverage beams as contained in the IRG/BR study in Document WRC2000/34 and its Addendum 5.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 152-E
8 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

Hungary (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

CORRECTIONS IN ARTICLE S5 OF THE RADIO REGULATIONS

1 Introduction

Article S5 of the Radio Regulations (edition of 1998) contains several inconsistencies, ambiguities and editorial errors. Furthermore, there are some discrepancies between the English and French texts and in most cases the French version is incorrect. However, according to the Constitution of the ITU, in case of discrepancy, the French text shall prevail. These errors should be corrected.

In accordance with *further resolves* 3 of Resolution 26 (Rev.WRC-97), proposals for new footnotes or modification of existing footnotes could exceptionally be considered by a world radiocommunication conference if they concern corrections of obvious omissions, inconsistencies, ambiguities or editorial errors.

2 Proposals for eliminating inconsistencies

1) **Error:** Footnote S5.120 still refers to Resolution 640.

HNG/152/1

Proposal: Delete footnote S5.120.

Reasons: Resolution 640 was abrogated by WRC-97, therefore there is no need for footnote S5.120.

2) **Error:** The Table of Frequency Allocations still refers to footnote S5.149 in the band 75.4-87 MHz, in column Region 3.

HNG/152/2

Proposal: Delete S5.149 from the band 75.4-87 MHz in column Region 3 of the Table of Frequency Allocations.

Reasons: WRC-97 deleted the text “79.75-80.25 MHz in Region 3” from footnote S5.149, however, the corresponding change has not been made in the Table.

3) **Error:** In accordance with footnote S5.536A, administrations installing earth exploration-satellite earth stations in the band 25.5-27 GHz cannot claim protection from fixed and mobile stations operated by neighbouring administrations. This means indirectly that they can claim protection from land stations operated by neighbouring administrations.

HNG/152/3

Proposal: Replace “from fixed and mobile stations” by “from stations of the fixed and mobile services” in footnote S5.536A.

Reasons: It cannot be justified that protection cannot be claimed from fixed stations of the fixed service and mobile stations of the mobile service but can be claimed from land stations of the mobile service. In a similar footnote (S5.536B) relevant to the same band and service protection cannot be claimed from all kinds of stations of the fixed and mobile services.

3 Proposals for correcting editorial errors

1) **Error:** The Table of Frequency Allocations contains the word “SERVICE” in the band 5 150-5 250 MHz.

HNG/152/4

Proposal: Delete the word “SERVICE” from “FIXED-SATELLITE SERVICE” in the band 5 150-5 250 MHz of the Table.

Reasons: This is the only band where the word “service” appears in the Table.

4 Proposals for correcting editorial errors in the French edition of the RR in order to eliminate discrepancies between the English and French texts

1) **Error:** Footnote S5.154 contains Belarus in the French edition of the RR.

HNG/152/5

Proposal: Delete Belarus from footnote S5.154 in the French edition of the RR.

Reasons: Footnote S5.154 does not contain Belarus in the English edition of the RR and in the Final Acts of WRC-97.

2) **Error:** At the end of the first sentence in footnote S5.203 in the French edition of the RR, the expression “service aéronautique” is incorrect.

HNG/152/6

Proposal: Replace “service aéronautique” by “service mobile aéronautique”.

Reasons: The “service aéronautique” is not defined in Article S1, and the corresponding expression in the English edition is: “aeronautical mobile service”.

3) **Error:** At the end of the first sentence in footnote S5.311 in the French edition of the RR, the reference to Resolution 33 is incorrect.

HNG/152/7

Proposal: Replace “Résolutions 33 (CMR-97)” by “Résolutions 33 (Rév.CMR-97)”.

Reasons: It is necessary to align the reference to this Resolution with the English edition and the correct name of this Resolution.

4) **Error:** At the end of footnote S5.388 in the French edition of the RR, the reference to Resolution 212 is incorrect.

HNG/152/8

Proposal: Replace “Résolution 212 (CMR-95)” by “Résolution 212 (Rév.CMR-97)”.

Reasons: It is necessary to align the reference to this Resolution with the English edition and the Final Acts of WRC-97.

5) **Error:** In the French edition of the RR, the earth exploration-satellite (Earth-to-space) service is secondary in the band 40-40.5 GHz.

HNG/152/9

Proposal: Replace “Exploration de la Terre par satellite (Terre vers espace)” by “EXPLORATION DE LA TERRE PAR SATELLITE (Terre vers espace)”.

Reasons: This service is primary in the English edition and in the RR edition of 1996, and the WRC-97 did not change the allocation of the band 40-40.5 GHz.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 153-E
9 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

ORGANIZATION OF THE WORK OF COMMITTEE 5

To cover the Conference agenda items assigned to Committee 5, the following Working Groups have been agreed:

Working Group 5A (WG 5A)

Terms of reference

To consider, with due regard to the requirements of existing and future services in the bands under consideration:

- Agenda item 1.6 - issues related to IMT-2000:

  1.6.1 - review of spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000, noting that there is an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Frequency Allocations as necessary;

  1.6.2 - identification of a global radio control channel to facilitate multimode terminal operation and worldwide roaming of IMT-2000.

- Agenda item 1.10 - to consider results of ITU-R studies carried out in accordance with Resolution **218 (WRC-97)**.

- Agenda item 1.11 - to consider constraints on existing allocations and to consider additional allocations on a worldwide basis for the non-geostationary (non-GSO) MSS below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolutions **214 (Rev.WRC-97)** and **219 (WRC-97)**.

Documents: See DT/1, DT/4

Chairperson: Mr A. Jamieson Box 599

Secretary: Mr F. Leite Box 2904

Working Group 5B (WG 5B)

Terms of reference

To consider, with due regard to the requirements of existing and future services in the bands under consideration:

- Agenda item 1.7 - review of the use of the HF bands by the aeronautical mobile (R) and maritime mobile services with a view to protecting operational, distress and safety communications, taking into account Resolution **346 (WRC-97)**.
- Agenda item 1.9 - to take into account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-Earth direction to the mobile-satellite service (MSS) in a portion of the 1 559-1 567 MHz frequency range, in response to Resolutions **213 (Rev.WRC-95)** and **220 (WRC-97)**.
- Agenda item 1.15 - issues related to the radionavigation-satellite service:

  1.15.1 - to consider new allocations to the radionavigation-satellite service in the range from 1 GHz to 6 GHz required to support developments;

  1.15.2 - to consider the addition of the space-to-space direction to the radionavigation-satellite service allocations in the bands 1 215-1 260 MHz and 1 559-1 610 MHz;

  1.15.3 - to consider the status of allocations to services other than the radionavigation-satellite service (Nos. **S5.355** and **S5.359**) in the band 1 559-1 610 MHz.
- Agenda item 1.18 - to consider the use of new digital technology for the maritime mobile service in the band 156-174 MHz and consequential revision of Appendix **18/S18**, taking into account Resolution **342 (WRC-97)**.

Documents: See DT/1, DT/4

Chairperson: Mr T. Mizuike Box 132

Secretary: Mr A. Sion Box 2962

Working Group 5C (WG 5C)

Terms of reference

To consider, with due regard to the requirements of existing and future services in the bands under consideration:

- Agenda item 1.4 - to consider issues concerning allocations and regulatory aspects related to Resolutions **126 (WRC-97)**, **128 (WRC-97)**, **129 (WRC-97)**, **133 (WRC-97)**, **134 (WRC-97)** and **726 (WRC-97)**.
- Agenda item 1.5 - to consider regulatory provisions and possible additional frequency allocations for services using high altitude platform stations, taking into account the results of ITU-R studies conducted in response to Resolution **122 (WRC-97)**.
- Agenda item 1.16 - to consider allocation of frequency bands above 71 GHz to the earth exploration-satellite (passive) and radio astronomy services, taking into account Resolution **723 (WRC-97)**.
- Agenda item 1.17 - to consider possible worldwide allocation for the earth exploration-satellite (passive) and space research (passive) services in the band 18.6-18.8 GHz, taking into account the results of the ITU-R studies.

Documents: See DT/1, DT/4

Chairperson: Mr D. Jansky Box 5

Secretary: Mr L. Casado Box 2901

Working Group 5D (WG 5D)

Terms of reference

To consider, with due regard to the requirements of existing and future services in the bands under consideration:

- Agenda item 1.12 - to consider the progress of studies on sharing between feeder links of non-GSO MSS networks and GSO FSS networks in the bands 19.3-19.7 GHz and 29.1-29.5 GHz, taking into account Resolution **121 (Rev.WRC-97)**.
- Agenda item 1.13 - on the basis of the results of the studies in accordance with Resolutions **130 (WRC-97)**, **131 (WRC-97)** and **538 (WRC-97)**:

  1.13.1 - to review and, if appropriate, revise the power limits appearing in Articles **S21** and **S22** in relation to the sharing conditions among non-GSO FSS, GSO FSS, GSO broadcasting-satellite service (BSS), space sciences and terrestrial services, to ensure the feasibility of these power limits and that these limits do not impose undue constraints on the development of these systems and services;

  1.13.2 - to consider the inclusion in other frequency bands of similar limits in Articles **S21** and **S22**, or other regulatory approaches to be applied in relation to sharing situations.
- Agenda item 1.14 - to review the results of the studies on the feasibility of implementing non-GSO MSS feeder links in the 15.43-15.63 GHz in accordance with Resolution **123 (WRC-97)**.

Documents: See DT/1, DT/4

Chairperson: Mr J. Leary Box 937

Secretary: Mr J. Li Box 2905

All Committee 5 Working Groups

Agenda item 4 - Working Groups shall also review, in accordance with Resolution **95 (WRC-97)**, the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation.

Chris van DIEPENBEEK
Chairperson, Committee 5, Box 120

J.A. LEWIS
Secretary, Committee 5, Box 2968

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

Corrigendum 2 to Document 154-E
15 May 2000
Original: English

WORKING GROUP 1 OF THE PLENARY COMMITTEE 5

Algeria (People's Democratic Republic of), Germany (Federal Republic of), Andorra (Principality of), Saudi Arabia (Kingdom of), Belgium, Burkina Faso, Cameroon (Republic of), Central African Republic, Côte d'Ivoire (Republic of), Denmark, Spain, Finland, France, Gabonese Republic, Ghana, Ireland, Latvia (Republic of), Lebanon, Liechtenstein (Principality of), Lithuania (Republic of), Luxembourg, Mali (Republic of), Morocco (Kingdom of), Norway, Portugal, Romania, United Kingdom of Great Britain and Northern Ireland, Senegal (Republic of), Sweden, Switzerland (Confederation of), Chad (Republic of), Tunisia

PROPOSAL FOR THE WORK OF THE CONFERENCE

POSSIBLE ELEMENTS TOWARDS AN AGREEMENT AT WRC-2000

Please make the following change to Document 154:

1) Add the following country as co-sponsor to this document: Central African Republic.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Corrigendum 1 to Document 154-E 11 May 2000 Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5 WORKING GROUP 1 OF THE PLENARY

Algeria (People's Democratic Republic of), Germany (Federal Republic of), Andorra (Principality of), Saudi Arabia (Kingdom of), Belgium, Burkina Faso, Cameroon (Republic of), Côte d'Ivoire (Republic of), Denmark, Spain, Finland, France, Gabonese Republic, Ghana, Ireland, Latvia (Republic of), Lebanon, Liechtenstein (Principality of), Lithuania (Republic of), Luxembourg, Mali (Republic of), Morocco (Kingdom of), Norway, Portugal, Romania, United Kingdom of Great Britain and Northern Ireland, Senegal (Republic of), Sweden, Switzerland (Confederation of), Chad (Republic of), Tunisia

PROPOSALS FOR THE WORK OF THE CONFERENCE

POSSIBLE ELEMENTS TOWARDS AN AGREEMENT AT WRC-2000

Please add the following countries as co-sponsors to this document:

– Tunisia, Spain, Burkina Faso and Andorra.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 154-E
9 May 2000
Original: French
English
Spanish

ISTANBUL, 8 MAY – 2 JUNE 2000

WORKING GROUP 1
OF THE PLENARY
COMMITTEE 5

[Algeria (People's Democratic Republic of), Germany (Federal Republic of), Saudi Arabia (Kingdom of), Belgium, Cameroon (Republic of), Côte d'Ivoire (Republic of), Denmark, Finland, France, Gabonese Republic, Ghana, Ireland, Latvia (Republic of), Lebanon, Liechtenstein (Principality of), Lithuania (Republic of), Luxembourg, Mali (Republic of), Morocco (Kingdom of), Norway, Portugal, Romania, United Kingdom of Great Britain and Northern Ireland, Senegal (Republic of), Sweden, Switzerland (Confederation of), Chad (Republic of)]

PROPOSALS FOR THE WORK OF THE CONFERENCE

POSSIBLE ELEMENTS TOWARDS AN AGREEMENT AT WRC-2000

The WRC-2000 agenda contains an unprecedented number of important and complex issues. In order for the Conference to agree on these issues and adopt the required decisions, compromises between administrations are necessary at the early stage of the Conference on the main issues on the agenda of the Conference. In the spirit of Resolution 72 (WRC-97) and in order to facilitate the work of the Conference in reaching such compromises, the above-mentioned Administrations have agreed to the following proposals.

A BSS replanning

The Conference will need to take the principal decisions required for replanning, at the latest at the end of the first week of the Conference, in order to allow the Conference Secretariat to prepare a final Plan while ensuring compatibility between the new Plan and the assignments for which the procedure of Article 4 has been successfully completed, as well as with the other services.

1 The Conference should adopt the planning exercise presented by the Bureau on the basis of the work of IRG, as the Regions 1 and 3 BSS Plan, limited to national coverage, amended by the Conference, as necessary, to ensure compatibility with the BSS assignments in the three Regions and with the other services. This Plan will normally contain ten channels per coverage area for Region 1, representing a continuous band of 400 MHz. This Plan will also include the additional assignments for national coverage appearing in the Appendix S30 Plan as adopted by WRC-97.

In exceptional cases, the minimum ellipse size may be extended in order to permit the common operation of satellite systems by neighbouring countries from the same orbital location.

2 To adopt this final Plan, the Conference, on the basis of appropriate criteria (see paragraph 8), will have to ensure its compatibility with:

2.1 the assignments in the BSS for which, as of 12 May 2000 at 1700 hours, the procedure of the current Article 4 of Appendix S30 has been successfully completed and the due diligence information specified in Annex 2 of Resolution 49 (WRC-97) has been received by the Bureau;

2.2 the assignments in the FSS which, as of 12 May 2000 at 1700 hours, have been notified to the Bureau with the required coordination agreements and for which, by that date, the due diligence information specified in Annex 2 of Resolution 49 (WRC-97) has been received by the Bureau;

2.3 terrestrial services;

2.4 the Region 2 BSS Plan.

3 The Plan adopted by the Conference will not be open to any modification. However, in the case of a new ITU Member, the Bureau shall carry out the appropriate studies, consult the affected administrations and, subject to reaching the required agreements, the subsequent conference will be requested to modify the Plan accordingly.

4 Any additional use (use of the channels appearing in the Plan with characteristics resulting in an increase in interference levels, use of additional channels or use of a service area exceeding national boundaries) will be included in a list attached to the MIFR.

Entries in the list will be:

4.1 the assignments for which, as of 12 May 2000 at 1700 hours, the current procedure of Article 4 of Appendix S30 has been successfully completed and the due diligence information specified in Annex 2 of Resolution 49 (WRC-97) has been received by the Bureau;

4.2 following the development of the Plan, the additional uses which have successfully completed a procedure that may be contained either in a new Article 4/5 or in Article S9/S11 (in the latter case, a list separate from the MIFR would not be necessary). In applying this procedure, in case of continuing disagreement between two administrations, the procedure must include the examination by the Bureau of the probability of harmful interference (as foreseen in Article 7 of Appendix S30 or under S11.32A). In case of unfavourable finding, a provision similar to S11.41 should also be included to allow recording in the List (or in the MIFR) on a provisional basis.

5 In order to guarantee equitable access to orbit/spectrum resources, entering and remaining in the List is subject to:

5.1 the successful application of the procedure mentioned in paragraph 4.2 above (except for assignments covered by 4.1). However, the assignments for which the current Article 4 procedure has been successfully completed before 12 May 2000 at 1700 hours, but for which at that date, the due diligence information specified in Annex 2 of Resolution 49 (WRC-97) has not been received, have to apply the new Article 4 procedure only in respect of assignments in the new Plan;

5.2 the application of paragraph 4.1.1 of Appendix S30;

5.3 the provision of due diligence information in conformity with the provisions of Resolution 49 (WRC-97);

5.4 a use limited to 15 years duration, starting from the date of bringing into use, or the last day of WRC-2000, whichever is later. An administration may keep the priority of date indicated in the list for a space station to be used for another period of 15 years with the same characteristics;

5.5 bringing into use within eight years of the receipt by the Bureau of the information specified in Annex 2 of Appendix S30.

6 When an Administration A (already having included in the List two assignments (not including those present intergovernmental systems notified on behalf of a group of administrations) on the same channel covering the same service area) proposes to include in the List a new assignment in the same channel over this service area, it shall apply the following in respect of another Administration B which has no assignment in the List in the same channel and which proposes to include in the List a new assignment:

6.1 In a first step, both administrations make every possible effort to resolve the difficulties by means of mutually acceptable adjustments to their networks.

6.2 In case of continuing disagreement, and if Administration A has not communicated to the Bureau the information specified in Annex 2 of Resolution 49 (WRC-97), this administration shall modify its system to facilitate the entry in the List of the assignment of Administration B.

7 It is assumed that most of the incompatibilities identified during WRC-2000 will be resolved by the Conference. However, should incompatibilities remain, they may be the subject of remarks leaving it to the administrations concerned to resolve them and to the next WRC to review the results obtained. Should the number of unresolved incompatibilities be large, their study may be the subject of different approaches.

8 The sharing criteria included in the Annexes of Appendix S30 are considered as overly conservative. To avoid meeting with the same deficiencies as in the 1977 Plan, the planning must take into account the mutual protection of the relevant networks on the basis of more realistic criteria in order to satisfy the needs of the administrations. In order for the planning to benefit from these new criteria, WRC-2000 has to adopt them before 12 May 2000. They also need to be used in the framework of the sharing procedures implying BSS assignments in the planned bands.

9 As the plan will be based on digital modulations, new additional uses in the BSS in the planned bands should be limited to digital modulations.

10 The orbital limitations in section A3 of Annex 7 of Appendix S30 in 1977 were based on a Plan with nominal orbital positions separated by 6° and on the use of analogue modulations. They were justified by the fact that, in 1977, the BSS was occupying spectrum/orbit resources more intensively than FSS. The use of digital modulations and the fact that both services now occupy orbit/spectrum resources with equivalent densities make these limitations obsolete, hence these limitations are no longer required.

11 The above elements refer only to Appendix S30. Similar provisions need to be adopted for Appendix S30A.

12 The Plans and the associated procedures should be brought into provisional application immediately after the Conference, by means of a Conference Resolution.

B Agenda item 1.6 (IMT-2000 terrestrial component)

It is recognized that an additional spectrum of 160 MHz is required for IMT-2000. However, this can only be supported if national administrations retain full flexibility to determine their own implementation requirements and schedules.

The objective at WRC-2000 should therefore be to identify additional frequency ranges on a worldwide basis for IMT-2000, from which national administrations may select any additional spectrum needed for their national implementation plans.

To this effect, the following frequency ranges are proposed for potential IMT-2000 terrestrial use on a worldwide basis: 862-960 MHz, 1 710-1 885 MHz and 2 520-2 670 MHz. In addition, the bands 2 500-2 520 MHz and 2 670-2 690 MHz are also proposed to be identified for the terrestrial component of IMT-2000 in the longer term, provided that the continuation and the future development of MSS, including the IMT-2000 satellite component in this band, is guaranteed though a Resolution, without precluding the possibility of use of this band by the IMT-2000 terrestrial component in the longer term, taking into account IMT-2000 requirements and ITU-R studies.

C Agenda item 1.15 (Radionavigation-satellite service)

The allocation of the bands 1 151-1 215 MHz, 1 260-1 300 MHz and 5 010-5 030 MHz to RNSS (space-to-Earth and space-to-space) and the bands 1 300-1 350 MHz and 5 000-5 010 MHz (Earth-to-space) is supported, provided that maximum pfd limits are applied to protect terrestrial services having allocations in these bands. These limits should be decided by WRC-2000 so as to enable the development of the radionavigation-satellite service, applied provisionally and reviewed by WRC-03.

Consequential action to modify No. S5.43 is also supported. This is necessary to ensure that the respective status of services is maintained as intended when the condition of not causing harmful interference is applied. If the condition is applied to service A in respect of a service B in a particular band, then S5.43 should only apply to the relations between these two services and not to any other services sharing the band in question.

D Agenda item 1.13 (non-GSO FSS systems)

The limits and procedures agreed by CPM to facilitate the implementation of non-GSO FSS systems are supported provided that the protection of the planned services be specified in the relevant footnotes of Article S5.

E Agenda item 1.4 (HDFS)

The identification and facilitation of the bands 31.8-33.4 GHz, 37-39.5 GHz, 40.5-42.5 GHz, 51.4-52.6 GHz, 55.78-59 GHz and 64-66 GHz for high-density applications operating within the fixed service is supported. In order to facilitate sharing between space and terrestrial services, the pfd levels as contained in the CPM Report are supported, where applicable.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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COMMITTEE 4

Zambia (Republic of)*

PROPOSALS FOR THE WORK OF THE CONFERENCE

The Administration of Zambia wishes to submit the following proposals for the work of the Conference:

Agenda item 1.1

MOD ZMB/155/1

S5.107 *Additional allocation:* in Saudi Arabia, Botswana, Eritrea, Ethiopia, Iraq, Lesotho, Libya, Somalia~~,~~ and Swaziland ~~and Zambia~~, the band 2 160-2 170 kHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis. The mean power of stations in these services shall not exceed 50 W.

MOD ZMB/155/2

S5.322 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. **S5.10** to **S5.13**) excluding Algeria, Egypt, Spain, Libya, Morocco, Nigeria, South Africa, Tanzania, ~~and~~ Zimbabwe and Zambia, subject to agreement obtained under No. **S9.21**.

MOD ZMB/155/3

S5.355 *Additional allocation:* in Bahrain, Bangladesh, the Congo, Egypt, the United Arab Emirates, Eritrea, Ethiopia, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, Oman, Qatar, Syria, Somalia, Sudan, Sri Lanka, Chad, Togo~~,~~ and Yemen ~~and Zambia~~, the bands 1 540-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis.

MOD ZMB/155/4

S5.359 *Additional allocation:* in Germany, Saudi Arabia, Armenia, Austria, Azerbaijan, Belarus, Benin, Bulgaria, Cameroon, Spain, France, Gabon, Georgia, Greece, Guinea, Guinea-Bissau, Hungary, Jordan, Kazakstan, Kuwait, Latvia, Libya, Mali, Mauritania, Moldova, Mongolia, Nigeria, Uganda, Uzbekistan, Pakistan, Poland, Syria, Kyrgyzstan, the Democratic People's Republic of Korea, Romania, Russian Federation, Senegal, Swaziland, Tajikistan,

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* Pursuant to Resolution 26 (Rev.WRC-97), the Secretariat notes that this contribution was received on 9 May 2000.

Tanzania, Turkmenistan, Ukraine~~, Zambia~~ and Zimbabwe 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. Administrations are urged to make all practicable efforts to avoid the implementation of new fixed-service stations in the bands 1 550-1 555 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz.

MOD ZMB/155/5

S5.422 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Brunei Darussalam, the Central African Republic, the Congo, Côte d'Ivoire, Cuba, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Georgia, Guinea, Guinea-Bissau, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakstan, Lebanon, Malaysia, Mali, Morocco, Mauritania, Moldova, Mongolia, Nigeria, Oman, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Dem Rep. of the Congo, Romania, Russian Federation, Somalia, Tajikistan, Tunisia, Turkmenistan, Ukraine, Yemen~~,~~ and Yugoslavia~~ 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.

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COMMITTEE 4

Zambia (Republic of)*

PROPOSALS FOR THE WORK OF THE CONFERENCE

The Administration of Zambia wishes to submit the following proposals for the work of the Conference:

Agenda item 1.1

MOD ZMB/155/1

S5.107 *Additional allocation:* in Saudi Arabia, Botswana, Eritrea, Ethiopia, Iraq, Lesotho, Libya, Somalia~~,~~ and Swaziland ~~and Zambia~~, the band 2 160-2 170 kHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis. The mean power of stations in these services shall not exceed 50 W.

MOD ZMB/155/2

S5.322 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. **S5.10** to **S5.13**) excluding Algeria, Egypt, Spain, Libya, Morocco, Nigeria, South Africa, Tanzania, ~~and~~ Zimbabwe and Zambia, subject to agreement obtained under No. **S9.21**.

MOD ZMB/155/3

S5.355 *Additional allocation:* in Bahrain, Bangladesh, the Congo, Egypt, the United Arab Emirates, Eritrea, Ethiopia, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, Oman, Qatar, Syria, Somalia, Sudan, Sri Lanka, Chad, Togo~~,~~ and Yemen ~~and Zambia~~, the bands 1 540-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis.

MOD ZMB/155/4

S5.359 *Additional allocation:* in Germany, Saudi Arabia, Armenia, Austria, Azerbaijan, Belarus, Benin, Bulgaria, Cameroon, Spain, France, Gabon, Georgia, Greece, Guinea, Guinea-Bissau, Hungary, Jordan, Kazakstan, Kuwait, Latvia, Libya, Mali, Mauritania, Moldova, Mongolia, Nigeria, Uganda, Uzbekistan, Pakistan, Poland, Syria, Kyrgyzstan, the Democratic People's Republic of Korea, Romania, Russian Federation, Senegal, Swaziland, Tajikistan,

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* Pursuant to Resolution 26 (Rev.WRC-97), the Secretariat notes that this contribution was received on 9 May 2000.

Tanzania, Turkmenistan, Ukraine~~, Zambia~~ and Zimbabwe 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. Administrations are urged to make all practicable efforts to avoid the implementation of new fixed-service stations in the bands 1 550-1 555 MHz, 1 610-1 645.5 MHz and 1 646.5-1 660 MHz.

MOD ZMB/155/5

S5.422 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Brunei Darussalam, the Central African Republic, the Congo, Côte d'Ivoire, Cuba, Egypt, the United Arab Emirates, Eritrea, Ethiopia, Gabon, Georgia, Guinea, Guinea-Bissau, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakstan, Lebanon, Malaysia, Mali, Morocco, Mauritania, Moldova, Mongolia, Nigeria, Oman, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Dem Rep. of the Congo, Romania, Russian Federation, Somalia, Tajikistan, Tunisia, Turkmenistan, Ukraine, Yemen~~,~~ and Yugoslavia~~ 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.

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COMMITTEE 4

Mongolia

PROPOSALS FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 1.1

The Administration of Mongolia has examined the footnotes to the Table of Frequency Allocations under agenda item 1.1 and concluded that the following footnotes should be modified by the deletion of Mongolia.

MOD MNG/156/1

S5.177 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Kazakstan, Latvia, Lithuania, Moldova, ~~Mongolia,~~ Uzbekistan, Poland, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 73-74 MHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. **S9.21**.

MOD MNG/156/2

S5.349 *Different category of service:* in Saudi Arabia, Azerbaijan, Bahrain, Bosnia and Herzegovina, Cameroon, Egypt, the United Arab Emirates, France, the Islamic Republic of Iran, Iraq, Israel, Kazakstan, Kuwait, The Former Yugoslav Republic of Macedonia, Lebanon, Morocco, ~~Mongolia,~~ Oman, Qatar, Syria, Kyrgyzstan, Romania, Turkmenistan, Ukraine, 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. **S5.33**).

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COMMITTEE 4

Ecuador

PROPOSAL FOR THE WORK OF THE CONFERENCE

Under agenda item 1.1, the Administration of Ecuador hereby submits the following proposal for the work of WRC-2000 in respect of a footnote in Article S5:

MOD EQA/157/1

S5.293 *Different category of service:* in Chile, Colombia, Cuba, the United States, Guyana, Honduras, 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. **S5.33**), subject to agreement obtained under No. **S9.21**. In Ecuador, the allocation of the band 470-512 MHz to the fixed and mobile services is on a primary basis (see No. **S5.33**), subject to agreement obtained under No. **S9.21**.

* Pursuant to Resolution 26 (Rev.WRC-97), the secretariat notes that this contribution was received on 9 May 2000.

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WORKING GROUP 1
OF THE PLENARY

Latvia (Republic of), Lithuania (Republic of)

PROPOSAL FOR THE WORK OF THE CONFERENCE

FEASIBILITY STUDIES AND THE POSSIBLE REVISION OF THE PLANS CONTAINED IN APPENDICES S30 AND S30A FOR REGIONS 1 AND 3 (AGENDA ITEM 1.19)

Common beams for Latvia and Lithuania

The studies according to Conference agenda item 1.19 provided by the IRG demonstrated the technical feasibility to establish multinational beams for some number of neighbouring countries and particularly for small countries with limited economies which are in transition from one formation to another. There is a possibility of providing economically viable development of the broadcasting-satellite service system to satisfy the public with similar cultural traditions and similar language group needs. Latvia and Lithuania are located within the same geographical area and have common boundaries. The common territory is only about 120 000 square km. The population speaks the same Baltic group of languages.

Proposal

LVA/LTU/158/1

Therefore, we kindly ask WRC-2000 to consider merging the two beams (beams of Latvia and Lithuania) into one composite beam in the BSS replanning. This will result in providing subregional coverage for each of 10 channels to cover the entire territory of Latvia and Lithuania, which would be a more economic approach.

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WORKING GROUP 1
OF THE PLENARY

Belgium, Netherlands (Kingdom of the)

PROPOSAL FOR THE WORK OF THE CONFERENCE

WORK TOWARDS THE POSSIBLE REVISION OF THE PLANS CONTAINED IN APPENDICES S30 AND S30A FOR REGIONS 1 AND 3 (AGENDA ITEM 1.19)

Identical beams for Belgium and the Netherlands

1 Introduction

Cooperation between neighbouring countries with similar cultural associations is a possible way to enhance the economical viability of BSS national beams while not requesting additional transmission frequencies.

Belgium and the Netherlands are located within the same geographical area and have a common border. An economical and frequency efficient way to operate their BSS assignments is to include the possibility for such types of identical beams covering cooperating neighbouring countries.

2 Proposal

BEL/HOL/159/1

Should WRC-2000 decide to revise the current Plans of Appendices S30 and S30A with respect to Regions 1 and 3, it is proposed to include identical beams for Belgium and the Netherlands jointly covering the territories of these Administrations from the same orbital location. In case of acceptance of this proposal by the Conference, these new identical beams would replace the national beams of these Administrations. Belgium and the Netherlands request that their current national beams continue to be taken into account until the final clarification of the acceptability of inclusion of the proposed identical beams.

These Administrations request that the size to be considered for these beams be 1.0°.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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Addendum 1 to Document 160-E
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GT PLEN-2

Note by the Secretary-General

I have the honour to transmit to the Conference the Report from the ITU Radiocommunication Assembly, Istanbul, 2000, to the World Radiocommunication Conference, Istanbul, 2000.

Yoshio UTSUMI
Secretary-General

Annex: 1

ANNEX

The Radiocommunication Assembly (Istanbul, 2000) pursuant to the provisions of Article 33 (CV) considered possible dates for its next meeting, which are to be transmitted to WRC-2000 for comments before being submitted to Council. Council will be considering the programme of future activities for the Union in July 2000. The Radiocommunication Assembly discussed whether the next Radiocommunication Assembly should be held separately or in association with WRC, or in association with the second session of CPM.

In particular, consideration was given to the following possible dates for which facilities are available in Geneva.

Year 2002	17-21 June
	4-15 November (just prior to CPM foreseen from 18-29 November)
	2-13 December (just after CPM)

NOTE - The next Plenipotentiary Conference may be scheduled to last until 11 or 18 October 2002.

Year 2003	17-28 March
	13-24 October

NOTE - If the Radiocommunication Assembly were to continue to be associated with WRC, two further possible periods in 2003, namely 2-6 or 9-13 June, would also be available for the RA.

Year 2004	19-30 April
	17-28 May
	18-29 October

While no definite conclusion was reached on the issue in the Radiocommunication Assembly, the majority of the expressed views supported the option to hold the next RA before WRC, with a preference to hold it from 2-6 June 2003, just before the next WRC.

Other views were also expressed in favour of having the next RA associated with CPM and possibly held before it.

The above considerations are brought to the attention of WRC-2000 which may wish to make any comment for the attention of Council.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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PLENARY MEETING

NOTE BY THE SECRETARY-GENERAL

I have the honour to transmit to the Conference the Report from the ITU Radiocommunication Assembly, Istanbul, 2000, to the World Radiocommunication Conference, Istanbul, 2000.

Yoshio UTSUMI
Secretary-General

Annexes: 6

ANNEX

Report from the ITU Radiocommunication Assembly, Istanbul, 2000, to the World Radiocommunication Conference, Istanbul, 2000

The Radiocommunication Assembly, in accordance with No. 136 of the Convention, hereby submits this progress report on matters that WRC-2000 may wish to consider for inclusion in the agenda of future radiocommunication conferences.

A list of ITU-R recommendations in force after the Radiocommunication Assembly, Istanbul, 2000, is given in Annex 1. These recommendations represent completed studies which future radiocommunication conferences wish to take into account.

Also, a list of Questions in force after the Radiocommunication Assembly, Istanbul, 2000, is given in Resolution ITU-R 5-3, which is electronically available on the ITU website and can also be provided by the Secretariat on request.

A list of the ITU-R recommendations related to the CPM-99 Report to WRC-2000 as of 5 May 2000 is included in Annex 2.

The status of the ITU-R recommendations incorporated by reference in the Radio Regulations adopted by WRC-97 as of 5 May 2000 is given in Annex 3.

In particular, attention is drawn to Recommendation ITU-R SM.1448 approved by RA-2000. This Recommendation replaces Recommendations ITU-R IS.847, IS.848, IS.849 and IS.850 which are currently incorporated by reference in the Radio Regulations.

Finally, according to the instructions given to the Director, Radiocommunication Bureau, by the Radiocommunication Assembly, Istanbul, 2000, ITU-R Resolutions 2 and 38 are brought to the attention of WRC-2000. The text of these amended resolutions can be found, respectively, in Annexes 4 and 5 to this document.

It is brought to the attention of WRC-2000 that, in the light of Resolution 80 (Minneapolis, 1998), the Radiocommunication Assembly invited the Director, BR, to report to the Conference on the need for regional seminars to be held between CPM and the following Conference (and possibly even before CPM) in order to present the CPM Report. The Radiocommunication Assembly also decided to invite ITU-D to assist the Director, BR in such organization.

ANNEX 1

List of ITU-R recommendations in force

Number	Title	Source
BO.566-3	Terminology relating to the use of space communication techniques for broadcasting	
BO.600-1	Standardized set of test conditions and measurement procedures for the subjective and objective determination of protection ratios for television in the terrestrial broadcasting and the broadcasting-satellite services	
BO.650-2	Standards for conventional television systems for satellite broadcasting in the channels defined by Appendix 30 of the Radio Regulations	
BO.651	Digital PCM coding for the emission of high-quality sound signals in satellite broadcasting (15 kHz nominal bandwidth)	
BO.652-1	Reference patterns for earth-station and satellite antennas for the broadcasting-satellite service in the 12 GHz band and for the associated feeder links in the 14 GHz and 17 GHz bands	
BO.712-1	High-quality sound/data standards for the broadcasting-satellite service in the 12 GHz band	
BO.786	MUSEsystem for HDTV broadcasting-satellite services	
BO.787	MAC/packet based system for HDTV broadcasting-satellite services	
BO.788-1	Coding rate for virtually transparent studio quality HDTV emissions in the broadcasting-satellite service	
BO.789-2	Service for digital sound broadcasting to vehicular, portable and fixed receivers for broadcasting-satellite service (sound) in the frequency range 1 400-2 700 MHz	
BO.790	Characteristics of receiving equipment and calculation of receiver figure-of-merit (G/T) for the broadcasting-satellite service	
BO.791	Choice of polarization for the broadcasting-satellite service	
BO.792	Interference protection ratios for the broadcasting-satellite service (television) in the 12 GHz band	
BO.793	Partitioning of noise between feeder links for the broadcasting-satellite service (BSS) and BSS down links	
BO.794	Techniques for minimizing the impact on the overall BSS system performance due to rain along the feeder-link path	
BO.795	Techniques for alleviating mutual interference between feeder links to the BSS	
BO.1130-2	Systems selection for digital sound broadcasting to vehicular, portable and fixed receivers for broadcasting-service satellite (sound) bands in the frequency range 1 400-2 700 MHz	
BO.1211	Digital multi-programme emission systems for television, sound and data services for satellites operating in the 11/12 GHz frequency range	
BO.1212	Calculation of total interference between geostationary-satellite networks in the broadcasting-satellite service	
BO.1213	Reference receiving earth station antenna patterns for replanning purposes to be used in the revision of the WARC-77 BSS plans for Regions 1 and 3	
BO.1293-1	Protection masks and associated calculation methods for interference into broadcast-satellite systems involving digital emissions	
BO.1294	Common functional requirements for the reception of digital multiprogramme television emissions by satellites operating in the 11/12 GHz frequency range	

BO.1295	Reference transmit Earth station antenna off-axis e.i.r.p. patterns for planning purposes to be used in the revision of the Appendix 30A (Orb-88) Plans of the Radio Regulations at 14 GHz and 17 GHz in Regions 1 and 3	
BO.1296	Reference receive space station antenna patterns for planning purposes to be used for elliptical beams in the revision of the Appendix 30A (Orb-88) Plans of the Radio Regulations at 14 GHz and 17 GHz in Regions 1 and 3	
BO.1297	Protection ratios to be used for planning purposes in the revision of the Appendices 30 (Orb-85) and 30A (Orb-88) Plans of the Radio Regulations in Regions 1 and 3	
BO.1373	Use of BSS assignments for FSS transmissions	
BO.1383	Introduction of the broadcasting-satellite service (sound) in the same frequency bands as used by mobile aeronautical telemetry systems in the frequency range 1-3 GHz	
BO.1408	Transmission system for advanced multimedia services provided by integrated services digital broadcasting in a broadcasting-satellite channel	
BO.1443	Reference BSS earth station antenna patterns for use in interference assessment involving non-GSO satellites in frequency bands covered by RR Appendix S30	
BO.1444	Protection of the broadcasting-satellite service in the 12 GHz band and associated feeder links in the 17 GHz band from interference caused by non-geostationary fixed-satellite service systems	
BO.1445	Improved patterns for fast roll-off satellite transmit antennas of the Regions 1 and 3 BSS plans of RR Appendix S30	
BO.1503	Functional description to be used in developing software tools for determining conformity of non-GSO FSS networks with limits contained in Article S22 of the Radio Regulation (Resolutions ITU-R 130, 538 (CMR-97))	10-11/ 1004
BR.265-8	Standards for the international exchange of programmes on film for television use	
BR.407-4	International exchange of sound programmes recorded in analogue form	
BR.408-6	Standards of sound recording on magnetic tape for the international exchange of programmes	
BR.469-6	Analogue composite television tape recording. Standards for the international exchange of television programmes on magnetic tape	
BR.602-4	Exchange of television recordings for programme evaluation	
BR.648	Digital recording of audio signals	
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SM.1131	Factors to consider in allocating spectrum on a worldwide basis	
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SM.1392-1	Essential requirements for a spectrum monitoring station for developing countries	
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SM.1447	Monitoring of the radio coverage of land mobile networks to verify compliance with a given licence	
SM.1448	Determination of the coordination area around an earth station in the frequency bands between 100 MHz and 105 GHz	1/1004+ A1
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SNG.771-1	Auxiliary coordination satellite circuits for SNG terminals	
SNG.1007-1	Uniform technical standards (digital) for Satellite News Gathering (SNG)	
SNG.1070	An automatic transmitter identification system (ATIS) for analogue-modulation transmissions for Satellite News Gathering and outside broadcasts	
SNG.1152	Use of digital transmission techniques for Satellite News Gathering (SNG) (sound)	
SNG.1421	Common operating parameters to ensure interoperability for transmission of digital television news gathering	
TF.374-5	Precise frequency and time-signal transmissions	
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TF.458-3	International comparisons of atomic time scales	
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ANNEX 2

List of the ITU-R recommendations related to the CPM Report to WRC-2000

(as of 5 May 2000)

NOTE - This is an updated version of Annex to the CPM Report to the WRC-2000 resulting from the approval of the ITU-R recommendations by the 2000 Radiocommunication Assembly.

Chapter 1 - IMT-2000, maritime and aeronautical issues		
Recommendation ITU-R M.816-1	Framework for services supported on International Mobile Telecommunications-2000 (IMT-2000)	1997 M-series, Part 2
Recommendation ITU-R M.687-2	International Mobile Telecommunications-2000 (IMT-2000)	1997 M-series, Part 2
Recommendation ITU-R M.1390	Methodology for the calculation of IMT-2000 terrestrial spectrum requirements	1997 M-series, Part 2, Sup. 1
Recommendation ITU-R M.1391	Methodology for the calculation of IMT-2000 satellite spectrum requirements	1997 M-series, Part 2, Sup. 1
Recommendation ITU-R SA.1154	Provisions to protect the space research (SR), space operations (SO) and Earth-exploration satellite services (EEES) and to facilitate sharing with the mobile service in the 2 025-2 110 and 2 200-2 290 MHz bands	1997 SA-series
Recommendation ITU-R M.1036-1	Spectrum considerations for implementation of International Mobile Telecommunications-2000 (IMT-2000) in the bands 1 885-2 025 MHz and 2 110-2 200 MHz	1997 M-series, Part 2
Recommendation ITU-R M.1456	Minimum performance characteristics and operational conditions for high altitude platform stations (HAPS) providing IMT-2000 in the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3 and 1 885-1 980 MHz in Regions 1 and 3 and 1 885-1 980 MHz and 2 110-2 160 MHz in Region 2	Doc. 8/1043
Recommendation ITU-R RA.1031-1	Protection of the radio astronomy service in frequency bands shared with other services	1997 RA-series
Recommendation ITU-R RA.769-1	Protection criteria used for radio astronomical measurements	1997 RA-series
Recommendation ITU-R F.1242	Radio-frequency channel arrangements for digital radio systems operating in the range 1 350 MHz to 1 530 MHz	1997 F-series, Part 1
Recommendation ITU-R F.1098-1	Radio-frequency channel arrangements for radio-relay systems in the 1 900-2 300 MHz band	1997 F-series, Part 1
Recommendation ITU-R F.1243	Radio-frequency channel arrangements for digital radio systems operating in the range 2 290-2 670 MHz	1997 F-series, Part 1
Recommendation ITU-R F.283-5	Radio-frequency channel arrangements for low and medium capacity analogue or digital radio-relay systems operating in the 2 GHz band	1997 F-series, Part 1
Recommendation ITU-R F.382-7	Radio-frequency channel arrangements for radio-relay systems operating in the 2 and 4 GHz bands	1997 F-series, Part 1
Recommendation ITU-R F.701-2	Radio-frequency channel arrangements for analogue and digital point-to-multipoint radio systems operating in the frequency bands in the range 1 350 to 2 690 GHz (1.5, 1.8, 2.0, 2.2, 2.4 and 2.6 GHz)	1997 F-series, Part 1
Recommendation ITU-R F.759	Use of frequencies in the bands 500 to 3 000 MHz for radio-relay systems	1997 F-series, Part 2
Recommendation ITU-R F.389-2	Preferred characteristics of auxiliary radio-relay systems operating in the 2, 4, 6 or 11 GHz bands	1990 CCIR Volume IX, Part 1

Recommendation ITU-R F.755-1	Point-to-multipoint systems used in the fixed service	1997 F-series, Part 1
Recommendation ITU-R F.758-1	Considerations in the development of criteria for sharing between the terrestrial fixed service and other services	1997 F-series, Part 2
Recommendation ITU-R F.1334	Protection criteria for systems in the fixed service sharing the same frequency band in the 1 to 3 GHz range with the land mobile service	1997 F-series, Part 2
Recommendation ITU-R F.1094-1	Maximum allowable error performance and availability degradations to digital radio-relay systems arising from interference from emissions and radiations from other sources	1997 F-series, Part 1
Recommendation ITU-R F.1241	Performance degradation due to interference from other services sharing the same frequency bands on a primary basis with digital radio-relay systems operating at or above the primary rate and which may form part of the international portion of a 27 500 km hypothetical reference path	1997 F-series, Part 1
Recommendation ITU-R F.1331	Performance degradation due to interference from other services sharing the same frequency bands on a primary basis with analogue radio-relay systems for television	1997 F-series, Part 1
Recommendation ITU-R F.1245	Mathematical model of average radiation patterns for line-of-sight point-to-point radio-relay system antennas for use in certain coordination studies and interference assessment in the frequency range from 1 to about 40 GHz	1997 F-series, Part 2
Recommendation ITU-R F.1336	Reference radiation patterns of omnidirectional and other antennas in point-to-multipoint systems for use in sharing studies	1997 F-series, Part 2
Recommendation ITU-R F.699-4	Reference radiation patterns for line-of-sight radio-relay system antennas for use in coordination studies and interference assessment in the frequency range from 1 to about 40 GHz	1997 F-series, Part 2
Recommendation ITU-R BT.1368-1	Planning criteria for digital terrestrial television services in the VHF/UHF television bands	1997 BT-series, Supplement 2
Recommendation ITU-R BT.417-4	Minimum field strengths for which protection may be sought in planning a television service	1997 BT-series
Recommendation ITU-R BT.798-1	Digital television terrestrial broadcasting in the VHF/UHF bands	1997 BT-series
Recommendation ITU-R IS.851-1	Sharing between the broadcasting service and the fixed and/or mobile services in the VHF and UHF bands	1997 IS-series
Recommendation ITU-R BO.1130-1	Systems for digital sound broadcasting to vehicular, portable and fixed receivers for broadcasting-satellite service (sound) bands in the frequency range 1 400-2 700 MHz	1997 BO-series
Recommendation ITU-R M.1040	Public mobile telecommunication service with aircraft using the bands 1 670-1 675 MHz and 1 800-1 805 MHz	1997 M-series, Part 3
Recommendation ITU-R M.1459	Protection criteria for telemetry systems in the aeronautical mobile service and mitigation techniques to facilitate sharing with geostationary broadcasting-satellite and mobile-satellite services in the bands 1 452-1 525 MHz and 2 310-2 360 MHz	Doc. 8/1029
Recommendation ITU-R M.1044-1	Frequency sharing criteria in the amateur and amateur-satellite services	1997 M-series, Part 6
Recommendation ITU-R SA.1016	Sharing considerations relating to deep-space research	1997 SA-series
Recommendation ITU-R SA.1027-3	Sharing and coordination criteria for space-to-earth data transmission systems in the earth exploration-satellite and meteorological-satellite services using satellites in low-Earth orbit	Doc. 7/BL/6
Recommendation ITU-R SA.1157	Protection criteria for deep-space research	1997 SA-series
Recommendation ITU-R M.1313	Technical characteristics of maritime radionavigation radars	1997 M-series, Part 4

Recommendation ITU-R M.629	Use for the radionavigation service of the frequency bands 2 900-3 100 MHz, 5 470-5 650 MHz, 9 200-9 300 MHz, 9 300-9 500 MHz and 9 500-9 800 MHz	1997 M-series, Part 4
Recommendation ITU-R M.1464	Characteristics of and protection criteria for radionavigation and meteorological radars operating in the frequency band 2 700-2 900 MHz	Doc. 8/1021
Recommendation ITU-R M.1460	Technical and operational characteristics and protection criteria of radiodetermination and meteorological radars in the 2 900-3 100 MHz band	Doc. 8/1013
Recommendation ITU-R M.1465	Characteristics of and protection criteria for radars operating in the radiodetermination service in the frequency band 3 100-3 700 MHz	Doc. 8/1022
Recommendation ITU-R M.1461	Procedures for determining the potential for interference between radars operating in the radiodetermination service and systems in other services	Doc. 8/1017
Recommendation ITU-R M.1141-1	Sharing in the 1-3 GHz frequency range between non-geostationary space stations operating in the mobile-satellite service and stations in the fixed service	1997 M-series, Part 5
Recommendation ITU-R M.1142-1	Sharing in the 1-3 GHz frequency range between geostationary space stations operating in the mobile-satellite service and stations in the fixed service	1997 M-series, Part 5
Recommendation ITU-R M.1084-3	Interim solutions for improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service	1997 M-series, Part 3, Sup.1
Recommendation ITU-R M.1308	Evolution of land mobile systems towards IMT-2000	1997 M-series, Part 2
Recommendation ITU-R M.1312	A long-term solution for improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service	1997 M-series, Part 3
Chapter 2 - Mobile-satellite and radionavigation-satellite services		
Recommendation ITU-R M.1089	Technical considerations for the coordination of mobile-satellite systems supporting the aeronautical mobile-satellite (R) service (AMS(R)S)	1997 M-series, Part 5
Recommendation ITU-R M.1180	Availability of communication circuits in the aeronautical mobile-satellite (R) services (AMS(R)S)	1997 M-series, Part 5
Recommendation ITU-R M.1229	Performance objectives for the digital aeronautical mobile-satellite service (AMSS) channels operating in the bands 1 525 to 1 559 MHz and 1 626.5 to 1 660.5 MHz not forming part of the ISDN	1997 M-series, Part 5
Recommendation ITU-R M.1233	Technical considerations for sharing satellite network resources between the mobile-satellite service (MSS) (other than the aeronautical mobile-satellite (R) service (AMS(R)S)) and AMS(R)S	1997 M-series, Part 5
Recommendation ITU-R M.1234	Permissible level of interference in a digital channel of a geostationary satellite network in the aeronautical mobile-satellite (R) service (AMS(R)S) in the bands 1 545 to 1 555 MHz and 1 646.5 to 1 656.5 MHz and its associated feeder links caused by other networks of this service and the fixed-satellite service	1997 M-series, Part 5
Recommendation ITU-R M.1088	Considerations for sharing with systems of other services operating in the bands allocated to the radionavigation-satellite service	1997 M-series, Part 5
Recommendation ITU-R M.1317	Considerations for sharing between systems of other services operating in bands allocated to the radionavigation-satellite and aeronautical radionavigation services and the global navigation satellite system (GLONASS-M)	1997 M-series, Part 5
Recommendation ITU-R M.1318	Interference protection evaluation model for the radionavigation-satellite service in the 1 559-1 610 MHz band	1997 M-series, Part 5
Recommendation ITU-R F.759	Use of frequencies in the band 500 to 3 000 MHz for radio-relay systems	1997 F-series, Part 2

Recommendation ITU-R M.1477	Technical and performance characteristics of current and planned RNSS (space-to-earth) and ARNS receivers to be considered in interference studies in the band 1 559-1 610 MHz	Doc. 8/1036
Recommendation ITU-R M.1184-1	Technical characteristics of mobile satellite systems in the frequency bands below 3 GHz for use in developing criteria for sharing between the mobile-satellite service (MSS) and other services	Doc. 8/1011
Recommendation ITU-R M.1343	Essential technical requirements of mobile earth stations for global non-geostationary mobile-satellite service systems in the bands 1-3 GHz	1997 M-series, Part 5
Recommendation ITU-R M.1389	Methods for achieving coordinated use of multiple non-GSO MSS systems below 1 GHz and sharing with other services in existing MSS allocations	1997 M-series, Part 5, Sup.1
Recommendation ITU-R M.1479	Technical characteristics and performance requirements of current and planned RNSS (space-to-space) receivers to be considered in interference studies in the frequency bands 1 215-1 260 MHz and 1 559-1 610 MHz	Doc. 8/1039
Recommendation ITU-R SA.1158-2	Sharing of the 1 675-1 710 MHz band between the meteorological-satellite service (space-to-Earth) and the mobile-satellite service (Earth-to-space)	Doc. 7/BL/10
Recommendation ITU-R SA.1262	Sharing and coordination criteria for meteorological aids in the 400.15-406 MHz and 1 668.4-1 700 MHz bands	1997 SA-series
Recommendation ITU-R M.1478	Protection criteria for Cospas-Sarsat search and rescue processors (SARP) in the band 406-406.1 MHz	Doc. 8/1038
Recommendation ITU-R M. 1463	Characteristics of and protection criteria for radars operating in the radiodetermination service in the frequency band 1 215-1 400 MHz	Doc. 8/1020
Recommendation ITU-R M.1184-1	Technical characteristics of mobile satellite systems in the frequency bands below 3 GHz for use in developing criteria for sharing between the mobile-satellite service (MSS) and other services	Doc. 8/1011
Recommendation ITU-R M.1039-1	Co-frequency sharing between stations in the mobile service below 1 GHz and mobile earth stations of non-geostationary mobile-satellite systems (Earth-to-space) using FDMA	Doc. 8/1028
Recommendation ITU-R SA.1258-1	Sharing of the frequency band 401-403 MHz between the meteorological-satellite service, earth exploration-satellite service and meteorological aids service	Doc. 7/BL/5
Recommendation ITU-R SA.1165-1	Technical characteristics and performance criteria for radiosonde systems in the meteorological aids service	1997 SA-series
Recommendation ITU-R RA.769-1	Protection criteria used for radioastronomical measurements	1997 RA-series
Recommendation ITU-R P.531-4	Ionospheric propagation data and prediction methods required for the design of satellite services and systems	1997 P-series, Part 2
Recommendation ITU-R S.1342	Method for determining coordination distances, in the 5 GHz band, between the international standard microwave landing system and non-geostationary mobile-satellite service stations providing feeder uplink services	1997 S-series
Chapter 3 - Non-GSO FSS issues		
Recommendation ITU-R S.1430	Determination of the coordination area for earth stations operating with non-geostationary space stations with respect to earth stations operating in the reverse direction in frequency bands allocated bidirectionally to the fixed-satellite service	Doc. 4/BL/17
Recommendation ITU-R S.1431	Methods to enhance sharing between non-GSO FSS systems (except MSS feeder links) in the frequency bands between 10-30 GHz	Doc. 4/BL/20
Recommendation ITU-R S.1323-1	Maximum permissible levels of interference in a satellite network (GSO/FSS; non-GSO/FSS; non-GSO/MSS feeder links) in the fixed-satellite service caused by other codirectional networks below 30 GHz	Doc. 4/BL/23

Recommendation ITU-R S.1328	Satellite system characteristics to be considered in frequency sharing analyses between GSO and non-GSO satellite systems in the fixed-satellite service including feeder links for the mobile-satellite service	1997 S-series
Recommendation ITU-R S.1428	Reference FSS earth-station radiation patterns for use in interference assessment involving non-GSO satellites in frequency bands between 10.7 GHz and 30 GHz	Doc. 4/BL/14
Recommendation ITU-R S.672-4	Satellite antenna radiation pattern for use as a design objective in the fixed-satellite service employing geostationary satellites	1997 S-series
Recommendation ITU-R S.524-5	Maximum permissible levels of off-axis e.i.r.p. density from earth stations in GSO network operating in the fixed-satellite service transmitting in the 6, 14 and 30 GHz frequency bands	Doc. 4/1001
Recommendation ITU-R BO.1444	Protection of the broadcasting-satellite service in the 12 GHz band and associated feeder links in the 17 GHz band from interference caused by non-GSO FSS systems	Doc. 11/BL/30
Recommendation ITU-R BO.1443	Reference BSS earth station antenna patterns for use in interference assessment involving non-geostationary satellites in frequency bands covered by RR Appendix S30	Doc. 11/BL/29
Recommendation ITU-R F.1245	Mathematical model of average radiation patterns for line-of-sight point-to-point radio-relay system antennas for use in certain coordination studies and interference assessment in the frequency range from 1 to about 40 GHz	1997 SF-series, Part 2
Recommendation ITU-R SF.1395	Minimum propagation attenuation due to atmospheric gases for use in frequency sharing studies between the fixed-satellite service and the fixed service	Doc. 4-9/BL/1
Recommendation ITU-R F.1494	Interference criteria to protect the fixed service from aggregate interference from other services sharing the 10.7-12.75 GHz band on a co-primary basis	Doc. 9/1011
Recommendation ITU-R F.1495	Interference criteria to protect the fixed service from aggregate interference from other services sharing the 17.7-19.3 GHz band on a co-primary basis	Doc. 9/1012
Recommendation ITU-R F.1108-2	Determination of the criteria to protect fixed service receivers from the emissions of space stations operating in non-geostationary orbits in shared frequency bands	1997 F-series, Part 2
Recommendation ITU-R SF.1483	Maximum allowable values of power flux-density produced at the Earth's surface by non-geostationary satellites in the fixed-satellite service operating in the 17.7-19.3 GHz band	Doc. 4-9/1007
Recommendation ITU-R SF.406-8	Maximum equivalent isotropically radiated power of radio-relay system transmitters operating in the frequency bands shared with the fixed-satellite service	1997 SF-series
Recommendation ITU-R S.1068	Fixed-satellite and radiolocation/radionavigation services sharing in the band 13.75 to 14 GHz	1997 S-series
Recommendation ITU-R SA.1155	Protection criteria related to the operation of data relay satellite systems	1997 SA-series
Recommendation ITU-R BO.1503	Functional description to be used in developing software tools for determining conformity of non-GSO FSS networks with limits contained in Article S22 of the Radio Regulations	Doc. 10-11/1004
Recommendation ITU-R S.672-4	Satellite antenna radiation pattern for use as a design objective in the fixed-satellite service employing geostationary satellites	1997 S-series
Recommendation ITU-R SF.1482	Maximum allowable values of power flux-density produced at the Earth's surface by non-geostationary satellites in the fixed-satellite service operating in the 10.7-12.75 GHz band	Doc. 4-9/1006

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Recommendation ITU-R RA.769-1	Protection criteria used for radioastronomical measurements	1997 RA-series
Recommendation ITU-R RA.1031-1	Protection of the radio astronomy service in frequency bands shared with other services	1997 RA-series
Recommendation ITU-R RA.1272	Protection of radio astronomy measurements above 60 GHz from ground based interference	1997 RA-series
Recommendation ITU-R SA.515-3	Frequency bands and bandwidths used for satellite passive sensing	1997 SA-series
Recommendation ITU-R SA.1028-1	Performance criteria for satellite passive remote sensing	1997 SA-series
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Recommendation ITU-R SA.1416	Sharing between spaceborne passive sensors and the inter-satellite service operating near 118 and 183 GHz	Doc. 7/BL/18
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Recommendation ITU-R F.761	Frequency sharing between the fixed service and passive sensors in the band 18.6 to 18.8 GHz	1997 F-series, Part 2
Recommendation ITU-R F.699-4	Reference radiation patterns for line-of-sight radio-relay system antennas for use in coordination studies and interference assessment in the frequency range from 1 to about 40 GHz	1997 F-series, Part 2
Recommendation ITU-R S.465-5	Reference earth-station radiation pattern for use in coordination and interference assessment in the frequency range from 2 to about 30 GHz	1997 S-series
Recommendation ITU-R S.580-5	Radiation diagrams for use as design objectives for antennas of earth stations operating with geostationary satellites	1997 S-series
Recommendation ITU-R S.1328	Satellite system characteristics to be considered in frequency sharing analyses between GSO and non-GSO satellite systems in the fixed-satellite service including feeder links for the mobile-satellite service	Doc. 4/BL/3 + 4/BL/15
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Recommendation ITU-R BO.1445	Improved patterns for fast roll-off satellite transmit antenna of the Regions 1 and 3 BSS Plan of Appendix S30	Doc. 11/BL/31
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Recommendation ITU-R F.697-2	Error performance and availability objectives for the local-grade portion at each end of an ISDN connection at a bit rate below the primary rate utilizing digital radio-relay systems	1997 F-series, Part 1
Recommendation ITU-R F.755-1	Point-to-multipoint systems used in the fixed service	1997 F-series, Part 1
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Recommendation ITU-R F.1189-1	Error-performance objectives for constant bit rate digital paths at or above the primary rate carried by digital radio-relay systems which may form part or all of the national portion of a 27 500 km hypothetical reference path	1997 F-series, Part 1
Recommendation ITU-R F.1102	Characteristics of radio-relay systems operating in frequency bands above about 17 GHz	1997 F-series, Part 1
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Recommendation ITU-R F.699-4	Reference radiation patterns for line-of-sight radio-relay system antennas for use in coordination studies and interference assessment in the frequency range from 1 to about 40 GHz	1997 F-series,~ Part 2
Recommendation ITU-R F.1245	Mathematical model of average radiation patterns for line-of-sight point-to-point radio-relay system antennas for use in certain coordination studies and interference assessment in the frequency range from 1 to about 40 GHz	1997 F-series, Part 2
Recommendation ITU-R F.1336	Reference radiation patterns of omnidirectional and other antennas in point-to-multipoint systems for use in sharing studies	1997 F-series, Part 2
Recommendation ITU-R F.1097-1	Interference mitigation options to enhance compatibility between radar systems and digital radio-relay systems	Doc. 9/1020
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Recommendation ITU-R SA.1157	Protection criteria for deep-space research	1997 SA-series
Recommendation ITU-R SA.509-2	Generalized space research earth station antenna radiation pattern for use in interference calculations, including coordination procedures	1997 SA-series, Supplement 1
Recommendation ITU-R SA.609-1	Protection criteria for telecommunication links for manned and unmanned near-Earth research satellites	1997 SA-series
Recommendation ITU-R IS.847-1	Determination of the coordination area of an earth station operating with a geostationary space station and using the same frequency band as a system in a terrestrial service	1997 IS-series
Recommendation ITU-R P.452-8	Prediction procedure for the evaluation of microwave interference between stations on the surface of the Earth at frequencies above about 0.7 GHz	1997 P-series, Part 2
Recommendation ITU-R P.618-6	Propagation data and prediction methods required for the design of Earth-space telecommunication systems	1997 P-series - Part 2, Sup.1
Recommendation ITU-R P.620-4	Propagation data required for the evaluation of coordination distances in the frequency range 100 MHz to 105 MHz	1997 P-series - Part 2, Sup.1
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Recommendation ITU-R S.672-4	Satellite antenna radiation pattern for use as a design objective in the fixed-satellite service employing geostationary satellites	1997 S-series
Recommendation ITU-R F.1498	Deployment characteristics of fixed service systems in the band 37-40 GHz for use in sharing studies	Doc. 9/1015
Recommendation ITU-R SA.1344	Preferred frequency bands and bandwidths for the transmission of space VLBI data	1997 SA-series, Supplement 1
Recommendation ITU-R SA.1015	Bandwidth requirements for deep-space research	1997 SA-series
Recommendation ITU-R M.1316	Principles and a methodology for frequency sharing in the 1 610.6-1 613.8 and 1 660-1 660.5 MHz bands between the mobile-satellite service (Earth-to-space) and the radio astronomy service	1997 M-series, Part 5

Recommendation ITU-R SF.1484	Maximum allowable values of power flux-density at the surface of the Earth produced by non-geostationary satellites in the fixed-satellite service operating in the 37.5-40.5 GHz and 40.5-42.5 GHz bands to protect the fixed service	Doc. 4-9/1008
Recommendation ITU-R SA.1259	Feasibility of sharing between spaceborne passive sensors and the fixed service from 50 to 60 GHz	1997 SA-series
Recommendation ITU-R SA.515-3	Frequency bands and bandwidths used for satellite passive sensing	1997 SA-series
Recommendation ITU-R F.1496	Radio-frequency channel arrangement for radio-relay systems in the fixed service in the band 51.4-52.6 GHz	Doc. 9/1013
Recommendation ITU-R F.1497	Radio-frequency channel arrangements for systems in the fixed service in the band 55.78-59 GHz	Doc. 9/1014
Recommendation ITU-R RA.517-2	Protection of the radio astronomy service from transmitters in adjacent bands	1997 RA-series
Recommendation ITU-R RA.611-2	Protection of the radio astronomy service from spurious emissions	1997 RA-series
Recommendation ITU-R RA.1237	Protection of the radio astronomy service from unwanted emissions resulting from applications of wideband digital modulation	1997 RA-series
Recommendation ITU-R RA.314-8	Preferred frequency bands for radio astronomical measurements	1997 RA-series
Recommendation ITU-R SM.329-8	Spurious emissions	Doc. 1/BL/11
Recommendation ITU-R SA.1344	Preferred frequency bands and bandwidths for the transmission of space VLBI data	1997 SA-series, Supplement 1
Recommendation ITU-R SA.1396	Protection criteria for the space research service in the 37-38 and 40-40.5 GHz bands	Doc. 7/BL/2
Recommendation ITU-R SA.1015	Bandwidth requirements for deep-space research	1997 SA-series
Recommendation ITU-R M.1316	Principles and a methodology for frequency sharing in the 1 610.6-1 613.8 and 1 660-1 660.5 MHz bands between the mobile-satellite service (Earth-to-space) and the radio astronomy service	1997 M-series, Part 5
Recommendation ITU-R F.1500	Preferred characteristics of systems in the fixed service using high altitude platforms operating in the bands 47.2-47.5 GHz and 47.9-48.2 GHz	Doc. 9/1017
Recommendation ITU-R F.1501	Coordination distance for systems in the fixed service involving high altitude platforms sharing the frequency bands 47.2-47.5 GHz and 47.9-48.2 GHz with other systems in the fixed service	Doc. 9/1018
Recommendation ITU-R SF.1481	Frequency sharing between systems in the fixed service using high-altitude platform stations and satellite systems in the geostationary orbit in the fixed-satellite service in the bands 47.2-47.5 and 47.9-48.2 GHz	Doc. 4-9/1005
Recommendation ITU-R S.1419	Interference mitigation techniques to facilitate coordination between non-GSO MSS feeder links and GSO FSS networks in the bands 19.3-19.7 GHz and 29.1-29.5 GHz	Doc. 4/BL/5
Recommendation ITU-R S.1255	Use of adaptive uplink power control to mitigate codirectional interference between geostationary satellite orbit/fixed-satellite service (GSO/FSS) networks and feeder links of non-geostationary satellite orbit/mobile-satellite service (non-GSO/FSS) networks and between GSO/FSS networks and non-GSO/FSS networks	1997 S-series
Recommendation ITU-R S.1328	Satellite system characteristics to be considered in frequency sharing analyses between GSO and non-GSO satellite systems in the fixed-satellite service including feeder links for the mobile-satellite service	1997 S-series

Recommendation ITU-R SA.1028-1	Performance criteria for satellite passive remote sensing	1997 SA-series
ITU-T Rec. G.821	Error performance of an international digital connection operating at a bit rate below the primary rate and forming part of an integrated services digital network	Version 8/1996
ITU-T Rec. G.826	Error performance parameters and objectives for international, constant bit rate digital paths at or above the primary rate	Version 2/1999 to be published
ITU-T Rec. G.827	Availability parameters and objectives for path elements of international constant bit rate digital paths at or above the primary rate	Version 8/1996
Chapter 7 - Other matters		
Recommendation ITU-R SM.329-8	Spurious emissions	Doc. 1/BL/11
Recommendation ITU-R M.1177-2	Techniques for measurement of unwanted emissions of radar systems	Doc. 8/1031
Recommendation ITU-R P.620-4	Propagation data required for the evaluation of coordination distances in the frequency range 100 MHz to 105 MHz	1997 P-series - Part 2, Sup.1
Recommendation ITU-R IS.847-1*	Determination of the coordination area of an earth station operating with a geostationary space station and using the same frequency band as a system in a terrestrial service	1997 IS-series
Recommendation ITU-R IS.848-1*	Determination of the coordination area of a transmitting earth station using the same frequency band as receiving earth stations in bidirectionally allocated frequency bands	1997 IS-series
Recommendation ITU-R IS.849-1*	Determination of coordination area for earth stations operating with non-geostationary spacecraft in bands shared with terrestrial services	1997 IS-series
Recommendation ITU-R IS.850-1*	Coordination areas using predetermined coordination distances	1997 IS-series
Recommendation ITU-R SM.1448	Determination of the coordination area around an earth station in frequency bands between 100 MHz and 105 GHz	Doc. 1/1004 + Addendum 1
Recommendation ITU-R S.1340	Sharing between feeder links for the mobile-satellite service and the aeronautical radionavigation service in the Earth-to-space direction in the band 15.4-15.7 GHz	1997 S-series
Recommendation ITU-R S.1341	Sharing between feeder links for the mobile-satellite service and the aeronautical radionavigation service in the space-to-Earth direction in the band 15.4-15.7 GHz and the protection of the radio astronomy service in the band 15.35-15.4 GHz	1997 S-series

* This Recommendation has been suppressed by the 2000 Radiocommunication Assembly pending the approval of Recommendation [1/1004].

ANNEX 3

Status of the ITU-R recommendations incorporated by reference to the Radio Regulations[1]

(as of 5 May 2000)

Recommendation	Title	Status[2]	Document
ITU-R M.257-3	Sequential single frequency selective-calling system for use in the maritime mobile service	NOC	1997 M-series, Part 3
ITU-R TF.460-5	Standard-frequency and time-signal emissions	NOC	1997 TF-series
ITU-R M.476-5	Direct-printing telegraph equipment in the maritime mobile service	NOC	1997 M-series, Part 3
ITU-R M.489-2	Technical characteristics of VHF radiotelephone equipment operating in the maritime mobile service in channels spaced by 25 kHz	NOC	1997 M-series, Part 3
ITU-R M.492-6	Operational procedures for the use of direct-printing telegraph equipment in the maritime mobile service	NOC	1997 M-series, Part 3
ITU-R M.541-8	Operational procedures for the use of digital selective-calling (DSC) equipment in the maritime mobile service	MOD	1997 M-series, Part 3
ITU-R M.625-3	Direct-printing telegraph equipment employing automatic identification in the maritime mobile service	NOC	1997 M-series, Part 3,
ITU-R M.627-1	Technical characteristics for HF maritime radio equipment using narrow-band phase-shift keying (NBPSK) telegraphy	NOC	1997 M-series, Part 3
ITU-R M.690-1	Technical characteristics of emergency position-indicating radio beacons (EPIRBs) operating on the carrier frequencies of 121.5 MHz and 243 MHz	NOC	1997 M-series, Part 4
ITU-R RA.769-1	Protection criteria used for radioastronomical measurements	NOC	1997 RA-series
ITU-R IS.847-1	Determination of the coordination area of an earth station operating with a geostationary space station and using the same frequency band as a system in a terrestrial service	SUP	1997 IS-series
ITU-R IS.848-1	Determination of the coordination area of a transmitting earth station using the same frequency band as receiving earth stations in bidirectionally allocated frequency bands	SUP	1997 IS-series
ITU-R IS.849-1	Determination of the coordination area for earth stations operating with non-geostationary spacecraft in bands shared with terrestrial services	SUP	1997 IS-series
ITU-R SM.1138	Determination of necessary bandwidths including examples for their calculation and associated examples for the designation of emissions	NOC	1997 SM-series
ITU-R SA.1154	Provisions to protect the space research (SR), space operations (SO), and Earth-exploration satellite services (EES) and to facilitate sharing with the mobile service in the 2 025-2 110 MHz and 2 200-2 290 MHz bands	NOC	1997 SA-series
ITU-R M.1169	Hours of service of ship stations	NOC	1997 M-series, Part 3
ITU-R M.1170	Morse telegraphy procedures in the maritime mobile service	NOC	1997 M-series, Part 3
ITU-R M.1171	Radiotelephony procedures in the maritime mobile service	NOC	1997 M-series, Part 3
ITU-R M.1172	Miscellaneous abbreviations and signals to be used for radiocommunications in the maritime mobile service	NOC	1997 M-series, Part 3

ITU-R M.1173	Technical characteristics of single-sideband transmitters used in the maritime mobile service for radiotelephony in the bands between 1 606.5 kHz (1 605 kHz Region 2) and 4 000 kHz and between 4 000 kHz and 27 500 kHz	NOC	1997 M-series, Part 3
ITU-R M.1174	Characteristics of equipment used for on-board communications in the bands between 450 and 470 MHz	NOC	1997 M-series, Part 3
ITU-R M.1175	Automatic receiving equipment for radiotelegraph and radiotelephone alarm signals	NOC	1997 M-series, Part 3
ITU-R M.1185-1	Method for determining coordination distance between ground based mobile earth stations and terrestrial stations operating in the 148.0-149.9 MHz band	MOD	1997 M-series, Part 5
ITU-R M.1187	A method for the calculation of the potentially affected region for a mobile-satellite service (MSS) network in the 1-3 GHz range using circular orbits	NOC	1997 M-series, Part 5
ITU-R BO.1213	Reference receiving earth station antenna patterns for replanning purposes to be used in the revision of the WARC BS-77 broadcasting-satellite service plans for Regions 1 and 3	NOC	1997 BO-series
ITU-R S.1256	Methodology for determining the maximum aggregate power flux-density at the geostationary-satellite orbit in the band 6 700-7 075 MHz from feeder links of non-geostationary satellite systems in the mobile-satellite service in the space-to-Earth direction	NOC	1997 S-series
ITU-R BO.1293	Protection masks and associated calculation methods for interference into broadcast satellite systems involving digital emissions	MOD	Doc.11/BL/39
ITU-R BO.1295	Reference transmit earth station antenna off-axis e.i.r.p. patterns for planning purposes to be used in the revision of the Appendix 30A (Orb-88) Plans of the Radio Regulations at 14 GHz and 17 GHz in Regions 1 and 3	NOC	1997 BO-series
ITU-R BO.1296	Reference receive space station antenna patterns for planning purposes to be used for elliptical beams in the revision of the Appendix 30A (Orb-88) Plans of the Radio Regulations at 14 GHz and 17 GHz in Regions 1 and 3	NOC	1997 BO-series
ITU-R BO.1297	Protection ratios to be used for planning purposes in the revision of the Appendices 30 (Orb-85) and 30A (Orb-88) Plans of the Radio Regulations in Regions 1 and 3	NOC	1997 BO-series
ITU-R S.1340	Sharing between feeder links for the mobile-satellite service and the aeronautical radionavigation service in the earth-to-space direction in the band 15.4-15.7 GHz	NOC	1997 S-series
ITU-R S.1341	Sharing between feeder links for the mobile-satellite service and the aeronautical radionavigation service in the space-to-earth direction in the band 15.4-15.7 GHz and the protection of the radio astronomy service in the band 15.35-15.4 GHz	NOC	1997 S-series

[1] This list does not include ITU-R recommendations referred to in resolutions and recommendations of world administrative radio conferences or world radiocommunication conferences.

[2] Status as of date of the end of the 2000 Radiocommunication Assembly.

ANNEX 4

RESOLUTION ITU-R 2-3

CONFERENCE PREPARATORY MEETING

(1993-1995-1997-2000)

The ITU Radiocommunication Assembly,

considering

a) that the duties and functions of the Radiocommunication Assembly, in preparing for World Radiocommunication Conferences (WRCs) are stated in Articles 13 of the ITU Constitution and 8 of the ITU Convention;

b) that special arrangements are necessary for such preparations,

resolves

1 that a Conference Preparatory Meeting (CPM) shall be set up on the basis of the following principles:

– that the CPM should be permanent;

– that it should address topics on the agenda of the immediately forthcoming conference and make provisional preparations for the subsequent conference;

– that invitations to participate should be sent to all Member States of the ITU and to Radiocommunication Sector Members;

– that documents should be distributed to all Member States of the ITU and to Radiocommunication Sector Members wishing to participate in the CPM;

– that the terms of reference of the CPM should include the updating, rationalization, presentation and discussion of material from Radiocommunication Study Groups and the Special Committee, together with consideration of new material submitted to it;

2 that the scope of the CPM shall be:

– on the basis of contributions from administrations, the Special Committee, the Radiocommunication Study Groups (see also Provision No. 156 of the Convention), and other sources (see Article 19 of the Convention) concerning the regulatory, technical, operational and procedural matters to be considered by World and Regional Radiocommunication Conferences, the CPM shall prepare a consolidated report to be used in support of the work of such conferences. In the preparation of these reports, differences in approach as contained in the source material shall be reconciled to the extent possible. In the case where the approaches cannot be reconciled, the differing views and their justification shall be included in the report;

3 that the working methods shall be as presented in Annex 1.

ANNEX 1 TO RESOLUTION ITU-R 2-3

Working methods for the Conference Preparatory Meeting

1 Regulatory studies of technical and operational matters will be undertaken by the appropriate Study Groups.

2 The CPM will normally hold two meetings during the interval between WRCs.

2.1 The first meeting will be for the purpose of coordinating the work programmes of the relevant Study Groups, and preparing a draft structure for the CPM Report, based on the agenda for the next two WRCs, and for taking into account any directives which may have come from the previous WRC. This meeting will be of short duration and will normally occur in the week following the conclusion of the previous WRC, and should be associated with a meeting of Study Group Chairmen and Vice-Chairmen.

2.2 The second meeting will be for the purpose of preparing the report for the next WRC. This meeting shall also review progress on preparatory studies for agenda items to be considered at the WRC following the next scheduled WRC. The meeting will be of adequate duration to accomplish the necessary work (two to three weeks) and will be timed to ensure publication of the Final Report at least six months before the next WRC.

2.3 The first meeting will identify issues for study in preparation for the next WRC and, to the extent necessary, for the subsequent WRC. These issues should be derived from the draft and provisional Conference agendas and should, as far as possible, be self contained and independent. For each issue a single group (which could be a Study Group, Task Group or Working Party, etc.) should be identified to take responsibility for the preparatory work, inviting input and/or participation from other groups as necessary. As far as possible, existing groups should be used for this purpose, with new groups being established only where this is considered to be necessary.

2.4 Meetings of the groups identified should be scheduled to facilitate maximum participation by all interested members. The groups should base their output on existing material plus new contributions. The output of each group should form contributions to the CPM Final Report to the WRC without the need for formal consideration by the relevant Study Group. Where the relevant Study Group has not considered the output from the respective group, this should be clearly indicated, and the output should be submitted to the CPM by the Study Group Chairman.

2.5 In order to facilitate the understanding by all participants of the contents of the draft CPM Report, overview presentations by the CPM management of the chapters will be made at the early stages of the meeting as part of the regularly scheduled sessions.

3 The work of the CPM will be directed by a Chairman and two Vice-Chairmen. The Chairman will be responsible for preparing the report to the next WRC.

4 The Chairman or the CPM may appoint Chapter Rapporteurs to assist in guiding the development of the text that will form the basis of the CPM Report, and to provide continuity of material through the consolidation of Study Group texts into a cohesive report.

5 The Chairman shall convene a meeting of the responsible Working Party/Task Group Chairmen, Study Group Chairmen, CPM Vice-Chairmen, Chapter Rapporteurs and Radiocommunication Bureau Staff to consolidate the output from the responsible Working Parties or Task Groups into a draft CPM Report, that will be an input document to the CPM.

6 The consolidated draft CPM Report shall be translated into the three working languages of the Union and distributed to Member States a minimum of two months prior to the date schedule for the second meeting of the CPM.

7 Every effort shall be made to ensure that the volume of the final CPM Report is kept to a minimum. To this end, Working Parties/Task Groups/Study Groups are urged to maximize the use of references to approved ITU-R Recommendations in preparing CPM texts.

8 In relation to working arrangements, the CPM shall be considered as an ITU meeting in accordance with No. 172 of the Constitution.

9 In preparing for the CPM, maximum use should be made of electronic means for the distribution of contributions to participants.

10 The other working arrangements shall be in accordance with the relevant provisions of Resolution ITU-R 1.

ANNEX 5

RESOLUTION ITU-R 38-2

STUDY OF REGULATORY/PROCEDURAL MATTERS

(1995-1997-2000)

The ITU Radiocommunication Assembly,

considering

a) that the ITU Convention includes among the functions of Radiocommunication Study Groups the study of technical, operational and procedural matters to be considered by World and Regional Radiocommunication Conferences (CV 156);

b) that the Radiocommunication Assembly, 1995 (Resolution ITU-R 38) established a Special Committee to deal with matters relating to regulatory/procedural issues as part of preparations for World Radiocommunication Conferences;

c) that the Special Committee to deal with matters relating to regulatory/procedural issues has undertaken valuable work in preparation for World Radiocommunication Conferences (WRCs);

d) that a significant body of work of a regulatory/procedural nature might be identified in preparation for a future WRC;

e) that a mechanism should be put in place to facilitate such preparations,

recognizing

a) that the activation of that mechanism shall be the responsibility of the relevant WRC or the first session of the Conference Preparatory Meeting (CPM),

resolves

1 to maintain the infrastructure of the Special Committee to address the review of regulatory/procedural matters, the results of which may be used by administrations in their preparation for the relevant WRC;

2 that a decision to activate this Special Committee should be taken by a WRC or the first session of the CPM authorized by the WRC;

3 that the results of the studies by the Special Committee shall be contained in reports as contributions to the work of the CPM in preparing its report to the relevant WRC;

4 that the Special Committee shall be open to all the membership of the ITU-R;

5 that the Special Committee shall adopt the working methods of the Radiocommunication Study Groups wherever applicable, and shall be task oriented;

6 that the Special Committee shall identify suitable options for completing agenda items assigned to it, and, where appropriate, to draft example regulatory text in accordance with those options;

7 that the Special Committee will have a Chairperson and at least two Vice-Chairpersons appointed by a Radiocommunication Assembly,

instructs the Director

1 to draw the attention of the next WRC to this Resolution and invite the Conference or the first session of the CPM authorized by the WRC to identify whether there is likely to be a sufficient body of work of a regulatory/procedural nature in preparation for the following WRC to justify activating the Special Committee, and if so to task the Special Committee by identifying those agenda items for which attention will need to be given to regulatory/procedural aspects, thereby forming the primary basis of activity of the Special Committee;

2 to take the necessary measures to activate the Special Committee, if needed.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 161-E
10 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4
COMMITTEE 5

NOTE BY THE SECRETARY-GENERAL

IUCAF POSITION STATEMENT ON WRC-2000 AGENDA ITEMS

I have the honour to bring to the attention of the Conference, at the request of IUCAF, the annexed information paper.

Yoshio UTSUMI
Secretary-General

Annex: 1

ANNEX

Introduction

The agenda of WRC-2000 contains a number of issues relevant for radio astronomy, but some of them are more important than others. The preparations for WRC-2000 have reached a close-to-final stage, with a number of proposals to all of the agenda items being submitted to ITU by many countries and groups of countries, like APT, the Arab countries, CEPT, and CITEL. In this update of the IUCAF position statement shortly before the Conference starts, only the most important agenda items are reviewed. These are agenda items 1.2 (Recommendation 66), 1.4 (42.5 GHz), 1.14 (15 GHz), 1.15.1 (RNSS at 5 GHz), and 1.16 (>71 GHz). These agenda items are listed below and their importance is explained. The IUCAF position is given and explained for each of these items.

We recommend that this document is used in the final preparation for WRC-2000 and during the Conference itself as a working basis. Additionally, a number of agenda items, which are not listed here, will require close attendance and immediate consultation with IUCAF on a position during the Conference, depending on the development.

Agenda items of WRC-2000

Agenda item 1.2 - to finalize the remaining issues in the review of Appendix S3 to the Radio Regulations with respect to spurious emissions for space services, taking into account Recommendation 66 (Rev.WRC-97) and the decisions of WRC-97 on adoption of new values, due to take effect at a future time, of spurious emissions for space services

Background

Recommendation 66 (Rev.WRC-97) asks for “Studies of the maximum permitted levels of unwanted emissions”. These studies have been performed by Task Groups 1/3 and 1/5. Spurious emission limits for most services have been included in the Radio Regulations (Appendix S3) by WRC-97, and the outstanding issue of making spurious emission limits mandatory for space services also, is expected to be finalized by WRC-2000. Protection of vulnerable passive services, however, cannot be guaranteed by these limits. Additionally, out-of-band emission limits have been studied intensely by TG 1/5, and emission masks for most services could be agreed upon. They will be part of a recommendation of Study Group 1, and not appear in the Radio Regulations. Again, these standards are not designed to fully protect radio astronomy from interference by transmitters in nearby frequency bands. Protection of radio astronomy bands has therefore been made subject of a specific study, the “band-by-band study”, which is under way in TG 1/5 and a number of Working Parties of ITU-R. Progress in this band-by-band study has been very slow, mainly due to a lack of information by the space service Working Parties about which improvements could be achieved, and what is impossible to achieve. At WRC-2000, agenda item 1.2 looks as if it had a very restricted scope, and indeed, the Conference will primarily make the change to Appendix S3. But this change may provide an opportunity to revise Recommendation 66 again. Several proposals have been submitted to this agenda item.

IUCAF position

As the spurious emission limits for space stations in the space services, to which TG 1/5 agreed, are not sufficient to protect radio astronomy and other sensitive passive services, IUCAF would like to propose to amend Recommendation 66 again and ask for further studies. Some operators particularly of geostationary satellites in the space services have recently indicated to be able to

protect frequency bands allocated to the radio astronomy service substantially better than the general limits in Appendix S3 of the Radio Regulations. This is the kind of result that makes the band-by-band study meaningful. Also out-of-band emission masks proposed for satellites are far from protecting radio astronomy in adjacent or nearby bands, however very recently new development seemed to take place, which needs careful evaluation. Therefore the process of limiting unwanted emissions to the benefit of passive services must go on with a scope as broad as possible. Attempts to further restrict the band-by-band study should be resisted.

Agenda item 1.4 - to consider issues concerning allocations and regulatory aspects related to Resolution 126 (WRC-97), 128 (WRC-97), 129 (WRC-97), 133 (WRC-97), 134 (WRC-97), and 726 (WRC-97)

From the large number of resolutions, this one is most important for radio astronomy:

Resolution 128: “Allocation to the fixed-satellite service (space-to-Earth) in the 41.5-42.5 GHz band and protection of the radio astronomy service in the 42.5-43.5 GHz band”.

Background

FSS (space-to-Earth) has been introduced into the frequency band 40.5-42.5 GHz in Regions 2 and 3, and a number of countries in Region 1 by WRC-97. A worldwide allocation would probably be preferred by space service operators. Additionally there is a BSS allocation in this band, also in Region 1. The studies, which Resolution 128 asks for, have not been concluded, but a European common proposal asks for removal of the BSS allocation from the band 40.5-42.5 GHz and keeping FSS out in Region 1. Other input asks for continuation of the studies.

IUCAF position

IUCAF supports the opposition against introduction of FSS in Region 1 and also the deletion of BSS from the band 40.5-42.5 GHz. IUCAF has expressed concerns about protection of the RA band 42.5-43.5 GHz. The deletion of the BSS is justified by the high attenuation required to protect the RA. Furthermore, the introduction of an adequate pfd limit in the band 42.5-43.5 GHz is required to protect the RA from out-of-band emission of space services in the band immediately below this band, in case a space service downlink allocation is retained in the band 40.5-42.5 MHz or the sub-band 40.5-41.5 GHz.

Adequate spfd levels must be known and agreed. This agreement must be supported by WP 7D. Unwanted emissions from the space-to-Earth transmissions of BSS and FSS in the frequency band adjacent to the radio astronomy band 42.5-43.5 GHz will generate severe degradation of radio astronomy observations and pfd limits have not yet been developed (note that aggregate pfd must be considered).

Agenda item 1.14 - to review the results of the studies on the feasibility of implementing non-GSO MSS feeder links in the 15.43-15.63 GHz in accordance with Resolution 123 (WRC-97)

Background

Resolution 123 addresses the issue of the “feasibility of implementing feeder links of non-geostationary satellite networks in the band 15.43-15.63 GHz (space-to-Earth) while taking into account the protection of the radio astronomy service, the Earth exploration-satellite (passive) service and the space research (passive) service in the band 15.35-15.4 GHz” and asks for relevant studies. The study asked for by Resolution 123 was undertaken by a joint group of experts from Working Parties 4A and 7C/D. The conclusion of this group was, that satellite downlink for the MSS feeder links would barely be possible without causing interference to radio astronomy. The recommendation, which went into the CPM Report, was to delete this

allocation. The allocation to the uplink direction could, however, be retained. Later, in Working Party 7D a Russian satellite system was discussed, which is especially designed to protect radio astronomy in the band 15.35-15.4 GHz, and which had been prepublished already. Therefore a footnote was recommended, which would allow existing or notified systems to continue to operate. Some proposals to the conference take these recommendation fully into account, but unfortunately, the European common proposal is very inconsistent, in that it proposes to retain the allocation to the FSS downlink in the table and only restrict its use to already republished systems via a proposed change in footnote S5.511A.

IUCAF position

Support the proposal of the ITU-R Joint Group of Experts 4A-7C to remove the FSS space-to-Earth allocation in the band 15.43-15.63 GHz from the Table of Frequency Allocations. The Earth-to-space allocation would remain.

Agenda item 1.15.1 - to consider new allocations to the radionavigation-satellite service in the range from 1 to 6 GHz required to support developments

Background

Among the new allocations proposed is one at 5 000-5 030 MHz, in a part of the frequency band dedicated to Microwave Landing Systems, which is not used by these systems. This proposed new allocation is adjacent to the radio astronomy band 4 800-5 000 MHz, of which only the upper 10 MHz are allocated to RAS on a primary basis. Any attempt in the past to push the proposed RNSS band up in frequency to provide a better guardband failed.

A system, which has been proposed to operate in this frequency band, has been discussed in a lot of forums, including Working Parties 7D and 8D of ITU-R. It has always been pointed out that the satellite, by employing advanced filtering techniques, could well protect radio astronomy in the adjacent band, respecting a guardband of 10 MHz only, which would be accommodated fully in the RNSS allocation. The filter suppression would be such that the main beam of a radio telescope could be coordinated to a large extent, if similarly sharp filtering against the strong satellite signal on the receiver side would be possible. The proposals in the CPM Report and the ECP to agenda item 1.15.1 are premature. The protection of radio astronomy from interference due to satellite emissions is still under study, and not concluded yet (see agenda item 1.2).

IUCAF position

Support the possibility to shift the proposed allocation of RNSS further away from the radio astronomy band 4 800-5 000 MHz to a frequency band above 5 060 MHz. This is not very likely to be achieved, therefore the allocation to RNSS should be made subject to stringent protection requirements and to further studies, which examine the sharing scenario.

Agenda item 1.16 - to consider allocation of frequency bands above 71 GHz to the Earth exploration-satellite (passive) and radio astronomy services, taking into account Resolution 723 (WRC-97)

Background

The CPM Report to WRC-97 recommended that a future WRC should address allocation of frequency bands above 75 GHz for passive sensing, based upon the results of further ITU-R studies. This agenda item is of paramount importance for the future of radio astronomy. Fortunately, the preparation went very well, and the proposals to WRC-2000 from a number of countries are all based on the same basic concept, and they are all very similar.

IUCAF position

IUCAF has been involved in the preparatory work, on which the proposals from APT, CEPT, and CITEL are based. There is no clear preference to any one of these proposals since their differences are only minor. However, one point remains to be solved in the ECP. For the proposed EESS (active) (space-to-Earth) allocation of 0.5 GHz at 130 GHz, a coordination agreement must be formulated. IUCAF is confident that such coordination between scientific services is viable. A similar situation exists for the band 94.0-94.1 GHz for which the ECP proposes a footnote to demand coordination between cloud radar operations in the band 94.0-94.1 GHz and radio astronomy stations operating in the frequency range ~94 GHz. IUCAF strongly supports this proposed footnote. A similar footnote could solve the issue at 130 GHz.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 6

Note by the Chairperson of Committee 6 (Editorial)

In order to facilitate the work of the Conference, the Chairperson of Committee 6 wishes to draw participants' attention to the following points regarding the Editorial Committee and the way it operates.

Terms of reference of the Committee

Under Nos. 362 and 363 (Article 32, Rules of Procedure) of the Convention of the International Telecommunication Union (Geneva, 1992), the Editorial Committee's terms of reference are as follows:

"*4.3 Editorial Committee*

362 *a)* The texts prepared in the various committees, which shall be worded as far as possible in their definitive form by these committees, taking account of the views expressed, shall be submitted to an Editorial Committee charged with perfecting their form without altering the sense and, where appropriate, with combining them with those parts of former texts which have not been altered.

363 *b)* The texts shall be submitted by the Editorial Committee to the Plenary Meeting, which shall approve them, or refer them back to the appropriate committee for further examination."

Structure of the Committee

Chairperson:	Mr Lucien BOURGEAT (France)	Pigeon-hole 2692
Vice-Chairperson:	Mr Celestino MENENDEZ ARGÜELLES (Spain)	Pigeon-hole 2519
Vice-Chairperson:	Mr Malcolm JOHNSON (United Kingdom)	Pigeon-hole 106

Secretariat

Mr Colin LANGTRY	Rumeli 0/04
Mr Alberto MENDEZ	Rumeli 0/05
Mr Jacques FONTEYNE	Rumeli 0/06

Composition

In order to facilitate the Committee's work, particularly regarding the preparation of meeting documents, and in view of the small size of the Committee's meeting room, it is desirable that delegations wishing to take part in the Editorial Committee's work should notify the Chairperson by using the registration form in the **Annex** to this document and returning it to the Committee Secretariat (Room Rumeli 0/04 or pigeon-hole 2930) as far as possible by **1800 hours on Monday, 15 May**.

Organization of work

The Editorial Committee will hold its first meeting on **Thursday, 11 May 2000, at 0900 hours** in Room Rumeli A.

The Committee's other meetings will be held in Room Rumeli 0/05.

During the remaining weeks of the Conference, notices of meetings will be communicated individually to delegates registered with Committee 6.

A second team may be set up if the volume of work makes it necessary, facilities being available for this purpose. If the two teams have to meet at the same time, it will not always be possible, in view of the volume of work, to assign all Committee 4 texts to one team and all Committee 5 texts to the other. The two teams will not be under supervision, it being the task of the Secretariat, under the authority of the Committee Chairperson, to coordinate their work as a whole.

L. BOURGEAT
Chairperson of Committee 6

ANNEX

COMMITTEE 6

REGISTRATION FORM

To be completed and returned to Room Rumeli 0/04 or pigeon-hole 2930 by **1800 hours on Monday, 15 May**

COUNTRY .....

Delegate

Surname .....

First name .....

Position in delegation .....

Number of pigeon-hole .....

Working language

E ☐ F ☐ S ☐

Signature

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 163-E
17 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

WORKING GROUP 2
OF THE PLENARY

Germany (Federal Republic of), Austria, Vatican City State, France, Italy, Liechtenstein (Principality of), Mali (Republic of), Poland (Republic of), San Marino (Republic of), Switzerland (Confederation of), Ukraine

PROPOSAL FOR THE WORK OF THE CONFERENCE

REVISION OF THE DATE OF CESSATION OF DOUBLE SIDE BAND (DSB) EMISSION IN THE SHORT WAVE BROADCASTING (SW)

Considering:

– the necessity and urgency of improving the quality of S.W. broadcasting;

– the evolution and advantages of digital techniques and the concurrent activities in ITU-R to standardize a digital system for broadcasting in the SW, MW and LW, which will improve: signal quality, spectrum utilization, S/N, fading performance and reduce RF power consumption;

– that ITU-R is on the way to adopt a unique standard for digital AM in the year 2000;

– that the planning system, adopted by WRC-97, is very well used for the planification of SW frequencies with biannual application;

– that the introduction of digital AM is provided in Resolution 517 (Rev.WRC-97);

D/AUT/CVA/F/I/LIE/MLI/POL/SMR/SUI/UKR/163/1

the above Administrations suggest to the WRC-2000 Conference the insertion on the agenda for WRC-03/06 the revision of the date of cessation of the DSB services and the rapid introduction of more efficient techniques for the spectrum usage (digitalization of AM).

Reasons: The introduction of the above techniques are not supposed to change the application of present planning procedures for HF (Article S12 of the RR), since it will only need a revision of certain technical parameters to be used for the application of the aforementioned Article S12.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 164-E
21 March 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

Slovenia (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 1.1

Introduction

Item 1.1 of the agenda for WRC-2000 refers to the deletion of country names from the footnotes of the Radio Regulations Table of Frequency Allocations, whenever such reference is no longer necessary.

Therefore, the Republic of Slovenia submits the following proposals for deletion of its country name from footnote S5.211 and S5.214.

The following proposals are being submitted for consideration by WRC-2000:

MOD SVN/164/1

S5.211 *Additional allocation:* in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Bosnia and Herzegovina, Denmark, the United Arab Emirates, Spain, Finland, Greece, Ireland, Israel, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Liechtenstein, Luxembourg, Mali, Malta, Norway, the Netherlands, Qatar, the United Kingdom, ~~Slovenia,~~ Somalia, Sweden, Switzerland, Tanzania, Tunisia, Turkey and Yugoslavia, the band 138-144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis.

MOD SVN/164/2

S5.214 *Additional allocation:* in Bosnia and Herzegovina, Croatia, Eritrea, Ethiopia, Kenya, The Former Yugoslav Republic of Macedonia, Malta, ~~Slovenia,~~ Somalia, Sudan, Tanzania and Yugoslavia, the band 138-144 MHz is also allocated to the fixed service on a primary basis.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 165-E
10 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

ORGANIZATION OF THE WORK OF COMMITTEE 4 APPROVED AT THE FIRST MEETING

At its first meeting on 8 May 2000, Committee 4 decided to organize its work as follows and to set up the following Working Groups in order to cover the Conference agenda items assigned to it:

Working Group 4A (WG 4A)

Terms of reference

1 to consider the results of ITU-R studies in respect of Appendix **S7/28** on the method for the determination of the coordination area around an earth station in frequency bands shared among space services and terrestrial radiocommunication services, and take the appropriate decisions to revise this Appendix **(item 1.3)**;

2 Resolutions 80, 85, 86, 87 and 88 of the Plenipotentiary Conference (Minneapolis, 1998);

Chairperson:	Mr N. Kisrawi	Box	50
Secretary:	Mr M. Sakamoto	Box	2976

Working Group 4B (WG 4B)

Terms of reference

1 requests from administrations to delete their country footnotes or to have their country name deleted from footnotes, if no longer required, in accordance with Resolution **26 (Rev.WRC-97) (item 1.1)**;

2 to finalize remaining issues in the review of Appendix **S3** to the Radio Regulations with respect to spurious emissions for space services, taking into account Recommendation **66 (Rev.WRC-97)** and the decisions of WRC-97 on adoption of new values, due to take effect at a future time, of spurious emissions for space services **(item 1.2)**;

3 to consider regulatory and technical provisions to enable earth stations located on board vessels to operate in the fixed-satellite service (FSS) networks in the bands 3 700-4 200 MHz and 5 925-6 425 MHz, including their coordination with other services allocated in these bands **(item 1.8)**;

4 to examine the revised ITU-R Recommendations incorporated by reference in the Radio Regulations in accordance with Resolution **28 (WRC-95)**; and decide whether or not to update the corresponding references in the Radio Regulations, in accordance with principles contained in the Annex to Resolution **27 (Rev.WRC-97) (item 2)**;

5 in accordance with Resolution **95 (WRC-97)**, to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation **(item 4)**;

Chairperson:	Mrs A. Allison	Box	68
Secretary:	Mr W. Frank	Box	2926

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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

United Arab Emirates

PROPOSALS FOR THE WORK OF THE CONFERENCE

ADDITION OF (SPACE-TO-SPACE) DIRECTION TO THE RNSS ALLOCATIONS IN THE (1 559-1 610 MHz) BAND (AGENDA ITEM 1.15.2)

1 Introduction

The issue of interference and compatibility with other services due to the addition of a space-to-space direction allocation to the radionavigation satellite service in the 1 559-1 610 MHz band was studied extensively in the ITU-R.

The studies submitted to ITU-R concluded that that the RNSS spaceborne receivers can operate satisfactorily in the presence of interference caused by systems in other services as well as other RNSS systems. Also such addition will not cause any additional interference to other services since it involves no change to the space-to-Earth transmissions.

The discussion of these studies during ITU-R WP 8D has resulted in identifying three options to satisfy the requirement of RNSS, and these are reflected in the CPM-99 Report. These options are provided for WRC-2000 to guide the delegations in taking a decision on this agenda item of the conference.

2 Proposal

The UAE Administration proposes that such allocation to RNSS for the space-to-space direction can only be made with the following provisions:

– No protection should be given to spaceborne RNSS receivers from RNSS systems already operating in these bands or for which complete advance publication information has been received by the Bureau, prior to the end of WRC-2000.

– Spaceborne RNSS receivers operating in the 1 559-1 610 MHz band should not request protection from unwanted emissions of stations of the MSS (Earth-to-space) operating in the 1 610-1 660.5 MHz band.

– Spaceborne RNSS receivers should be deployed and operated such as to avoid or accept possible interference at levels equivalent to those caused by MSS (space-to-Earth) systems in the bands 1 525-1 559 MHz and which are already operating or for which complete advanced publication information has been received by the BR, prior to the end of WRC-2000.

Therefore, if WRC-2000 decides to make a space-to-space direction in the RNSS allocation 1 559-1 610 MHz, then the relevant Table of Frequency Allocations should be modified as follows:

MOD UAE/166/1

1 525-1 610 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
1 559-1 610	AERONAUTICAL RADIONAVIGATION RADIONAVIGATION-SATELLITE (space-to-Earth) (space-to-space) S5.341 S5.355 S5.359 S5.363 ADD S5.XXX ADD S5.YYY ADD S5.ZZZ	

ADD UAE/166/2

S5.XXX Spaceborne RNSS receivers should not claim protection from RNSS systems already operating in this band or for which complete advanced publication information has been received by the BR, prior to the end of WRC-2000.

S5.YYY Spaceborne RNSS receivers operating in this band should not request protection from unwanted emissions of stations of the MSS (Earth-to-space) operating in the 1 610-1 660.5 MHz band.

S5.ZZZ Spaceborne RNSS receivers should be deployed and operated such as to avoid or accept possible interference at levels equivalent to those caused by MSS (space-to-Earth) systems in the bands 1 525-1 559 MHz and which are already operating or for which complete advanced publication information has been received by the BR, prior to the end of WRC-2000.

Reasons: The justification for adding these provisions is to avoid imposing unnecessary constraints, due to RNSS (space-to-space) operations, on existing systems or systems that are planned to operate in the concerned bands or in adjacent bands. Therefore, the new allocation RNSS (space-to-space) will not request protection from existing services, that is RNSS in the concerned bands and MSS in the adjacent bands.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

Bulgaria (Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

CONTRIBUTION TO RESOLUTION 86 (MINNEAPOLIS, 1998) - COORDINATION AND NOTIFICATION PROCEDURES FOR SATELLITE NETWORKS

The proposals for simplification of the satellite network examinations will positively affect the image of ITU. The current methodology of RR Appendix 29 is quiet simple and with low resolution which does not allow more precise C/I calculations.

One third of the ITU member administrations have submitted satellite networks for coordination and only half of them have real working satellites. They would be favoured by further reducing or eliminating the satellite network examinations. However, this would adversely affect the developing countries and their equitable access to spectral/orbital resources. Many administrations have terrestrial and planned BSS networks and earth stations requiring protection, but they are unable to make satellite coordination calculations mainly because of the lack of relevant data.

The delay of the satellite network publications affects the effective use of the spectral/orbital resources. If the data about the networks is published on time, every administration would be able to make the necessary calculations in order to find an empty, or not very crowded, part of the geostationary orbit and of the radio spectrum, and thus make the work of ITU simpler.

The proposals are:

BUL/167/1

ITU-BR, as a contact point and main body for satellite network registrations, should publish the satellite data on its web page immediately after receiving it and should keep a correct satellite database.

BUL/167/2

The access to ITU-BR databases should be free. At the present time the charge for ITU WEB and for SRS CD ROM accounts for less than the 0.0001% of the ITU-BR budget thus preventing developing countries from having access to this information.

BUL/167/3

The coordination examination should be provided by ITU-BR or by external organizations, if preferable to the administrations. Some companies offer free satellite network examinations for the developing countries and ITU-BR should assist them in this activity.

BUL/167/4

ITU-BR should keep its control functions over the final coordination results at the time of satellite network notification and should check the compatibility of the operational satellite data with the data in the Master Frequency Register (this is currently not being done).

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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10 May 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTE 4

Bulgaria (Republic of)

PROPOSAL FOR THE WORK OF THE CONFERENCE

CONTRIBUTION TO RESOLUTION 86 (MINNEAPOLIS, 1998) - COORDINATION AND NOTIFICATION PROCEDURES FOR SATELLITE NETWORKS

According to the last BR IFIC, the publication delay of the communication satellite networks as of the first day of WRC-2000 is more than 24 months. This delay at the time of Resolution 86 creation was only 18 months. The main conclusion is that a serious analysis of the satellite network coordination procedure is necessary and answers to the following questions are very important:

1) Description of the separate groups of notification and coordination procedures.

2) Satellite network examination methodology: procedures, software and platforms.

3) Databases used and their formats.

4) Resources used: computers, servers, network arrangement.

5) Duration of the main operations (examples for 1-3 specific networks).

6) Backlog statistics for the last year: delay in the main operations in the sequence of the examinations and publications.

The description of the satellite coordination procedures is necessary in order to evaluate their efficiency when they are performed by external companies and to help ITU-BR, if necessary. Considering the above-mentioned BR IFIC, its data format (PDF format) is unsuitable for engineering purposes (no sorting and searching facilities). That is why it is proposed that the data about satellite coordination be published in a suitable electronic form, thus making the whole information, related to the coordination analyses and satellite network replanning, available to all interested administrations.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 169-E
10 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

MINUTES

OF THE

OPENING CEREMONY

Monday, 8 May 2000, at 1100 hours

1 Address by the Secretary-General of ITU

2 Address by the Minister of Transport and Communications of Turkey

3 Address and opening of the Conference by the Deputy Prime Minister of Turkey

The **Chief of Protocol of ITU** said that the Opening Ceremony would be addressed by the Secretary-General of ITU, the Minister of Transport and Communications of Turkey and the Deputy Prime Minister of Turkey.

1 Address by the Secretary-General of ITU

1.1 The **Secretary-General of ITU** delivered the address reproduced in Annex A.

2 Address by the Minister of Transport and Communications of Turkey

2.1 The **Minister of Transport and Communications of Turkey** delivered the address reproduced in Annex B.

3 Address by the Deputy Prime Minister of Turkey

3.1 The **Deputy Prime Minister of Turkey** delivered the address reproduced in Annex C and declared open the World Radiocommunication Conference (Istanbul, 2000).

The meeting rose at 1235 hours.

Annexes: 3

Original: English

ANNEX A

Address by the Secretary-General of ITU

Your Excellency, Mr Devlet Bahçeli, Deputy Prime Minister of Turkey,
Your Excellency, Mr Enis Öksüz, Minister of Transport and Communications,
Your Excellency, Mr Erkan Mumcu, Minister of Tourism,
Your Excellency, Mr. Osman Durmus, Minister of Health,
The Governor of Istanbul, Mr Erol Gakir,
The Mayor of Istanbul, Mr Ali Müfit Gürtuna,
The Mayor of Sisli, Mr Mustafa Sarigül,
Excellencies,
Ladies and Gentlemen,

I am very pleased to be able to welcome you all here today to the opening of the World Radiocommunication Conference (WRC-2000). It is of course the first WRC in the new millennium, indeed the first major ITU conference of the millennium. Let me pay a special tribute to the generous and outstanding support that ITU has received from the Turkish Government and its partners, at a time when two big natural disasters have presented enormous challenges to them. We can imagine how hard they must have worked to prepare for this conference which is the biggest event ITU has ever experienced in its 135-year history. Istanbul, a city that has, for many centuries, been a symbol of bridging continents, different cultures and people, just as telecommunications do today. We are very proud of being able to hold this millennium event in this city.

WRC-2000 is the first ITU conference to operate under the revised provisions of the Constitution, Convention and Rules of Procedure adopted at the Minneapolis Plenipotentiary Conference in 1998. It is thus, significantly, the first WRC to have the participation, as observers, of Sector Members in their own right. I personally welcome this change and, as you know, ITU is working hard on considering further reforms to ensure that our organization is relevant, and remains relevant in the face of the swiftly changing demands of today's environment.

In this new age of rapid technological development, WRC must be an excellent example of a mechanism for enabling the framework for the worldwide use of frequencies to adapt constantly to meet today's requirements.

The issues you will be discussing during WRC-2000 reflect the urgency of the situation very clearly:

– additional spectrum for IMT-2000 systems;

– replanning of the broadcasting-satellite service for Regions 1 and 3;

– arrangements for proposed new satellite systems such as new non-GSO systems and satellite positioning systems.

Many of these needs for spectrum and other changes to be considered are of vital importance to the Members of the Union.

I know that it will not be easy to reach agreement on those complicated issues for which strong vested interests and expectations are held. However, there have been extraordinarily extensive

preparations made for this conference through regional groups such as APT, CITEL and CEPT. It would not be possible to get close to agreement at this WRC without these extensive regional preparations. And, of course, ITU has played its part in these preparations through ITU-R study groups, the recent conference preparatory meeting (CPM) and the work conducted by the secretariat.

With all of this preparation, the final movement of the symphony is now before us and, I am sure, that with your hard work we shall see the results in an agreed set of final acts for you to take home with you.

In order to be able to do that, however, efficient deliberations are absolutely necessary so as to be able to tackle the many difficult items. ITU's ways of conducting discussions must become more streamlined. And so I should like to propose some measures, which in my own experience, have led to increased efficiency, especially considering the constraints of the time available for the discussion of very important matters:

– firstly, each delegation's intervention should be limited to a maximum of five minutes;

– secondly, delegations should not ask for the floor repeatedly on the same issue;

– thirdly, chairpersons should not allow delegations to repeat the same kind of interventions when it is clear that the majority of the hall is moving in the same direction, and they should only allow delegations stating different opinions to take the floor;

– fourthly, conflicting issues should be resolved as much as possible between the main proponents in small ad hoc groups or in the corridors.

If you follow these suggestions and if you are well disciplined, I am sure enormous time will be saved. I believe that these measures will allow us to be able to enjoy some of the beauty of Istanbul, and if we do not have night sessions we may also be able to enjoy some of Istanbul's famous nightlife.

Furthermore, I should like to draw your attention to the fact that the budgetary situation of the Union today is quite different from any previous one. ITU has a very limited budget for its heavy workload. If you exceed the budget allocated to this conference, you will have to cut down on certain other activities of the Union. And, if your decisions in this conference require more resources than are currently available, again you will have to reduce or eliminate other activities. We simply do not have the resources to satisfy demands that are made without taking into account the budgetary constraints. We may have had such resources in the past, but we certainly no longer have them today.

Four weeks seem like a long time at the beginning, but they will feel really short at the end. Let us have a meaningful meeting. I wish you a successful conference.

Thank you.

Original: English

ANNEX B

Address by the Minister of Transport and Communications of Turkey

Excellencies, Mr Secretary-General of ITU,
Distinguished delegates,
Dear guests,
Ladies and gentlemen,

As the member of the Turkish Government responsible for telecommunications, I would like to welcome you all to the World Radiocommunication Conference in Istanbul. I am very happy that we have succeeded in completing all the facilities in good shape and provided them for your service. It was really a very hard and difficult time for us to arrange everything for the conference on time. We succeeded, and we are really very pleased to be able to welcome you in this very pleasant environment. In addition, by hosting this conference we have gained a brand new, big, well-equipped conference and exhibition centre which has an area of 8 000 square metres in total. We would like to host many ITU conferences in this new building in coming years.

WRC-2000 is the first conference of ITU in the twenty-first century. Of course this is not going to be the last one. However, because of the very important and sensitive issues on its agenda, it will shed a light for the entire twenty-first century in the field of radiocommunications. The number of players, the interest and the requirements are growing every day, and in parallel the demand on ITU and its constituent bodies is also growing every day. Like all other countries, naturally we do not want to remain behind all these developments in the world. That's why we thought that ITU activities should be spread out, all over the world, and for the first time in the history of WRCs, we decided in 1995 to host one of the WRC conferences in Turkey. Now we are realizing this reality together. In this context, I would like to repeat once again, we are happy that we are able to serve humanity by hosting this conference in Turkey.

I would also like to touch upon the importance of the WRC-2000 conference agenda, because there are really very important issues to be considered and hopefully to be resolved before the last day of the conference.

The first issue I want to raise is the third generation mobile systems, which is known as the International Mobile Telecommunication System, IMT-2000. As you know, the frequency bands allocated by WARC-92 to IMT-2000 are not sufficient. So, we need some more frequencies for IMT-2000. I hope, at the end of this conference, that we will be able to allocate some more frequency bands for the mobile systems of the future, because the industry is looking for such bands urgently.

The second important issue is BSS services. Of course there is a plan, established in 1977, but since then many new countries have emerged and they also need BSS channels. This is why we should try to do our best to provide equitable usage of spectrum for all countries of the world. I hope this conference will have no difficulty in sorting out this issue in one way or another.

One of the most important issues that I would like to touch upon is the navigation systems and rearrangement of frequencies for radionavigation services either for maritime or aeronautical purposes. But I believe that aeronautical radionavigation comes first, because the civil aviation community has some difficulties nowadays. It has also been brought to our Ministry's attention,

since we are managing civil aviation as the Ministry of Transport. That's why I look forward to this conference solving the aviation-related issues.

There are others: the high-altitude platform stations, high-density fixed service, power limits, GSO or non-GSO systems frequency and sharing issues, and others. I don't think it is necessary to stress again that your work will be hard in Istanbul, you need to resolve as many as possible of the agenda items here, because each forthcoming conference will carry its own load, maybe more than WRC-2000. That's why I hope you will be finalizing all the issues on the agenda at this conference.

Ladies and gentlemen, before concluding, once again I would like to extend to you all the warmest welcome of the people of Turkey, coming from the deepest part of our hearts. Enjoy your stay in Istanbul and pass on all our regards to your people and your countries.

Thank you.

Original: English

ANNEX C

Address by the Deputy Prime Minister of Turkey

Excellencies,
Mr Secretary-General of ITU,
Distinguished delegates to WRC-2000, and
Representatives of the Press,

It is a great honour for me, on behalf of the Government of the Republic of Turkey, to welcome you all to Istanbul. This conference is very important for the items on its agenda, and because it is the first such conference to be held outside Geneva, in Turkey. In addition, we are happy that we have the opportunity to show Turkish hospitality and friendship to all our guests from all over the world.

The twenty-first century is seen as an historical starting point heralding a new development period for humanity. The role of developments in telecommunication technologies is very important in this era and can affect all other sectors.

Today, many economic and social developments are taking place. If we try to analyse the direction of these developments, we find that the first issue is that these developments, which have occurred since the industrial revolution, have the power to reshape the world.

It is important to understand the new so-called “infra industry” period from a standpoint of global dynamics and parameters. This is why it is very important to establish multidimensional dialogue and relationships with the “new world”.

With your permission, I would like to underline the concept of establishing relationships with the “new world”, because it will be very difficult for closed societies which are not open to the outside world to be successful and to contribute to the globalization process.

As is well known, the most important aspects characterizing the new era are focused on the following points:

1 Developments in telecommunications, informatics and the computer and electronic sectors, i.e. information technologies, have formed a new economic sector and also opened up and revolutionized all conventional manufacturing sectors

The “new economy” concept which is current today is one of the new developments in the production field. One of the reasons for the creation of a growth dynamic by the new economy is the fact that conventional production systems have had a good deal of interactivity and compatibility with these new economies.

2 Another important development is the much-debated globalization process

This new development wave, which includes the establishment by societies and countries of a new kind of relationship which takes account of economic, technological and even political standards, is being seen as an important factor which shows that the dynamic of development has altered the relationships between societies and countries.

In today's world, the infrastructure establishing these relationships is directly related to the level of development in telecommunication and informatics technologies. In order to continue our relations with the world we should improve our capacity for better global competition and global trade of our own.

Establishing interactivity with the world and opening the way to new developments in telecommunications in political, technological, scientific and cultural areas is increasingly important.

We may clearly state that it is no longer possible to remain outside global relations. Those who wish to do so will face various effects of globalization and will be obliged to accept the negative consequences, because the basic property of the globalization process is that it has economic, technological and international dynamics which cannot be rejected by any country or society.

Those who better understand such a process, its methods, language and technology, will reap more benefit from the process than others.

We in Turkey are obliged to be an open society. We have the background to set up and improve our relations with international bodies, based also on the foundation of our very rich civilization.

By contemplating strong cultural and ethical relations in conjunction with the dynamics of the globalization process we may contribute to the formation of a more balanced and equitable world in this new era.

This favourable global ground and climate should be for the benefit of all humanity.

For this reason, it is very important for all countries to try to provide an optimum balance for the benefit of all humanity.

Distinguished guests and delegates,

Turkey is preparing for major investments and further progress in telecommunications following the improvements it has experienced in recent years in this context. A new development policy to be put forward for the reorganization and establishment of a more powerful infrastructure gives us new hope and enthusiasm for the future.

As Turkey catches up with this century's level of development and starts producing its own technologies, major investment, particularly in the field of telecommunications and new economies, will follow.

In recent days, the first stages of a development plan in the telecommunication field have been accomplished with the establishment of the Turkish Telecommunications Regulatory Authority, marking a milestone in the sector. The Telecommunications Authority, which will operate completely independently, will play a vital role in regulating the telecommunication sector.

In addition, with the help of the Authority, Turkey will have an economically competitive structure for this sector.

At the end of the year 2003, the monopoly in the sector will be removed totally and a structure completely open to competition will be established.

Before concluding, I would like to wish every success to WRC-2000 on behalf of the Turkish people.

I would also like to thank ITU for its service to all humanity, and offer my heartfelt best wishes for a fruitful outcome to this conference organized in Turkey.

I trust that there will be wide support for the election of Mr Yurdal, whose experience is well known to all, as the Chairperson of the Conference.

Once again, I would like to welcome you to our country, Turkey, which has been one of the most important centres of many civilizations in the history of humanity.

Excellencies,
Distinguished delegates
Ladies and gentlemen,

To conclude, it is a great honour for me on behalf of the Government and people of Turkey to declare open the World Radiocommunication Conference 2000 in Istanbul.

Thank you.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Corrigendum 1 to Document 170-E
22 May 2000
Original: French English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

MINUTES

OF THE

FIRST PLENARY MEETING

Monday, 8 May 2000, at 1200 hours

Chairperson: Mr H. GÜLER (Turkey)
Later: Mr F.M. YURDAL (Turkey)

Modify section 15.5, line 4, page 6 (English version) as follows:

... IRG and CPM, he ~~deplored the fact~~said that ~~an~~ organization<u>s</u> like his own ~~was unable to~~were <u>handicapped by not being able to</u> play a more significant role ~~in an international conference such as~~<u>at</u> WRC<u>s</u> ...

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 170-E
.. May 2000
Original: French
English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

MINUTES

OF THE

FIRST PLENARY MEETING

Monday, 8 May 2000, at 1200 hours

Chairperson: Mr H. GÜLER (Turkey)
Later: Mr F. YURDAL (Turkey)

Subjects discussed		**Documents**
1	Opening of the first Plenary Meeting	-
2	Election of the Chairperson of the Conference	-
3	Address by the Chairperson of the Conference	-
4	Address by the Director of the Radiocommunication Bureau	-
5	Conference structure	DT/2
6	Election of the Vice-Chairpersons of the Conference	-
7	Election of the Chairpersons and Vice-Chairpersons of the Committees	-
8	Composition of the Conference secretariat	-
9	Financial responsibilities of conferences	110
10	Allocation of documents to committees	DT/4
11	Participation requests submitted by international organizations	114
12	Invitations to the Conference	113
13	Date by which the Credentials Committee must submit its conclusions	-
14	Working hours of the meetings of the Conference	-
15	General statements	-

1 Opening of the first Plenary Meeting

1.1 Mr Hüseyin Güler, former Director-General of the General Directorate of Radiocommunications of Turkey, declared open the first Plenary Meeting of the World Radiocommunication Conference (Istanbul, 2000).

2 Election of the Chairperson of the Conference

2.1 The **Secretary-General** announced that the Turkish Government had proposed Mr Fatih Yurdal (Turkey) for the post of Chairperson of the Conference.

2.2 The proposal was **adopted** by acclamation.

Mr Yurdal took the chair.

3 Address by the Chairperson of the Conference

3.1 The **Chairperson** delivered the address reproduced in Annex A.

4 Address by the Director of the Radiocommunication Bureau

4.1 The **Director of the Radiocommunication Bureau** delivered the address reproduced in Annex B.

5 Conference structure (Document DT/2)

5.1 The **Secretary-General** said that the meeting of Heads of delegation had agreed to the establishment of Committees 1, 2, 3, 4, 5 and 6, and of Working Groups 1 and 2 of the Plenary, as outlined in Document DT/2. It had also agreed on a number of amendments to the document.

5.2 The **Secretary of the Plenary Meeting** informed participants of the agreed amendments to Document DT/2, pending its reproduction in final form.

5.3 Document DT/2, as amended, was **approved**.

6 Election of the Vice-Chairpersons of the Conference

6.1 The **Secretary-Genera**l announced that the meeting of Heads of delegation had approved the following nominations for the posts of Vice-Chairpersons of the Conference:

H.E. Mrs G. Schoettler (United States)

Mr J.S. Strick (Germany)

H.E. Mr L. Reyman (Russia)

Mr I. Samake (Mali)

Mr H. Ishihara (Japan)

Mr A. Berrada (Morocco)

6.2 The proposals were **adopted**.

7 Election of the Chairpersons and Vice-Chairpersons of the Committees

7.1 The **Secretary-General** announced that the meeting of Heads of delegation had approved the following nominations for the posts of Chairpersons and Vice-Chairpersons of the Committees:

Committee 2 - Credentials

Chairperson: Mr A.M.T. Abu (Nigeria)

Vice-Chairperson Mr R. Chen (China)

Committee 3 - Budget Control

Chairperson: Mr B. Gracie (Canada)

Vice-Chairperson: H.E. Mr M. Tabeshian (Iran (Islamic Republic of))

Committee 4 - Regulatory and Associated Issues

Chairperson: Mr H. Railton (RRB)

Vice-Chairpersons: Mr N. Kisrawi (Syria)

Mr L. Petzer (South Africa)

Committee 5 - Allocations and Associated Issues

Chairperson: Mr C. van Diepenbeek (Netherlands)

Vice-Chairpersons: Mr H.K. Al-Shankiti (Saudi Arabia)

Mr H. Fernandez Macbeath (Cuba)

Committee 6 - Editorial

Chairperson: Mr L. Bourgeat (France)

Vice-Chairpersons: Mr M. Johnson (United Kingdom)

Mr C. Menendez Argüelles (Spain)

Working Group 1 of the Plenary

Chairperson: Mr R. Zeitoun (Canada)

Vice-Chairpersons: Mr S. Djematene (Algeria)

Mr A. Frederich (Sweden)

Working Group 2 of the Plenary

Chairperson: Mr E. George (Germany)

Vice-Chairperson: Mr A. Zourmba (Cameroon)

7.2 The proposals were **adopted**.

7.3 The **delegate of Lebanon** said that at the meeting of Heads of delegation**,** Lebanon had proposed a second Vice-Chairperson for Working Group 2 of the Plenary for consideration by the Arab Group. As the outcome of the deliberations by the Arab Group was still awaited, he requested further patience pending that decision.

8 Composition of the Conference secretariat

8.1 The **Secretary-General** informed the Conference that the following ITU staff members would make up the Conference secretariat:

Executive Secretary: Mr P. Capitaine

Conference Coordinator: Ms H. Laugesen

Secretary of the Plenary Meeting and Committee 1: Mr R. Smith

Secretary of Committee 2: Mr D. Schuster

Secretary of Committee 3: Mr G. Eidet

Secretary of Committee 4: Mr P. Lundborg

Secretary of Committee 5: Mr J. Lewis

Secretary of Committee 6: Mr C. Langtry

Secretary of Working Group 1 of the Plenary: Mr G. Mesias

Secretary of Working Group 2 of the Plenary: Mr A. Nalbandian

The Secretary-General of ITU would act as Secretary of the Conference.

8.2 That information was **noted**.

9 Financial responsibilities of conferences (Document 110)

9.1 The **Secretary-General** drew attention to the provisions of Article 34 of the Convention of the Union on financial restrictions, as reproduced in Document 10. It was important that these financial restrictions be taken into account when making decisions during the Conference.

9.2 Document 110 was **noted**.

The meeting was suspended at 1235 hours and resumed at 1435 hours.

10 Allocation of documents to committees (Document DT/4)

10.1 The **Secretary of the Plenary** said that the documents listed in Document DT/4 were those which had been submitted to the secretariat before 5 May 2000 and that new documents received since that date would subsequently be added to the list and allocated to committees. Document 41 (Report of the Director of BR) would initially be considered by WG PLEN-2, and then by the various committees concerned, namely Committees 4 and 5, and also by WG PLEN-1.

10.2 After comments by the **delegates of Japan** (speaking on behalf of APT), **Syria**, **Mali** (speaking on behalf of the African Group), **Indonesia**, the **Islamic Republic of Iran**, **India**, **Denmark**, **Brazil**, **France** and the **representative of BR**, the **Chairperson** said that Document DT/4 would be amended accordingly. He invited the participants to submit their corrections to the secretariat and to approve the document as it stood.

10.3 Document DT/4 was **approved** on the understanding that it would be amended subsequently.

11 Participation requests submitted by international organizations (Document 114)

11.1 The **Secretary-General**, introducing Document 114, said that it concerned a request by the Mobile Satellite Users Association (MSUA), a non-profit organization which wished to take part in the work of the conference as an observer.

11.2 The request was **approved**.

12 Invitations to the conference (Document 113)

12.1 The **Secretary-General** said that the participants were invited to take note of Document 113, which contained a list of Member States and Sector Members invited to take part in the conference.

12.2 Document 113 was **noted**.

13 Date on which the Credentials Committee is to report on its conclusions

13.1 The **Secretary-General** recalled that, in accordance with No. 334 of the Convention, the conference had to verify the credentials of delegations. Since the Credentials Committee was to submit its report to Plenary on Monday, 29 May, delegations were invited to present their credentials before that date.

14 Working hours of the conference

14.1 The **Secretary-General** said that following the meeting of Heads of delegation, it was proposed that the conference should adopt the following working hours: 0930-1230 hours and 1430-1730 hours from Monday to Friday inclusive, and 1930-2230 hours if evening meetings were required.

14.2 It was so **agreed**.

15 General statements

15.1 The **delegate of Morocco** recalled that in Minneapolis the Plenipotentiary Conference had adopted Resolution 99 (Minneapolis, 1998) on the status of Palestine in ITU, under which the Secretary-General and the Directors of the Bureaux were called upon to take certain steps. Accordingly, the relevant measures taken by the Secretary-General and the Director of BR should be examined by the conference. On behalf of the Arab Group, he requested that the Secretary-General and the Director of BR should to submit a report as soon as possible on the action taken in application of Resolution 99 (Minneapolis, 1998).

15.2 The **Chairperson** said that the secretariat would submit a report as soon as possible.

15.3 The **delegate of the United States** said that her country's proposals were based on four key principles whose purpose was to contribute to the success of the conference, namely: 1) to guarantee the proper protection of existing systems, taking into account the heavy investment involved; 2) to protect and encourage the development of new technologies and new systems; 3) to avoid any unnecessary regulation in order to ensure, in the light of the complexity of spectrum use, the regulatory and technical flexibility needed to make the most of the progress

that had been achieved without introducing procedures or structures that could restrict the Union's ability to adapt to the changing telecommunication environment; and 4) to adopt procedures offering all possible flexibility to Member States of the Union, regardless of the region to which they belonged, and to industry, so that technical progress could be of benefit to everyone throughout the world.

15.4 The **representative of ICAO** underlined the importance that ICAO attached to protecting the frequencies allocated to the aeronautical services, which were the sole guarantee of the safety of civil aviation and the development of the air transport sector in the 21st century - a sector that had a major economic and social role to play throughout the world. The smooth functioning of communications, navigation and surveillance/air traffic management (CNS/ATM) depended on interference-free operation. ICAO was concerned by the tendency to reduce the frequency bands allocated to the aeronautical services and urged the conference not to underestimate the adverse effects of reallocating frequencies that were at present allocated to civil aviation. Three issues deserved special attention: the long-term availability of the frequency bands required for aeronautical navigation by satellite, in particular those already used by the global orbiting navigation satellite system, guaranteed access to the frequency bands for aeronautical communication by satellite; and compatibility between any new frequency allocation and existing aviation allocations. In conclusion, after cautioning the conference against any sharing of bands currently allocated to civil aviation which could threaten air transport safety and efficiency, he emphasized the absolutely essential need to protect the frequencies allocated to aeronautical communications and radionavigation systems.

15.5 The **representative of ABU** said that his organization took a special interest in the question of BSS replanning, the allocation of frequencies to IMT-2000 systems and other frequency allocations that could have an impact on broadcasting services. After recalling the contribution that ABU made to the work of the study groups, IRG and CPM, he deplored the fact that an organization like his own was unable to play a more significant role in an international conference such as WRC and hoped that the reform of ITU would enable ABU to participate actively in the work of the conference in future. Finally, he pointed out that the World Broadcasting Union, which had submitted Document 99, had adopted the same position as ABU.

15.6 The **delegate of Colombia**, speaking on behalf of CITEL, said that CITEL had submitted 361 proposals stemming from the joint thinking of its member administrations. The aim of those proposals was to contribute to the progress of radiocommunications around the world through better use of the spectrum, which was the most important and valuable strategic resource of the century for communications. CITEL's proposals related to the use of the frequency spectrum for the development of third-generation mobile services, high-density fixed-service systems, geostationary and non-geostationary satellite systems, the protection of aeronautical services and Earth observation and surveillance services, scientific and space services and the overall development of radiocommunications in the convergent telecommunication environment. CITEL's common proposals were based on the CPM recommendations, the studies carried out by the ITU-R study groups and the suggestions made by various players in the telecommunication sector. Lastly, he pointed out that the documents and proposals from other regions (the European Commission and the Asia-Pacific Broadcasting Union, for example) had also been taken into account and expressed the hope that a spirit of collaboration would inform the work of the conference.

15.7 The **Minister of Communications of Nigeria** said that since the return to democracy Nigeria had undertaken a reform of its telecommunication sector in May 1999 with a view to creating a climate conducive to participation by foreign investors. Deregulation, competition and the involvement of the private sector were encouraged. The regulatory body had been restructured to win back the confidence of investors. Being deeply attached to the aims and

aspirations of ITU, Nigeria offered its special congratulations to the Union and the various other organizations and bodies which had contributed to the historic achievement of the IMT-2000 standardized global interface.

15.8 The **delegate of Mali** said that in spite of the many items on the conference agenda and the complexity of the problems to be resolved - of which replanning was the most important for Africa - the African Group was convinced that the preparatory work carried out at the national, regional and subregional levels and the spirit of compromise that would surely prevail among all delegations would enable the conference to reach generally acceptable solutions that were in the wider interests of all concerned. The African Group was optimistic in that respect and willing to join with others in seeking those solutions.

The meeting rose at 1525 hours.

The Secretary:
Y. UTSUMI

The Chairperson:
F. YURDAL

Annexes: 2

Original: English

ANNEX A

Address by the Chairperson of the Conference

Ladies and gentlemen,
dear colleagues,
distinguished delegates,

It is a great honour for me to have been elected Chairperson of this very important Conference by you. Thank you for your kind support, and I would wish that your support will continue throughout the Conference in order to make it a successful one.

As many of you are aware, there are many important issues on our agenda, and we are almost obliged to finalize all of them before the last day of the Conference. Because, if we leave any issue pending until the next Conference we will be overloading that Conference, which will have its own heavy workload. This is why I will need everybody's indulgence and help during our deliberations in being more flexible and more creative.

As you all know there are many important and difficult issues on the agenda. But some of them will be more difficult to resolve. Among these are:

– new frequency allocations to IMT-2000 which will be the next generation of mobile systems to be used all over the world;

– consideration of the BSS plan, which I hope will pose no serious problems; and

– frequency allocation to the high attitude platform stations.

There are others, too, but since the time allowed for the Conference is only four weeks, I would suggest we start our work immediately in order to be able to finalize it in good time and not to have night or all-night sessions. And please take note that in any case we shall be finalizing our work by 1700 hours on Thursday 1 June in order to facilitate the necessary procedures to close the Conference in a timely manner.

I also would like to warn everybody that this is a rather technically based Conference. This is why I would kindly urge you, as far as possible, not to go for a vote. Not asking for any kind of point of order would be very much appreciated. This will ease and speed up our work.

I reiterate the welcome of the Turkish people to the Conference, and I welcome here the presence here of the Minister of Transport and Communications of Turkey and the Minister of Telecommunications of Nigeria.

Original: English

ANNEX B

Address by the Director of the Radiocommunication Bureau

Mr Chairman,
Excellencies,
ladies and gentlemen,
dear colleagues and friends,

I would like to welcome to you all to this World Radiocommunication Conference. It is very appropriate that such a significant event is taking place here in Istanbul, a city with such a fascinating history and situated at the crossroads between Europe and Asia. Istanbul today is also an appropriate reminder of the progress that can be made in terms of the incredible advances in technology many of which depend on the results of this Conference if they are to move forward from concept to reality.

Dear friends, the four weeks we have ahead of us will prove to be very brief given the huge workload that we face. Indeed, this Conference has already broken virtually all records that we thought were not possible to break and still be able to achieve a successful result. First of all, we now have over 2 600 registered delegates representing some 150 countries. This record number places incredible demands on the Conference resources and on your individual skills, patience and spirit of cooperation and compromise. Secondly, you begin this Conference with a record number of documents to consider. On the basis of the experience of WRC-97, this could result in some 29 million pages of documents being distributed by the end of the Conference. That would be a 16 per cent increase over WRC-97.

I mention these statistics because it is symptomatic of the environment in which the Radiocommunication Bureau finds itself. We have worked very hard in the last two and a half years to meet all the demands you placed on us at WRC-97, in addition to our ever increasing ongoing work. You are well aware of the significant tasks associated with the BSS replanning exercises, the implementation of Resolution 49, the studies associated with Resolutions 130, 131 and 538 and many other studies with which WRC-97 tasked the Bureau. The Conference has before it my comprehensive report on the activities of the Bureau so I shall not mention now matters that you will consider in more detail later. I do, however, want to mention one significant issue that you will consider and, hopefully, take action on. This is the totally unacceptable situation we have now reached with respect to the processing of satellite network filings. The Bureau has done much to continue to streamline its work but the filings now awaiting processing represent close to three years work even if no further new filings were to be made. The kind of streamlining of work that we in the Bureau can undertake within the current Radio Regulations can lead to only marginal improvements. Regulatory changes are necessary to have a more significant and more immediate impact. I hope that you will all agree with me that this situation has to be corrected if the ITU is to maintain its credibility in this fundamental role. I sincerely hope that you will tackle the complexity of the current regulatory framework and provide the means for the required improvement. WRC-2000 is probably the last effective opportunity to do so.

Ladies and gentlemen, I have mentioned just one of the significant issues that face you. There are, of course, very many others that must be resolved if the benefits of new technologies are to be available to as many of the world's population as possible.

I personally will do all that I can to assist you, as will all of the ITU staff. Mr Chairman, ladies and gentlemen, may I wish you all the best of success with your endeavours over the next four weeks.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

Ce document a été annulé avant publication.

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This document was withdrawn before publication.

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Este document ha sido anulado antes de su publicación.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 172-E
10 May 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 4

(REGULATORY AND ASSOCIATED ISSUES)

Monday, 8 May 2000, at 1600 hours

Chairperson: Mr H. RAILTON (RRB)

Subjects discussed		**Documents**
1	Introductory remarks by the Chairperson	-
2	Terms of reference of Committee 4	DT/2
3	Organization of work	DT/7
4	Appointment of chairpersons of working groups	-
5	Allocation of documents to working groups	DT/6

1 Introductory remarks by the Chairperson

1.1 The **Chairperson** said that he would seek to find solutions which would facilitate revision of the Radio Regulations in a manner that would meet upcoming challenges while accommodating the different views on the objectives sought and the action to be taken to achieve those objectives.

2 Terms of reference of Committee 4 (Document DT/2)

2.1 The terms of reference of Committee 4 set out in Document DT/2, as amended at the first Plenary Meeting, were **noted**.

3 Organization of work (Document DT/7)

3.1 The **delegate of Colombia** asked in what context the report by RRB (Document 29) would be considered and when delegations would have the opportunity to comment on it. At the previous WRC, the RRB report had been considered late in the evening at the very last meeting. The **delegate of Morocco** also considered the item to be an important one, and pointed out that Document 29 was not included in the terms of reference of any committee or working group of the Plenary.

3.2 The **Chairperson** said that the RRB report undeniably fell within the competence of Committee 4. He would raise the matter in the Steering Committee, in order to ensure that the RRB report was duly considered and that delegations were given the time to make their comments.

3.3 Document DT/7 was **approved**.

4 Appointment of chairpersons of working groups

4.1 The **Chairperson** said that, following consultations, it was proposed that Working Group 4A should be chaired by Mr Kisrawi (Syria) and Working Group 4B by Ms Allison (United States).

4.2 It was so **agreed**.

5 Allocation of documents to the working groups (Document DT/6)

5.1 The **Chairperson** explained that he had refrained from drawing up a detailed list of documents allocated to Working Groups 4A and 4B in Document DT/6, because new documents were coming out each day and it would be necessary to wait until the working groups started work. Several delegations having taken the floor to request that specific documents be allocated to specific working groups, he said that corrections should be notified direct to the secretariat, and would be taken into account in the detailed list to be produced for each working group.

5.2 The **delegate of Morocco** pointed out that some of the documents mentioned had not yet been issued and their content was thus not known. Furthermore, it was necessary to wait until the Steering Committee had decided whether information documents and documents from observers could be allocated to committees.

5.3 The **delegate of Malaysia** said that, during consideration of Document DT/4 in Plenary, Document 46 had been allocated by mistake to Committee 4, whereas it should in fact be taken up by Committee 5. He requested the Chairperson to bring that point to the attention of the Chairperson of Committee 5.

5.4 Document DT/6 was **approved**, taking into account the comments made during the discussion.

The meeting rose at 1625 hours.

The Secretary:
P. LUNDBORG

The Chairperson:
H. RAILTON

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 173-E
10 May 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 5

(ALLOCATIONS AND ASSOCIATED ISSUES)

Monday, 8 May 2000, at 1600 hours

Chairperson: Mr C. van DIEPENBEEK (Netherlands)

Subjects discussed		**Documents**
1	Opening of the meeting	-
2	Terms of reference of the Committee	DT/2
3	Organization of work	DT/5
4	Allocation of documents to working groups	DT/1, DT/4

1 Opening of the meeting

1.1 The **Chairperson** welcomed participants to the first meeting of Committee 5.

2 Terms of reference of the Committee (Document DT/2)

2.1 The terms of reference of Committee 5, as set out in Document DT/2, were **noted**.

3 Organization of work (Document DT/5)

3.1 The **Chairperson** said that a process of consultation had resulted in a proposal to establish four working groups with the following terms of reference:

Working Group 5A: agenda items 1.6 (1.6.1, 1.6.2), 1.10, 1.11

Working Group 5B: agenda items 1.7, 1.9, 1.15 (1.15.1, 1.15.2, 1.15.3), 1.18

Working Group 5C: agenda items 1.4, 1.5, 1.16, 1.17

Working Group 5D: agenda items 1.12, 1.13 (1.13.1, 1.13.2), 1.14

3.2 It was so **agreed**.

3.3 The appointment of Mr Jamieson (New Zealand), Mr Mizuike (Japan), Mr Jansky (United States) and Mr Leary (Japan) as chairpersons of Working Groups 5A, 5B, 5C and 5D, respectively, was **approved**.

3.4 The **Chairperson**, in response to a query from the **delegate of the United States** concerning a mechanism to coordinate the work of Committees 4 and 5, said that he would, according to normal procedures within conferences send liaison statements to other committees and working groups.

3.5 The **delegate of Benin**, supported by the **delegate of the United Arab Emirates**, drew attention to the difficulties encountered by smaller delegations in attending meetings held in parallel.

3.6 The **Chairperson** said that for the time being there would be no parallel meetings of the working groups, which were urged to avoid any proliferation of smaller groups.

4 Allocation of documents to working groups (Documents DT/1 and DT/4)

4.1 The **Chairperson**, referring to Documents DT/1 and DT/4, said that the allocation of documents to the Committee and its working groups would be revised in the light of the corrections and amendments presented in the Plenary and at the present meeting or submitted in writing to the secretariat.

4.2 In reply to a comment by the **delegate of Canada**, he said that he would raise with the Chairperson of Committee 4 the question of the proper place at which to discuss certain regulatory aspects of agenda item 1.13. Responding to an observation by the **delegate of Australia**, who was speaking on behalf of the Asia-Pacific Telecommunity (APT), he said that he would coordinate the allocation of the proposals in Document 20 with Committee 4 and GT PLEN-2. In addition, an effort would be made to allocate the resolutions listed under agenda item 4 to specific working groups, as requested by the **delegate of the United States**.

The meeting rose at 1640 hours.

The Secretary:
J. LEWIS

The Chairperson:
C. van DIEPENBEEK

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 174-E
10 May 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

Note by the Chairperson of Committee 5

The proposal CUB/31/51 was included with other proposals relating to agenda item 1.13. It appears however to be within the terms of reference of Committee 4, in particular Working Group 4B.

C. VAN DIEPENBEEK
Chairperson, Committee 5, Box 120

J.A. Lewis
Secretary, Committee 5, Box 2968

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 3
GT PLEN-2

NOTE BY THE CHAIRPERSON OF COMMITTEE 4

In the examination of the terms of reference of Committee 4, I note that Resolution 80 of PP-98 addresses subjects within the terms of reference of Committee 3 and GT PLEN-2. Accordingly I would appreciate it if you could take responsibility for this item.

Hugh RAILTON
Chairperson, Committee 4, Box 2895

P. LUNDBORG
Secretary, Committee 4, Box 2906

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

NOTE BY THE CHAIRPERSON OF WORKING GROUP 5D

WRC-2000 AGENDA ITEM 1.12

References to S9.7A and S9.7B have been placed in square brackets pending consideration of other proposals by Working Group 5D.

J. LEARY
Chairperson of Working Group 5D

MOD

S5.541A Feeder links of non-geostationary networks in the mobile-satellite service and geostationary networks in the fixed-satellite service operating in the band 29.1-29.5 GHz (Earth-to-space) shall employ uplink adaptive power control or other methods of fade compensation, such that the earth station transmissions shall be conducted at the power level required to meet the desired link performance while reducing the level of mutual interference between both networks. These methods shall apply to networks for which Appendix **S4** coordination information is considered as having been received by the Bureau after 17 May 1996 and until they are changed by a future competent world radiocommunication conference. Administrations submitting Appendix **S4** information for coordination before this date are encouraged to utilize these techniques to the extent practicable. ~~These methods are also subject to review by ITU-R (see Resolution **121 (Rev.WRC-97)**).~~

SUP

RESOLUTION 121 (Rev.WRC-97)

Continued development of interference criteria and methodologies for fixed-satellite service coordination between feeder links of non-geostationary satellite networks in the mobile-satellite service and geostationary-satellite networks in the fixed-satellite service in the bands 19.3-19.7 GHz and 29.1-29.5 GHz

MOD

S11.32A *c)* with respect to the probability of harmful interference that may be caused to or by assignments recorded with a favourable finding under Nos. **S11.36** and **S11.37** or **S11.38**, or recorded in application of No. **S11.41**, or published under Nos. **S9.38** or **S9.58** but not yet notified, as appropriate, for those cases for which the notifying administration states that the procedure for coordination under Nos. **S9.7**, **[S9.7A**, **S9.7B]**, **S9.11**, **S9.12**, **S9.13** or **S9.14** could not be successfully completed (see also No. **S9.65**);[10] or

MOD

S11.33 *d)* with respect to the probability of harmful interference that may be caused to or by other assignments recorded with a favourable finding in application of Nos. **S11.36** and **S11.37** or **S11.38** or in application of No. **S11.41**, as appropriate, for those cases for which the notifying administration states that the procedure for coordination or prior agreement under Nos. **S9.15**[11], **S9.16**[11], **S9.17**[11], **S9.17A** or **S9.18**[11] could not be successfully completed (see also No. **S9.65**); [12] or

MOD

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[10] **S11.32A.1** The examination of such notices with respect to any other frequency assignment for which a request for coordination under Nos. **S9.7**, **[S9.7A**, **S9.7B,] S9.12** or **S9.13**, as appropriate, has been published under No. **S9.38** but not yet notified shall be effected by the Bureau in the order of their publication under the same number using the most recent information available.

MOD

S11.35 ~~Not used.~~In cases where the Bureau is not in a position to conduct the examination under No. **S11.32A** (**S11.33**), the Bureau shall immediately inform the notifying administration, which may then resubmit its notice under No. **S11.41**, under the assumption that the finding under No. **S11.32A** (**S11.33**) is unfavourable.

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UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS

CMR-2000 CONFÉRENCE MONDIALE DES RADIOCOMMUNICATIONS

Document 177-F
12 mai 2000
Original: français
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espagnol

ISTANBUL, 8 MAI – 2 JUIN 2000

SÉANCE PLÉNIÈRE
PLENARY
PLENARIA

CALENDRIER POUR LA CMR-2000/ SCHEDULE FOR WRC-2000/ CALENDARIO PARA LA CMR-2000

Le calendrier est joint en annexe.

The schedule is annexed.

Se adjunta el calendario.

Annexe/Annex/Anexo: 1

ANNEXE/ANNEX/ANEXO

CONFERENCE MONDIALE DES RADIOCOMMUNICATIONS
ISTANBUL 8 MAI - 2 JUIN 2000

*SEMAINE **1***
Lundi 8 mai 2000 -
Dimanche 14 mai 2000

<table>
<tr><th></th><th colspan="2">9h30-12h30</th><th colspan="2">14h30-17h30</th><th>17h45</th><th>19h30-22h30</th></tr>
<tr><td rowspan="2">Lundi 8 mai
Monday 8 May
Lunes 8 de mayo</td><td rowspan="2">Formal meeting of Heads of delegations followed by opening ceremony</td><td rowspan="2">First Plenary meeting</td><td rowspan="2">First Plenary meeting (Cont.)</td><td>COM 4</td><td rowspan="2">COM 1</td><td rowspan="2"></td></tr>
<tr><td>COM 5</td></tr>
<tr><td rowspan="3">Mardi 9 mai
Tuesday 9 May
Martes 9 de mayo</td><td rowspan="2"></td><td>GT PLEN-1</td><td></td><td>GT PLEN-1</td><td rowspan="3"></td><td rowspan="3"></td></tr>
<tr><td>WG 4B</td><td>WG 4B</td><td>WG 4B</td></tr>
<tr><td colspan="2">WG 5A</td><td colspan="2">WG 5B</td></tr>
<tr><td rowspan="3">Mercredi 10 mai
Wednesday 10 May
Miercoles 10 de mayo</td><td>GT PLEN-2</td><td>COM-3</td><td colspan="2">GT PLEN-1</td><td rowspan="3">COM-1</td><td rowspan="3"></td></tr>
<tr><td colspan="2">WG 4A</td><td colspan="2">WG 4B</td></tr>
<tr><td colspan="2">WG 5D</td><td colspan="2">WG 5C</td></tr>
<tr><td rowspan="3">Jeudi 11 mai
Thursday 11 May
Jueves 11 de mayo</td><td>WG 5D</td><td>COM-2</td><td colspan="2">GT PLEN-1</td><td rowspan="3"></td><td rowspan="3"></td></tr>
<tr><td colspan="2">WG 4A</td><td colspan="2">WG 5C</td></tr>
<tr><td colspan="2">WG 5A</td><td colspan="2">WG 5B</td></tr>
<tr><td rowspan="3">Vendredi 12 mai
Friday 12 May
Viernes 12 de mayo</td><td colspan="2">GT PLEN-1</td><td rowspan="2">WG 4A</td><td rowspan="3">PL-2</td><td rowspan="3">COM-1</td><td rowspan="3"></td></tr>
<tr><td>WG 4B</td><td>GT PLEN-2</td></tr>
<tr><td colspan="2">WG 5A</td><td>WG 5D</td></tr>
</table>

CONFERENCE MONDIALE DES RADIOCOMMUNICATIONS
ISTANBUL 8 MAI - 2 JUIN 2000

*SEMAINE **2***

Lundi 15 mai 2000 -

Dimanche 21 mai 2000

	9h30-12h30	**14h30-17h30**	**17h45**	**19h30-22h30**
Lundi 15 mai Monday 15 May Lunes 15 de mayo	GT PLEN-1 WG 4B C 5 associated groups	GT PLEN-2 WG 4A COM 4 C 5 associated groups		
Mardi 16 mai Tuesday 16 May Martes 16 de mayo	GT PLEN's and associated groups COM 4 C 4 associated groups C 5 associated groups	GT PLENs and associated groups C 4 associated groups COM 5 C 5 associated groups	COM 1	
Mercredi 17 mai Wednesday 17 May Miercoles 17 de mayo	GT PLENs and associated groups C 4 associated groups C 5 associated groups	GT PLENs and associated groups 16h00 C 4 associated groups PL 3 C 5 associated groups		
Jeudi 18 mai Thursday 18 May Jueves 18 de mayo	GT PLENs and associated groups C 4 associated groups C 5 associated groups	GT PLENs and associated groups C 4 associated groups C 5 associated groups		
Vendredi 19 mai Friday 19 May Viernes 19 de mayo	GT PLENs and associated groups C 4 associated groups COM 5 C 5 associated groups	GT PLENs and associated groups COM 4 C 4 associated groups C 5 associated groups		

CONFERENCE MONDIALE DES RADIOCOMMUNICATIONS
ISTANBUL 8 MAI - 2 JUIN 2000

*SEMAINE **3***

Lundi 22 mai 2000 -

Dimanche 28 mai 2000

	9h30-12h30	**14h30-17h30**	**17h45**	**19h30-22h30**
Lundi 22 mai Monday 22 May Lunes 22 de mayo	GT PLENs and associated groups C 4 associated groups C 5 associated groups	GT PLENs and associated groups C 4 associated groups C 5 associated groups		
Mardi 23 mai Tuesday 23 May Martes 23 de mayo	GT PLENs and associated groups COM 4 C 4 associated groups C 5 associated groups	GT PLENs and associated groups C 4 associated groups COM 5 C 5 associated groups		
Mercredi 24 mai Wednesday 24 May Miercoles 24 de mayo	COM 3 PL 4 C 4 associated groups C 5 associated groups	GT PLENs and associated groups C 4 associated groups C 5 associated groups	COM 1	
Jeudi 25 mai Thursday 25 May Jueves 25 de mayo	GT PLENs and associated groups COM 4 C 4 associated groups C 5 associated groups	GT PLENs and associated groups C 4 associated groups COM 5 C 5 associated groups		
Vendredi 26 mai Friday 26 May Viernes 26 de mayo	**COM 2 (Final)** GT PLENs and associated groups COM 4 C 4 associated groups C 5 associated groups	GT PLENs and associated groups C 4 associated groups **COM 5 (Final)**		

	CONFERENCE MONDIALE DES RADIOCOMMUNICATIONS **ISTANBUL 8 MAI - 2 JUIN 2000**	*SEMAINE **4*** *Lundi 29 mai 2000 -* *Vendredi 2 juin 2000*

	9h30-12h30	**14h30-17h30**	**17h45**	**19h30-22h30**
Lundi 29 mai Monday 29 May Lunes 29 de mayo	**GT PLEN 2 (Final)** **COM 3 (Final)** COM 4 GT PLEN 1	**GT PLEN 1 (Final)** **COM 4 (Final)**	COM 1	
Mardi 30 mai Tuesday 30 May Martes 30 de mayo	PL 5	PL 6		
Mercredi 31 mai Wednesday 31 May Miercoles 31 de mayo	PL 7	PL 8	**COM 1 (Final)**	
Jeudi 1 juin Thursday 1 June Jueves 1 de junio	PL 9	**PL 10 (Final readings)**		
Vendredi 2 juin Friday 2 June Viernes 2 de junio	PL 11	PL 11 (Cont.) CLOSURE		

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 178-E
11 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

GT PLEN-1

REQUEST BY SPAIN TO MAINTAIN HISPASAT-2 FREQUENCY ASSIGNMENTS IN APPENDICES S30 AND S30A PLANS

For consideration of the Plenary meeting, attached for approval is recommended action agreed to by GT PLEN-1 on the subject matter.

R. ZEITOUN
Chairperson GT PLEN-1

REQUEST BY SPAIN TO MAINTAIN HISPASAT-2 FREQUENCY ASSIGNMENTS IN APPENDICES S30 AND S30A PLANS

A Background

1 The request for modification to Appendices S30/S30A Plans to add Hispasat-2 was received by the Radiocommunication Bureau on 7 March 1991.

2 The Bureau published the relevant Special Sections in application of the various provisions of Article 4 of the above-mentioned appendices.

3 The analogue emission (27 MHz) of that network was included in the Plans at WRC-97. The digital emission (27 MHz) of that network was still at the stage of coordination at that time.

4 According to the definition of the symbols contained in columns 16 and 18 of sections 11.1 and 9A.1 of Articles 11 and 9A of Appendices S30 and S30A respectively (pages 433 and 598 of Volume 2 of the Radio Regulations refer), the date of bringing into use of both analogue (27 MHz) and digital (27 MHz) emissions of Hispasat-2 was subject to the eight years regulatory time limit referred to in paragraphs 4.3.5 and 4.2.5 of Article 4 of Appendices S30 and S30A.

5 Based on the information available to the Bureau, the assignments in question (analogue (27 MHz) and digital (27 MHz)) were not brought into use within that time limit. The Bureau therefore, in application of paragraphs 4.3.5 and 4.2.5 of Article 4 of Appendices S30 and S30A and its associated Rules of Procedure, suppressed them from its files.

6 The Spanish Administration disagreed with the course of action taken by the Bureau and in its letter of 22 October 1999 requested the Director, Radiocommunication Bureau to submit the case to the 18th meeting of the Radio Regulations Board (8-12 November 1999, Geneva) for its consideration. In that letter, the Administration of Spain, **based on its interpretation of Resolution 533 (WRC-97) and in particular the wording of the 3rd indent of *resolves* 2 of that Resolution**, "requests the Board to review the finding of the Bureau in order to keep the assignments of Hispasat-2 in the Plans contained in Appendices S30 and S30A".

7 At the 18th meeting of the Radio Regulations Board (8-12 November 1999, Geneva), the RRB considered the matter and the following decisions were taken:

Quote

1) The RRB confirmed the decision of the Bureau on the cancellation of the Hispasat-2 analogue and digital satellite network at 30° W.

2) In reviewing the Spanish Administration's request, the RRB recognized a potential ambiguity between the text of *resolves* 2 of Resolution 533 (WRC-97) and that contained in sections 11.1 and 9A.1 of Articles 11 and 9A of Appendices S30 and S30A respectively. Consequently the Board decided to refer the matter to WRC-2000 for its consideration and appropriate action. In this connection, the Board is aware of a potential retroactive impact of a conference decision on the above-mentioned matter.

3) In order to avoid suspension of the processing of submissions from administrations or consequential additional workload for the Bureau, the Board decided to instruct the Bureau to continue to take into account Hispasat-2 in its calculations on a provisional basis pending the decision of WRC-2000 on the matter. In so doing the

Bureau shall indicate appropriately, in its Weekly Circular Special Sections, the provisional nature of Hispasat-2 assignments when that network is identified in the results of the compatibility analysis.

4) Depending on the conference decision on the matter, the Bureau shall, either definitively remove Hispasat-2 assignments from the Plans, its files and the Special Sections already published, or remove the provisional nature of the results of its calculations. The results of the above, shall be reflected by the Bureau in its Weekly Circular Special Sections.

Unquote

8 The Administration of Spain notified the Bureau of the launch of the third satellite in the HISPASAT series in February 2000; this new satellite uses the frequency assignments contained in the HISPASAT-2 network. The Administration of Spain also provided the due diligence data in accordance with Resolution 49 (WRC-97) and confirmed the date of bringing into use of the subject assignment as 16 February 2000.

9 The Administration of Spain requested WRC-2000 (see Document 65 of 3 April 2000 to WRC-2000):

– to maintain the frequency assignments to HISPASAT-2 analogue and digital emissions 27 MHz in the Appendices S30 and S30A Plans and in the replanning process;

– to instruct the Bureau to take necessary action in order to implement this decision.

B Recommended action

The Plenary of the Conference allocated Document 65 to GT PLEN-1 (Document DT/4 of 5 May 2000). Consequently in examining this document and the Report of the Director of the Radiocommunication Bureau on the matter (Appendix to Document 17 of 11 February 2000 to WRC-2000) GT PLEN-1 unanimously recommends to the Plenary to decide:

– to maintain the frequency assignments to HISPASAT-2 analogue and digital emissions 27 MHz in the Appendices S30 and S30A Plans and in the replanning process and to instruct the Bureau to take necessary action in order to implement this decision.

GT PLEN-1 further recommends to the Plenary to decide:

– to amend Articles 11 and 9A of Appendices S30 and S30A, respectively, and Resolution 533 (WRC-97) in order to remove the inconsistency and to avoid further difficulty in the future.

A draft revision will be submitted to the Plenary very soon.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 179-E
10 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

Oman (Sultanate of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

AGENDA ITEM 1.1

The Administration of the Sultanate of Oman has examined the footnotes in the Table of Frequency Allocations under agenda item 1.1 and concluded that the following footnotes should be modified by the deletion of the country's name, "Oman".

MOD OMA/179/1

S5.349 *Different category of service:* in Saudi Arabia, Azerbaijan, Bahrain, Bosnia and Herzegovina, Cameroon, Egypt, the United Arab Emirates, France, the Islamic Republic of Iran, Iraq, Israel, Kazakstan, Kuwait, The Former Yugoslav Republic of Macedonia, Lebanon, Morocco, Mongolia, ~~Oman,~~ Qatar, Syria, Kyrgyzstan, Romania, Turkmenistan, Ukraine, 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. **S5.33**).

MOD OMA/179/2

S5.355 *Additional allocation:* in Bahrain, Bangladesh, the Congo, Egypt, the United Arab Emirates, Eritrea, Ethiopia, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, ~~Oman,~~ Qatar, Syria, Somalia, Sudan, Sri Lanka, Chad, Togo, Yemen and Zambia, the bands 1 540-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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11 May 2000
Original : English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

Note by the Chairperson of Working Group 4B

AGENDA ITEM 1.1 – APPLICATION OF RES. 26 (REV. WRC-97)

In undertaking its review of Agenda Item 1.1, Working Group 4B considered the fact that several of the proposals submitted under this item address not only the deletion of country names from footnotes, as is contemplated by Resolution 26 (Rev.WRC-97), but the addition of country names to existing footnotes. In several cases, these proposed additions were received by the secretariat following the deadline set forth in the Resolution, in this case, 8 January 2000.

The Working Group concluded that this Conference might wish to consider the proposals for the addition of country names to existing footnotes. Moreover, the Working Group expressed the view that a date should be set to allow for the submission of additional proposals in time for this Conference's consideration. If the Conference decides to consider such proposals, the Working Group suggests that such deadline for receipt of new proposals for adding country names to existing footnotes should be Thursday, 18 May 2000 at 17:00 hours.

A. ALLISON
Chairperson of Working Group 4B, Box 68

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Corrigendum 1 to Document 181-E
15 May 2000
Original: French
English
Spanish

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

CITEL Administrations

Argentine Republic, Brazil (Federative Republic of), Canada, Colombia (Republic of), Ecuador, United States of America, Guatemala (Republic of), Mexico, Paraguay (Republic of), Venezuela (Republic of)

CITEL BSS POSITION (AGENDA ITEM 1.19)

Please add the following countries as co-sponsors to this document:

– Argentina, Colombia and Guatemala.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 181-E
11 May 2000
Original: French
English
Spanish

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

CITEL Administrations

Brazil (Federative Republic of), Canada, Ecuador, United States of America, Mexico, Paraguay (Republic of), Venezuela (Republic of)

CITEL BSS POSITION (AGENDA ITEM 1.19)

CITEL supports the objective of increasing the capacity assigned to each country of Regions 1 and 3 sufficiently to permit the economic development of BSS systems (see IAP/14/229). At WARC-92, WRC-95 and WRC-97, CITEL has supported the efforts of Regions 1 and 3 countries to revise their BSS Plans. The frequency bands allocated to BSS in Regions 1 and 3 are allocated to BSS, terrestrial services and FSS in Region 2. It is imperative to ensure the continued viability of these services in Region 2. The principles of Resolution 532 (WRC-97) as stated in items 7 and 8 of Annex 1 are intended to ensure that the BSS and other services in Region 2 are to be protected to the same degree now provided by the current provisions of Appendices S30 and S30A of the Radio Regulations.

WRC-97 created an additional allocation to non-GSO FSS in the Region 2 BSS bands and established provisional technical criteria for the operation of non-GSO FSS systems in the FSS and BSS bands. Modifications to the sharing criteria in Appendices S30 and S30A would require that all sharing criteria, including those proposed for non-GSO FSS, would need to be reviewed.

The use of the revised sharing criteria to protect terrestrial services, as adopted by the CPM, should facilitate replanning by reducing the number of incompatibilities between terrestrial services and new Regions 1 and 3 Plan assignments. However, additional changes to the interregional sharing criteria in Annexes 1 and 4 of Appendix S30 between BSS systems and between BSS and FSS systems have not been studied within ITU-R. Due to the above considerations, CITEL considers that extensive changes to the Annex 1 and Annex 4 sharing criteria is not possible in the time-frame of a WRC.

With regard to Annex 7 of Appendix S30, CITEL supports retention of the orbital position limitations on Region 1 BSS in the arc 37 W.L. to 10 E.L. contained in Sections A1 and A3 of Annex 7 (see IAP/14/295-298). The intent of these limitations is to ensure equitable sharing of this arc and the 11.7-12.2 GHz band between Region 1 BSS and Region 2 FSS. Section A3 of Annex 7 is not a purely technical issue; it is a regulatory provision that ensures that Region 2 countries wishing to implement FSS systems in this band in the future will have access to the orbit/spectrum resource. In proposals to delete Section A3 of Annex 7, the rationale given is that the growing use

of digital techniques by both BSS and FSS networks make orbital position limitations unnecessary. However, recent ITU-R studies in JWP 10-11S and WP 4A and in the IRG all agree that this is not the case. In summary, CITEL finds that Section A3 of Annex 7 must be maintained in order to preserve the existing equitable situation between Region 2 FSS and Region 1 BSS.

In regards to which FSS systems serving Region 2 should be taken into account during revision of the Regions 1 and 3 Plans, CITEL is of the view that systems which have filed at ITU should be taken into account during revision of the Plans. It is unacceptable to only take into account FSS systems that are notified, have completed coordination and have submitted due diligence information specified in Annex 2 of Resolution 49. In other words, these FSS systems which have filed at ITU must be protected and also must not be subjected to new, retroactive coordination requirements.

The existing Article 4 Plan modification procedures have been used without major difficulties within Region 2. Therefore, it is understood that new concepts, such as not allowing modifications to the Plans, modifying the procedures to create “additional uses”, lifetime limitations for existing/future operational BSS systems, do not apply to the Region 2 Plan modification process. With respect to the concept of a lifetime limitation for existing/future operational BSS systems in the Regions 1 and 3 Plans, it should be recognized that most implementation of BSS systems will be “additional uses” or modifications to the Plans and thus subject to the proposed lifetime limitation. CITEL considers that BSS systems implemented should not be treated any less favourably than Plan assignments.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Corrigendum 1 to Document 182-E
15 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

CITEL Administrations

Argentine Republic, Brazil (Federative Republic of), Canada, Ecuador, United States of America, Mexico, Paraguay (Republic of), Venezuela (Republic of)

INFORMATION PAPER

AGENDA ITEM 1.4: FREQUENCY SHARING BETWEEN SPACE AND TERRESTRIAL SERVICES IN BANDS ABOVE 30 GHz

Please add the following countries as co-sponsors to this document:

– Argentina and Paraguay.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 182-E
11 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

CITEL Administrations

Brazil (Federative Republic of), Canada, Ecuador, United States of America, Mexico, Venezuela (Republic of)

INFORMATION PAPER

AGENDA ITEM 1.4: FREQUENCY SHARING BETWEEN SPACE AND TERRESTRIAL SERVICES IN BANDS ABOVE 30 GHz

Many administrations and regional groups have submitted constructive proposals to this Conference that endeavour to harmonize the use of bands above 30 GHz by space and terrestrial services. There are many common elements among these proposals, as well as differences, and it remains for this Conference to deliberate carefully each of these proposals on its merits. However, one recent contribution by a number of administrations in Region 1 (Document 154) can be interpreted as an attempt to foreclose consideration of many proposals, and to focus on only part of a problem that should be addressed in a comprehensive manner.

Global harmonization in these bands is desirable to the extent it can be achieved, yet the pace of technological development is rapidly complicating productive steps toward that end. Many administrations believe that if harmonization does not occur at WRC-2000, it will be prohibitively difficult to achieve at a later conference. In this context, the active participation of all administrations, in all three ITU-R regions, is required in order to achieve a satisfactory approach that is worthy of international consensus. Failure to take decisions in a timely manner may prevent some or all of these space and terrestrial services from operating successfully.

The administrations submitting this paper welcome all contributions toward our mutual goals, including those contained in Document 154. Like many other administrations, we hope:

- to identify sufficient spectrum above 30 GHz for high-density applications in the fixed service;
- to adopt power flux-density limits adequate to protect terrestrial services that have already been deployed;
- to adopt allocations and associated regulatory provisions for high- and low-density applications in the fixed-satellite service and other satellite services;
- to protect important space science services and radio astronomy in these frequency bands;

- to facilitate sharing in such a way as to accommodate each of the services with spectrum requirements in the bands covered by agenda item 1.4; and
- to promote global harmonization.

All administrations will be affected by the decisions of this Conference; all administrations should participate in our deliberations; and all deliberations should be based on the extent to which particular proposals advance the work of the Conference under each agenda item. All administrations are invited to support the views expressed here.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

Addendum 1 to Document 183-E 12 May 2000 Original: English

PLENARY MEETING

GT PLEN-1

BASIC ELEMENTS FOR BSS REPLANNING

Please add the following section:

3.3 Serious concern has been expressed on interregional sharing issues between the BSS in Regions 1 and 3 and other services or the BSS in Region 2.

In order to minimize incompatibilities in the replanning process between the FSS in Region 3 and the BSS in Region 1, the planning process shall minimize the number of orbital locations to be used by the BSS in Region 1 in the arc east of 34° E in the band 12.2-12.5 GHz.

It is understood that reference to Document 34 in section 1 of this document includes IRG's conclusions on the orbital position limitations in Annex 7 of Appendix S30 during the replanning process.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

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12 May 2000
Original: English

PLENARY MEETING

GT PLEN-1

BASIC ELEMENTS FOR BSS REPLANNING

Add the following as the first two paragraphs of this document:

With reference to agenda item 1.19, it is recommended that the Plenary decide that this conference undertake the replanning of the BSS and associated feeder-link plans for Regions 1 and 3.

Following are the basic parameters.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 183-E
11 May 2000
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ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

GT PLEN-1

BASIC ELEMENTS FOR BSS RE-PLANNING

1 Basic BSS-to-BSS methodology, assumptions and criteria for replanning according to IRG conclusions

Methodology, technical assumptions and criteria as described in Document WRC2000/34 and its Corrigenda 1 and 2 and its Addendum 1 should be applied in the replanning study of WRC-2000.

NOTE - Subject to the further study in reviewing the sharing criteria listed in Document 37, a reduction of the orbital separation limits, beyond which interference is not taken into account, may possibly be recommended in order to facilitate the replanning process. To start with, the current limits of 15° and 9°, respectively, for co-polar and cross-polar situations, should also be applied to the feeder-link replanning process, provided it is possible to implement such changes in the MSPACE software in the time-frame given.

KOR requested not to recalculate the ellipse characteristics of its downlink and feeder-link national beams as a consequence of the change to its orbital position from 110.0° E to 116.0° E.

VTN requested to use at its preferred orbital position 107° E the same elliptical beam for both its downlink and feeder link. The ellipse characteristics of this beam are those used in the basic study for the feeder-link beam of VTN. In addition, VTN requested to use normal roll-off antenna patterns for its transmitting space station (i.e. R13TSS) instead of the fast-roll patterns used in the IRG study and the Appendix S30 Plan.

These requests will be carried out provided that they do not constrain the Planning process*.

2 Additional BSS-to-BSS studies requested by some administrations at the last IRG meeting (Geneva, 29 November - 3 December 1999), or after that meeting

The additional studies listed below had been requested by some administrations and were performed by the Radiocommunication Bureau in accordance with IRG instructions. All cases were found to be technically feasible. They should be included in the initial plan evaluation.

It was agreed that the date after which no new national preferences would be accepted will be 12 May 2000, 1700 hours Istanbul time. [The delegate of Greece proposed that the deadline be set two hours after the end of the Plenary.]

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* The term Planning Process refers to compatibility analyses.

Administrations concerned by the studies described below shall provide before 12 May 2000, 2400 hours their choice(s) between the basic technical assumptions, as presented in Document WRC2000/34 and its Corrigendum 2, and those presented in the relevant documents referred to below. In the absence of the requested choice(s), the basic technical assumptions will be used in the replanning process. The following requests will be taken into account if they do not constrain the Planning and the Bureau will report on the matter:

2.1 Extended national beams for CZE, HNG, HRV and SVK (see Addendum 5 to Document WRC2000/34)

2.2 Extended national beams for JOR, LBN and SYR (see Addendum 6 to Document WRC2000/34)

2.3 Use elliptical feeder-link beams of the Appendix S30A Plan and preferred channels for CHN at its orbital positions 62° E, 92° E and 134° E (see Addendum 7 to Document WRC2000/34 and its Addendum 1)

CHN agreed to the option contained in Addendum 1 to Addendum 7 to Document WRC2000/34, which proposes to use the orbital positions 62° E, 92.2° E and 134° E together with grouping of the adjacent channels assigned to this country at these positions.

2.4 Use Appendix S30 Plan elliptical downlink beam for feeder link of BUL at the orbital position 1° W (see Addendum 8 to Document WRC2000/34)

2.5 Use separate beams for USA at the orbital positions 170° E and 122° E (see Addendum 9 to Document WRC2000/34)

2.5.1 Separate beams for USA/PLM and USA/SMA at the orbital position 170° E

2.5.2 Separate beams for USA/MRA and USA/GUM at the orbital position 122° E

2.6 Use 12 channels for J at the orbital positions 109.85° E, in addition to and grouped with its assignments at 109.85° E and 110° E (see Addendum 10 to Document WRC2000/34)

2.7 Use a channel bandwidth value of 33 MHz for LAO instead of the standard value of 27 MHz (see Addendum 11 to Document WRC2000/34)

2.8 Use orbital position 20° E instead of 17° E for QAT (see Addendum 12 to Document WRC2000/34)

2.9 Use preferred feeder-link beams and channels for AUS at its orbital positions 152° E and 164° E (see Addendum 13 to Document WRC2000/34)

2.10 Additional or alternative use of the 14 GHz and/or the 17 GHz frequency bands for IND, IRN, MRC, SEY and ISR (see Addendum 14 to Document WRC2000/34)

IRN requested to use both 14 GHz and 17 GHz frequency bands and to assign 12 channels to its beams in each band.

CHN requested to assign 12 channels in the 14 GHz frequency band to its feeder-link beam CHN19000 at the orbital position 122.0° E.

With respect to Morocco, the choice of the 17 GHz band is conditional upon not employing orbital position offset of ± 0.2°.

2.11 Use alternative orbital position within the arc 25° W to 10° E for TUN instead of 30° W (see Addendum 15 to Document WRC2000/34)

2.12 Extended national beams for LTU and LVA at the orbital position 23° E (see Addendum 16 to Document WRC2000/34)

3 Issues for which further WRC decisions are required for replanning

3.1 The satellite networks to be included in the planning are:

a) Systems which satisfy principle 3 of Annex 1 of Resolution 532 (WRC-97) by May 12, 2000 1700 hours Istanbul time. These systems should also provide due diligence by this date.

b) Systems that have, by the same date, applied successfully the Article 4 procedure and have submitted the due diligence information.

Networks submitted as having completed the procedure of Article 4, yet to be examined by the Bureau will be included provisionally** on the basis of a successful BSS-toBSS compatibility analysis. Their retention in the replanning process is subject to their conformity with the Appendices S30 and S30A of the Radio Regulations.

3.2 Methodology, technical parameters and sharing criteria associated to networks of 3.1 b)

3.2.1 Channel bandwidth

As specified by the responsible administration.

** In parallel to the ongoing planning process, the Radiocommunication Bureau will carry out the compatibility analyses with respect to other services. If the results are unfavourable, the corresponding network will be removed from the planning process and the matter will be reported to the Conference.

3.2.2 Protection ratios/modulation

Apply, for all networks of 3.1 b), digital modulation associated with the protection ratios specified by IRG (i.e. downlink co-channel: 21 dB, downlink upper and lower adjacent channels: 16 dB, feeder-link co-channel: 27 dB, feeder-link upper and lower adjacent channels: 22 dB).

3.2.3 Test points

When test points with very low EPM (less than about –10 dB) receive excess interference, such test points can be ignored for the purpose of the replanning exercises, if necessary, on a case-by-case basis, as in the case of "existing" systems. In such cases, the issue will be reported to WRC-2000.

3.2.4 Grouping of 3.1 b) network with national assignments of the responsible administration

Should be applied as in the case of "existing" systems, unless:

a) the responsible administration had expressed, in response to CR/117, a preferred orbital position for its national assignments different from that of the Part B network, and this preferred orbital position was taken into account by IRG; or

b) these networks and the national assignments have geographically separate service areas.

3.2.5 Receiving earth station antenna

Antenna diameter of 60 cm associated with antenna patterns described in Recommendation ITU-R BO.1213. However, for networks of 3.1 b) with e.i.r.p. below 54.5 dBW, adjust the antenna diameter accordingly to compensate the difference in e.i.r.p.

3.2.6 Orbital position shift

In consultation with the responsible administration, the orbital position of the network(s) in 3.1 b) can be shifted by ±0.2° in order to resolve incompatibilities.

3.2.7 Negative equivalent protection margin of WRC-97 Plans for networks in 3.1 b)

Negative Equivalent Protection Margins of WRC-97 Plans for networks in 3.1 b) were kept because it is considered that those negative EPM were accepted together with the protection margins at that time when those assignments were successfully included in the Plans.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

Addendum 1 to Document 184-E
12 May 2000
Original: English

SÉANCE PLÉNIÈRE/
PLENARY MEETING/
SESIÓN PLENARIA

Note du Secrétaire général/
Note by the Secretary-General/
Nota del Secretario General

EXAMEN ET RÉVISION ÉVENTUELLE DES PLANS DU SERVICE DE RADIODIFFUSION PAR SATELLITE DE 1997 POUR LES RÉGIONS 1 ET 3/ REVIEW AND POSSIBLE REVISION OF THE 1997 BROADCASTING-SATELLITE SERVICE PLANS FOR REGIONS 1 AND 3/ EXAMEN Y POSIBLE REVISIÓN DE LOS PLANES DEL SERVICIO DE RADIODIFUSIÓN POR SATÉLITE DE 1997 PARA LAS REGIONES 1 Y 3

LISTE DES SYSTEMES EXISTANTS ET DES SYSTEMES PARTIE B WHICH AYANT ETE REÇUS PAR LE BUREAU DES RADIOCOMMUNICATIONS/ LIST OF EXISTING SYSTEMS AND PART B SYSTEMS WHICH HAVE BEEN RECEIVED BY THE RADIOCOMMUNICATION BUREAU/ LISTA DE SYSTEMAS EXISTENTES Y SYSTEMAS PARTE B RECIBIDOS POR LA OFICINA DE RADIOCOMUNICACIONES

Veuillez trouver ci-joint de nouvelles lignes devant être ajoutées au début du tableau 1 de l'annexe 1 au document CMR2000/184.

Please find attached additional rows to be added at the top of Table 1 of the Annex to Document WRC2000/184.

Sírvase encontrar adjunto líneas adicionales al cuadro 1 del anexo al Documento CMR2000/184.

Yoshio UTSUMI
Secrétaire général/
Secretary-General/
Secretario General

Annexe/Annex/Anexo: 1

ANNEXE/ANNEX/ANEXO

1	E	HISPASAT-1 (analogique/ Analogue/ analógica, 27 MHz)	30.0 W	(1)	(1)	(1)	(1)	57.6	57.6	5	5	Examiné et publié Examined and published Examinado y publicado	Oui Yes Si	(1)	(1)
2	J	BS-3N	109.85 E	(1)	(1)	(1)	(1)	63.2	64.4	8	8	Examiné et publié Examined and published Examinado y publicado	Oui Yes Si	(1)	(1)
3	J	BS-3M BS-3	110.0 E	(2)	(2)	(1)	(2)	63.2	64.4	8	8	(2)	Oui Yes Si	(2)	(2)
4	KOR	KOREASAT-1 (analogique/ Analogue/ analógica)	116.0 E	(1)	(1)	(1)	(1)	63.6	63.7	6	6	Examiné et publié Examined and published Examinado y publicado	Oui Yes Si	(1)	(1)
5	KOR	KOREASAT-1 (numérique/ Digital/ digital)	116.0 E	(1)	(1)	(1)	(1)	63.6	63.7	6	6	Examiné et publié Examined and published Examinado y publicado	Oui Yes Si	(1)	(1)
6	S	TELEX	5.0 E	(1)	(1)	(1)	(1)	63.2	63.2	1	1	Examiné et publié Examined and published Examinado y publicado	Oui Yes Si	(1)	(1)
7	S	SIRIUS	5.2 E	(1)	(1)	(1)	(1)	58.0	59.5	5	5	Examiné et publié Examined and published Examinado y publicado	Oui Yes Si	(1)	(1)
8	RUS	RST-1 (analogique et numérique/ Analogue and Digital/ analógica y digital)	36.0 E	(1)	(1)	(1)	(1)	53.0	53.0	8	8	Examiné et publié Examined and published Examinado y publicado	Oui Yes Si	(1)	(1)

													Oui Yes Si		
9	NOR	BIFROST-2	0.8 W	(1)	(1)	(1)	(1)	54.5	54.5	15	15	Examiné et publié Examined and published Examinado y publicado	Oui Yes Si	(1)	(1)

(1) Information devant être fournie dans la révision du document CMR2000/184
Information to be provided in the revised version of Document WRC2000/184
La información aparecerá en la versión revisada del documento CMR2000/184

(2) Non applicable/Not Applicable/No aplicable

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 184-E
11 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Note by the Secretary-General

REVIEW AND POSSIBLE REVISION OF THE 1997 BROADCASTING-SATELLITE SERVICE PLANS FOR REGIONS 1 AND 3

LIST OF EXISTING SYSTEMS AND PART B SYSTEMS WHICH HAVE BEEN RECEIVED BY THE RADIOCOMMUNICATION BUREAU

Please find attached a document related to the review and possible revision of the 1997 Broadcasting-satellite Service Plans for Regions 1 and 3.

Yoshio UTSUMI
Secretary-General

Annex: 1

ANNEX

Director, Radiocommunication Bureau

List of Existing Systems and Part B[1] Systems which have been Received by the Radiocommunication Bureau

Table 1 contains a list of satellite networks which satisfy the conditions of Principle 3 of Annex 1 to Resolution 532(WRC-97).

Table 2 contains a list of satellite networks submitted under paragraphs 4.3.14 and 4.2.15 of Appendices S30 and/or S30A respectively to be published under paragraph 4.3.17 and/or 4.2.18 of these Appendices. The list also includes satellite networks notified under Article 5 of the abovementioned Appendices.

It should be noted that that one Administration listed in Table 1 has requested that its assignments be grouped with assignments belonging to networks of other Administrations included in the Appendices S30 and S30A Plans in application of paragraphs 4.3.15 and 4.2.16 of Appendices S30 and S30A respectively.

The Conference is requested to decide whether or not the abovementioned grouping arrangement is acceptable.

If the answer is positive, the same grouping arrangement should be carried forward in the replanning process.

[1] Satellite systems for which the procedures of Article 4 of Appendices S30 and S30A have been successfully completed.

Table 1: Satellite networks which satisfy the conditions of Principle 3 of Annex 1 to Resolution 532(WRC-97)

No.	Adm.	Satellite Network	Orbital Position	Part A Request Date of Receipt	Part B Request Date of Receipt	Date of bringing into use	Date of Receipt of due diligence[2] information	APS30 EIRP (dBW) Min	APS30 EIRP (dBW) Max	No. of Chan-nels AP S30	No. of Chan-nels AP S30A	Status of Publication	Notif-ied under Art. 5	Special Section AP30/E	Special Section AP30A/E
1	E	HISPASAT-1 (Digital, 27 MHz)	30.0 W	13.02.90	16.08.99	01.12.95	21.09.98	57.6	57.6	5	5	Examined and Published	Yes	9+ Corr.1	5+ Corr.1
2	LUX	DBL (APS30 only)	19.2 E	11.03.91 11.03.93	09.03.99	01.01.96	26.04.99	49.3	54.5	40	---	Examined and Published	Yes	15+ Add.1	---
3	E	HISPASAT-1 (Digital, 33 MHz)	30.0 W	13.10.94	18.10.99	01.12.98	22.12.99	57.6	57.6	5	5	Examined and Published	Yes	9 Add.1	5 Add.1
4	NOR	BIFROST	0.8 W	20.05.92	21.19.97	01.07.98	23.12.99	59.0	59.0	5	5	Examined and Published	Yes	20	16
5	F/EUT	EUTELSAT B-13E	13.0 E	11.05.93	26.0100	18.12.96	03.02.00	51.4	55.5	40	40	Examined and Published	Yes	26	---
					27.01.00			---	---					---	23
6	LUX	DBL-28.2E (APS30 only)	28.2 E	23.12.94	28.01.00	30.08.983	22.12.99	55.0	55.0	40	---	Examined, yet to be Published	Yes [1]	51	---
7	S	SIRIUS-W	13.0 W	25.08.92	04.02.00	04.05.00	09.03.00	52.9	52.9	5	5	Examined and Published		21	17
8	E	HISPASAT-2 (27 MHz digital)	30.0 W	07.03.91	24.04.00, 15:22	16.02.00	16.06.99	58.5	58.5	10	---	Examined, yet to be Published	Yes	14	---

[2] In accordance with Resolution 49(WRC-97)

No.	Adm.	Satellite Network	Orbital Position	Part A Request Date of Receipt	Part B Request Date of Receipt	Date of bringing into use	Date of Receipt of due diligence[2] information	APS30 EIRP (dBW) Min	APS30 EIRP (dBW) Max	No. of Chan-nels AP S30	No. of Chan-nels AP S30A	Status of Publication	Notif-ied under Art. 5	Special Section AP30/E	Special Section AP30A/ E
9	F/EUT	EUTELSAT-36E APS30A only	36.00 E	17.03.95	25.04.00	27.04.00	06.04.00	-	-	---	40	Examination in progress	Yes	---	59
10	S	SIRIUS-2 APS30 only	5.00 E	27.03.95	05.05.00, 13:34	21.11.97	30.06.98	51.5	57.0	25	---	Examination in progress	Yes	65+a1	---
11	S	SIRIUS-3 APS30 only	5.20 E	11.04.95	05.05.00, 13:28	01.12.99	31.12.99	57.0	57.0	13	---	Examination in progress	Yes	66	---

The corresponding due diligence information for networks contained in this table have been examined under Resolution 49(WRC-97) and found to be completed.

Table 2: Satellite networks submitted under paragraphs 4.3.14 and 4.2.15 of Appendices S30 and/or S30A respectively to be published under paragraph 4.3.17 and/or 4.2.18 of these Appendices

No.	Adm.	Satellite Network	Orbital Position	Part A Request Date of Receipt	Part B Request Date of Receipt	Date of bringing into use	Date of Receipt of due diligence[4] information	APS30 EIRP (dBW) Min	APS30 EIRP (dBW) Max	No. of Chan-nels AP S30	No. of Chan-nels AP S30A	Status of Examination	Notif-ied under Art. 5	Special Section AP30/E	Special Section AP30A/E
1	USA	USASAT29H	41.0 E	18.10.95	27.03.00, 16:08	17.10.00	05.05.00	55.0	55.0	40	---	Examined, yet to be Published	Yes	93	---
2	USA	USASAT29M	149.0 E	18.10.95	27.03.00, 16:08	17.10.00	05.05.00	44.0	53.0	24	---	Examined, yet to be Published	Yes	98	---
3	USA	USASAT29N	164.0 E	18.10.95	27.03.00, 16:08	17.10.00	05.05.00	51.5	55.0	24	---	Examined, yet to be Published	Yes	99	---
4	USA	USASAT29O	173.0 E	18.10.95	27.03.00, 16:08	17.10.00	05.05.00	55.0	55.0	24	---	Examined, yet to be Published	Yes	100	---
5	USA	USASAT29R (132E)	132.0 E	16.11.95	27.03.00, 16:08	17.10.00	05.05.00	42.0	55.0	24	---	Examined, yet to be Published	Yes	117	---
6	USA	USABSS-1 USABSS-2 USABSS-2A	101.2 W 100.8 W 100.85 W	18.12.95	20.04.00, 23:16	18.01.94 01.09.94 24.07.95	07.05.97	Region 2 Plan	Region 2 Plan	16 16 16	---	Examination in progress	Yes	118	---
7	TUR	TURKSAT-BSS	42.0 E	03.03.95	28.04.00, 09:17	15.09.00 for 1-22 and 15.02.03 for 23-40	21.04.00 for 1-22	51.0	54.0	40	40	Examination in progress	No	60	56

[4] In accordance with Resolution 49(WRC-97)

No.	Adm.	Satellite Network	Orbital Position	Part A Request Date of Receipt	Part B Request Date of Receipt	Date of bringing into use	Date of Receipt of due diligence[4] information	APS30 EIRP (dBW) Min	APS30 EIRP (dBW) Max	No. of Chan-nels AP S30	No. of Chan-nels AP S30A	Status of Examination	Notif-ied under Art. 5	Special Section AP30/E	Special Section AP30A/E
8	RUS	RST-1	36.0 E	Plan	28.04.00, 9:56	15.05.00	Not Applicable	53.0	53.0	8	8	Examination in progress	Yes	31	28
9	RUS	RST-2	56.0 E	Plan	28.04.00, 9:56	15.05.00	Not Applicable	55.0	55.0	8	8	Examination in progress	Yes	32	25
10	G/GIB	GE-SATCOM E1 APS30A only	24.0 W	14.11.95	28.04.00, 12:10	10.11.03	---	-		---	40	Examination in progress	No	---	106
11	D	EUROPE*STAR-1B	45.0 E	13.02.95	28.04.00, 14:41	15.02.03	17.04.00	52.0	52.0	40	40	Examination in progress	No	58	54
12	F	RADIOSAT-5	7.0 W	11.11.94	03.05.00, 15:16	10.11.02	11.05.00	51.8	56.0	25	25	Examination in progress	Yes	42	38
13	F	RADIOSAT-5A	7.0 W	12.10.95	03.05.00, 16:10	11.10.03	11.05.00	51.8	56.0	15	15	Examination in progress	Yes	---	76
14	LAO	LSTAR3B	116.0 E	18.10.95	03.05.00, 23:07	30.12.00	08.05.00	52.8	57.9	24	24	Examination in progress	Yes	90	86
15	LAO	LSTAR4B	126.0 E	18.10.95	03.05.00, 23:37	30.06.01	08.05.00	54.8	57.9	24	24	Examination in progress	Yes	91	87
16	USA	USABSS-3	119.2 W	03.06.96	04.05.00, 21:25	28.12.95	04.05.00	Region 2 Plan	Region 2 Plan	11	11	Not yet started	Yes	131	131

The corresponding due diligence information for networks contained in this table yet to be examined under Resolution 49(WRC-97)

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

ISTANBUL, 8 MAY – 2 JUNE 2000

Corrigendum 1 to Document 185-E
16 May 2000
Original: English

PLENARY MEETING

Australia, Korea (Republic of), India (Republic of), Indonesia (Republic of), Iran (Islamic Republic of), Japan, Mongolia, Pakistan (Islamic Republic of), Democratic People's Republic of Korea, Thailand, Tonga (Kingdom of) and Viet Nam (Socialist Republic of)

ELEMENTS TO BE CONSIDERED TO REACH AN AGREEMENT ON BSS REPLANNING AT WRC-2000

Add the names of "Pakistan (Islamic Republic of)" and "Democratic People's Republic of Korea" to the countries co-sponsoring this document.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 185-E
12 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING

Australia, Korea (Republic of), India (Republic of), Indonesia (Republic of), Iran (Islamic Republic of), Japan, Mongolia, Thailand, Tonga (Kingdom of) and Viet Nam (Socialist Republic of)

ELEMENTS TO BE CONSIDERED TO REACH AN AGREEMENT ON BSS REPLANNING AT WRC-2000

1 The APT countries can accept a plan for Regions 1 and 3 that should not be modified, on the understanding that BSS systems are implemented that result in equal or less interference and seek no additional protection.

2 The APT countries have general agreement with the additional use proposed in Document 154 but the details will need careful consideration.

3 APT members are concerned at adoption of new sharing criteria that were not taken into account in all the studies of the IRG planning and assessment of compatibility with other services.

Those changes identified and accepted by the CPM and those taken into account in preparation of the report of the IRG should be used at this conference.

4 APT considers that Annex 7 (Appendix S30) provides a mechanism for assurance of equitable sharing between services and between regions and takes due account of allocation variations between regions. APT considers that Annex 7 should be amended to address the sharing issues between Region 3 and the other regions.

5 The APT countries support the continued use of Articles 4 and 5 (Appendices S30 and S30A).

6 The APT countries support continuation of Article 4 for networks that have been filed under Article 4 procedures but are not included in the replanning.

7 The APT countries propose that compatibility assessments between the Appendices S30/S30A BSS Plan and other services should preserve the coordination status of the plan as it currently applies where those assignments have only minor changes (e.g. analogue to digital, ±0.2° orbital position shifts, etc.).

8 Regarding FSS systems serving Region 3 that should be taken into account during revision of the Regions 1 and 3 Plan, the APT countries are of the view that all systems which have been filed at ITU should be taken into account during revision of the Plans. In other words, FSS systems which have been filed at ITU must be protected and also must not be subjected to new retroactive coordination requirements.

9 With respect to measures avoiding monopolization of resources (item 6 of Document 154), the APT countries would like to have the matter further clarified.

10 Document 154 addresses other conference agenda items. Region 3 views on these are clearly set out in the APT proposals and the proposals of some individual Region 3 countries. We wish to consider the merit of these proposals together with those from all countries within the appropriate committee.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 186-E
12 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

Chairperson, Working Group 5A

CONCLUSIONS RELATING TO AGENDA ITEM 1.6.2 ON THE GLOBAL RADIO CONTROL CHANNEL FOR IMT-2000

With regard to agenda item 1.6.2, following the consideration of the conclusion of ITU-R studies in the CPM Report (§ 1.1.3.1) and the various proposals to this Conference, Working Group 5A agreed that there is no need for the identification of a global radio control channel to facilitate multimode terminal operation and worldwide roaming of IMT-2000.

Alan R. JAMIESON
Chairperson, Working Group 5A

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 187(Rev.1)-E*
12 May 2000
Original: Spanish

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 4

Guatemala (Republic of)

PROPOSAL FOR THE WORK OF THE CONFERENCE

The Administration of the Republic of Guatemala, having studied the footnotes to the Table of Frequency Allocations and having reviewed the assignments to systems currently operating in its territory, has come to the conclusion that the following footnote should include the name of its country.

MOD GTM/187/1

S5.481 *Additional allocation:* in Germany, Angola, China, Ecuador, Spain, Guatemala, Japan, Morocco, Nigeria, Oman, Democratic People's Republic of Korea, Sweden, Tanzania and Thailand, the band 10.45-10.5 GHz is also allocated to the fixed and mobile services on a primary basis.

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* Pursuant to Resolution 26 (Rev.WRC-97) the secretariat notes that this contribution was received on 12 May 2000.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 187-E*
12 May 2000
Original: Spanish

ISTANBUL, 8 MAY – 2 JUNE 2000

WORKING GROUP 1
OF THE PLENARY

Guatemala (Republic of)

PROPOSAL FOR THE WORK OF THE CONFERENCE

The Administration of the Republic of Guatemala, having studied the footnotes to the Table of Frequency Allocations and having reviewed the assignments to systems currently operating in its territory, has come to the conclusion that the following footnote should include the name of its country.

MOD GTM/187/1

S5.481 *Additional allocation:* in Germany, Angola, China, Ecuador, Spain, Guatemala, Japan, Morocco, Nigeria, Oman, Democratic People's Republic of Korea, Sweden, Tanzania and Thailand, the band 10.45-10.5 GHz is also allocated to the fixed and mobile services on a primary basis.

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* Pursuant to Resolution 26 (Rev.WRC-97) the secretariat notes that this contribution was received on 12 May 2000.

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 188-E
12 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 6

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 6
(EDITORIAL)

Thursday, 11 May 2000, at 0900 hours

Chairperson: Mr L. BOURGEAT (France)

Subjects discussed	**Documents**
1 Terms of reference of the Editorial Committee	162

1 Terms of reference of the Editorial Committee (Document 162)

1.1 The **Chairperson** introduced Document 162 which set out the terms of reference of the committee. He emphasized that the role of the Editorial Committee, with the competent assistance of the language services of ITU, consisted strictly in perfecting the form of texts without altering their meaning. Problems of ambiguity or meaning in texts would be resolved by consulting the chairperson or the secretary of the committee concerned. Similarly, any errors of substance detected in texts by delegates should be taken up directly with the committee concerned. In the event of discrepancies being identified in the texts after the Editorial Committee had completed its work, delegates would be informed of the necessary corrections by the Executive Secretary of the conference. Once the conference had finished, however, the Editorial Committee had no further role to play, even though the members of the Editorial Committee would of course remain at the Union's disposal for consultation on request.

1.2 While noting that the committee was open to participation by all delegates, for logistical reasons he invited interested delegations to register for participation by means of the registration form contained in the Annex to Document 162.

1.3 Document 162 was **noted**.

The meeting rose at 0915 hours.

The Secretary:
C. LANGTRY

The Chairperson:
L. BOURGEAT

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 189-E
12 May 2000
Original: English

ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 3

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 3

(BUDGET CONTROL)

Wednesday, 10 May 2000, at 1115 hours

Chairperson: Mr B. GRACIE (Canada)

Subjects discussed		**Documents**
1	Agreement between the Government of Turkey and the Secretary-General of ITU	118
2	Terms of reference of Committee 3	149
3	Financial responsibilities of conferences	110
4	Budget of the World Radiocommunication Conference (WRC-2000)	111
5	Contribution of organizations of an international character and Sector Members	112

1 Agreement between the Government of Turkey and the Secretary-General of ITU (Document 118)

1.1 The **Secretary** introduced Document 118, which contained a copy of the Agreement between the Government of Turkey and the Secretary-General of ITU relating to the organization, holding and financing of RA-2000 and WRC-2000 as well as other meetings of the Radiocommunication Sector. Speaking on behalf of the Secretary-General of ITU, he thanked the Government of Turkey for the facilities and organizational support which it had provided for the conference.

1.2 Document 118 was **noted**.

2 Terms of reference of Committee 3 (Document 149)

2.1 The **Chairperson** drew particular attention to the Committee's terms of reference, as set out in Document 149. He recalled the opening remarks made by the Secretary-General at the opening ceremony of the conference, when the Secretary-General had drawn attention to the limited budget available and had reminded the conference that, if the budget was exceeded, other activities might be affected. He also recalled that the Radiocommunication Advisory Group meeting in January 2000 had emphasized the importance of being conscious of budgetary limitations; and he drew attention to Decision 5 (Minneapolis, 1998), which fixed the expenditure ceilings for the biennial budgets of the Union for 2000-2001 and 2002-2003, and to Council Resolution 1133, in which the budget of the Radiocommunication Sector for 2000-2001 was set at CHF 63 476 000 (see Resolution in annex).

2.2 The terms of reference of the Committee as set out in Document 149 were **noted**.

3 Financial responsibilities of conferences (Document 110)

3.1 The **Chairperson** read out Article 34 of the Convention relating to the financial responsibilities of conferences as reproduced in Document 110.

3.2 Document 110 was **noted.**

4 Budget of the World Radiocommunication Conference (WRC-2000) (Document 111)

4.1 The **Secretary** introduced Document 111 which contained a breakdown of the planned budget for WRC-2000, as approved by the Council in its Resolution 1133.

4.2 Document 111 was **noted**.

5 Contribution of organizations of an international character and Sector Members (Document 112)

5.1 The **Secretary**, introducing Document 112, outlined the relevant provisions of the Convention concerning the calculation of contribution per unit to defraying the expenses of the conference. The contributory unit for non-exempted international organizations and Sector Members (except ITU-R Sector Members) was CHF 17 300. A list of those organizations and Sector Members would be published in the report of Committee 3 to the Plenary.

5.2 Document 112 was **noted**.

The meeting rose at 1135 hours.

The Secretary:
G. EIDET

The Chairperson:
B. GRACIE

Annex: 1

ANNEX

INTERNATIONAL TELECOMMUNICATION UNION

COUNCIL

Document C99/95-E
24 June 1999
Original: English

GENEVA — 1999 SESSION — (14 - 25 JUNE)

RESOLUTION 1133

(approved at the ninth Plenary Meeting)

BIENNIAL BUDGET OF THE INTERNATIONAL TELECOMMUNICATION UNION FOR 2000-2001

The Council,

in view of

the provisions of the Convention of the International Telecommunication Union (Geneva, 1992), as amended by the Plenipotentiary Conference (Kyoto, 1994),

bearing in mind

the provisions of Decision 5 of the Plenipotentiary Conference (Minneapolis, 1998), which sets the Union's expenditure limits for the period 2000-2003,

resolves

to approve the biennial budget of the Union for 2000-2001, amounting to 332,621,000 Swiss francs, appropriated as follows:

		Swiss francs
a)	General Secretariat	176,298,000
b)	Radiocommunication Sector	63,476,000
c)	Telecommunication Standardization Sector	29,398,000
d)	Telecommunication Development Sector	63,449,000
	Total	332,621,000

further resolves

1 that the appropriations for the Arabic, Chinese and Russian languages shall be included in the budget appropriations of the General Secretariat to a maximum amount of 10,920,000 Swiss francs;

2 to fix the amount of the annual contributory unit for 2000 and 2001 at 315,000 Swiss francs on the basis of the class of contribution chosen by Member States under No. 160 of the Constitution and No. 468 of the Convention of the International Telecommunication Union (Geneva, 1992), as amended by the Plenipotentiary Conference (Kyoto, 1994), i.e. on the basis of a total of 358 3/16 units;

3 to fix at 63,000 Swiss francs for 2000 and 2001 the annual value of the contributory unit for defraying the expenses of meetings of the Radiocommunication, the Telecommunication Standardization and the Telecommunication Development Sectors payable by entities and organizations other than administrations, in accordance with Nos. 479 and 480 of the Convention of the International Telecommunication Union (Geneva, 1992), as amended by the Plenipotentiary Conference (Kyoto, 1994), i.e. on the basis of a total of 325 1/2 units.

Annexes: Tables 1-10

TABLE 1

PLANNED EXPENDITURE BY SECTOR

CHF(000)

	Expenditure 1996-1997	Budget* 1998-1999	Estimates 2000	Estimates 2001	Total 2000-2001
1 General Secretariat	189 465	188 197	88 271	88 027	176 298
2 Radiocommunication Sector	61 921	65 351	34 149	29 327	63 476
3 Telecommunication Standardization Sector	20 122	21 195	15 186	14 212	29 398
4 Telecommunication Development Sector	54 599	57 911	31 880	31 569	63 449
5 Cancellation of bad debts	201	0	0	0	0
6 Surplus income paid to the ITU Reserve Account	16 838	0	0	0	0
TOTAL	**343 146**	**332 654**	**169 486**	**163 135**	**332 621**

**) Including additional appropriations of 5,010,000 CHF as per Resolution 112.*

TABLE 2

INCOME BY SOURCE

CHF(000)

	Income 1996-1997	Budget 1998-1999	Estimates 2000	Estimates 2001	Total 2000-2001
A. Assessed contributions					
A.1 Member States' contributions	244 950	241 532	112 901	112 901	225 802
A.2 Sector Members' contributions					
- Radiocommunication Sector	14 162	13 842*	6 903	6 903	13 806*
- Telecommunication Standardization Sector	23 548	22 370*	11 820	11 820	23 640*
- Telecommunication Development Sector	3 530	3 550*	1 797	1 797	3 594*
Total contributions	41 240	39 762*	20 520	20 520	41 040*
Total assessed contributions	**286 190**	**281 294**	**133 421**	**133 421**	**266 842**
B. Project support cost income					
- Telecommunication Development Sector	6 322	4 320	3 000	3 000	6 000
Total project support cost income	**6 322**	**4 320**	**3 000**	**3 000**	**6 000**
C. Income from interest	**-**	**3 000**	**1 250**	**1 250**	**2 500**
D. Sales of publications					
- General Secretariat	332	527	264	264	528
- Radiocommunication Sector	11 709	10 928	6 129	6 128	12 257
- Telecommunication Standardization Sector	13 761	13 568	7 079	7 079	14 158
- Telecommunication Development Sector	1 011	1 035	528	529	1 057
Total sales of publications	**26 813**	**26 058**	**14 000**	**14 000**	**28 000**
E. Cost recovery					
- UIFN			750	750	1 500
- GMPCS-MOUS			464	463	927
- TELECOM	1 336	2 727	1 524	1 525	3 049
- Satellite Network Filings			4 500	6 500	11 000
Total cost recovery	**1 336**	**2 727**	**7 238**	**9 238**	**16 476**
F. Other income	**3 024**	**424**	**710**	**710**	**1 420**
Subtotal	**323 685**	**317 823**	**159 619**	**161 619**	**321 238**
G. Withdrawal from the ITU Reserve Account	**7 800**	**14 831**	**4 873****	**6 510**	**11 383**
H. Withdrawal from the Publications Capital Account	**2 000**				
I. Withdrawal from the ITU Reserve Account, Res. 1088	**8 260**				
J. Withdrawal of the reserve from the debtor's accounts for cancellation of bad debts	**201**				
K. Withdrawal from the Telecom Surplus	**1 200**				
Total	**343 146**	**332 654**	**164 492**	**168 129**	**332 621**

***** *Based on the existing number of contributory units of Sector Members as of 1st January 1997. Since then, the number of the contributory units of Sector Members has increased from 303 1/16 to 350 3/4 units under the Kyoto Conference. Under the Minneapolis Conference, the number of contributory units for 2000-2001 is 325 1/2 units (See Doc. C99/50).*

*** On account of the postponement of the WRC and RA from 1999 to 2000.*

TABLE 3

GENERAL SECRETARIAT

Expenditure by Section

CHF(000)

		Expenditure 1996-1997	Budget 1998-1999	Estimates 2000	Estimates 2001	Total 2000-2001
Section 1.1	Plenipotentiary Conference		3 019		24	24
Section 1.2	Policy Forum	128	202	219		219
Section 2.1	Council	1 426	1 516	1 389	1 249	2 638
Section 5	World Telecom. Advisory Council	36	60			
Section 9	Secretary General's Office and departments	187 719	183 002	86 608	86 699	173 307
	- Secretary-General's Office	11 951	5 767	2 801	2 800	5 601
	- Strategic Planning & Ext. Aff. Unit		7 060	5 110	5 094	10 204
	- Conferences Department	44 007	49 899	19 630	19 638	39 268
	- Common Services Department	69 319	61 611	30 771	30 603	61 374
	- Personnel & Social Protect. Dept	17 826	17 647	9 095	9 048	18 143
	- Finance Department	9 526	8 922	4 435	4 401	8 836
	- Information Services Department	35 090	32 096	14 766	15 115	29 881
Section 20	Publications	156	398	55	55	110
	TOTAL	**189 465**	**188 197**	**88 271**	**88 027**	**176 298**

TABLE 4

GENERAL SECRETARIAT 2000-2001

Planned Expenditure by Section and Category

	Conferences	*General Secretariat*							Publications	**Total Swiss francs (000)**
	Council and other meetings	Office of the Secretary-General	Strategic Planning & Ext.Affairs Unit	Conferences Dept.	Common Services Dept.	Personnel and Social Protection Dept.	Finance Dept.	Inform. Services Dept.		
Staff costs	1 022	3 359	6 697	26 577	31 611	7 242	6 807	15 576		**98 891**
Other staff costs	68	1 030	1 721	6 809	8 129	3 568	1 799	4 140		**27 264**
Travel on duty	1 010	214	170	128	145	50	30	30		**1 777**
Contractual services	600		925	4 630	470	1 140		2 422		**10 187**
Rental and maintenance of premises and equipment	29	7	14	68	11 078	19	18	2 931		**14 164**
Materials and supplies	28	49	120	257	2 527	26	25	350		**3 382**
Acquisition of premises, furniture and equipment		36	79	487	4 137	102	99	3 632		**8 572**
Public and internal service utilities	81	164	420	252	2 586	36	36	800	110	**4 485**
Audit and inter-agency fees and miscellaneous	43	742	40	60	691	20	22			**1 618**
Retired staff costs			18			5 940				**5 958**
Total	**2 881**	**5 601**	**10 204**	**39 268**	**61 374**	**18 143**	**8 836**	**29 881**	**110**	**176 298**

TABLE 5

RADIOCOMMUNICATION SECTOR

Expenditure by Section

CHF(000)

		Expenditure 1996-1997	Budget* 1998-1999	Estimates 2000	Estimates 2001	Total 2000-2001
Section 3.1	World radiocommunication conferences	2 641	1 910	2 467		2 467
Section 3.2	Radiocommunication assemblies	291	390	380		380
Section 3.3	Review of the ITU's frequency coord. & planning framework for satellite services (Resolution 18, Kyoto)	172	0	0	0	0
Section 5.1	Radio Regulations Board	466	717	376	524	900
Section 5.2	Radiocommunication Advisory Group	173	226	115	115	230
Section 6	Study group meetings	3 367	3 027	1 541	1 871	3 412
Section 8	Seminars	585	517	277	268	545
Section 9	Bureau	50 033	54 437	27 482	25 267	52 749
	- Office of the Director	6 257	5 528	704	703	1 407
	- Study Groups Department	4 194	4 567	2 319	2 318	4 637
	- Space Services Department	13 195	12 194	6 832	6 741	13 573
	- Terrestrial Services Department	17 882	18 449	9 207	9 420	18 627
	- Radiocom.Information Systems Dept	8 505	8 189	6 204	6 085	12 289
	- Post conference work		5 510	2 216	0	2 216
Section 20	Publications	4 193	4 127	1 511	1 282	2 793
	TOTAL	**61 921**	**65 351**	**34 149**	**29 327**	**63 476**

**) Including additional appropriations of 5,010,000 CHF as per Resolution 1121.*

TABLE 6

RADIOCOMMUNICATION SECTOR 2000-2001

Planned Expenditure by Section and Category

	Conferences and assemblies	Seminars	Radio Reg. Board	Radio Advisory Group	Study group meetings	*Bureau*			Publications	**Total Swiss francs (000)**
						Office of the Director	Post conference work	Dept.		
Staff costs	2 322	120	367	169	2 196	1 041	2 035	37 528		**45 778**
Other staff costs	187		1	61	216	267	5	10 608		**11 345**
Travel on duty	100	425	521		220	70	150	225		**1 711**
Contractual services	5							210	1 746	**1 961**
Rental and maintenance of premises and equipment	86				50		8	91		**235**
Materials and supplies	47				160		8	128		**343**
Acquisition of premises, furniture and equipment								99		**99**
Public and internal service utilities	82		8		540		8	232	1 047	**1 917**
Miscellaneous	18		3		30	29	2	5		**87**
Total	**2 847**	**545**	**900**	**230**	**3 412**	**1 407**	**2 216**	**49 126**	**2 793**	**63 476**

TABLE 7

TELECOMMUNICATION STANDARDIZATION SECTOR

Expenditure by Section

CHF(000)

		Expenditure 1996-1997	Budget 1998-1999	Estimates 2000	Estimates 2001	Total 2000-2001
Section 3	World Telecommunication Standardization Assembly	456	0	765	0	765
Section 5	Telecommunication Standardization Advisory Group	132	370	124	125	249
Section 6	Study group meetings	2 551	3 536	3 159	3 189	6 348
Section 8	Seminars			100	100	200
Section 9	Bureau	14 601	16 267	10 493	10 254	20 747
	- Office of the Director	1 055	1 280	824	758	1 582
	- Department A	3 087	3 473	1 920	1 920	3 840
	- Department B	5 634	6 863	3 722	3 741	7 463
	- Technical Revision Terminol. & Proc.	3 531	3 267	3 273	3 158	6 431
	- Intern. Telecom. Regul. Applic. & Stat.	1 294	1 384	754	677	1 431
Section 20	Publications	2 382	1 022	545	544	1 089
	TOTAL	**20 122**	**21 195**	**15 186**	**14 212**	**29 398**

TABLE 8

TELECOMMUNICATION STANDARDIZATION SECTOR 2000-2001

Planned Expenditure by Section and Category

	Conferences	Seminars	Telecommun. Standardization Advisory Group	Study group meetings	*Bureau*		Publications	**Total Swiss francs (000)**
					Office of the Director	Study groups secretariat		
Staff costs	487		171	4 605	726	14 800		**20 789**
Other staff costs	61		61	131	230	4 077		**4 560**
Travel on duty		200		50	88	100		**438**
Contractual services					135	30	370	**535**
Rental and maintenance of premises and equipment	20			140	31	40		**231**
Materials and supplies	25		5	250	43	62		**385**
Acquisition of premises, furniture and equipment					169			**169**
Public and internal service utilities	162		12	1 152	120	50	719	**2 215**
Miscellaneous	10			20	40	6		**76**
Total	**765**	**200**	**249**	**6 348**	**1 582**	**19 165**	**1 089**	**29 398**

TABLE 9

TELECOMMUNICATION DEVELOPMENT SECTOR

Expenditure by Section

CHF(000)

		Expenditure 1996-1997	Budget 1998-1999	Estimates 2000	Estimates 2001	Total 2000-2001
Section 3	World telecommunication development conferences - 4 preparatory meetings	101	1 175	0	702	702
Section 4	RTDC - 2 follow up meetings	838	596	578	0	578
Section 5	Telecommunication Development Advisory Group	224	188	168	171	339
Section 6	Study group meetings	697	1 420	784	839	1 623
Section 7	Telecommunication development activities and programmes	15 150	13 400	8 720	8 173	16 893
Section 9	Bureau	37 281	40 945	21 588	21 649	43 237
	- Office of the Director	3 002	5 711	733	799	1 532
	- Regional Offices	9 353	8 901	5 332	5 332	10 664
	- Policies, Strat. & Program. Dept	9 934	9 663	4 445	4 505	8 950
	- Field Operations Department	7 727	8 851	4 527	4 462	8 989
	- Progr. Support, Org. & Meth. Dept	7 265	7 819	6 551	6 551	13 102
Section 20	Publications	308	187	42	35	77
	TOTAL	**54 599**	**57 911**	**31 880**	**31 569**	**63 449**

TABLE 10
TELECOMMUNICATION DEVELOPMENT SECTOR 2000-2001

Planned Expenditure by Section and Category

	Programme of Cooperation			***Valletta Action Plan***	***Bureau***				**Total**
	Conferences	Telecom. Development Advisory Board	Study group meetings	BDT activities	Office of the Director	Departments	Regional Presence	Publications	**Swiss francs (000)**
Staff costs	317	167	712	339	1 016	22 044	6 593		**31 188**
Other staff costs	1	61	62		302	6 180	1 993		**8 599**
Travel on duty	670	100	501	6 369	185	1 004	774		**9 603**
Contractual services	75		60	9 685		174	403		**10 397**
Rental and maintenance of premises and equipment	25		80			85	136		**326**
Materials and supplies	40	2	38			221	54		**355**
Acquisition of premises, furniture and equipment	5			400		506	480		**1 391**
Public and internal service utilities	117	9	140			824	110	77	**1 277**
Miscellaneous	30		30	100	29	3	121		**313**
Total	**1 280**	**339**	**1 623**	**16 893**	**1 532**	**31 041**	**10 664**	**77**	**63 449**

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COMMITTEE 4

Ethiopia (Federal Democratic Republic of)

PROPOSAL FOR THE WORK OF CONFERENCE

The Administration of the Federal Democratic Republic of Ethiopia wishes to submit the following proposal for the work of the Conference.

Agenda item 1.1

MOD ETH/190/1

S5.355 *Additional allocation:* in Bahrain, Bangladesh, the Congo, Egypt, the United Arab Emirates, Eritrea, ~~Ethiopia,~~ the Islamic Republic of Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Malta, Morocco, Oman, Qatar, Syria, Somalia, Sudan, Sri Lanka, Chad, Togo, Yemen and Zambia, the bands 1 540-1 645.5 MHz and 1 646.5-1 660 MHz are also allocated to the fixed service on a secondary basis.

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COMMITTEE 4

Jordan (Hashemite Kingdom of)

PROPOSAL FOR THE WORK OF THE CONFERENCE

REQUEST FOR THE DELETION OF FOOTNOTES (WRC-2000 AGENDA ITEM 1.1)

MOD JOR/191/1

S5.347 *Different category of service:* in Bangladesh, Bosnia and Herzegovina, Botswana, Bulgaria, Burkina Faso, Cuba, Denmark, Egypt, Greece, Ireland, Italy, ~~Jordan,~~ Kenya, Mozambique, Portugal, Sri Lanka, Swaziland, Yemen, Yugoslavia and Zimbabwe, the allocation of the band 1 452-1 492 MHz to the broadcasting-satellite service and the broadcasting service is on a secondary basis until 1 April 2007.

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WORKING GROUP 1
OF THE PLENARY

Tunisia

PROPOSAL FOR THE WORK OF THE CONFERENCE

BASES FOR REPLANNING - APPENDICES S30, S30A IN REGIONS 1 AND 3

AGENDA ITEM 1.19

Tunisia recognizes the importance of the planning exercise communicated to WRC by the Bureau on the basis of IRG's decisions, and the value of taking account in the draft Plan to be adopted by WRC of unresolved difficulties requiring additional consideration.

The results of planning studies conducted up to now by the Group of Technical Experts (GTE) and the Inter-conference Representative Group (IRG) for the downlink Plan (Appendix S30) show that a large number of beams and the existing systems covered in principle 3 of Resolution 532 have been successfully allocated.

Nevertheless, in view of:

– the conclusions of the Radiocommunication Bureau set forth in Addendum 15 to Document 34 and confirming the feasibility of allocating the orbital position 21° W to Tunisia for the beam TUN15000;

– the content of Document DT/19 containing the report of ad hoc Group 1 to GT PLEN-1, and particularly § 2.11 thereof concerning the possible use of an alternative orbital position within the arc 25° W to 10° E for TUN instead of 30° W;

– the fact that the initial study carried out by IRG (§ 6.3.12 of Document 34) maintains the beam TUN27200, allocating to it the orbital position 30° W, as set out in Addenda 2 and 3 to Document 34,

the Tunisian Administration, while noting the feasibility of allocation of the orbital position 21° W to the beam TUN15000 according to DT/19 and the study in Addendum 15 to Document 34:

– expresses the wish that the orbital position 25° W be considered for the beam TUN15000;

– interprets the conclusions of the studies conducted as maintenance of the orbital position 30° W for the beam TUN27200.

Accordingly, the Tunisian Administration wishes that the following hypotheses be included in the basic hypotheses to be taken into consideration in the planning process:

– allocation of the orbital position 25° W for the beam TUN15000, or, failing that, an orbital position within the arc 25° W to 10° E;

– allocation to beam TUN27200 of the same orbital position as that of the beam TUN15000.

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COMMITTEE 5
WORKING GROUP 1
OF THE PLENARY

Ethiopia (Federal Democratic Republic of)

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda item 1.4 - to consider issues concerning allocations and regulatory aspects related to Resolutions 126 (WRC-97), 128 (WRC-97), 129 (WRC-97), 133 (WRC-97), 134 (WRC-97), and 726 (WRC-97)

ETH/193/1

Ethiopia supports the stand that any sharing criteria to be implemented shall protect the fixed service and further the radio astronomy service shall investigate ways to reduce its susceptibility to harmful interference.

Agenda item 1.5 - to consider regulatory provisions and possible additional frequency allocations for services using high altitude platform stations, taking into account the results of ITU-R studies conducted in response to Resolution 122 (WRC-97)

ETH/193/2

Ethiopia supports the recommendation given by WRC-97 to assign 47.2-47.5 GHz to HAPS and the sharing of these frequencies with FS and FSS based on further studies. If additional frequency allocations are planned, they should be above 18 GHz as per the ITU-R ongoing study.

Agenda item 1.6 - issues related to IMT-2000

Agenda item 1.6.1 - review of spectrum and regulatory issues for advanced mobile applications in the context of IMT-2000, noting that there in an urgent need to provide more spectrum for the terrestrial component of such applications and that priority should be given to terrestrial mobile spectrum needs, and adjustments to the Table of Frequency Allocations as necessary

ETH/193/3

Terrestrial component of IMT-2000

NOC

470-806 MHz

Reasons: Ethiopia is using this spectrum band for fixed and broadcasting services and the phasing out of analogue TV is not to happen in the coming 10 years.

NOC

806-960 MHz

Reasons: Ethiopia is using this spectrum band for fixed and second-generation mobile systems. The use of this band for IMT-2000 is not possible in the near future.

NOC

1 429-1 501 MHz

Reasons: Ethiopia is using this spectrum band heavily for digital multi-access systems.

NOC

1 710-1 885 MHz

Reasons: Ethiopia is using this spectrum band for fixed services.

2 290-2 300, 2 300-2 400, 2 520-2 670, 2 700-2 900 MHz

Ethiopia proposes that these bands may be considered for the use of IMT-2000 terrestrial component.

3 000-3 400 MHz

Ethiopia supports the future study of this band for the deployment of IMT-2000 terrestrial and satellite systems.

Satellite component of IMT 2000

Ethiopia proposes that the bands 1 610-1 626.5/2 483.5-2 500 and 2 500-2 520/2 670-2 690 MHz be considered for IMT-2000 satellite component.

Agenda item 1.6.2 - identification of a global radio control channel to facilitate multimode terminal operation and worldwide roaming of IMT-2000

ETH/193/5

Ethiopia supports the conclusion of the ITU-R studies per the CPM Report.

Agenda item 1.9 - to take into account the results of ITU-R studies in evaluating the feasibility of an allocation in the space-to-Earth direction to the mobile-satellite service (MSS) in a portion of the 1 559-1 567 MHz frequency range, in response to Resolutions 213 (Rev.WRC-95) and 220 (WRC-97)

ETH/193/6

Ethiopia recognizes the importance of radionavigation satellite systems including GPS and has the following proposals:

a) no allocation should be made to the MSS service in the band 1 559-1 567 MHz;

b) delete Resolution 220 (WRC-97);

c) protection of the existing MetSat service in the sub-band of 1 675-1 710 MHz should be ensured by proper regulatory and procedural considerations.

Agenda item 1.10 - to consider results of ITU-R studies carried out in accordance with Resolution 218 (WRC-97) and take appropriate action on this subject

ETH/193/7

In order to ensure the safety of life, Ethiopia supports the agenda in such a way that protection of GMDSS and AMS(R)S should be considered.

Agenda item 1.11 - to consider constraints on existing allocations and to consider additional allocations on a worldwide basis for the non-geostationary (non-GSO) MSS below 1 GHz, taking into account the results of ITU-R studies conducted in response to Resolutions 214 (Rev.WRC-97) and 219 (WRC-97)

ETH/193/8

Regarding the possibility of additional allocation to the non-GSO mobile-satellite service in the band below 1 GHz, Ethiopia recognizes that such current services as the mobile service, the fixed service, the broadcasting service and the meteorological aids service, to which the band concerned is already allocated for use and usage of which is heavy, have protection priority, hence the above-mentioned additional allocation is considered to be difficult.

Agenda item 1.18 - to consider the use of new digital technology for the maritime mobile service in the band 156-174 MHz and consequential revision of Appendix 18/S18, taking into account Resolution 342 (WRC-97)

ETH/193/9

The modification of Appendix S18 by this agenda item has been identified by ITU-R as intending to fulfill two roles:

1) providing the possibility to implement new applications;

2) the relief of congestion experienced in certain parts of the world.

As far as the appropriate consequential amendments to the RR are considered, Ethiopia supports the modification of Appendix S18 to satisfy the agenda item.

Agenda item 1.20 - to consider the issues related to application of Nos. S9.8, S9.9 and S9.17 and the corresponding parts of Appendix S5 with respect to Appendices S30 and S30A, with a view to possible deletion of Articles 6 and 7 of Appendices S30 and S30A, also taking into consideration Recommendation 35 (WRC-95)

ETH/193/10

Provided that the deletion of regulations causes no discrepancy in procedure between deleted and existing regulations, Ethiopia supports the modifications to the current provisions in Article S9, Appendices S30 and S30A under Approach B. This avoids the difficulties arising from the need to update these procedures under Approach A.

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COMMITTEE 5

Chairperson, Working Group 5D

PROPOSALS RELATING TO AGENDA ITEM 1.14

The Working Group 5D proposals relating to agenda item 1.14 are attached.

These proposals should be brought to the attention of Committee 4 so that steps can be taken to include the necessary elements in ApS4.

John Leary
Chairperson, Working Group 5D

MOD

Allocation to services		
Region 1	**Region 2**	**Region 3**
15.43-15.63	FIXED-SATELLITE ~~(space-to-Earth)~~ (Earth-to-space) MOD S5.511A AERONAUTICAL RADIONAVIGATION S5.511C	

MOD

S5.511A **The band 15.43-15.63 GHz is also allocated to the fixed-satellite service (space-toEarth) on a primary basis.** Use of the band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth ~~(see Resolution **123 (WRC-97))**~~ and Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. **S9.11A**. The use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth) is limited to non-GSO MSS feeder-link systems for which advance~~d~~ publication information has been received by the Bureau prior to ~~the end of WRC-2000~~ 2 June 2000. In the space-to-Earth direction, the minimum earth station elevation angle above and gain towards the local horizontal plane and the minimum coordination distances to protect an earth station from harmful interference shall be in accordance with Recommendation ITU-RS.1341. ~~Also in the space-to-Earth direction, harmful interference shall not be caused to stations of the radio astronomy service using the band 15.35-15.4 GHz. The threshold levels of interference and associated power flux-density limits which are detrimental to the radio astronomy service are given in Recommendation ITU-R RA.769-1. Special measures will need to be employed~~. In order to protect the radio astronomy service in the band 15.35-15.4 GHz, the aggregate power flux-dencity radiated in the 15.35-15.4 GHz band by all the space stations within any non-GSO MSS feeder-link (space-to-Earth) system operating in the 15.43-15.63 GHz band shall not exceed the level of –156 dB(W/m2) in a 50MHz bandwidth, which is given in Recommendation ITU-R RA.769-1, into any radio astronomy observatory site for more than 2% of the time.

SUP

RESOLUTION 123 (WRC-97)

Feasibility of implementing feeder links of non-geoestationary satellite networks in the mobile-satellite service in the band 15.43-15.63 GHz (space-to-Earth) while taking into account the protection of the radio astronomy service, the Earth exploration-satellite (passive) service and the space research (passive) service in the band 15.35-15.4 GHz.

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COMMITTEE 5

Chairperson, Working Group 5D

PROPOSALS RELATING TO AGENDA ITEM 1.14

The Working Group 5D proposals relating to agenda item 1.14 are attached.

These proposals should be brought to the attention of Committee 4 so that steps can be taken to include the necessary elements in ApS4.

John LEARY
Chairperson, Working Group 5D

MOD

14.25-15.63 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
15.43-15.63	FIXED-SATELLITE (space-to-Earth) (Earth-to-space) MOD S5.511A AERONAUTICAL RADIONAVIGATION S5.511C	

MOD

S5.511A The band 15.43-15.63 GHz is also allocated to the fixed-satellite service (space-to Earth) on a primary basis. Use of the band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth ~~(see Resolution **123 (WRC-97))**~~ and Earth-to-space) is limited to feeder links of non-geostationary systems in the mobile-satellite service, subject to coordination under No. **S9.11A**. The use of the frequency band 15.43-15.63 GHz by the fixed-satellite service (space-to-Earth) is limited to non-GSO MSS feeder-link systems for which advance publication information has been received by the Bureau prior to 2 June 2000. In the space-to-Earth direction, the minimum earth station elevation angle above and gain towards the local horizontal plane and the minimum coordination distances to protect an earth station from harmful interference shall be in accordance with Recommendation ITU-R S.1341. ~~Also in the space-to-Earth direction, harmful interference shall not be caused to stations of the radio astronomy service using the band 15.35-15.4 GHz. The threshold levels of interference and associated power flux-density limits which are detrimental to the radio astronomy service are given in Recommendation ITU-R RA.769-1. Special measures will need to be employed~~In order to protect the radio astronomy service in the band 15.35-15.4 GHz, the aggregate power flux-density radiated in the 15.35-15.4 GHz band by all the space stations within any non-GSO MSS feeder-link (space-to-Earth) system operating in the band 15.43-15.63 GHz shall not exceed the level of –156 dB(W/m^2) in a 50 MHz bandwidth, which is given in Recommendation ITU-R RA.769-1, into any radio astronomy observatory site for more than 2% of the time.

SUP

RESOLUTION 123 (WRC-97)

Feasibility of implementing feeder links of non-geostationary satellite networks in the mobile-satellite service in the band 15.43-15.63 GHz (space-to-Earth) while taking into account the protection of the radio astronomy service, the Earth exploration-satellite (passive) service and the space research (passive) service in the band 15.35-15.4 GHz

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

NOTE BY THE CHAIRPERSON OF THE CONFERENCE

INFORMATION DOCUMENTS AND ORAL INTERVENTIONS BY OBSERVERS

Committee 1 of the Conference (Steering Committee) has agreed on the following principles relating to the handling of information documents and statements submitted by observers.

In accordance with Nos. CV278 to CV280, the United Nations, regional telecommunication organizations, intergovernmental organizations operating satellite systems, the specialized agencies of the United Nations, international organizations admitted by the Conference and Sector Members of the Radiocommunication Sector have observer status at the Conference.

Several organizations are able to participate in the Conference in two ways (for instance, as an intergovernmental organization operating satellite systems **and** as a Sector Member). However, this does not affect their observer status.

In accordance with No. 1002 of the ITU Convention, observers from the United Nations, regional telecommunication organizations, intergovernmental organizations operating satellite systems, the specialized agencies of the United Nations and the international organizations may participate in a conference or a meeting of the Union **but only** in an **advisory capacity**.

The right to submit proposals to the Conference is, pursuant to No. CV320, **exclusively reserved for Member States**. However, in line with the practice of ITU and also of the common system as a whole, observers may submit written contributions in the form of information documents only.

Information documents do not constitute proposals and should not therefore be listed as documents allocated to items of the agenda of a meeting. Information documents should be referenced at the bottom of the page of an agenda for information purposes only. The agenda item could be annotated with a footnote or an asterisk to indicate that an information document listed at the bottom of the page contains information related to that agenda item.

The right to express opinions freely and fully on any subject under debate, which is provided for in No. 16 of the ITU Rules of Procedure of Conferences and other Meetings, is **granted solely** to Member States. Accordingly, observers in their advisory capacity, may be given the floor only at the discretion of the chairperson. When given the floor, the observer should not make any proposals but provide information relevant to the item under discussion.

As far as Sector Members are concerned, No. 31A of the ITU Rules of Procedure of Conferences and other Meetings provides, for the sake of clarity, that "*Representatives of Sector Members of the Radiocommunication Sector may, with the authorization of the chairman, make statements but shall not be authorized to participate in debates*". This provision simply implies that Sector Members are only observers during WRC and thus may, as any other observer, only make statements with the prior authorization of the chairperson.

The chairperson, when presiding over the meetings, directing the discussions and ensuring observance of the Rules of Procedure, should respect the principles mentioned in this note.

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INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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COMMITTEE 4

NOTE BY THE CHAIRPERSON OF WORKING GROUP 4B TO THE CHAIRPERSON OF COMMITTEE 4

AGENDA ITEM 2
(Incorporation by reference)

The Working Group considered the question of the four missing ITU-R Recommendations from Volume 4 of the Radio Regulations. The following was agreed:

The reference to Recommendation ITU-R **SA.1154** in No. **S5.391** was judged to be mandatory in nature and the full text should therefore ~~be~~ have been included in Volume 4 of the Radio Regulations.

The reference to Recommendation ITU-R **S.1256** in No. **S22.5A** was judged to be mandatory in nature and the full text should therefore ~~be~~ have been included in Volume 4 of the Radio Regulations.

The reference to Recommendation ITU-R **S.1340** in No. **S5.511C** was judged to be mandatory in nature and the full text should therefore ~~be~~ have been included in Volume 4 of the Radio Regulations.

The reference to Recommendation ITU-R **SA.1341** in No. **S5.511A** was judged to be mandatory in nature and the full text should therefore ~~be~~ have been included in Volume 4 of the Radio Regulations.

A. ALLISON
Chairperson of Working Group 4B, Box 68

INTERNATIONAL TELECOMMUNICATION UNION

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ISTANBUL, 8 MAY – 2 JUNE 2000

COMMITTEE 5

Note by the Chairperson of Working Group 4B
to the Chairperson of Committee 5

AGENDA ITEM 2
(Incorporation by reference)

The Working Group considered the reference to Recommendation ITU-R **RA.769-1**. It was noted that, although the reference to ITU-R **RA.769-1** in No. **S5.511A** does not appear to be mandatory in nature, it is treated as mandatory in the Annexes of Resolution **27 (Rev.WRC-97)** and therefore appears in Volume 4 of the Radio Regulations. Committee 5 is therefore requested to provide Working Group 4B with a clarification of the status of the references to ITU-R **RA.769-1** in No. **S5.511A**.

A. ALLISON
Chairperson of Working Group 4B, Box 68

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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GT PLEN-1

Note by the Chairperson of Working Group 4B to the Chairperson of GT PLEN-1

AGENDA ITEM 2
(Incorporation by reference)

The Working Group considered the reference to Recommendation ITU-R **BO.1293**. Recommendation ITU-R **BO.1293** has actually been revised during the last study period. Since GT PLEN-1 is dealing with related matters at this conference, it is therefore requested to advise Working Group 4B on whether the references in Appendices **S30/S30A** to this Recommendation should be updated to reflect the changes agreed in ITU-R.

A. ALLISON
Chairperson of Working Group 4B, Box 68

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

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ISTANBUL, 8 MAY – 2 JUNE 2000

WORKING GROUP 5B

Note by the Chairperson of Working Group 4B
to the Chairperson of Working Group 5B

AGENDA ITEM 2
(Incorporation by reference)

The Working Group considered the reference to Recommendation ITU-R **M.1174**. During the consideration, an anomaly was noted in relation to that Recommendation. A revision has apparently taken place and Working Group 5B is requested to advise Working Group 4B on whether the version referenced in the Radio Regulations should be updated to ITU-R **M.1174-1**.

A. ALLISON
Chairperson of Working Group 4B, Box 68

INTERNATIONAL TELECOMMUNICATION UNION

WRC-2000 WORLD RADIOCOMMUNICATION CONFERENCE

Document 200-E
22 May 2000
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LIST OF DOCUMENTS ISSUED
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DOCUMENT NUMBER	***SOURCE***	***TITLE***	***DESTINATION***
151	HRV/HNG/ SVK/CZE	Proposal for the work of the Conference	WG PLEN-1
152	HNG	Proposals for the work of the Conference	C4
153	C5	Organization of the work of Committee 5	C5
154 + Corr.1 + Corr.2	[1]	Proposals for the work of the Conference	WG PLEN-1, C5
155 + Rev.1	ZMB	Proposals for the work of the Conference	C4
156	MNG	Proposals for the work of the Conference	C4
157	EQA	Proposal for the work of the Conference	C4
158	LVA/LTU	Proposal for the work of the Conference	WG PLEN-1
159	BEL/HOL	Proposal for the work of the Conference	WG PLEN-1
160	SG	Note by the Secretary-General	PL
161	SG	IUCAF position statement on WRC-2000 agenda items	C4, C5

[1] ALG/D/AND/ARS/BEL/BFA/CME/CAF/CTI/DNK/E/FIN/F/GAB/GHA/IRL/LVA/LBN/LIE/LTU/ LUX/MLI/MRC/NOR/POR/ROU/G/SEN/S/SUI/TCD/TUN

DOCUMENT NUMBER	*SOURCE*	*TITLE*	*DESTINATION*
162	C6	Note by the Chairperson of Committee 6 (Editorial)	C6
163	[2]	Proposal for the work of the Conference	WG PLEN-2
164	SVN	Proposals for the work of the Conference	C4
165	C4	Organization of the work of Committee 4 approved at the first meeting	C4
166	UAE	Proposals for the work of the Conference	C5
167	BUL	Proposals for the work of the Conference	C4
168	BUL	Proposal for the work of the Conference	C4
169	SG	Minutes of the opening ceremony	PL
170 + Corr.1	PL	Minutes of the first Plenary Meeting	PL
171	-	This document was withdrawn before publication	-
172	C4	Summary Record of the first meeting of Committee 4 (regulatory and associated issues)	C4
173	C5	Summary Record of the first meeting of Committee 5 (allocations and associated issues)	C5
174	C5	Note by the Chairperson of Committee 5	C4
175	C4	Note by the Chairperson of Committee 4	C3, WG PLEN-2
176	WG 5D	Note by the Chairperson of Working Group 5D	C5
177	SG	Schedule for WRC-2000	PL
178	WG PLEN-1	Request by Spain to maintain Hispasat-2 frequency assignments in Appendices S30 y S30A Plans	PL
179	OMA	Proposals for the work of the Conference	C4
180	WG 4B	Note by the Chairperson of Working Group 4B	C4

[2] D/AUT/CVA/F/I/LIE/MLI/POL/SMR/SUI/UKR

DOCUMENT NUMBER	*SOURCE*	*TITLE*	*DESTINATION*
181 + Corr.1	CITEL	CITEL BSS position (agenda item 1.19)	PL
182 + Corr.1	CITEL	Information paper Agenda item 1.4: Frequency sharing between space and terrestrial services in bands above 30 GHz	C5
183 + Add.1 + Corr.1	WG PLEN-1	Basic elements for BSS re-planning	PL
184 + Add.1	SG	Review and possible revision of the 1997 Broadcasting-Satellite Service Plans for Regions 1 and 3	PL
185 + Corr.1	[3]	Elements to be considered to reach an agreement on BSS replanning at WRC-2000	PL
186	WG 5A	Conclusions relating to agenda item 1.6.2 on the global radio control channel for IMT-2000	C5
187 + Rev.1	GTM	Proposal for the work of the Conference	C4, WG PLEN-1
188	C6	Summary record of the first meeting of Committee 6 (Editorial)	C6
189	C3	Summary record of the first meeting of Committee 3 (Budget control)	C3
190	ETH	Proposal for the work of the Conference	C4
191	JOR	Proposal for the work of the Conference	C4
192	TUN	Proposal for the work of the Conference	WG PLEN-1
193	ETH	Proposals for the work of the Conference	C5, WG PLEN-1

[3] AUS/KOR/IND/INS/IRN/J/MNG/PAK/KRE/THA/TON/VTN

DOCUMENT NUMBER	*SOURCE*	*TITLE*	*DESTINATION*
194 + Rev.1	WG 5D	Proposals relating to agenda item 1.14	C5
195	Chairperson, WRC-2000	Note by the Chairperson of the Conference Information documents and oral interventions by observers	PL
196	WG 4B	Note by the Chairperson of Working Group 4B to the Chairperson of Committee 4	C4
197	WG 4B	Note by the Chairperson of Working Group 4B to the Chairperson of Committee 5	C5
198	WG 4B	Note by the Chairperson of Working Group 4B to the Chairperson of GT PLEN-1	WG PLEN-1
199	WG 4B	Note by the Chairperson of Working Group 4B to the Chairperson of Working Group 5B	WG 5B
200	BR	List of documents issued (151 - 200)	-