



**Documents of the Extraordinary Administrative Radio Conference
to allocate frequency bands for space radiocommunication purposes (EARC-63)
(Geneva, 1963)**

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

- This PDF includes Document DT No. 1 - 109.
- The complete set of conference documents includes Document No. 1 - 243, DT No. 1 - 109.

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SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/1-E
9 October 1963
Original: English

Geneva, 1963

WORKING GROUPS 5A, 5B, 5C

DISTRIBUTION OF FORMAL PROPOSALS TO WORKING GROUPS

1. At a meeting of Committee and Working Group Chairmen of Committee 5, together with the representatives of the I.F.R.B., held on Wednesday, 9 October 1963 and in keeping with the decision of Committee 5, the following co-ordination and working methods were agreed.
2. The initial basic working document for Working Groups 5A, 5B and 5C will be Document No. 17 with Addenda No. 1 and No. 2, which reflect the proposals by Administrations published in the documents introduced in Committee 5 at its 1st meeting on Tuesday, 8 October 1963.
3. The distribution of these proposals to the individual Working Groups is as shown in the Table appearing in the Annex attached hereto.
4. In the said Table the page references given are those of Document No. 17 and its Addenda. Where two Working Groups are mentioned, separated by a slant line, it is the Working Group which appears first which is to consider the proposal in the first instance; the Working Group mentioned after the slant line will consider the proposal in the light of the findings of the first-mentioned Working Group. Where two Working Groups are mentioned one above the other, each Working Group will consider the proposal independently.

Annex: 1

W. KLEIN
Chairman
Committee 5



ANNEXE - ANNEX - ANNEXO

<u>Doc. 17</u> <u>page</u> <u>pagina</u>	<u>Groupe de travail</u> <u>Working group</u> <u>Grupo de trabajo</u>
1/1 - 1/3	5 B
1/4 15,762 - 15,768 kHz kc/s	5 B
1/4 18,030 - 18,036 kHz kc/s	5 B
1/4 20,010 - 20,016 kHz kc/s	5 C
1/4 10,003 - 10,005 kHz kc/s } 19,990 - 20,010 kHz kc/s } 39,986 - 40,002 kHz kc/s }	5 B
2/1 - 2/5	5 B
2/6 30,005 - 30.01 MHz Mc/s	(5 B 5 C
3/1 - 3/2	5 B
4/1,2,3,5 272bis 273A	5 C
4/1 - 4/5 136 - 137 MHz Mc/s	5 B
4/1,3,4,5 137 - 138 MHz Mc/s	(5 A 5 C
4/6 114.1 - 114.4 MHz Mc/s	5 C
4/6 136 - 137 MHz Mc/s	5 A
4/6 137 - 138 MHz Mc/s	(5 B 5 C
4/6 143.6 - 143.65 MHz Mc/s	5 B
(Corr 2 - Doc. 3) (144 - 146 MHz Mc/s)	(5 C)
5/1 285 bis	5 A
5/2 - 5/5 285A 286A	5 A
5/2 - 5/5 149.9 - 150.05 MHz Mc/s	5 C
5/3 150.05 - 153 MHz Mc/s	5 B

<u>Doc. 17</u> <u>page</u> <u>pagina</u>		<u>Groupe de travail</u> <u>Working group</u> <u>Grupo de trabajo</u>
6/1 - 6/4		5 B
6 A/1	267 - 273 MHz Mc/s	5 A
6 A/1	400.05 - 401 MHz Mc/s	(5 A 5 B 5 C
7/1	400.05 - 401 MHz Mc/s	5 B
7/1	401 - 402 MHz Mc/s	5 A
7/1	404 - 406 MHz Mc/s	5 B
7/2,3,4,5	399.9 - 400.05 MHz Mc/s	5 C
7/2,3,4,5	400.05 - 401 MHz Mc/s	5 B
7/3,4,5	401 - 402 MHz Mc/s	5 C
7/5	404 - 406 MHz Mc/s	5 B
7/6,7	406 - 410 MHz Mc/s	5 B
8/1	324bis	5 A
8/2	319 A	5 A
8/3,4,5		5 A
8/6		5 C
8 A/1(+Doc.14)		5 B
9/1 - 9/5		5 C

<u>Doc. 17</u> <u>page</u> <u>pagina</u>		<u>Groupe de travail</u> <u>Working group</u> <u>Grupo de trabajo</u>
10/1,2a,3(rev),5a	1427 - 1540 MHz Mc/s	5 A
10/1	1660 - 1664.4 MHz Mc/s	5 C
10/1	1664.4 - 1668.4 MHz Mc/s	5 C/ 5 B
10/1	1668.4 - 1670 MHz Mc/s	5 C
10/1	1690 - 1700 MHz Mc/s	5 C
10/2a,5a,6,7	1400 - 1427 MHz Mc/s	5 B
10/2a,2b,3(rev)	1540 - 1660 MHz Mc/s } 352 A. 352 B }	5 C
10/2a,3(rev)	1660 - 1700 MHz Mc/s	5 C
10/2b	350 A.	5 B
10/4	1427 - 1535 MHz Mc/s	5 A
10/4	1535 - 1540 MHz Mc/s	5 B
10/4 10/7	1660 - 1670 MHz Mc/s	5 C
10/5a	1540 - 1700 MHz Mc/s	5 C
10/5b		5 C
11/1,2		5 B
11/3,4	1700 - 1710 MHz Mc/s	5 B
11/3,4	1750 - 2250 MHz Mc/s	5 A
11/3,4	2290 - 2300 MHz Mc/s	5 B
11/3	356 A	5 A
11/5		5 B
11/6	1770 - 1790 MHz Mc/s	5 A/ 5 C
12/1 - 12/6		5 B

<u>Doc. 17</u> <u>page</u> <u>pagina</u>	<u>Groupe de travail</u> <u>Working group</u> <u>Grupo de trabajo</u>
13/1a,2,3,4,5a 3700 - 4200 MHz Mc/s	5 A
13/1a 4990 - 5000 MHz MC/s	5 B
13/1a 378bis	(5 A)
13/1a 378ter	5 A
13/1a 383bis	5 B
13/1b 352bis 352ter	5 C
13/2,3 352 A 352 B	5 C
13/2,3,5a 4990 - 5000 MHz Mc/s	5 B
13/2,3,4 5250 - 5255 MHz MC/s	5 B
13/2 374 A 374 B	(5 A)
13/3 356 A	5 A
13/3 383 A	5 B
13/5a 374 A	5 A
13/5a 374 B	(5 A)
13/5b 352 A 352 B	5 C
13/6,7	5 B
13/8	5 A

<u>Doc. 17</u> <u>page</u> <u>pagina</u>	<u>Groupe de travail</u> <u>Working group</u> <u>Grupo de trabajo</u>
14/1a,2a,3,5a 5925 - 7650 MHz Mc/s	5 A
14/1a,2a,3,5a 7650 - 7750 MHz Mc/s	{ 5 A 5 C
14/1a,2a,2b,3,5a,5b 7900 - 8400 MHz Mc/s	5 A
14/1a,2b,3,5b 8400 - 8500 MHz Mc/s	5 B
14/1b 378ter, 391ter, 391quater } 391quinque, 391sextus }	5 A
14/1b 391bis	(5 A)
14/2b 374 A 374 B 391 A 391 B 393 B	(5 A)
14/2b 393 A	5 A
14/3 356 A 391 A 391 B	5 A
14/4 5925 - 8400 MHz Mc/s	{ 5 A 5 C
14/4 8400 - 8500 MHz Mc/s	5 B
14/5b 374 A 392 A 392 B 392 C } 392 D 392 E 392 F }	5 A
14/5b 374 B	(5 A)
14/6 5670 - 5725 MHz Mc/s	5 B
14/6 5725 - 6225 MHz Mc/s	5 A
14/6 7200 - 7250 MHz Mc/s	5 C
14/6 7250 - 7550 MHz Mc/s	5 A
14/6 8400 - 8500 MHz Mc/s	5 B
15/1,2,3,5	5 C
15/6	5 B
16/1 - 16/6	5 B
16/7	5 C
17/1 - 17/3	5 C

<u>Doc. 17</u> <u>page</u> <u>pagina</u>		<u>Groupe de travail</u> <u>Working group</u> <u>Grupo de trabajo</u>
18/1,5,6,7	15.25 - 15.4 GHz Gc/s	5 B
18/1	352bis- 352ter	5 C
18/2,3	15.15 - 15.4 GHz Gc/s	5 B
18/2,3,5	352 A 352 B	5 C
18/4		5 B
19/1 - 19/6		5 B
20/1 - 20/8		5 B
21/1 - 21/3		5 C
21/4	33.4 - 34.0 GHz Gc/s	(5 B 5 C
21/4	34.2 - 37.5 GHz Gc/s	5 B

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/2-E
9 October 1963
Original : English

Geneva, 1963

WORKING GROUP 5B

AGENDA

1st MEETING OF WORKING GROUP 5B

Thursday, 10 October at 14.30 (2.30 p.m.)

1. Nomination of Reporters
2. Organization of work
3. Presentation of documents and general discussion (Document No. 17,
Add. 1 and 2, Document No. DT/1)
4. Miscellaneous

V.V. RAO
Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/3-E
9 October, 1963
Original : English

Geneva, 1963

WORKING GROUP 5C

AGENDA

1st MEETING OF WORKING GROUP 5C

Thursday, 10 October at 16.30 (4.30 p.m.)

1. Nomination of Reporter.
2. Organization of work.
3. Presentation of documents and general discussion (Document No. 17, Add. 1 and 2; Document No. DT/1)
4. Miscellaneous.

J.T. PENWARDEN
Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/4-E
9 October, 1963
Original: English

WORKING GROUP 5A

AGENDA

1st MEETING OF WORKING GROUP 5A

Friday, 11 October at 09.30 (9.30 a.m.)

1. Nomination of Reporter
2. Organization of work
3. Presentation of documents and general discussion (Documents No. 3, No. 7, No. 8, No. 9, No. 10, No. 27, No. 32 (Rev.) and No. 55, together with associated working documents No. 17 plus Add. 1 and Add. 2, No. 41 and No. DT/1)
4. Miscellaneous

P. MORTENSEN
Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/5-E
10 October 1963
Original: French

WORKING GROUP 4B

AGENDA

SECOND MEETING OF WORKING GROUP 4B

Monday, 14 October at 2.30 p.m.

1. Documents submitted *)
2. Discussion of documents
3. Preparation of Report to Committee 4
4. Other business

P. BOUCHIER
Chairman

*) The documents are:

Document N° 1: Recommendation	259
"	350
"	351
"	361
"	362
"	363
"	364
"	365
"	366
"	367
"	314
Report	205
"	207

C.C.I.R.

II



Doc. No. 1	Report 211
	" 214
	" 216
	" 217
	" 218
	" 221
	" 222
	" 223
	" 224
	" 243

Doc. No.1	Add. No.1	Report 244
-----------	-----------	------------

Doc. No.2	
Doc. No.8	pp. 85-86
Doc. No.10	pp. 1-2
Doc. No.13	
Doc. No.16	
Doc. No.18	
Doc. No.28	
Doc. No.29	
Doc. No.30	
Doc. No.32	(Rev.), p. 3
Doc. No.33	
Doc. No.34	pp. 5-7
Doc. No.37	
Doc. No.60	
Doc. No.61	
Doc. No.62	

C.C.I.R.	II
United Kingdom	II
United States	II
Canada	II
C.C.I.T.T.	II
General Secretariat	-
General Secretariat	-
France	I
Italy	I
Fed. Rep. of Germany	I
U.S.S.R.	II
Japan	I
Australia	II
United States	I
Denmark, Norway, Sweden	I
E.B.U.	I/II
U.S.S.R.	I

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/6(Rev.)--E.
15 October 1963
Original : English

Replacing Document No. DT/6

WORKING GROUP 5C

DRAFT

FIRST REPORT OF WORKING GROUP 5C

1. Following discussion at its first meeting on Thursday 10 October, 1963 at its second meeting on Friday 11 October, 1963 and accepting, at its third meeting on Monday 14 October 1963, the results of an Ad Hoc Group comprising Delegates of Canada, U.S.A., U.K. and the U.S.S.R., Working Group 5C reached agreement on the band 144 - 146 Mc/s as shown in the attached Appendix.
2. The Delegation of Australia notified agreement subject to the outcome of the work of other groups concerned with operations in Region 3.

J. PENWARDEN
Chairman
Working Group 5C

Appendix : 1

APPENDIX

Mc/s

Allocation to services		
Region 1	Region 2	Region 3
144 - 146	AMATEUR	
	279 279A 279B	

(new) In the band 144 - 146 Mc/s, space satellites may be used by the
279A Amateur Service subject to co-ordination with all national amateur organi-
sations concerned and affected.

(new) Attention is drawn to Resolution No. ... with regard to the
279B provisions of No. 279A.

DRAFT RESOLUTION No.

Relating to the use of Space Satellites in the Amateur Service

The Extraordinary Administrative Radio Conference, Geneva, 1963,
taking into account

the desire of amateurs to use space satellites for amateur
communications and in the light of any recommendations received from the
International Amateur Radio Union

resolves

that the C.C.I.R. be requested to study and recommend upon the
technical principles on the basis of which such use of satellites can be
conducted taking into account the use of the band concerned by normal
terrestrial amateur radio operations.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/6-E
10 October, 1963
Original: English

WORKING GROUP 5C

DRAFT

FIRST REPORT BY WORKING GROUP 5C

1. Working Group 5C at its First Meeting on Thursday, 10 October, 1963 welcomed Mr. A.H. Catá and Mr. J. Ziolkowski, members of the I.F.R.B. and Dr. M.B. Sarwate, Vice-Secretary General to assist in the work of the Group.
2. Subject to the views recorded in paragraph 3 below, Working Group 5C reached agreement on the band 144-146 Mc/s as shown in the attached Appendix.
3. The Delegation of the U.S.S.R. opposed the extension of space radiocommunication techniques to the Amateur Service. The Delegation of Yugoslavia sought a more mature consideration of the technical factors involved before signifying its agreement.

J. PENWARDEN
Chairman
Working Group 5C

Appendix: 1



APPENDIX

Region 1	Region 2	Region 3
144-146	AMATEUR 279 279A	

(New) 279A

In the band 144-146 Mc/s, space radiocommunication techniques may be employed by the Amateur Service.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Corrigendum No. 1 to
Document No. DT/7-E
15 october 1963

WORKING GROUP 5A

Concerns only the Spanish text.



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/7-E
11 October 1963
Original : English

Geneva, 1963

WORKING GROUP 5A

DRAFT

FIRST REPORT BY WORKING GROUP 5A

1. Working Group 5A at its First Meeting on Friday, 11 October 1963 welcomed Mr. J. Ziołkowski and Mr. A. H. Catá, members of the I.F.R.B., and Dr. M. B. Sarwate, Vice-Secretary General to assist in the work of the Group.
2. Formal proposals were presented and explanations given on the philosophy on which proposals for allocations to Communication Satellites in particular, were established.
3. In the general discussion which followed, question was raised on two points,
 - a) the amount of spectrum space to be allocated to Communication Satellites,
 - b) the criteria for sharing between Communication Satellites and conventional radio-relay systems.
4. The band 1427 - 1429 Mc/s was given detailed consideration. The Delegation of Japan modified its proposal in that the Mobile Service (except aeronautical mobile) would have secondary status. The widest area of agreement was reached on the draft new Table for this band as shown in the Appendix attached hereto.
5. The Delegations of U.S.S.R., Yugoslavia, Argentina, Cuba and Czechoslovakia expressed the view that the Mobile Service (except aeronautical service) in this band should retain its present primary status.

Appendix: 1

P. MORTENSEN
Chairman



APPENDIX

Mc/s

Allocations to Services		
Region 1	Region 2	Region 3
1427-1429	SPACE TELECOMMAND FIXED Mobile except aeronautical mobile	

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/8-E
11 October, 1963
Original : English

WORKING GROUP 5C

AGENDA

3rd MEETING OF WORKING GROUP 5C

Monday, 14 October at 14.30 (2.30 p.m.), Room B

1. Further consideration of band 144 - 146 Mc/s - Amateur Service (Doc. DT/6)
2. Consideration of proposals concerning Radionavigation Satellites
 - at 150 Mc/s Document No. 17, Annex 5
 - at 400 Mc/s Document No. 17, Annex 7
 - at 14.0 Gc/s Document No. 17, Annex 17
3. Any other business

J.T. PENWARDEN

Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/9-E
12 October 1963
Original : English

WORKING GROUPS
5A, 5B and 5C

FOOT-NOTE RR 279 TO THE TABLE OF FREQUENCY ALLOCATIONS

(Document No. 41 and Document No. 17)

1. Delegations will have noted the references in Annex 6 to Document No. 41 to the use of the band 137 - 138 Mc/s in Australia. These references concern Footnote 279 to Article 5 which reads :

"In Australia, the band 132 - 144 Mc/s is allocated to the Aeronautical Mobile (OR) Service until 1 July 1963, after which date the band 132 - 146 Mc/s will be allocated to the Broadcasting Service and the band 148 - 150 Mc/s will be allocated to the Amateur Service."

2. In Annexes 4 and 5 to Document No. 17, there is a number of proposals for re-allocation of frequencies in the bands mentioned in this footnote to a variety of services using space techniques.
3. The Australian Delegation has kindly provided clarification, for the benefit of Committee 5 and its Working Groups, of the present position in their country with respect to the bands concerned which is as follows :
- a) Since 1959, and in recognition of the importance of protecting the international allocation of 136 - 137 Mc/s for the Space Service, Australia has changed its plans for the use of the relevant frequencies from that set out in RR 279. The present use in Australia is:

132 - 136 Mc/s	Aeronautical Mobile Service
136 - 137 Mc/s	Space Service
137 - 144 Mc/s	Broadcasting Service
144 - 148 Mc/s	Amateur Service



- b) The use of the band 137 - 144 Mc/s for Broadcasting is by Television. Although there is no specific frequency assignment in the band 137 - 138 Mc/s it is pointed out that 138.25 Mc/s is an assigned vision carrier channel and that the vestigial sideband encompasses 137 - 138 Mc/s.

4. With respect to the observations in Column 5 of Annex 6, page 1 to Document No. 41 against AUS for 137 - 138 Mc/s, the Australian position would be clarified by replacing the present entry by :

"Existing services are to vacate this band to permit the Broadcasting Service to operate at an early date."

J. PENWARDEN
Chairman
Working Group 5C

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/10-E
12 October 1963
Original : English

Geneva, 1963

WORKING GROUP 5B

PROPOSALS BY ADMINISTRATIONS
TO AMEND THE TABLE OF FREQUENCY ALLOCATIONS

RADIO ASTRONOMY SERVICE

The present Working Document has been prepared at the request of Working Group 5B and on the basis of Document No. 17 with Corr. 1 and Corr. 2.

The page numbering of the present document is parallel in the three languages and may prove useful in meetings as an easy means of reference.

Additionally, on each page a cross-reference is given to the relevant page of Document No. 41 (Report of the I.F.R.B. on existing and planned frequency usage of certain frequency bands in which the existing categories of service to which the bands are allocated, will either be eliminated or their status will be down-graded under proposals submitted to the Conference by Administrations).

V.V. RAO
Chairman

Annex : 1



1

kc/s

MEX

Proposal

Transmission in the bands listed below is limited to standard frequencies and time signals, in order that they may also be used for radio-astronomical reception :

2495 - 2505 kc/s
4995 - 5005 kc/s

9995 - 10 005 kc/s
19 990 - 20 010 kc/s

Reason : Proposal based on Recommendation 314 of the C.C.I.R.
(Geneva 1963)

Proposal

These bands are also allocated to the radioastronomy service.

Reason : As a consequence of the preceding proposal.

2
10

Mc/s

AMENDNo. 234 to delete 38 Mc/s.

CAN

234. After this No. add the following new footnote:
234 bis. The frequency 38 Mc/s \pm .25 Mc/s is allocated, on a secondary basis, to the radio astronomy service.

234. Replace the present text by the following:

G

The band 37.25-38.75 Mc/s is also allocated to the radio astronomy service. In making assignments to new stations of other services to which this band is allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference. The radio astronomy service shall be protected from harmful interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

AUS

GENEVA ALLOCATION	PROPOSED ALLOCATION	REASON FOR CHANGE
29.7-41 FIXED MOBILE 233, 234, 235, 236	234. Delete and insert the following - 234. The band 37.75-38.25 Mc/s is also allocated to the Radioastronomy Service. In making assignments to stations of other services to which this band is allocated, administrations are urged to take all practicable steps to protect radioastronomy observations from harmful interference. The Radioastronomy Service shall be protected from harmful interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.	To provide a firm allocation in the band 37-41 Mc/s in accordance with the terms of paragraph 2 of Recommendation No. 32 of the Administrative Radio Conference, Geneva, 1959.

3
10

Mc/s

CAN

Region 1	Region 2	Region 3
	73.0 - 74.6 RADIO ASTRONOMY 253 NEW	

253 NEW Replace the present text by the following:

In Region 2, fixed and mobile service operations previously authorized in the band 73.0 - 74.6 Mc/s shall vacate the band by January 1, 1967.

USA

Region 1	Region 2	Region 3
	73 - 74.6 RADIO ASTRONOMY	

4
10

Mc/s

Region 1	Region 2	Region 3
150.05-151 RADIO ASTRONOMY 274 285*	150.05-174 FIXED MOBILE	150.05-170 FIXED MOBILE
151-153 RADIO ASTRONOMY Meteorological aids 285*	285A 287	279 285A 287 290

G

Mc/s

5
10

CAN

404 - 406

METEOROLOGICAL AIDS
Radio Astronomy
314 315

USA

404 - 406

METEOROLOGICAL AIDS
Radio Astronomy
314 315

MODIFY

No. 316 by deleting therefrom reference to the band 404-406 Mc/s.

AUS

GENEVA ALLOCATION	PROPOSED ALLOCATION	REASON FOR CHANGE
401-406 METEOROLOGICAL AIDS Fixed Mobile except Aeronautical Mobile 314, 315, 316, 317	317. Delete the first sentence and insert instead -	Having regard to requirements for other services in this region of the spectrum, it is considered that the band 406-410 Mc/s only should be also allocated to the Radioastronomy Service instead of 404-410 Mc/s.
406-420 FIXED MOBILE except Aeronautical Mobile 314, 317	"The band 406-410 Mc/s is also allocated to the Radioastronomy Service."	

406-410

RADIO ASTRONOMY

HOL

Mc/s

6
10

606-614

RADIO ASTRONOMY

HOL

RADIO ASTRONOMY OBSERVATIONS IN THE FREQUENCY BAND
606-- 614 Mc/s

S

The Administration of Sweden,

considering :

- a) Recommendation No. 32 of the Administrative Radio Conference (Geneva, 1959);
- b) Recommendation No. 2 of the European VHF/UHF Broadcasting Conference (Stockholm, 1961);
- c) that radio astronomy is now a recognized service in the Radio Regulations;
- d) that the frequency band 606 - 614 Mc/s is already in use at some radio astronomy observatories and is planned for several others;
- e) that the equipment and techniques used at these observatories are of the most advanced types giving an extremely high sensitivity for radio wave reception;
- f) that it is most important that these observatories should be able to conduct their scientific work at all times and seasons;

proposes

that the frequency band 606 - 614 Mc/s be allocated exclusively and on a world wide basis to the radio astronomy service and that the notes 326, 329, 330 and 332 be changed accordingly.

Mc/s

7/10

1400 - 1427

RADIOASTRONOMY
350
350 A

F

(new) 350 A

Band 1400 - 1427 Mc/s is allocated to the radio-astronomy service. Administrations should avoid assigning frequencies close to the guard band limits to stations of other services which might, by reason of their power or geographical position, cause harmful interference to the radio-astronomy service.

1400 - 1427

RADIO ASTRONOMY

USA

AUS

GENEVA ALLOCATION	PROPOSED ALLOCATION	REASON FOR CHANGE
1400-1427 RADIOASTRONOMY 350	Delete footnote No. 350	To provide a world-wide exclusive allocation for the Radioastronomy Service.

URS

Apart from the bands enumerated in the Table, the frequencies shown in the Radio Regulations (Geneva, 1959) are allocated for radio astronomy. The band 1,400 - 1,427 Mc/s can be allotted for radio astronomy exclusively.

7 bis
10

M/s.

CAN

1664.4 - 1668.4

METEOROLOGICAL SATELLITE

Radio Astronomy

354

USA

1664.4 - 1668.4

METEOROLOGICAL-SATELLITE

Radio Astronomy

354

Mc/s

8/10

CAN

2680 - 2700

RADIO ASTRONOMY

AMEND Nos. 363 and 364 to delete the band 2680 - 2700 Mc/s.

2690 - 2700

RADIO ASTRONOMY

363 364 365

363 Rev. and 364 Rev. are 363 and 364, amended to allow for the new band limit (2690 instead of 2700).

2690-2700

RADIO ASTRONOMY

363* 364*

361A. The band 2470-2480 Mc/s is allocated for telecommand for use in deep space research subject to agreements between the administrations concerned and affected.

2690 - 2700

RADIO ASTRONOMY

MODIFY Nos. 363 and 364 to delete therefrom the band 2690-2700 Mc/s.

GENEVA ALLOCATION	PROPOSED ALLOCATION	REASON FOR CHANGE
2550-2700 FIXED MOBILE 362, 363, 364, 365	365. After the word "interference" in the second sentence, add the words "to the extent indicated in C.C.I.R. Report 224 (Document No. 2217)."	To provide, where practicable, for the Radio-astronomy Service to be protected from interference from other radio services in accordance with C.C.I.R. Report 224 (Document No. 2217).

2690-2700

RADIO ASTRONOMY

Delete No. 365.

Amend Nos. 363 and 364 to exclude the band 2690-2700 Mc/s.

Mc/s

9/10

Region 1	Region 2	Region 3
4400-5000 FIXED MOBILE 354 383 bis	4400-4990 FIXED MOBILE 4990-5000 RADIO ASTRONOMY	4400-5000 FIXED MOBILE 354 383 bis

CAN

383. After this No. add the following new footnote:

383 bis. In Regions 1 and 3 the band 4990-5000 Mc/s is also allocated to the radio astronomy service. In making assignments to stations of other services to which this band is allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference. The radio astronomy service shall be protected from harmful interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

4990-5000	RADIOASTRONOMY 365
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F

4990-5000	FIXED MOBILE RADIO ASTRONOMY 383 A
5000-5250	AERONAUTICAL RADIONAVIGATION 352 A 352 B

G

383 A. In making assignments to stations in the fixed and mobiles services, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference. The radio astronomy service shall be protected from harmful interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

4990-5000	RADIO ASTRONOMY
-----------	-----------------

USA

4400-5000	FIXED MOBILE 354 365
-----------	--------------------------------

AUS

365. After the word "interference" in the second sentence, add the words "to the extent indicated in C.C.I.R. Report 224 (Document N° 2217)."

Add N° 383 A: The band 4990-5000 Mc/s is also allocated to the radio astronomy services. In making assignments to stations of other services to which this band is allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference. The radio astronomy service shall be protected from harmful interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

HOL

G-1/s

URS

Allotment to services		
Region 1	Region 2	Region 3
10.230 - 10.250	RADIO ASTRONOMY Amateur *) 402 403	

*) Region 1 : Secondary service

Gols

11/10

CAN

10.68 - 10.7

RADIO ASTRONOMY

F

10.68 - 10.7

RADIOASTRONOMY

405

G

10.68-10.7

RADIO ASTRONOMY
Radiolocation

USA

10.68 - 10.7

RADIO ASTRONOMY

AUS

GENEVA ALLOCATION	PROPOSED ALLOCATION	REASON FOR CHANGE
<p>10.55-10.7 FIXED MOBILE Radiolocation</p> <p>405.</p>	<p>405. After the word "Interference" in the second sentence, add the words "to the extent indicated in C.C.I.R. Report 224 (Document No. 2217).".</p>	<p>To provide, where practicable, for the Radio-astronomy Service to be protected from interference from other radio services in accordance with C.C.I.R. Report 224 (Document No. 2217).</p>

HOL

10.68-10.70

RADIO ASTRONOMY

Delete No. 405.

Ge/s

12/10

CAN

15.35 - 15.4

RADIO ASTRONOMY

F

15.35 - 15.40

RADIOASTRONOMY

405

15.35-15.4

RADIO ASTRONOMY

G

15.35 - 15.4

RADIO ASTRONOMY

USA

AUS

GENEVA ALLOCATION	PROPOSED ALLOCATION	REASON FOR CHANGE
405. 15.25-15.4 FIXED MOBILE	405. After the word "Interference" in the second sentence, add the words "to the extent indicated in C.C.I.R. Report 224 (Document No. 2217).".	To provide, where practicable, for the Radio-astronomy Service to be protected from interference from other radio services in accordance with C.C.I.R. Report 224 (Document No. 2217).

15.35-15.40

RADIO ASTRONOMY

HOL

13
10

Gc/s

CAN

19.3 - 19.4

RADIO ASTRONOMY

19.3 - 19.4

RADIO ASTRONOMY

405

F

19.3-19.4

RADIO ASTRONOMY

G

19.3 - 19.4

RADIO ASTRONOMY

USA

AUS

GENEVA ALLOCATION	PROPOSED ALLOCATION	REASON FOR CHANGE
405. 17.7-21 FIXED MOBILE	405. After the word "Interference" in the second sentence, add the words "to the extent indicated in C.C.I.R. Report 224 (Document No. 2217).".	To provide, where practicable, for the Radio-astronomy Service to be protected from interference from other radio services in accordance with C.C.I.R. Report 224 (Document No. 2217).

19.3-19.4

RADIO ASTRONOMY

HOL

Gc/s

14
10

31.3 - 31.5	RADIO ASTRONOMY	CAN
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<u>31.3</u> - 31.5	RADIOASTRONOMY 405	F
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31.3-31.5	RADIO ASTRONOMY	G
-----------	-----------------	---

31.3 - 31.5	RADIO ASTRONOMY	USA
-------------	-----------------	-----

GENEVA ALLOCATION	PROPOSED ALLOCATION	REASON FOR CHANGE
405. 25.25-31.5 FIXED MOBILE	405. After the word "Interference" in the second sentence, add the words "to the extent indicated in C.C.I.R. Report 224 (Document No. 2217).".	To provide, where practicable, for the Radio-astronomy Service to be protected from interference from other radio services in accordance with C.C.I.R. Report 224 (Document No. 2217).

31.3-31.5	RADIO ASTRONOMY	HOL
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15
10

Gc/s

33.0 - 33.4	RADIO ASTRONOMY RADIO NAVIGATION	URS
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33.4 - 34.0	WEATHER SATELLITES *) RADIO ASTRONOMY 407 408 412	URS
-------------	---	-----

*) A band 100 Mc/s wide would be allotted in this band.

36.5 - 37.5	RADIO ASTRONOMY FIXED MOBILE	X URS
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SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/11-E
12 October 1963
Original : English

Geneva, 1963

WORKING GROUP 5B

PROPOSALS BY ADMINISTRATIONS
TO AMEND THE TABLE OF FREQUENCY ALLOCATIONS

SPACE RESEARCH SERVICE

The present Working Document has been prepared at the request of Working Group 5B and on the basis of Document No. 17 with Corr. 1 and Corr. 2.

The page numbering of the present document is parallel in the three languages and may prove useful in meetings as an easy means of reference.

Additionally, on each page a cross-reference is given to the relevant page of Document No. 41 (Report of the I.F.R.B. on existing and planned frequency usage of certain frequency bands in which the existing categories of service to which the bands are allocated, will either be eliminated or their status will be down-graded under proposals submitted to the Conference by Administrations).

V.V. RAO
Chairman

Annex : 1



M/1
CAN

kc/s

Region 1	Region 2	Region 3
9995 - 10005	STANDARD FREQUENCY 204 214 215 NEW	

215 NEW. Replace the present text by the following:
The bands 10003 - 10005 kc/s, 19990 - 20010 kc/s and 39.986 - 40.002 Mc/s are also allocated, on a secondary basis to the space research service.

215 Rev. Band 10 003 - 10 005 kc/s is also allocated, on a secondary basis, to the space research service. F

No. 215 - The band 10003-10005 kc/s is also allocated, on a secondary basis, to the space research service. space and earth-space services for research purposes. USA

The bands 10,003 - 10,005 kc/s, 19,990 - 20,010 kc/s and 39,986 - 40,002 Mc/s are allotted for space research "on a secondary basis". URS

②
11

15,762 - 15,768

SPACE RESEARCH
FIXED

URS

18,030 - 18,036

SPACE RESEARCH
FIXED

URS

3
11.

kc/s

CAN

Region 1	Region 2	Region 3
19990 - 20010	STANDARD FREQUENCY 204 215 NEW 220	

215 NEW. Replace the present text by the following :
The bands 10003 - 10005 kc/s, 19990 - 20010 kc/s and 39.986 - 40.002
Mc/s are also allocated, on a secondary basis to the space research
service.

221 Rev.

Band 19 990 - 20 010 kc/s is also allocated, on a secondary
basis, to the space research service.

F

No. 221 - The band 19990 - 20010 kc/s is also allocated, on a secondary
basis, to the space research service. ~~space and earth-space~~
~~services for research purposes.~~

USA

The bands 10,003 - 10,005 kc/s, 19,990 - 20,010 kc/s and 39,986 -
40,002 Mc/s are allotted for space research "on a secondary basis".

URS

④
11

30.005 - 30.010

SPACE RESEARCH
SATELLITE IDENTIFICATION

URS

5
11
CAN

Mc/s

Region 1	Region 2	Region 3
29.7 - 41	FIXED 228 229 230 231 232 MOBILE 215 NEW 233 234 234 bis 236	

215 NEW. Replace the present text by the following :
The bands 10003 - 10005 kc/s, 19990 - 20010 kc/s and 39.986 - 40.002
Mc/s are also allocated, on a secondary basis to the space research
service.

235 Rev. Band 39.986-40.002 Mc/s is also allocated, on a secondary
basis, to the space research service.

No. 235 - The band 39.986 - 40.002 Mc/s is also allocated, on a
secondary basis, to the space research service. ~~space and~~
~~earth-space services for research purposes.~~

The bands 10,003 - 10,005 kc/s, 19,990 - 20,010 kc/s and 39,986 -
40,002 Mc/s are allotted for space research "on a secondary basis".

USA

URS

Mc/s

⑥
11
CAN

136 - 137

SPACE RESEARCH

AMEND Nos. 275 and 279 to delete the frequency band 136 - 137 Mc/s.

136 - 137

SPACE RESEARCH (tracking and telemetry)

275 - 279 - 280 - 281

F

275 Rev. and 279 Rev. are 275 and 279, amended to exclude the 136 - 137 Mc/s band.

136-137

SPACE RESEARCH

Fixed

Mobile except aeronautical mobile

275* 279* 281*

G

136 - 137 Mc/s

SPACE RESEARCH AND TELEMETRY

Fixed

Mobile (except aeronautical mobile)

NIG

Modify Radio Regulations 279 to delete this portion, (136 - 137 Mc/s), from the band.

136 - 137

SPACE RESEARCH

USA

MODIFY Nos. 275 and 279 to delete therefrom the frequency band 136-137 Mc/s.

136 - 137

SPACE RESEARCH (telemetering and tracking)

Amend Nos. 275 and 279 to delete therefrom the frequency band 136 - 137 Mc/s.

Delete Nos. 280 and 281.

J

137 - 138

SPACE RESEARCH

WEATHER SATELLITES

AERONAUTICAL MOBILE (OR)

275 282 283

SPACE RESEARCH

WEATHER SATELLITES

FIXED

MOBILE

278 279 (exclude 137-138)

URS

Mc/s

7
11

URS

143.6 - 143.65	SPACE RESEARCH
SPACE RESEARCH	TELEMETERING, TRACKING
TELEMETERING, TRACKING	FIXED
AERONAUTICAL MOBILE (OR)	MOBILE
275 282 283	

278 279 (exclude 143.6-143.65)

Mc/s

⑧
11

CAN

174 - 216	174 - 216
BROADCASTING	FIXED MOBILE BROADCASTING
291 292 293 294	294 295 296

AMEND No. 294 to read - The band $183.6 \text{ Mc/s} \pm 0.5 \text{ Mc/s}$ is also allocated to the space research service subject to causing no harmful interference.

F

294 Rev.

Band $183.6 \pm 0.5 \text{ Mc/s}$ is also allocated to the space research service, provided it does not cause harmful interference.

USA

NOTE: Should the Conference decide to retain No. 294 in the band 174-216 Mc/s, its text should be amended, as a consequence of the newly-defined space research service, to read as follows:

The band $183.6 \text{ Mc/s} \pm 0.5 \text{ Mc/s}$ is also allocated to the space research service ~~space and earth-space services for research purposes~~ subject to causing no harmful interference.

URS

The band $183.1 - 184.1 \text{ Mc/s}$ is allotted for deep space research "on a secondary basis".

Mc/s

(9)
11

400 - 401

METEOROLOGICAL AIDS
SPACE RESEARCH (telemetering and tracking)

J

400.05 - 401

METEOROLOGICAL AIDS
SPACE RESEARCH

CAN

AMEND No. 314 to delete the band 400.05 - 401 Mc/s.

400.05 - 401

METEOROLOGICAL AIDS
SPACE RESEARCH (telemetry and tracking)
312 Rev. 313 Rev. 314 Rev. (280)

F

400.05 - 401

SPACE RESEARCH
METEOROLOGICAL AIDS
312 313 314

G

400.05 - 401 Mc/s

SPACE RESEARCH

Meteorological Aids

Retain RR 314 over this portion of the band.

NIG

400.05 - 401

METEOROLOGICAL AIDS
SPACE RESEARCH

USA

MODIFY No. 314 to delete therefrom the band 400.05-401 Mc/s.

400.05 - 401

TELEMETERING, TRACKING
SPACE RESEARCH
WEATHER SATELLITES
312 313

URS

⑩

Mc/s

1535 - 1540 Mc/s

SPACE RESEARCH

Fixed

NIG

Modify RR 341, 351 and 352 to delete this portion of the band therein.

Mc/s

11
11

1700 - 1710

SPACE RESEARCH

CAN

1700 - 1710

FIXED

SPACE RESEARCH
(telemetry and
tracking) 280

mobile
355

1700 - 1710

FIXED

MOBILE

SPACE RESEARCH (telemetry and tracking) (280)

F

1700-1710

SPACE RESEARCH
FIXED
Mobile

G

1700 - 1710 Mc/s

SPACE RESEARCH

FIXED

Mobile

Modify RR 355.

NIG

1700 - 1710

SPACE RESEARCH

USA

1700 - 1710

SPACE RESEARCH (telemetering and tracking)
FIXED
MOBILE

J

Mc/s

12
11

1710 - 2290	1710 - 2290
FIXED	FIXED
Mobile	MOBILE
356 356 bis	356 bis

CAN

356. After this No. add the following new footnote:
356 bis. The frequency band 2110 - 2120 Mc/s may be used for telecommand for deep space research, subject to agreement between administrations concerned or affected.

1710 - 2290	1710 - 2290
FIXED	FIXED
Mobile	Mobile
356 - <u>356 A</u>	<u>356 A</u>

F

(new) 356 A

Band 2110 - 2120 Mc/s can be used in certain regions for the telecommand of spacecraft in deep space, subject to agreement among the Administrations directly concerned and those whose services are liable to receive interference from these emissions.

1710 - 2290	1710 - 2290
FIXED	FIXED
Mobile	MOBILE
356 356A	356A

USA

ADD No. 356A The frequency band 2110-2120 Mc/s may be used for telecommand in conjunction with spacecraft engaged in deep space research, subject to agreement between administrations concerned and those whose services, operating in accordance with the Table, may be affected.

Mc/s

13
11

2290 - 2300

SPACE RESEARCH
(deep space research)

CAN

2290 - 2300

FIXED

SPACE RESEARCH
Space research

(telemetry and tracking)

356 B 280

Mobile

355

2290 - 2300

FIXED

Mobile

SPACE RESEARCH
Space research

(Telemetry and tracking) 356 B 280

F

(new) 356 B

For telemetry of spacecraft in deep space.

2290-2300

SPACE RESEARCH

Fixed

Mobile

G

2290 - 2300 Mc/s

FIXED

SPACE RESEARCH

Mobile (except aeronautical Mobile)

Modify RR 355.

NIG

2290 - 2300

SPACE RESEARCH
(deep space research)

USA

2290 - 2300

SPACE RESEARCH (telemetering and tracking)

FIXED

MOBILE

Doc. 41, pp. 18,19

J

Mc/s

14
11

Mc/s

C

Region 1	Region 2	Region 3
2450-2550 FIXED MOBILE Radiolocation 357 361* 361A	2450-2550 FIXED MOBILE RADIOLOCATION 357 361A	

361A. The band 2470-2480 Mc/s is allocated for telecommand for use in deep space research subject to agreements between the administrations concerned and affected.

Mc/s

(15) //

5250 - 5255

RADIOLOCATION
Space research 280
384

F

5250-5255

RADIOLOCATION
Space research
384

G

5250 - 5255 Mc/

SPACE RESEARCH

RADIOLOCATION

NIG

NOTE: Should the Conference decide to retain an allocation for space research in the band 5250-5255 Mc/s, the allocation should be amended to show radiolocation primary, space research secondary and No. 280 deleted, as a consequence of the newly-defined space research service.

USA

Mc/s

16
11

URS

5670 - 5725

DEEP SPACE RESEARCH
Amateur *)

389

*) Secondary in Region 1

Mc/s

17
79

8400 - 8500

SPACE RESEARCH

CAN

8400 - 8500

FIXED

MOBILE

~~SPACE RESEARCH~~ 280

394

F

8400-8500

SPACE RESEARCH

FIXED

MOBILE

394 *

G

8400 - 8500 Mc/s

FIXED

MOBILE

~~SPACE~~ RESEARCH

NIG

8400 - 8500

SPACE RESEARCH

USA

8400 - 8500

SPACE RESEARCH

FIXED

MOBILE

URS

8400 - 8500

SPACE RESEARCH

FIXED

MOBILE

Delete Nos. 230 and 394.

J

Gc/s

(18)
11

NIG

15.15 - 15.25 Gc/s SPACE RESEARCH

Fixed

Mobile

Retain allocation as existing in Radio Regulations, Geneva, 1959.

Gc/s

19
11

CAN

15.25 - 15.35

SPACE RESEARCH

15.25 - 15.35

SPACE RESEARCH

F

15.25-15.35

SPACE RESEARCH
Fixed
Mobile

G

15.25 - 15.35

SPACE RESEARCH

USA

15.25 - 15.35

SPACE RESEARCH
Fixed
Mobile

J

Gc/s

20
11

URS

31.0 - 31.3

DEEP SPACE RESEARCH
FIXED
MOBILE

Gc/s

(21)
11

F

31.5 - 31.8

SPACE RESEARCH 380
280

G

31.5-31.8

SPACE RESEARCH
Fixed
Mobile

NIG

31.5 - 31.8 Gc/s

SPACE RESEARCH

Fixed

Mobile

Retain RR 280

USA

31.5 - 31.8

SPACE RESEARCH

URS

31.5 - 31.8

DEEP SPACE RESEARCH
FIXED
MOBILE

31.8 - 32.3

DEEP SPACE RESEARCH
RADIO NAVIGATION

Gc/s

(22)
11

URS -

34.2 - 35.2

DEEP SPACE RESEARCH
407 408 412

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/12-E
12 October 1963
Original : English

Geneva, 1963

WORKING GROUP 5A

PROPOSALS BY ADMINISTRATIONS
TO AMEND THE TABLE OF FREQUENCY ALLOCATIONS

COMMUNICATION-SATELLITE SERVICE

The present Working Document has been prepared at the request of Working Group 5A and on the basis of Document No. 17 with Corr. 1 and Corr. 2.

The page numbering of the present document is parallel in the three languages and may prove useful in meetings as an easy means of reference.

Additionally, on each page a cross-reference is given to the relevant page of Document No. 41 (Report of the I.F.R.B. on existing and planned frequency usage of certain frequency bands in which the existing categories of service to which the bands are allocated, will either be eliminated or their status will be down-graded under proposals submitted to the Conference by Administrations).

P. MORTENSEN
Chairman

Annex : 1



12/1

Mc/s

G

1750-2250

FIXED
 COMMUNICATION-SATELLITE 356A
 Mobile
 356*

356A. Where active satellites are employed in the communication-satellite service, the use of this band is limited to transmission by space stations.

NIG

1750 - 2250 Mc/s

FIXED

COMMUNICATION SATELLITE

Mobile (except aeronautical mobile)

URS

1770 - 1790

WEATHER SATELLITES

FIXED *)

MOBILE 356

*) Region 1 : Secondary service

12/2

Mc/s

URS

Region 1	Region 2	Region 3
3400 - 3600 COMMUNICATION SATELLITES (Satellite-earth) FIXED MOBILE		3400 - 3700 COMMUNICATION SATELLITES FIXED *) MOBILE *)
3600 - 3900 COMMUNICATION SATELLITES (Satellite-earth) FIXED MOBILE *)	3600 - 3900 COMMUNICATION SATELLITES (Satellite-earth) FIXED MOBILE	
		3700 - 3900 COMMUNICATION SATELLITES (Satellite-earth) FIXED MOBILE
4400 - 4700	COMMUNICATION SATELLITES FIXED MOBILE	Earth - Satellite

*) Secondary service.

12/3

Mc/s

CAN

3700 - 4200	3700 - 4200
COMMUNICATION SATELLITE 378 ter (space stations only)	COMMUNICATION SATELLITE 378 ter (space stations only)
FIXED	FIXED
Mobile	MOBILE
374 378 bis	378 bis

378. After this No. add the following new footnotes:
378 bis. The conditions governing the use of this band are specified in Articles 7 and 14 of these Regulations, (amended).
378 ter. Limited to space systems using active satellites.

3700 - 4200	FIXED <u>374 A</u>
	<u>COMMUNICATION SATELLITE 374 B</u> (satellite to earth)
	Mobile

- (new) 374 A For the conditions of use of this band by the fixed service, see number 470 A.
- (new) 374 B For the conditions of use of this band by the communication-satellite service, see numbers 470 E, 470 G and 470 J.

3700-4200	FIXED
	COMMUNICATION-SATELLITE
	Mobile
	356A 374 379* 380*

- 356A. Where active satellites are employed in the communication-satellite service, the use of this band is limited to transmission by space stations.

(cont.)

Mc/s

12/4
NIG

3700 - 4200 Mc/s

FIXED

COMMUNICATION SATELLITE

Mobile

Retain RR 374, 379 and 380.

Add new footnote : "Radiolocation services operating in the band 3770 - 4200 Mc/s must accept any harmful interference that may be experienced from communications satellites."

USA

3700 - 4200	3700 - 4200
COMMUNICATION-SATELLITE (space stations) 374A FIXED Mobile	COMMUNICATION-SATELLITE (space stations) 374A FIXED MOBILE
374B	374B

ADD

No. 374A This band may also be used for the transmission of tracking and telemetering signals associated with communication-satellite space stations operating in the same band.

No. 374B The conditions for the use of this band are specified in Article 7, Section VII, of these Regulations.

3700 - 4200	3700 - 4200
COMMUNICATION - SATELLITE FIXED Mobile 374(a)	COMMUNICATION - SATELLITE FIXED MOBILE 374(a)
Amend No. 374 to delete provisions for the radiolocation service in the band 3700 - 3770 Mc/s.	
Delete Nos. 379 and 380.	
Add Nos. 374(a). The use of this band for the communication-satellite service is limited to transmissions by space stations.	

12/5

Mc/s

URS

5725 - 6225	COMMUNICATION SATELLITES	Earth - Satellite
	FIXED	
	MOBILE	
	354 391	

NIG

<u>5925 - 8400 Mc/s</u>	FIXED
	SPACE { Communication Satellites Precision Tracking Telemetry and Telecommand Meteorological Satellites }
	MOBILE

Mc/s

12/6

5925 - 6425

COMMUNICATION SATELLITE 391 ter
(earth stations only)
FIXED
MOBILE
391 bis

CAN

391 bis. The conditions governing the use of this band are contained in Articles 7 and 14 of these Regulations (amended).

391 ter. Earth stations operating in this band shall not use passive satellite techniques.

5925 - 6425

FIXED 391 A
MOBILE 391 A
COMMUNICATION-SATELLITE 391 B
(earth to satellite)
392 393

F

(new) 391 A For the conditions of use of this band by the fixed and mobile services, see numbers 470 A and 470 C.

(new) 391 B For the conditions of use of this band by the communication-satellite service, see numbers 470 E and 470 I.

5925 - 7150

FIXED
MOBILE
COMMUNICATION-SATELLITE 391 A 391 B
392 * 393 *

G

391A. Where active satellites are employed in the communication-satellite service the use of this band is limited to transmissions by earth stations.

391B. The band 7120 - 7130 Mc/s may be used for telecommand in the communication-satellite service subject to agreements between the administrations concerned and affected.

5925 - 6425

COMMUNICATION-SATELLITE
(earth stations) 392A
FIXED
MOBILE
374B

USA

No. 374B The conditions for the use of this band are specified in Article 7, Section VII, of these Regulations.

No. 392A This band may also be used for the transmission of telecommand signals associated with communication-satellite earth stations operating in the same band.

5925 - 6425

COMMUNICATION-SATELLITE
FIXED
MOBILE
392(a)

J

No. 392(a) The use of this band for the communication-satellite service is limited to transmissions by earth stations.

Mc/s

12/7

CAN

6425 - 7150

COMMUNICATION-SATELLITE 378 ter 391 ter
FIXED
MOBILE
391 bis

378 ter. Limited to space systems using active satellites.

391 bis. The conditions governing the use of this band are contained in Articles 7 and 14 of these Regulations (amended).

391 ter. Earth stations operating in this band shall not use passive satellite techniques.

6425 - 7150

FIXED 391 A
MOBILE 391 A
COMMUNICATION-SATELLITE 391 B
(earth to satellite)
392 393

(new) 391 A For the conditions of use of this band by the fixed and mobile services, see numbers 470 A and 470 C.

(new) 391 B For the conditions of use of this band by the communication-satellite service, see numbers 470 E and 470 I.

5925 - 7150

FIXED
MOBILE
COMMUNICATION-SATELLITE 391A 391B
392* 393*

391A. Where active satellites are employed in the communication-satellite service the use of this band is limited to transmissions by earth stations.

391B. The band 7120 - 7130 Mc/s may be used for telecommand in the communication-satellite service subject to agreements between the administrations concerned and affected.

6425 - 7150

COMMUNICATION-SATELLITE 374A 392A
FIXED
MOBILE
374B 392B

No. 374A This band may also be used for the transmission of tracking and telemetering signals associated with communication-satellite space stations operating in the same band.

No. 374B The conditions for the use of this band are specified in Article 7, Section VII, of these Regulations.

No. 392A This band may also be used for the transmission of telecommand signals associated with communication-satellite earth stations operating in the same band.

No. 392B In addition to the provisions of No. 392A, the frequency band 7120 - 7130 Mc/s may be used for general telecommand purposes in conjunction with space radiocommunication, subject to agreement between Administrations concerned and those whose services, operating in accordance with the Table, may be affected.

6425 - 7150

COMMUNICATION-SATELLITE
FIXED
MOBILE

Mc/s

12/8

CAN

7250 - 7300

COMMUNICATION-SATELLITE
(space stations)
391 quater 391 quinque

391 quater. Fixed and mobile service operations previously authorized in the band 7250 - 7300 Mc/s shall vacate the band by January 1, 1970.
391 quinque. Exceptionally, earth stations of passive systems in the communication-satellite service may operate in this band, subject to agreement between the Administrations concerned or affected.

7250 - 7300

COMMUNICATION-SATELLITE
(satellite to earth)
393 A

(new) 393 A The fixed and mobile services operating in bands 7250 - 7300 and 7975 - 8025 Mc/s shall try to stop their emissions in these bands by 1 January 1968.

F

7250 - 7300

COMMUNICATION-SATELLITE
356A

356A. Where active satellites are employed in the communication-satellite service, the use of this band is limited to transmission by space stations.

G

7250 - 7300

COMMUNICATION-SATELLITE
(space stations)
374A 392C 392D

- No. 374A This band may also be used for the transmission of tracking and telemetering signals associated with communication-satellite space stations operating in the same band.
- No. 392C Fixed and mobile service operations previously authorized in the band 7250 - 7300 Mc/s shall vacate the band prior to January 1, 1968.
- No. 392D As an exception, earth stations of passive systems in the communication-satellite service also may be accommodated, subject to agreement between Administrations concerned and those whose services, operating in accordance with the Table, may be affected.

USA

7250 - 7750

COMMUNICATION-SATELLITE
FIXED
MOBILE
374(a)

374(a) The use of this band for the communication-satellite service is limited to transmissions by space stations.

J

12/9

Mc/s

URS

7250 - 7550

COMMUNICATION SATELLITES

Satellite - Earth

FIXED

MOBILE

Mc/s

12/10

CAN

7300 - 7650

COMMUNICATION-SATELLITE
(space stations)
FIXED
MOBILE
391 bis 391 quinque

391 bis. The conditions governing the use of this band are contained in Articles 7 and 14 of these Regulations (amended).

391 quinque. Exceptionally, earth stations of passive systems in the communication-satellite service may operate in this band, subject to agreement between the Administrations concerned or affected.

7300 - 7650

FIXED 374 A
MOBILE 374 A
COMMUNICATION-SATELLITE 374 B
(satellite to earth)

(new) 374 A For the conditions of use of this band by the fixed service, see number 470 A.

(new) 374 B For the conditions of use of this band by the communication-satellite service, see numbers 470 E, 470 G and 470 J.

7300 - 7650

FIXED
MOBILE
COMMUNICATION-SATELLITE 356A

356A Where active satellites are employed in the communication-satellite service, the use of this band is limited to transmission by space stations.

7300 - 7650

COMMUNICATION-SATELLITE
(space stations) 374A 392D
FIXED
MOBILE
374B

No. 374A This band may also be used for the transmission of tracking and telemetering signals associated with communication-satellite space stations operating in the same band.

No. 374B The conditions for the use of this band are specified in Article 7, Section VII, of these Regulations.

No. 392D As an exception, earth stations of passive systems in the communication-satellite service also may be accommodated, subject to agreement between administrations concerned and those whose services, operating in accordance with the Table, may be affected.

7250 - 7750

COMMUNICATION-SATELLITE
FIXED
MOBILE
374(a)

374(a) The use of this band for the communication-satellite service is limited to transmissions by space stations.

Me/s

12/11

7650 - 7750

METEOROLOGICAL SATELLITE
(space stations)
COMMUNICATION-SATELLITE
(space stations)
FIXED
MOBILE
391 bis 391 quinque

CAN

391 bis. The conditions governing the use of this band are contained in Articles 7 and 14 of these Regulations (amended).

391 quinque. Exceptionally, earth stations of passive systems in the communication-satellite service may operate in this band, subject to agreement between the Administrations concerned or affected.

7650 - 7750

METEOROLOGICAL SATELLITE 393 B
FIXED 374 A
MOBILE 374 A
COMMUNICATION-SATELLITE 374 B
(satellite to earth)

F

- (new) 374 A For the conditions of use of this band by the fixed service, see number 470 A.
- (new) 374 B For the conditions of use of this band by the communication-satellite service, see numbers 470 E, 470 G and 470 J.
- (new) 393 B For the conditions of use of this band by the meteorological satellite service, see numbers 470 E, 470 G and 470 J.

7650 - 7750

FIXED
MOBILE
COMMUNICATION-SATELLITE 356 A
METEOROLOGICAL SATELLITE

G

356A. Where active satellites are employed in the communication-satellite service, the use of this band is limited to transmission by space stations.

7650 - 7750

COMMUNICATION-SATELLITE
(space stations) 392D 392E
FIXED
METEOROLOGICAL SATELLITE
(space stations) 392E
MOBILE
374B

USA

- No. 374B The conditions for the use of this band are specified in Article 7, Section VII, of these Regulations.
- No. 392D As an exception, earth stations of passive systems in the communication-satellite service also may be accommodated, subject to agreement between Administrations concerned and those whose services, operating in accordance with the Table, may be affected.
- No. 392E This band may also be used for the transmission of tracking and telemetering signals associated with communication-satellite and meteorological satellite space stations operating in the same band.

7250 - 7750

COMMUNICATION-SATELLITE
FIXED
MOBILE
374(a)

J

374(a) The use of this band for the communication-satellite service is limited to transmissions by space stations.

Mc/s

12/12

7900 - 7975

COMMUNICATION SATELLITE
(earth stations only)
FIXED
MOBILE
391 bis

CAN

391 bis. The conditions governing the use of this band are contained in Articles 7 and 14 of these Regulations (amended).

7900 - 7975

FIXED 391 A
MOBILE 391 A
COMMUNICATION-SATELLITE 391B
(earth to satellite)

F

- (new) 391 A For the conditions of use of this band by the fixed and mobile services, see numbers 470 A and 470 C.
(new) 391 B For the conditions of use of this band by the communication-satellite service, see numbers 470 E and 470 I.

7900 - 7975

FIXED
MOBILE
COMMUNICATION-SATELLITE 391A

G

391A. Where active satellites are employed in the communication-satellite service the use of this band is limited to transmissions by earth stations.

7900 - 7975

COMMUNICATION-SATELLITE
(earth stations) 392A
FIXED
MOBILE
374B

USA

- No. 374B The conditions for the use of this band are specified in Article 7, Section VII, of these Regulations.
No. 392A This band may also be used for the transmission of telecommand signals associated with communication-satellite earth stations operating in the same band.

7900 - 8400

COMMUNICATION-SATELLITE
FIXED
MOBILE
392(a)

J

- No. 392(a) The use of this band for the communication-satellite service is limited to transmissions by earth stations.

Mc/s

12/13

7975 - 8025

COMMUNICATION-SATELLITE
(earth stations only)
391 sextus

CAN

391 sextus. Fixed and mobile service operations previously authorized in the band 7975 - 8025 Mc/s shall vacate the band by January 1, 1970.

7975 - 8025

COMMUNICATION-SATELLITE
(earth to satellite)
393 A

F

(new) 393 A The fixed and mobile services operating in bands 7250 - 7300 and 7975 - 8025 Mc/s shall try to stop their emissions in these bands by 1 January 1968.

7975 - 8025

COMMUNICATION-SATELLITE
391A

G

391A. Where active satellites are employed in the communication-satellite service the use of this band is limited to transmissions by earth stations.

7975 - 8025

COMMUNICATION-SATELLITE
(earth stations)
392A 392F

USA

No. 392A This band may also be used for the transmission of telecommand signals associated with communication-satellite earth stations operating in the same band.

No. 392F Fixed and mobile service operations previously authorized in the band 7975 - 8025 Mc/s shall vacate the band prior to January 1, 1968.

7900 - 8400

COMMUNICATION-SATELLITE
FIXED
MOBILE
392(a)

J

No. 392(a). The use of this band for the communication-satellite service is limited to transmissions by earth stations.

Mc/s

12/14

8025 - 8400

COMMUNICATION-SATELLITE
(earth stations only)
FIXED
MOBILE
391 bis

CAN

391 bis. The conditions governing the use of this band are contained in Articles 7 and 14 of these Regulations (amended).

8025 - 8400

FIXED 391 A
MOBILE 391 A
COMMUNICATION-SATELLITE 391 B
(earth to satellite)
394

F

- (new) 391 A For the conditions of use of this band by the fixed and mobile services, see numbers 470 A and 470 C.
(new) 391 B For the conditions of use of this band by the communication-satellite service, see numbers 470 E and 470 I.

8025 - 8400

FIXED
MOBILE
COMMUNICATION-SATELLITE 391A
394

G

391A. Where active satellites are employed in the communication satellite service the use of this band is limited to transmissions by earth stations.

8025 - 8400

COMMUNICATION-SATELLITE
(earth stations) 392A
FIXED
MOBILE
374B

USA

- No. 374B The conditions for the use of this band are specified in Article 7, Section VII, of these Regulations.
No. 392A This band may also be used for the transmission of telecommand signals associated with communication-satellite earth stations operating in the same band.

7900 - 8400

COMMUNICATION-SATELLITE
FIXED
MOBILE
392(a)

J

- No. 392(a) The use of this band for the communication-satellite service is limited to transmissions by earth stations.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/13-E
12 October, 1963
Original : English

WORKING GROUP 5A

PROPOSALS BY ADMINISTRATIONS
TO AMEND THE TABLE OF FREQUENCY ALLOCATIONS

TELEMETERING, TELECOMMAND AND TRACKING

(not specifically mentioned in
relation to a space service other
than the Communication-Satellite Service)

The present Working Document has been prepared at the request of Working Group 5A and on the basis of Document No. 17 with Corr. 1 and Corr. 2.

The page numbering of the present document is parallel in the three languages and may prove useful in meetings as an easy means of reference.

Additionally, on each page a cross-reference is given to the relevant page of Document No. 41 (Report of the I.F.R.B. on existing and planned frequency usage of certain frequency bands in which the existing categories of service to which the bands are allocated, will either be eliminated or their status will be down-graded under proposals submitted to the Conference by Administrations).

P. MORTENSEN
Chairman

Annex: 1



Mc/s

13/1

136-137

TELEMETERING, TRACKING
FIXED
MOBILE 275 279 281

URS

Modify Radio Regulations 275 to place fixed and mobile services on secondary status in the portion of the band referred to therein.

Delete the last paragraph of Radio Regulations 281.

NIG

137-138

METEOROLOGICAL-SATELLITE
SPACE (Telemetering and Tracking)
279 bis

CAN

Amend Nos 275, 278, 279, 282, 283 and 284 to delete the frequency band 137-138 Mc/s.

279. After this No. add the following new footnote:

279 bis. The fixed and mobile services may continue to operate on a secondary basis until January 1, 1967, at which time these services shall vacate the band.

137-138

SPACE TELEMETERING AND TRACKING
METEOROLOGICAL-SATELLITE
Fixed
Mobile except aeronautical mobile
275* 278* 279* 282* 283* 284*

G

137-138 Mc/s

METEOROLOGICAL SATELLITE
SPACE TELEMETRY AND TRACKING
Fixed
Mobile

NIG

Modify Radio Regulations 275 to place fixed and mobile services on secondary status in the portion of the band referred to therein.

137-138

METEOROLOGICAL-SATELLITE
SPACE (Telemetering and Tracking)
281 A

LISA

Add: N° 281 A Fixed and mobile service operations previously authorized in the band 137-138 Mc/s shall vacate the band prior to January 1, 1967, and in the interim, shall be on a secondary basis to the meteorological-satellite and space services.

Modify: Nos 275, 278, 279, 282, 283 and 284 to delete therefrom the frequency band 137-138 Mc/s.

137-138

METEOROLOGICAL-SATELLITE
SPACE (Telemetering and Tracking)

J

Amend Nos 275, 278, 279, 282, 283 and 284 to delete therefrom the frequency band 137-138 Mc/s.

Mc/s

13/2

CAN

285. After this No. add the following new footnote:
285 bis. The frequencies $148.25 \text{ Mc/s} \pm 15 \text{ kc/s}$ and $154.20 \text{ Mc/s} \pm 15 \text{ kc/s}$ may be used for telecommand purposes subject to agreement between the administrations concerned or affected.

285 Rev. and 290 Rev. are 285 and 290, amended to exclude band 149.9 - 150.05 Mc/s.

(new) 285 A

Frequency 148.25 Mc/s may be used for space telecommand, with a maximum occupied bandwidth of $\pm 15 \text{ kc/s}$, subject to agreement among the Administrations directly concerned as well as those whose services are liable to receive interference from these emissions.

286 Rev. is 286, amended to allow for the new band limit (150.05 instead of 150)

() 286 A

Frequency 154.2 Mc/s may be used for space telecommand, with a maximum occupied bandwidth of $\pm 15 \text{ kc/s}$, subject to agreement among the Administrations directly concerned as well as those liable to receive interference from such emissions.

285A. The frequencies $148.25 \text{ Mc/s} \pm 15 \text{ kc/s}$ and $154.20 \text{ Mc/s} \pm 15 \text{ kc/s}$ may be used for space telecommand subject to agreements between the administrations concerned and affected.

$148.25 \text{ Mc/s} \pm 20 \text{ Kc/s}$;
 $149.30 \text{ Mc/s} \pm 20 \text{ Kc/s}$

Subject to agreement between national Administrations, an additional footnote should be made to the Radio Regulations assigning these frequencies to Space Telecommand on an exclusive basis.

MODIFY

Nos. 279, 285, 286 and 290 to delete such portion of the band 149.9-150.05 Mc/s as appears therein.

ADD

No. 286A The frequencies 148.25 and 154.20 Mc/s each may be used with a maximum bandwidth of emission of $\pm 15 \text{ kc/s}$ for telecommand in conjunction with space radio-communication subject to agreement between administrations concerned and those whose services, operating in accordance with the Table, may be affected.

Mc/s

13/3

URS

267 - 273	TELEMETERING, TRACKING FIXED MOBILE
400.05 - 401	TELEMETERING, TRACKING SPACE RESEARCH WEATHER SATELLITES 312 313

CAN

401 - 402	METEOROLOGICAL AIDS Space (Telemetering) 315
-----------	--

AMEND Nos. 314 and 316 to delete the band 401 - 402 Mc/s.

G

401 - 402	SPACE TELEMETERING AND TRACKING METEOROLOGICAL AIDS 314 315* 316*
-----------	---

NIG

<u>401 - 402 Mc/s</u>	SPACE TELEMETRY AND TRACKING Meteorological Aids
Retain RR 314.	

USA

401 - 402	METEOROLOGICAL AIDS <u>Space (Telemetering)</u> 315
-----------	---

MODIFY Nos. 314 and 316 to delete therefrom the band 401-402 Mc/s.

Mc/s

13/4 CAN

324. After this No. add the following new footnote:
324 bis. The frequency 449.95 Mc/s \pm 50 kc/s may be used for space telecommand purposes subject to agreement among the administrations concerned or affected.

(new) 319 A

Band 449.75 - 450.25 Mc/s may be used for space telecommand, subject to agreement among the Administrations concerned as well as those whose services are liable to receive interference from these emissions.

449.5 - 450

SPACE TELECOMMAND
FIXED
Mobile except aeronautical mobile
318* 323* 324*

450 - 450.5

SPACE TELECOMMAND
FIXED
Mobile
318*

449.5 - 450.5 Mc/s

SPACE TELECOMMAND

Fixed

Mobile (except aeronautical mobile)
(in the band 449.5 - 450 Mc/s)

Delete RR 318.

Modify RR 319.

IDD

No. 319A The frequency 450.0 Mc/s may be used with a maximum bandwidth of emission of \pm 250 kc/s for telecommand in conjunction with space radiocommunication subject to agreement between administrations concerned and those whose services, operating in accordance with the Table, may be affected.

Add No. 319(a). The frequency band 449.5 - 450.0 Mc/s may be used for telecommand subject to agreement between the administrations concerned and affected.

Mc/s

13/5

CAN

1427 - 1429

FIXED
SPACE (Telecommand)
Mobile except aeronautical
mobile

F

1427 - 1429

FIXED
SPACE (telecommand) (280)
Mobile except aeronautical mobile

G

1427 - 1429

SPACE TELECOMMAND
FIXED
Mobile except aeronautical mobile

NIG

1427 - 1429 Mc/s

SPACE TELECOMMAND

Fixed

Mobile (except aeronautical mobile)

USA

1427 - 1429

FIXED
SPACE (Telecommand)
Mobile except aeronautical mobile

J

1427 - 1429

SPACE (telecommand)
FIXED
MOBILE except aeronautical mobile

Mc/s

13/6

Region 1	Region 2	Region 3
1525 - 1535 SPACE (Telemetering) Fixed Mobile except aeronautical mobile	1525 - 1535 SPACE (Telemetering) Fixed Mobile	

CAN

1525 - 1535 FIXED MOBILE <u>except aeronautical mobile</u> SPACE (telemetry)

F

1525-1535 SPACE TELEMETERING Fixed Mobile except aeronautical mobile	1525-1535 SPACE TELEMETERING Fixed Mobile
--	--

G

1530 - 1535 Mc/s SPACE TELEMETRY AND TRACKING Fixed Mobile

NIG

1525 - 1535 SPACE (Telemetering) Fixed Mobile except aero- nautical mobile	1525 - 1535 SPACE (Telemetering) Fixed Mobile
--	--

USA

1525 - 1535 SPACE (telemetering) FIXED MOBILE except aeronautical mobile	1525 - 1535 SPACE (telemetering) MOBILE Fixed	1525 - 1535 SPACE (telemetering) FIXED MOBILE
---	--	--

J

Mc/s

13/7

CAN

1535 - 1540

SPACE (Telemetering)

351 352

AMEND

Nos. 351 and 352 to delete the band 1535 - 1540 Mc/s.

1535 - 1540

SPACE (telemetry)

F

1535-1540

SPACE TELEMETERING
351* 352*

G

1535 - 1540

SPACE (Telemetering)

USA

MODIFY

Nos. 351 and 352 to delete therefrom the band 1535-1540 Mc/s.

1535 - 1540

SPACE (telemetering)

Delete No. 341.

Amend Nos. 351 and 352 to delete therefrom the band 1535 - 1540 Mc/s.

J

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/14-E (Rev.)
16 October, 1963.
Original: English

WORKING GROUP 6B

The Drafting Group of Working Group 6B has agreed on the draft text annexed herewith, which is submitted to Working Group 6B for consideration.

P.E. WILLEMS

Chairman
Working Group 6B

Annex: 1



A N N E X

No.116a Add For the purpose of resolving cases of harmful interference, the radio astronomy service shall be treated as a radiocommunication service, However, protection from services in other bands shall be afforded the radio astronomy service only to the extent that such services are afforded protection from each other.*

No.735.1 Mod. In the present state of the technique, it is recognized nevertheless that the transmission of identifying signals for certain radio systems (e.g. radiodetermination, radio relay systems and systems in the space service) is not always possible.

No.737a Add Space stations may also be identified by specifying the inclination and period of the orbit and the apogee and perigee distances in kilometres. In the case of space stations located on stationary satellites, the geographical longitude of the projection of the satellites' position on the surface of the earth shall be specified. (See also No. 773a.)

Title add Stations in the Space Service

No. 773a Add It is recommended that, as far as the state of technique permits, the call signs of stations in the space service consist of :

- two letters followed by two or three digits (other than the digits 0 and 1 in cases where they immediately follow a letter). (See also No. 737a.)

No.807 List VI. List of Radiodetermination and Special Service Stations.
Mod. (VI)

This list shall contain radio direction-finding stations and radiobeacon stations of the maritime radionavigation service, and include radiobeacons of the aeronautical radionavigation service reliable for maritime navigation, ocean-station vessels, direction-finder calibration stations as well as stations transmitting time signals, regular meteorological bulletins, notices to navigators, medical advice, standard frequencies, epidemiological bulletins and ursigrams. This list shall also contain radio astronomy stations. In this list, each class of station shall occupy a special section.

*) Upon adoption of the second sentence of No. 116a a redundancy will be created in certain footnotes relating to radio astronomy. Specifically, the last sentence of footnotes No. 204, No. 261 and No. 286 should be deleted inasmuch as the same provision is contained in No. 116a.

807a ~~[(VI bis)]~~ List ~~[VI bis]~~. List of Stations in the ~~[Space Service]~~

Add

This list shall contain particulars of ~~[earth]~~ and ~~[space stations]~~.
In this list, each class of station shall occupy a special section.

808 Mod. (VII) List VII. Alphabetical List of Call Signs Assigned from the International Series to Stations Included in Lists I to ~~[VI bis]~~.

815 Mod. § 2. (1) The Secretary-General shall publish the amendments to be made in the documents listed in Nos. 790 to 814 inclusive. Once a month, administrations shall inform him, in the form shown for the lists themselves in Appendix 9, of the additions, modifications or deletions to be made in Lists IV, V, VI and ~~[VI bis]~~ using for this purpose the appropriate symbols shown in Appendix 10. Furthermore, in order to make the necessary additions, modifications and deletions to Lists I, II and III, he shall use the data provided by the International Frequency Registration Board, obtained from the information received in application of the provisions of Articles 9, ~~[9 bis]~~ and 10. He shall make the requisite amendments to List VII by using the data he has received for Lists I to ~~[VI bis]~~.

826a

Add

~~[§ 8 bis]~~. The List of Stations in the ~~[Space Service]~~ ~~[(List VI bis)]~~ shall be republished at intervals to be determined by the Secretary-General. Recapitulative supplements shall be published every six months.

831 Mod. § 12. (1) The forms in which the List I to ~~[VI bis]~~ inclusive, List VIII and the Radiocommunication Statistics are to be prepared are given in Appendix 9. Information concerning the use of these documents shall be given in the prefaces thereto. Each entry shall include the appropriate symbol, as shown in Appendix 10, to designate the category of station concerned. Additional symbols, where necessary, may be selected by the Secretary-General, any such new symbols being notified by the Secretary-General to administrations.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT 14-E
14 October, 1963
Original : English

WORKING GROUP 6B

The Drafting Group of Working Group 6B met on Friday, 11 October, has agreed on the draft text annexed herewith, which is submitted to Working Group 6B for consideration.

P.E. WILLEMS

Chairman
Working Group 6B

Annex: 1



A N N E X

No.116a For the purpose of resolving cases of harmful interference, the radio astronomy service shall be treated as a radiocommunication service, However, protection from services in other bands shall be afforded the radio astronomy service only to the extent that such services are afforded protection from each other.*)

No.735.1 In the present state of the technique, it is recognized nevertheless that the transmission of identifying signals for certain radio systems (e.g. radiodetermination, radio relay systems and system in the space service) is not always possible.

No.737a Space stations may also be identified by specifying the inclination and period of the orbit and the apogee and perigee distances in kilometres. In the case of space stations located on stationary satellites, the geographical longitude of the projection of the satellites' position on the surface of the earth shall be specified. (See also No. 773a.)

Stations in the Space Service

No. 773a It is recommended that, as far as the state of technic permits, the call signs of stations in the space service consist of :

- two letters followed by two or three digits (other than the digits 0 and 1 in cases where they immediately follow a letter).
(See also No. 737a.)

No.807 (VI)List VI. List of Radiodetermination and Special Service Stations.

This list shall contain radio direction-finding stations and radiobeacon stations of the maritime radionavigation service, and include radiobeacons of the aeronautical radionavigation service reliable for maritime navigation, ocean-station vessels, direction-finder calibration stations as well as stations transmitting time signals, regular meteorological bulletins, notices to navigators, medical advice, standard frequencies, epidemiological bulletins and ursigrams. This list shall also contain radio astronomy stations. In this list, each class of station shall occupy a special section.

*) Upon adoption of the second sentence of No. 116a a redundancy will be created in certain footnotes relating to radio astronomy. Specifically, the last sentence of footnotes No. 204, No. 261 and No. 286 should be deleted inasmuch as the same provision is contained in No. 116a.

Insert additional paragraph to read as follows :

807a (VI bis) List VI bis. List of stations in the Space Service

This list shall contain particulars of earth and space stations.
In this list, each class of station shall occupy a special section.

808 (VII) List VII. Alphabetical list of Call Signs assigned from International series to stations included in Lists I to VI bis.

815 § 2. (1) The Secretary-General shall publish the amendments to be made in the documents listed in Nos. 790 to 814 inclusive. Once a month, administrations shall inform him, in the form shown for the lists themselves in Appendix 9, of the additions, modifications or deletions to be made in Lists IV, V, and VI and VI bis using for this purpose the appropriate symbols shown in Appendix 10. Furthermore, in order to make the necessary additions, modifications and deletions to Lists I, II and III, he shall use the data provided by the International Frequency Registration Board, obtained from the information received in application of the provisions of Articles 9, 9 bis and 10. He shall make the requisite amendments to List VII by using the data he has received for Lists I to VI bis.

826a § 8 bis. The List of Space Service Stations (List VI bis) shall be republished at intervals to be determined by the Secretary-General. Recapitulative supplements shall be published every six months.

831 § 12. (1) The forms in which the List I to VI bis inclusive, List VIII and the Radiocommunication Statistics are to be prepared are given in Appendix 9. Information concerning the use of these documents shall be given in the prefaces thereto. Each entry shall include the appropriate symbol, as shown in Appendix 10, to designate the category of station concerned. Additional symbols, where necessary, may be selected by the Secretary-General, any such new symbols being notified by the Secretary-General to administrations.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/15-E
14 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5C

PROPOSALS BY ADMINISTRATIONS
TO AMEND THE TABLE OF FREQUENCY ALLOCATIONS
RADIONAVIGATION-SATELLITE SERVICE

The present Working Document has been prepared on the basis of Document No. 17 with Corr. 1 and Corr. 2.

The page numbering of the present document is parallel in the three languages and may prove useful in meetings as an easy means of reference.

Additionally, on each page a cross-reference is given to the relevant page of Document No. 41 (Report of the I.F.R.B. on existing and planned frequency usage of certain frequency bands in which the existing categories of service to which the bands are allocated, will either be eliminated or their status will be down-graded under proposals submitted to the Conference by Administrations).

J. PENWARDEN
Chairman

Annex: 1



Mo/s

149.9 - 150.05

RADIONAVIGATION-SATELLITE

F

149.9 - 150.05

RADIONAVIGATION-SATELLITE

274* 279* 285* 286* 290*

G

149.9 - 150.05

NAVIGATION-SATELLITE

NIG

149.9 - 150.05

RADIONAVIGATION-SATELLITE
(space stations)

USA

MODIFY

Nos. 279, 285, 286 and 290 to delete such portion of the
band 149.9-150.05 Mc/s as appears therein.

Mc/s

399.90 - 400.05RADIONAVIGATION-SATELLITE

F

312 Rev., 313 Rev. and 314 Rev. are 312, 313 and 314, amended to allow for the new band limit (400.05 instead of 400).

399.9 - 400.05

RADIONAVIGATION-SATELLITE

312* 313* 314

G

399.9 - 400.05

NAVIGATION SATELLITE

NIG

Delete Radio Regulations 280, 312, 313 over this portion of the bands.

Modify RR 314 to delete this portion of the band.

399.90 - 400.05

 RADIONAVIGATION-SATELLITE
 (space stations)

USA

MODIFY No. 314 to delete therefrom the band 400-400.05 Mc/s.

Gc/s

<u>14.3</u> - 14.4	<u>RADIONAVIGATION-SATELLITE</u> 407
--------------------	---

F

14.3 - 14.4	RADIONAVIGATION-SATELLITE 407*
-------------	-----------------------------------

G

14.3 - 14.4	RADIONAVIGATION-SATELLITE
-------------	---------------------------

USA

MODIFY No. 407 by deleting therefrom reference to the band 14.3-14.4 Gc/s.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/16-E
15 October, 1963
Original : English

Geneva, 1963

WORKING GROUP 5C

PROPOSALS BY ADMINISTRATIONS
TO AMEND THE TABLE OF FREQUENCY ALLOCATIONS

AERONAUTICAL MOBILE, AERONAUTICAL RADIONAVIGATION SERVICES
AND DISTRESS FREQUENCIES

The present Working Document has been prepared on the basis of Document No. 17 with Corrigendum 1 and Corrigendum 2.

The page numbering of the present document is parallel in the three languages and may prove useful in meetings as an easy means of reference.

J. PENWARDEN
Chairman

Annex: 1



Mc/s

16/1

117.975 - 132		AERONAUTICAL MOBILE (R)	
		272 bis 273	
132 - 136		132 - 136	FIXED
AERONAUTICAL MOBILE (R)			MOBILE 272 bis 276
272 bis 274 275			277 278 279

CAN

272 bis. In the band 117.975 - 132 Mc/s and in the band 132 - 136 Mc/s where the Aeronautical Mobile (R) Service is authorized, satellite relay stations in the Aeronautical Mobile (R) Service may be used subject to co-ordination between administrations concerned.

117.975 - 132		AERONAUTICAL MOBILE (R)	
		273 <u>273 A</u>	
132 - 136		132 - 136	FIXED
AERONAUTICAL MOBILE (R)			MOBILE 276 277
274 275 <u>Rev.</u> <u>273 A</u>			<u>273 A</u> 278 279 <u>Rev.</u>

F

(new) 273 A

In bands 117.975 - 132 Mc/s and 132 - 136 Mc/s, where the aeronautical mobile (R) service is authorized, relay satellites may be used in the aeronautical mobile (R) service, subject to coordination among the Administrations concerned.

117.975-132		AERONAUTICAL MOBILE(R)	
		273 273A	
132 - 136		132 - 136	FIXED
AERONAUTICAL MOBILE(R)			MOBILE 273A 276 277
273A 274 275			278 279

G

273A. In the band 117.975 - 132 Mc/s and in the band 132-136 Mc/s where the aeronautical mobile (R) service is authorised, space stations may be used subject to agreement and co-ordination between the administrations concerned.

Mc/s

16/2

USA

117.975 - 132	
AERONAUTICAL MOBILE (R)	
273 273A	
132 - 136	132 - 136
AERONAUTICAL MOBILE (R)	FIXED
	MOBILE 276 277
273A 274 <u>275</u>	273A <u>278</u> <u>279</u>

ADD

No. 273A In the band 117.975-132.0 Mc/s, and in the band 132-136 Mc/s where the aeronautical mobile (R) service is authorized, satellite relay stations in the aeronautical mobile (R) service may be used subject to co-ordination between administrations concerned.

117.975 - 132	
AERONAUTICAL MOBILE (R)	
273, 273(a)	
132 - 136	132 - 136
AERONAUTICAL MOBILE (R)	FIXED
274, 275, 273(a)	MOBILE 276, 277
	278, 279, 273(a)
<p>Add No. 273(a)</p> <p>In the band 117.975 - 132 Mc/s and in the band 132 - 136 Mc/s where the aeronautical mobile (R) service is authorized, satellite relay stations in the aeronautical mobile (R) service may be used subject to co-ordination between the administrations concerned.</p>	

J

Mc/s

16/3

960 - 1215

AERONAUTICAL RADIONAVIGATION

341

CAN

AMEND

No. 341 to read - The band 960 - 1215 Mc/s is reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based facilities.

960 - 1215

AERONAUTICAL RADIONAVIGATION

341 Rev.

F

Rev.

(The) Bands 960 - 1215 Mc/s (1535 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s) is reserved on a world-wide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based facilities.

960-1215

G

341. Replace "The bands 960-1215 Mc/s, 1535-1660 Mc/s, 4200-4400 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s are reserved" by "The band 960-1215 Mc/s is reserved"

960 - 1215

AERONAUTICAL RADIONAVIGATION

341

USA

MODIFY

No. 341 to delete therefrom the bands 1535-1660 Mc/s, 4200-4400 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s.

960 - 1215

AERONAUTICAL RADIONAVIGATION

341

J

Amend No. 341. The band 960 - 1215 Mc/s is reserved on a world-wide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based facilities.

Mc/s

16/4

1540 - 1660

AERONAUTICAL RADIONAVIGATION

351 352 352 bis 352 ter

CAN

352 bis. The bands 1540 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

352 ter. The bands 1540 - 1660 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are also allocated to the Aeronautical Mobile (R) Service for the use and development of systems using space communication techniques. Such use and development is subject to agreement and co-ordination between administrations concerned.

1540 - 1660

AERONAUTICAL RADIONAVIGATION

341 351 352 352 A 352 B

F

(new) 352 A

Bands 1540 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are reserved, throughout the world, for the use and development of airborne electronic aids and any directly associated ground-based or satellite facilities.

(new) 352 B

Bands 1540 - 1660 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are, moreover, allocated to the aeronautical mobile (R) service for the use and development of systems involving space communication techniques. This use and development will form the subject of coordination among the Administrations concerned.

1540-1660

AERONAUTICAL RADIONAVIGATION

351 352 352A 352B

G

352A. In the bands 1540-1660 Mc/s, 4200-4400 Mc/s, 5000-5250 Mc/s, and 15.4-15.7 Gc/s the aeronautical radionavigation service is limited to the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

352B. The bands 1540-1660 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s are also allocated to the aeronautical mobile (R) service for the use and development of systems using satellite-borne facilities or space communication techniques. Such use and development is subject to agreement and co-ordination between the administrations concerned.

16/5

Mc/s

USA

1540 - 1660

AERONAUTICAL RADIONAVIGATION

351 352 352A 352B

ADD

No. 352A The bands 1540-1660 Mc/s, 4200-4400 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s are reserved on a world-wide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

No. 352B The bands 1540-1660 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s are also allocated to the aeronautical mobile (R) service for the use and development of systems using space radiocommunication techniques. Such use and development is subject to agreement and co-ordination between administrations concerned.

1540 - 1660

AERONAUTICAL RADIONAVIGATION

351, 352, 352(a), 352(b)

J

352(a): The bands 1540 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are reserved on a worldwide basis for the use and development of airborne electronic aids to airnavigation and any directly associated groundbased or satelliteborne facilities.

352(b): The bands 1540 - 1660, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are also allocated to the Aeronautical mobile (R) service for the use and development of systems using space communication techniques. Such use and development are subject to agreement and coordination between the administrations concerned.

Mc/s

16/6

4200 - 4400

AERONAUTICAL RADIONAVIGATION

352 bis 381 382 383

CAN

5000 - 5250

AERONAUTICAL RADIONAVIGATION

352 bis 352 ter

352 bis. The bands 1540 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

352 ter. The bands 1540 - 1660 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are also allocated to the Aeronautical Mobile (R) Service for the use and development of systems using space communication techniques. Such use and development is subject to agreement and co-ordination between administrations concerned.

4200 - 4400

AERONAUTICAL RADIONAVIGATION

~~341~~ 381 382 383 352 A

F

5000 - 5250

AERONAUTICAL RADIONAVIGATION

~~341~~ 352 A 352 B(new) 352 A

Bands 1540 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are reserved, throughout the world, for the use and development of airborne electronic aids and any directly associated ground-based or satellite facilities.

(new) 352 B

Bands 1540 - 1660 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are, moreover, allocated to the aeronautical mobile (R) service for the use and development of systems involving space communication techniques. This use and development will form the subject of coordination among the Administrations concerned.

4200-4400

AERONAUTICAL RADIONAVIGATION

352A 381 382 383

G

5000-5250

AERONAUTICAL RADIONAVIGATION

352A 352B

352A. In the bands 1540-1660 Mc/s, 4200-4400 Mc/s, 5000-5250 Mc/s, and 15.4-15.7 Gc/s the aeronautical radionavigation service is limited to the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

352B. The bands 1540-1660 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s are also allocated to the aeronautical mobile (R) service for the use and development of systems using satellite-borne facilities or space communication techniques. Such use and development is subject to agreement and co-ordination between the administrations concerned.

Mc/s

16/7

USA

4200 - 4400

AERONAUTICAL RADIONAVIGATION

352A 381 382 383

5000 - 5250

AERONAUTICAL RADIONAVIGATION

352A 352B

No. 352A The bands 1540-1660 Mc/s, 4200-4400 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s are reserved on a world-wide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

No. 352B The bands 1540-1660 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s are also allocated to the aeronautical mobile (R) service for the use and development of systems using space radiocommunication techniques. Such use and development is subject to agreement and co-ordination between Administrations concerned.

4200 - 4400

AERONAUTICAL RADIONAVIGATION

381, 382, 383, 352(a)

Add No. 352(a).

5000 - 5250

AERONAUTICAL RADIONAVIGATION

352(a) 352(b)

Add Nos. 352(a), 352(b).

Gc/s

16/8

15.4 - 15.7

AERONAUTICAL RADIONAVIGATION

352 bis 352 ter 407

CAN

352 bis. The bands 1540 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are reserved on a worldwide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

352 ter. The bands 1540 - 1660 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are also allocated to the Aeronautical Mobile (R) Service for the use and development of systems using space communication techniques. Such use and development is subject to agreement and co-ordination between administrations concerned.

15.4 - 15.7

AERONAUTICAL RADIONAVIGATION

- 341 - 352 A 352 B 407

F

(new) 352 A

Bands 1540 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are reserved, throughout the world, for the use and development of airborne electronic aids and any directly associated ground-based or satellite facilities.

(new) 352 B

Bands 1540 - 1660 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are, moreover, allocated to the aeronautical mobile (R) service for the use and development of systems involving space communication techniques. This use and development will form the subject of coordination among the Administrations concerned.

15.4-15.7

AERONAUTICAL RADIONAVIGATION

352A 352B 407*

G

352A. In the bands 1540-1660 Mc/s, 4200-4400 Mc/s, 5000-5250 Mc/s, and 15.4-15.7 Gc/s the aeronautical radionavigation service is limited to the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

352B. The bands 1540-1660 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s are also allocated to the aeronautical mobile (R) service for the use and development of systems using satellite-borne facilities or space communication techniques. Such use and development is subject to agreement and co-ordination between the administrations concerned.

16/9

Gc/s

USA

15.4 - 15.7

AERONAUTICAL RADIONAVIGATION

352A 352B 407

No. 352A The bands 1540-1660 Mc/s, 4200-4400 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s are reserved on a world-wide basis for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

No. 352B The bands 1540-1660 Mc/s, 5000-5250 Mc/s and 15.4-15.7 Gc/s are also allocated to the aeronautical mobile (R) service for the use and development of systems using space radiocommunication techniques. Such use and development is subject to agreement and co-ordination between administrations concerned.

15.4 - 15.7

AERONAUTICAL RADIONAVIGATION

407, 352 (a), 352 (b)

11 Nos. 352(a), 352(b).

16/10

Proposals relating to the Aeronautical Mobile (R) Service
operating in accordance with the Radio Regulations

Article 7

In addition to the foregoing, which comprise changes to specific allocations in the Table of Frequency Allocations (or of the foot-notes thereto) contained in Article 5 of the Radio Regulations, an alternative form of change to the Radio Regulations is presented in Document No. 32 (Rev. 2) and relates to the Aeronautical Mobile (R) Service. The reference is as follows:

" III. PROPOSALS FOR CHANGES IN ARTICLE 7 OF THE
RADIO REGULATIONS (GENEVA, 1959)

Amendment to Article 7 of the Radio Regulations
(No. 429, 3) :

(rev.) 429.§3. Frequencies in any band allocated to the aeronautical mobile (R) service shall be reserved for communications between all aircraft and air space vehicles and those aeronautical stations primarily concerned with the safety and regularity of flight along national or international civil air routes. "

Document No. 68 BUL, HNG, POL, ROU, TCH

Article 7 Radio Regulations, Geneva, 1959

" 429.§3. Frequencies in any band allocated to the aeronautical mobile (R) service shall be reserved for communications between all aircraft and those aeronautical stations primarily concerned with the safety and regularity of flight along national or international civil air routes. "

20,010 - 20,016 kc/s	DISTRESS FREQUENCY GUARD BAND
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Document No. 68 BUL, HNG, POL, ROU, TCH

114.1 - 114.4 Mc/s	DISTRESS FREQUENCY GUARD BAND
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Document No. 68 BUL, HNG, POL, ROU, TCH

URS

URS

URS

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/17-E
16 October 1963
Original : English

Geneva, 1963

WORKING GROUP 5C

PROPOSALS BY ADMINISTRATIONS TO AMEND
THE TABLE OF FREQUENCY ALLOCATIONS

METEOROLOGICAL SERVICE

This Working Document has been prepared for the assistance of Working Group 5C and on the basis of Document No. 17 with Corrigendums 1 and 2.

The page numbering of the present Document is parallel in the three languages and may prove useful in meetings as an easy means of reference.

Additionally, on each page, where applicable, a cross-reference is given to the relevant page of Document No. 41 (Report of the I.F.R.B. on existing and planned frequency usage of certain frequency bands in which the existing categories of service to which the bands are allocated, will either be eliminated or their status down-graded under proposals submitted to the Conference by Administrations).

J.T. PENWARDEN
Chairman

Annex : 1



Mc/s

17/1

137 - 138

METEOROLOGICAL-SATELLITE
SPACE (Telemetering and Tracking)
279 bis

CAN

279 bis. The fixed and mobile services may continue to operate on a secondary basis until January 1, 1967, at which time these services shall vacate the band.

CAN

137-138

SPACE TELEMETERING AND TRACKING
METEOROLOGICAL-SATELLITE
Fixed
Mobile except aeronautical mobile
275* 278* 279* 282* 283* 284*

G

137 - 138

METEOROLOGICAL SATELLITE

SPACE TELEMETRY AND TRACKING

Fixed

Mobile

NIG

137 - 138

METEOROLOGICAL-SATELLITE
SPACE (Telemetering and Tracking)

281A

USA

ADD

No. 281A Fixed and mobile service operations previously authorized in the band 137-138 Mc/s shall vacate the band prior to January 1, 1967 and, in the interim, shall be on a secondary basis to the meteorological-satellite and space services.

USA

MODIFY

Nos. 275, 278, 279, 282, 283 and 284 to delete therefrom the frequency band 137-138 Mc/s.

137 - 138

SPACE RESEARCH
WEATHER SATELLITES
AERONAUTICAL MOBILE (OR)
275 282 283

SPACE RESEARCH
WEATHER SATELLITES
FIXED
MOBILE

278 279 (exclude 137-138)

URS

137 - 138

METEOROLOGICAL - SATELLITE
SPACE (telemetering and tracking)

Amend Nos. 275, 278, 279, 282, 283 and 284 to delete therefrom the frequency band 137 - 138 Mc/s.

M/s

17/2

400.05 - 401

TELEMETERING, TRACKING
SPACE RESEARCH
WEATHER SATELLITES
312 313

URS

460 - 470

WEATHER SATELLITES
FIXED
MOBILE 318

URS

MC/s

17/3

1660 - 1664.4	METEOROLOGICAL SATELLITE 354	CAN
1664.4 - 1668.4	METEOROLOGICAL SATELLITE Radio Astronomy 354	
1668.4 - 1670	METEOROLOGICAL SATELLITE 354	

1660 - 1670	<u>METEOROLOGICAL-SATELLITE</u> 353 - 354 (Meteorological Aids by satellites)	F
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1660-1670	METEOROLOGICAL-SATELLITE Fixed Mobile except aeronautical mobile 353* 354*	G
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<u>1660 - 1670</u> NIG	METEOROLOGICAL SATELLITES Fixed Mobile (except aeronautical mobile) Modify RR 354 to delete this portion of the band.	NIG
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M4/s

17/4

USA

1660 - 1664.4	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE 354	(viz. Corr. 2 (Doc. 8)
1664.4 - 1668.4	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE Radio Astronomy 354	(viz. Corr. 2 (Doc. 8)
1668.4 - 1670	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE 354	(viz. Corr. 2 (Doc. 8)

URS

1660 - 1670	WEATHER SATELLITES FIXED MOBILE, except aeronautical mobile 353 354
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Mc/s

17/5

CAN

1690 - 1700

METEOROLOGICAL SATELLITE

F

1690 - 1700

METEOROLOGICAL-SATELLITE

353

(Meteorological Aids by Satellites)

R

G

1690-1700

METEOROLOGICAL-SATELLITE

Fixed

Mobile except aeronautical mobile

353*

USA

1690 - 1700

METEOROLOGICAL AIDS

METEOROLOGICAL-SATELLITE

{viz. Corr. 2
{Doc. 8

Me/s

17/6

URS

1770 - 1790	WEATHER SATELLITES FIXED MOBILE*) 356
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*) Region 1 : Secondary service

URS

7200 - 7250	WEATHER SATELLITES FIXED MOBILE
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Me/s

17/2

7650 - 7750

METEOROLOGICAL SATELLITE
(space stations)
COMMUNICATION SATELLITE
(space stations)
FIXED
MOBILE

CAN

391 bis 391 quinque

7650 - 7750

METEOROLOGICAL-SATELLITE 393 B

F

FIXED 374 A (*Meteorological Aids by Satellites*)

MOBILE 374 A

COMMUNICATION-SATELLITE 374 B
(satellite to earth)

(new) 393 B

For the conditions of use of this band by the meteorological-satellite service, see numbers 470 E, 470 G and 470 J.

7650-7750

FIXED
MOBILE
COMMUNICATION-SATELLITE 356A
METEOROLOGICAL-SATELLITE

G

5925 - 8400

FIXED

SPACE (Communication Satellites)
(Precision Tracking)
(Telemetry and Telecommand)
(Meteorological Satellites)

MOBILE

NIG

Me/s

17/8

7650 - 7750

COMMUNICATION-SATELLITE
(space stations) 392D 392E
FIXED
METEOROLOGICAL-SATELLITE
(space stations) 392E
MOBILE

374B

USA

No. 374B The conditions for the use of this band are specified in Article 7, Section VII, of these Regulations.

No. 392E This band may also be used for the transmission of tracking and telemetering signals associated with communication-satellite and meteorological-satellite space stations operating in the same band.

Gc/s

17/9

9.8 - 10.0 Gc/s

RADIOLOCATION
Fixed

400 401 401 bis

CAN

401. After this No. add the following new footnote:
401 bis. The band 9.9 - 10.0 Gc/s may be used by weather radar on board meteorological satellites for precipitation detection.

9800 - 10000 Mc/s

RADIOLOCATION 401 A
Fixed
400 401

F

(new) 401 A

Band 9900 - 10000 Mc/s may be used by the radiolocation device of meteorology satellites, for the detection of precipitations.

9800-10000 Mc/s

RADIOLOCATION
Fixed
400 401 401A

G

401A. The band 9900-10000 Mc/s may be used by weather radar on board meteorological satellites for precipitation detection.

9800 - 10 000 Mc/s

RADIOLOCATION 401A
Fixed
400 401

USA

ADD

No. 401A The band 9900 - 10 000 Mc/s may be used by weather radar on board meteorological satellites for precipitation detection.

Gc/s

17/10

10.7 - 11.7	WEATHER SATELLITES **) FIXED MOBILE
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URS

**) A band 100 Mc/s wide would be allotted in this band.

33.4 - 34.0	WEATHER SATELLITES *) RADIO ASTRONOMY 407 408 412
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URS

*) A band 100 Mc/s wide would be allotted in this band.

33.4 - 36.0	RADIOLOCATION 407 408 412 412A
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USA

ADD

No. 412A The band 33.4-^{34.5}~~33.5~~ Gc/s may be used by weather radar on board meteorological satellites for cloud detection.

viz.
Corr. 2
Doc. 8

33.4-36.0	RADIOLOCATION 407 408 412 412A
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G

412A. A bandwidth of 100 Mc/s within the bands 33.4-34.3 Gc/s or 35.5-36 Gc/s may be used by weather radar on board meteorological satellites for cloud detection.

33.4 - 36	RADIOLOCATION 407 408 412 <u>412 A</u>
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F

(new) 412 A

Band 35.9 - 36 Gc/s may be used by the radiolocation devices of meteorological satellites, for the detection of clouds.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/18-E
14 October 1963
Original: English

Geneva, 1963

WORKING GROUP 5A

DRAFT

SECOND REPORT BY WORKING GROUP 5A

1. Working Group 5A held its second meeting on Monday, 14 October 1963. The Chairman opened the meeting by inviting attention to Document No. DT/7 containing the draft Report of the Group's first meeting. He explained it was his intention to defer discussion on this document until a later date when it could be considered together with other working group documents containing proposals for allocation of frequency bands for telemetering, telecommand, and tracking. The Chairman stressed the point that the green documents, wherein various viewpoints could be seen clearly set forth, represented a first approach to the problems.
2. Band 1535 - 1540 Mc/s
 - 2.1 The band 1535 - 1540 Mc/s, proposed for telemetering by several Administrations, was then offered for consideration. The Chairman invited the I.C.A.O. Representative to comment on these proposals since they affected the present allocation to aeronautical radionavigation. The I.C.A.O. Representative stated that I.C.A.O. recommended that this band be allocated for space telemetering.
 - 2.2 The Chairman then invited comments concerning the foot-notes associated with this band. The Delegate of Italy informed the Group that Italy was prepared to amend foot-note 351 to read: "In Italy, the band 1535 - 1600 Mc/s is allocated to the fixed service up to 1 January 1968". Concerning foot-note 352, Austria, Indonesia and the F.R. of Germany indicated that they were prepared to amend the band limits in the foot-note to read: "1540 - 1660 Mc/s" whereas U.S.S.R. requested that the foot-note be retained without change for his country. In the absence of further comment the Chairman assumed that other countries referred to in this foot-note also wished the foot-note to remain unchanged.
 - 2.3 The U.S.A. made reference to an amendment to her proposal to the effect that space stations employing frequencies in this band may also transmit tracking signals. This amendment was generally accepted.



2.4 Resulting from the foregoing, the widest area of agreement was achieved on a draft new Table of Frequency Allocations for the band 1535 - 1540 Mc/s as shown in Appendix 1 attached hereto.

3. Band 1525 - 1535 Mc/s

3.1 The Group then considered proposals for the band 1525 - 1535 Mc/s. There was general agreement to allocate this band to space telemetering and tracking with primary status.

3.2 There was, however, a divergence of opinion with regard to maintaining the status of existing allocations. Some delegations stated that earth stations receiving telemetering and tracking signals should be given protection against other services within a certain area. Secondary status has therefore been proposed for the fixed and mobile services. Outside such areas fixed and mobile services would in fact retain their present status. Other delegations from Regions 1 and 3 were in favour of maintaining primary status for fixed and mobile services.

3.3 The Delegate of India, while agreeing that it was essential that telemetering be given a higher status, nevertheless indicated that extreme caution be exercised in making any changes in the Table with regard to the status of present services. He suggested as a possible solution the preparation for the band under consideration of a Resolution along the lines of Resolution No. 4 in the present Radio Regulations.

3.4 Paragraphs 3.1 - 3.3 above are intended to reflect the main points of the discussion on this band. Since no general agreement has yet been reached on the full contents of the draft new Table, no appendix for this band is attached to the present draft Report.

4. Band 449.75 - 450.05 Mc/s

The Group then considered the proposals for a space telecommand band in the vicinity of 450 Mc/s. The U.K. amended their published proposal to read "449.75 - 450 Mc/s" and "450 - 450.25 Mc/s". Japan and Canada indicated that they now were agreeable to amend their respective published proposals to align with that of the U.S.A. From the discussion that followed it appeared that there was a large measure of agreement to provide for this service in a foot-note specifying the band limits rather than writing the allocation into the draft new Table itself. A suggested wording for such a foot-note is presented in Appendix 2 attached hereto.

5. Bands 400.05 - 401 Mc/s and 401 - 402 Mc/s

5.1 The proposals concerning these bands were then considered. U.S.S.R. explained that their proposal for telemetering and tracking in the band 400.05 - 401 Mc/s was not confined to space research only, but would also be used for other space services including communication-satellites. In the course of discussion U.S.S.R. and a number of other delegations stressed the point that the status of the existing services in the present Table, and associated foot-notes, for the bands from 400.05 - 402 Mc/s should be retained without change.

5.2 A draft new Table for the bands concerned has been drawn up on the basis of the discussion and is submitted, as Appendix 3 hereto, for further consideration.

P. MORTENSEN
Chairman

Appendices: 3

APPENDIX 1

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
1535 - 1540 SPACE TELEMETERING and TRACKING 351 (rev) 352 (rev)		

(rev) In Italy, the band 1535 - 1600 Mc/s is allocated to the fixed
351 (rev) service up to 1 January 1968.

(rev) In Albania, Bulgaria, Hungary, Poland, Roumania, Czechoslovakia
352 (rev) and the U.S.S.R., the band 1535 - 1660 Mc/s is also allocated to the fixed
service.

(new) In Austria, Indonesia and the F.R. of Germany, the band
352 bis 1540 - 1660 Mc/s is also allocated to the fixed service.

APPENDIX 2

(new) The frequency band 449.75 - 450.25 Mc/s may be used for space
319 (bis) telecommand, subject to agreement among the Administrations concerned or
 affected.

APPENDIX 3

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
400.05 - 401 METEOROLOGICAL AIDS SPACE RESEARCH (telemetering and tracking) 312(rev) 312 bis 313(rev) 314		
401 - 402 METEOROLOGICAL AIDS SPACE TELEMETERING and TRACKING Fixed Mobile, except aeronautical mobile 314 315 316		

(rev) In Greece, the band 400.05 - 401 Mc/s is also allocated to the
312 (rev) fixed and mobile services.

(new) In Yugoslavia and Sweden, the band 400.05 - 401 Mc/s is also
2 bis allocated to the fixed and mobile services until 1 January, 1970.

(new) In Albania, Bulgaria, Hungary, Poland, Roumania, Czechoslovakia
313 (rev) and the U.S.S.R., the band 400.05 - 401 Mc/s, is also allocated to the
fixed and mobile services.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/19-E
15 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 50

DRAFT

SECOND REPORT OF WORKING GROUP 50

1. Following discussion at its second meeting on Friday, 11 October, 1963 and having accepted the report of an Ad Hoc Group consisting of Delegates of Canada, U.S.A., U.K. and the U.S.S.R., Working Group 50 reached agreement on the band 30.005 - 30.010 Mc/s as shown in the attached Appendix.
2. It will be noted that the retention of the existing allocations to the Fixed and Mobile Services and the related foot-notes were agreed.
3. The additional allocation in this band to the SPACE RESEARCH Service is a proposal by the U.S.S.R. for consideration by Working Group 5B. It has not been discussed in Working Group 50.

J. PENWARDEN
Chairman
Working Group 50

Appendix: 1



APPENDIX

Mc/s

Allocation to services		
Region 1	Region 2	Region 3
30.005 - 30.010		
FIXED 228 229 230 231 232		
MOBILE		
SATELLITE IDENTIFICATION		
SPACE RESEARCH		
233 234		

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/20-D
15 October, 1963.
Original : French, English,
Spanish

WORKING GROUP 4B

DRAFT REPORT OF WORKING GROUP 4B

Part I

1. Terms of Reference

The terms of reference of Working Group 4B, which is reproduced in Document No. 64, consists of two parts: the first on the technical progress, the second on technical factors affecting the allocation of frequencies but excluding problems of sharing, which are the concern of Working Group 4C.

2. Technical Progress

The Group has reviewed the documents which have been presented by the different Administrations which have conducted or are conducting experiments in space. It considers that all the information contained therein is of the greatest interest and has considered that it was not possible to summarize without changing the substance. Therefore, these documents are reproduced in full as Annexes to the present Report. They are:

Document No. 1 - pp. 106-109 (C.C.I.R.)
Document No. 28 - (France)
Document No. 29 - (Italy)
Document No. 30 - (Federal Republic of Germany)
Document No. 32 - pp. 1 & 2 (U.S.S.R.)
Document No. 33 - (Japan)
Document No. 37 - (U.S.A.)
Document No. 60 - (Denmark, Norway and Sweden)
Document No. 61 - (E.B.U.)
Document No. 62 - (U.S.S.R.)
Document No. 76 - (U.K.)
Document No. 84 - (I.A.R.U.)

3. Factors affecting the Allocation of Frequencies

Annex : 1

P. BOUCHIER



Geneva, 1963

WORKING GROUP 5C

DRAFT

THIRD REPORT OF WORKING GROUP 5C

"Radionavigation Satellites"

1. At its Third Meeting, on Monday, 14 October, Working Group 5C considered proposals submitted by the Administrations of France, Nigeria, United States and United Kingdom for the allocation of frequency bands for Space Satellites in the Radionavigation Service.
2. The four proposals, set out in detail in Document No. DT/15, were closely aligned and are for exclusive allocations to RADIONAVIGATION-SATELLITE in three small bands as follows: 149.9 - 150.05 Mc/s, 399.9 - 400.05 Mc/s and 14.3 - 14.4 Gc/s. The Working Group noted that the first two allocations proposed, at the 150 and 400 Mc/s orders, are directly related being the two channels essential to the radionavigation system to be introduced. The proposed allocation at 14 Gc/s is for a separate system. In the explanation of these proposals it was pointed out that initially the system would be of assistance to ships and ultimately to aircraft.
3. In the discussion that followed there was unanimous agreement that the Radionavigation Service should have access under the Radio Regulations to Space radio techniques and no objection was stated to the principle of the allocations proposed.
4. However, in further discussion it became evident that several Administrations foresaw difficulties in accepting the introduction of these allocations on an exclusive basis if this meant that services in their countries conducted in the bands concerned in accordance with the present Radio Regulations would be required to cease operations. The extent of these difficulties varied in the bands concerned being greatest in the 150 Mc/s band and significantly less in the two higher bands.



5. To assist Delegations in appreciating the position reached at the end of the Third Meeting of Working Group 5C the attached Appendix summarises the various statements made.

6. There was support for a proposal from India that a possible solution might be attained by devising a formula along the lines of Resolution No. 4 of the Geneva 1959 Radio Regulations and some Delegations undertook to re-examine their stated position, particularly as to fixing upon a date for the withdrawal of existing services.

J. PENWARDEN

Chairman
Working Group 5C

Annex: 1

A N N E X

RADIONAVIGATION SATELLITES

14.3 - 14.4 Gc/s	RADIONAVIGATION SATELLITES	WORLD-WIDE
------------------	----------------------------	------------

The following Delegations would accept this allocation on an exclusive basis:

AFS, ARG, AUS, CAN, CLM, D, ETH, F, G, J, NZL, PAK, POR, S, SUI, USA, YUG;

The following Delegations would accept this allocation subject to the retention of foot-note RR407 :

BUL, CUB, HNG, POL, TCH, URS.

399.9 - 400.05 Mc/s	RADIONAVIGATION SATELLITES	WORLD-WIDE
---------------------	----------------------------	------------

The following Delegations would accept this allocation on an exclusive basis:

AFS, ARG, AUS, CAN, CLM, D, ETH, F, J, NZL, PAK, POR, S, SUI, USA;

The following Delegations would accept this allocation with the existing allocations to FIXED and MOBILE deleted but subject to the retention of foot-notes shown :

G - RR314, GRC - RR312.

The following Delegations would accept this as an additional allocation and the retention of the foot-notes shown :

BUL, HNG, POL, TCH, URS - RR413, CUB, MRC - under study.

149.9 - 150.05 Mc/s	RADIONAVIGATION SATELLITES	WORLD-WIDE
---------------------	----------------------------	------------

The following Delegations would accept this allocation on an exclusive basis:

AFS, ARG, AUS, CAN, CLM, NZL, PAK, POR, S, USA;

The following Delegations would accept this subject either to the retention of the foot-note indicated or to the inclusion of a new foot-note to safeguard existing services (FIXED and MOBILE) :

BUL (RR274), CUB, D, F (RR274), G (RR274), HNG (RR274), J, JMC, MRC (RR274), POL (RR274), SUI (RR274), TCH (RR274), URS (RR274), YUG (RR274).

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/22-E
15 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5C

AGENDA

FOURTH MEETING OF WORKING GROUP 5C

Wednesday, 16 October at 0930 (9.30 a.m.) Room A

1. To consider draft First Report of the Working Group DT/6 (Rev.)
2. To consider draft Second Report of the Working Group DT/19
3. To continue consideration of Radionavigation-Satellites DT/21
4. Any other business

NOTE

Document No. DT/16 concerning the proposals of administrations for the Aeronautical Mobile, Aeronautical Radionavigation Services and Distress Frequencies is the Working Document for Sub-Group 5C1.

J.T. PENWARDEN
Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/23-E
15 October, 1963
Original : French

Geneva, 1963

WORKING GROUP 5 C 1

AGENDA

1st MEETING OF WORKING GROUP 5 C 1

Thursday 17 October at 9.30 a.m.

1. **Examination** of the proposals concerning aeronautical radionavigation and the aeronautical mobile R service (Doc. No. DT/16, pages 1 to 9 inclusive and Doc. No. 32 (Rev. 2), page 2).
2. Extension of the aeronautical mobile R service (Doc. No. DT/16, page 10).
3. Other business.

Maurice CHEF



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/24-E
16 October 1963
Original: English

Geneva, 1963

WORKING GROUP 5B2

DRAFT

FIRST REPORT BY WORKING GROUP 5B2

SPACE RESEARCH

1. Bands 10,003 - 10,005 Kc/s, 19,990 - 20,010 kc/s and 39,986 - 40,002 Mc/s

Unanimous agreement was reached on the amendments proposed to footnote 215 to the Table of Frequency Allocations. The agreed draft new text of No. 215 of the Radio Regulations appears in Appendix 1 attached hereto.

2. Band 183,1 - 184,1 Mc/s

2.1 During the detailed consideration of the relevant proposals, the Delegation of the U.S.S.R. agreed to the deletion of the word "deep" from their proposal and the Group quickly arrived at full agreement that

- a) the allocation to the space research service should take the form of a footnote;
- b) this allocation would be in addition to the existing allocations appearing in the Table of Frequency Allocations and associated footnote; and
- c) the space research service should be a secondary service.

2.2 Differing views were expressed concerning the formulation of the footnote required. On the one hand some delegations favoured the existing expression "subject to causing no harmful interference" while others felt that "on a secondary basis" was appropriate. From a detailed analysis of No. 139 of the Radio Regulations, it was generally agreed that the category of service concerned was "secondary". Furthermore, the Group had difficulty in choosing between "allocated" and "also allocated"; views were shared on this point also. Finally, upon the suggestion of the U.S.A., the Group agreed that the Chairman should prepare a draft text in consultation with Mr. V.V. Rao, (Delegate of India) and Mr. A.H. Catá, member of the I.F.R.B.



2.3 The resultant text appears in Appendix 2 attached hereto.

B. DESTA
Chairman
Working Group 5B2

Appendices: 2

A P P E N D I X 1

(Rev.) 215 The bands 10,003 - 10,005 Kc/s, 19,990 - 20,010 Kc/s and
39,986 - 40,002 Mc/s are also allocated, on a secondary basis, to the
space research service.

A P P E N D I X 2

(Rev.) 294 . The band 183,1 - 184,1 Mc/s is also allocated, on a
secondary basis, to the space research service.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/25-E (Rev.)
22 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5B1

DRAFT

FIRST REPORT BY WORKING GROUP 5B1

1. Foot-note 204

The Mexican proposal to amend foot-note 204 to the Table of Frequency Allocations with regard to the standard frequency guard-bands at 2.5 Mc/s, 5 Mc/s, 10 Mc/s and 20 Mc/s was considered. The Group unanimously agreed to maintain the present paragraph No. 204 of the Radio Regulations without change.

2. Band 1400 - 1427 Mc/s

2.1 The proposal by several Administrations for exclusive allocation to the Radio Astronomy Service and the proposal by the Delegations of Poland and the U.S.S.R., to give up the derogation from the Table contained in foot-note 350, met with the unanimous agreement of the Group. The resultant draft new Table of Frequency Allocations for this band is given in Appendix 1 attached hereto.

2.2 The proposal by the Administration of France to insert a new foot-note requiring Administrations to avoid assigning frequencies, close to the guard band limits, to stations of other services which might, by reason of their power or geographical position, cause harmful interference to the Radio Astronomy Service, was considered. Many Delegations, while fully subscribing to this principle, expressed the view that such protection was afforded by the existing paragraph No. 116 of the Radio Regulations. In the light of the discussion, the Delegation of France rallied to the majority view and withdrew its proposal.



3. Band 2690 - 2700 Mc/s

3.1 Detailed consideration was given to all proposals submitted by Administrations for the amendment of the Table of Frequency Allocations with respect to the band 2690 - 2700 Mc/s. A large majority of Delegations were in favour of an exclusive allocation to the Radio Astronomy Service.

3.2 The Delegation of the Federal Republic of Germany, while agreeing to amend foot-note 364 to exclude this band, was obliged to retain foot-note 363 unchanged. However, the Delegation declared that protection to the Radio Astronomy Service would be assured on a national basis.

3.3 Several Delegations of countries in Region 1 agreed to give up their rights under foot-note 364 by amending the band-limits mentioned therein to exclude the band 2690 - 2700 Mc/s.

3.4 The Polish Delegation, while agreeing to amend the Table to show the allocation of this band to the Radio Astronomy Service, stated its wish to retain authorization for the allocation of this band to the Fixed and Mobile Services in Poland. No objection was expressed to this derogation from the draft new Table.

3.5 The Delegations of the U.S.S.R., Hungary, Cuba, Czechoslovakia, Bulgaria, and Bielorussia, were against any change to the existing allocations in this band in the Table and associated foot-notes.

3.6 The draft new Table for the band 2690 - 2700 Mc/s and associated footnotes resulting from the foregoing, appears in Appendix 2 attached hereto.

4. Band 4990 - 5000 Mc/s

4.1 Detailed consideration was given to all proposals to amend the Table of Frequency Allocations for the band 4990 - 5000 Mc/s. Three different solutions emerged from the discussion namely:

- a) exclusive allocation to the radio astronomy service,
- b) allocation to the fixed, mobile and radio astronomy services, all on a primary basis and the addition of a new foot-note

urging Administrations to take all practicable steps to protect radio astronomy observations from harmful interference, and

- c) status quo with respect to the existing Table and associated foot-note.

4.2 No Delegation of a Region 2 country raised objection to exclusive allocation to the radio astronomy service.

4.3 A majority of Delegations of Region 1 and 3 countries preferred solution 4.1 b) above.

4.4 The Delegations of the U.S.S.R., Poland and Hungary wished to see no change to the existing allocations.

4.5 A draft new Table for the band concerned, reflecting the majority viewpoint as outlined above, appears in Appendix 3 attached hereto.

Appendices: 3

W.A.E. NIELSEN
Chairman
Working Group 5B1

A P P E N D I X 1

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
1400 - 1427 RADIO ASTRONOMY		

SUP 350

A P P E N D I X 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
2690 - 2700		
RADIO ASTRONOMY		
363 364A		

MOD 363 In the F.R. of Germany, the band 2550-2690 Mc/s is allocated to the fixed service and the band 2690-2700 Mc/s is also allocated to the fixed service.

MOD 364 In Region 1, tropospheric scatter systems may operate in the band 2550-2690 Mc/s under agreements concluded between administrations concerned and those having services operating in accordance with the Table, which may be affected.

ADD 364A In Region 1, except Austria, France, Italy, the Netherlands, the F.R. of Germany, the United Kingdom, Sweden, and the Rep. of South Africa and Territories of South West Africa, tropospheric scatter systems may operate in the band 2690-2700 Mc/s under agreements concluded between administrations concerned and those having services operating in accordance with the Table, which may be affected.

SUP 365

A P P E N D I X 3

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
4990 - 5000 FIXED MOBILE RADIO ASTRONOMY 383A	4990 - 5000 RADIO ASTRONOMY	4990 - 5000 FIXED MOBILE RADIO ASTRONOMY 383A

ADD 383A In making assignments to stations in the fixed and mobile services, Administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference. The radio astronomy service shall be protected from harmful interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

SUP 365

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/25-E
16 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5B1

DRAFT

FIRST REPORT BY WORKING GROUP 5B1

1. Foot-note 204

The Mexican proposal to amend foot-note 204 to the Table of Frequency Allocations with regard to the standard frequency guard-bands at 2.5 Mc/s, 5 Mc/s, 10 Mc/s and 20 Mc/s was considered. The Group unanimously agreed to maintain the present paragraph No. 204 of the Radio Regulations without change.

2. Band 1400 - 1427 Mc/s

2.1 The proposal by several Administrations for exclusive allocation to the Radio Astronomy Service and the proposal by the Delegations of Poland and the U.S.S.R., to give up the derogation from the Table contained in foot-note 350, met with the unanimous agreement of the Group. The resultant draft new Table of Frequency Allocations for this band is given in Appendix 1 attached hereto.

2.2 The proposal by the Administration of France to insert a new foot-note requiring Administrations to avoid assigning frequencies, close to the guard band limits, to stations of other services which might, by reason of their power or geographical position, cause harmful interference to the Radio Astronomy Service, was considered. Many Delegations, while fully subscribing to this principle, expressed the view that such protection was afforded by the existing paragraph No. 116 of the Radio Regulations. In the light of the discussion, the Delegation of France rallied to the majority view and withdrew its proposal.



3. Band 2690 - 2700 Mc/s

3.1 Detailed consideration was given to all proposals submitted by Administrations for the amendment of the Table of Frequency Allocations with respect to the band 2690 - 2700 Mc/s. A large majority of Delegations were in favour of an exclusive allocation to the Radio Astronomy Service.

3.2 The Delegation of the Federal Republic of Germany, while agreeing to amend foot-note 364 to exclude this band, was obliged to retain foot-note 363 unchanged. However, the Delegation declared that protection to the Radio Astronomy Service would be assured on a national basis.

3.3 Several Delegations of countries in Region 1 agreed to give up their rights under foot-note 364 by amending the band-limits mentioned therein to exclude the band 2690 - 2700 Mc/s.

3.4 The Polish Delegation, while agreeing to amend the Table to show the allocation of this band to the Radio Astronomy Service, stated its wish to retain authorization for the allocation of this band to the Fixed and Mobile Services in Poland. No objection was expressed to this derogation from the draft new Table.

3.5 A few Delegations, however, were against any change to the existing allocations in this band in the Table and associated foot-notes.

3.6 The draft new Table for the band 2690 - 2700 Mc/s and associated foot-notes resulting from the foregoing, appears in Appendix 2 attached hereto.

4. Band 4990 - 5000 Mc/s

4.1 Detailed consideration was given to all proposals to amend the Table of Frequency Allocations for the band 4990 - 5000 Mc/s. Three different solutions emerged from the discussion namely:

- a) exclusive allocation to the radio astronomy service,
- b) allocation to the fixed, mobile and radio astronomy services, all on a primary basis and the addition of a new foot-note

urging Administrations to take all practicable steps to protect radio astronomy observations from harmful interference, and

- c) status quo with respect to the existing Table and associated foot-note.

4.2 No Delegation of a Region 2 country raised objection to exclusive allocation to the radio astronomy service.

4.3 A majority of Delegations of Region 1 and 3 countries preferred solution 4.1 b) above.

4.4 A few Delegations of Region 1 countries wished to see no change to the existing allocations.

4.5 A draft new Table for the band concerned, reflecting the majority viewpoint as outlined above, appears in Appendix 3 attached hereto.

Appendices: 3

W.A.E. NIELSEN
Chairman
Working Group 5B1

A P P E N D I X 1

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
1400 - 1427 RADIO ASTRONOMY		

(del) 350

A P P E N D I X 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
2550 - 2690		
FIXED		
MOBILE		
362 363 364		
2690 - 2700		
RADIO ASTRONOMY		
363 364A		

362 In the United Kingdom, the radiolocation service may operate in the band 2550 - 2600 Mc/s, provided no harmful interference is caused to tropospheric scatter systems.

(rev) 363 In the F.R. of Germany, the band 2550-2690 Mc/s is allocated to the fixed service and the band 2690-2700 Mc/s is also allocated to the fixed service.

(rev) 364 In Region 1, tropospheric scatter systems may operate in the band 2550-2690 Mc/s under agreements concluded between administrations concerned and those having services operating in accordance with the Table, which may be affected.

(new) 364A In Region 1, except Austria, France, Italy, the Netherlands, the F.R. of Germany, the United Kingdom, Sweden, and the Rep. of South Africa and Territories of South West Africa, tropospheric scatter systems may operate in the band 2690-2700 Mc/s under agreements concluded between administrations concerned and those having services operating in accordance with the Table, which may be affected.

(del) 365

A P P E N D I X 3

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
4990 - 5000 FIXED MOBILE RADIO ASTRONOMY 383A	4990 - 5000 RADIO ASTRONOMY	4990 - 5000 FIXED MOBILE RADIO ASTRONOMY 383A

(new) 383A In making assignments to stations in the fixed and mobile services, Administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference. The radio astronomy service shall be protected from harmful interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

(del) 365

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/26-E
16 October 1963
Original : English

WORKING GROUP 5C

AGENDA

FIFTH MEETING OF WORKING GROUP 5C

Thursday, 17 October at 1430 (2.30 p.m.) Room A

1. To continue consideration of Radionavigation-Satellites DT/21
2. To consider proposals for Meteorological Satellites DT/17
(if available)
3. Any other business

J.T. PENWARDEN
Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Corrigendum No. 1 to
Document No. DT/27-E
18 October, 1963

Geneva, 1963

WORKING GROUP 4C

CORRIGENDUM TO FIRST REPORT OF WORKING GROUP 4C

1. Document No. DT/27, third paragraph: delegations attending.
Insert 43 in place of 42.
2. Annex of Document No. DT/27: List of Delegations
To the list of countries represented on the Working Party
add:
"India".

W.A.C. SCHULTZ
Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/27-E
16 October, 1963
Original : English

Geneva, 1963

COMMITTEE 4

DRAFT

FIRST REPORT BY WORKING GROUP 4C

Working Group 4C held two meetings, the first Wednesday, 9 October, 1963 and the second Thursday, 10 October, 1963.

Messrs. N.I. Krasnosselski and J.A. Gracie of the I.F.R.B., and Dr. Joachim, Dr. Mao and Mr. Froom of the C.C.I.R. attended the meetings to assist in the work of the group.

A list of 42 delegations attending these meetings is attached.

Three reporters were nominated to assist in the drafting of reports, etc.:

French - Mr. J.P. Houssin of France

English - Mr. D.W. Holmes of the U.S.A.

Spanish - The delegation of Spain offered its assistance in finding a reporter.

The meeting noted the terms of references given by the Chairman of Committee 4 and listed the documents allocated to Working Group 4C.

The delegations concerned introduced the documents submitted by their Administration.

To expedite the work on hand it was decided to establish immediately two sub-groups, assign terms of reference and appoint a chairman to each.

The organization is as follows :

- a) Sub-group 4C-1; Sharing Criteria,
Chairman : Mr. J.R. Marchand (Canada)



- b) Sub-group 4C-2; Coordination Procedure,
Chairman: Mr. H. Fine (U.S.A.)

Meetings of the sub-groups are being held consecutively and the following delegations accepted an invitation to participate in the work of the sub-groups: Australia, Belgium, Canada, France, Germany, Ghana, India, Japan, New Zealand, Netherlands, Pakistan, South Africa, Spain, United Kingdom, U.S.A. and the U.S.S.R.

W.A.C. SCHULTZ

Chairman

Annex : 1

A N N E X

LIST OF DELEGATIONS

Algeria	Kuwait
Argentina	Mexico
Australia	New Zealand
Austria	Norway
Belgium	Ouganda & Kenya
Canada	Pakistan
Cuba	Netherlands
Czechoslovakia	Poland
Ethiopia	Portugal
F.R. of Germany	Republic of China
Finland	Roumania
France	South Africa
Ghana	Spain
Greece	Sweden
Indonesia	Switzerland
Ireland	United Kingdom
Israel	U.K. - Overseas Territories
Italy	U.S.A.
Jamaica	U.S.S.R.
Japan	Yougoslavia
Korea (Republic)	UNESCO

Genève, 1963

GROUPE DE TRAVAIL 4A
WORKING GROUP 4A

PROPOSITIONS PROVISOIRES POUR LES TERMES ET DEFINITIONS
TENTATIVE PROPOSALS FOR TERMS AND DEFINITIONS

Première Partie

First Part

Introduction

Les définitions qui suivent, établies à titre provisoire par le Groupe de rédaction du Groupe de travail 4A, n'ont pas encore été soumises à l'approbation de la Commission 4. Elles sont publiées pour l'information des délégués siégeant dans les diverses commissions, en vue de susciter des observations basées sur les besoins propres de ces commissions. Ces observations devraient être transmises au Groupe de travail 4A de préférence par la voie des présidents de commissions.

Foreword

The following definitions, tentatively drafted by the Drafting group of Working Group 4A, have not yet been to Committee 4 for approval. They are published for the information of delegates in the various committees, with a view to inviting observations based on the requirements of these committees. These observations should preferably be transmitted to Working Group 4A through the Committee chairmen channels.

A. Modifications et adjonctions aux termes non spatiaux du Règlement
Modifications and additions to non space terms of the Regulations

A1 Service de Terre

Tout service radioélectrique défini dans le présent Règlement, autre qu'un service spatial ou que le service de radioastronomie.

Terrestrial service

Any radio service defined in these Regulations, other than a space service or the radio astronomy service.



A2 Station de Terre

Station d'un service de Terre.

Terrestrial station

A station in a terrestrial service.

A3 Station de radioastronomie

Station du service de radioastronomie.

Radio Astronomy station

A station in the radio astronomy service.

B. Services et stations spatiales, et termes associés
Space services and stations, and related terms

N^{os} 70, 71, 72, 73 du Règlement - Supprimés.

Nos. 70, 71, 72, 73 of the Regulations - Cancelled.

B1 Service spatial

Service de radiocommunication :

- entre stations terriennes et stations spatiales,
- ou entre stations spatiales,
- ou entre stations terriennes lorsque les signaux sont retransmis par des stations spatiales, ou transmis par réflexion ou diffusion sur des objets situés dans l'espace, en excluant la réflexion ou la diffusion par l'ionosphère ou dans l'atmosphère terrestre.

Space service

A radiocommunication service:

- between earth stations and space stations,
- or between space stations,
- or between earth stations when the signals are re-transmitted by space stations, or transmitted by reflection or by scattering from objects in space, excluding reflection or scattering by the ionosphere or within the atmosphere.

B2 Station spatiale

Station du service spatial située sur un objet se trouvant, ou destiné à aller, ou étant allé au-delà de la partie principale de l'atmosphère terrestre.

Space station

A station in the space service located on an object which is beyond, is intended to go beyond, or has been beyond the major portion of the earth's atmosphere.

B3 Station terrienne

Station du service spatial placée soit sur la surface de la Terre, y compris à bord d'un navire, soit à bord d'un aéronef.

Earth station

A station in the space service located either on the earth's surface, including on board a ship, or on board an aircraft.

B4 Service de radiocommunication par satellites

Service spatial de radiocommunication :

- entre stations terriennes, lorsque les signaux sont retransmis par une ou plusieurs stations spatiales sur des satellites de la Terre, ou transmis par réflexion ou diffusion sur des objets en orbite autour de la Terre,
- ou entre stations terriennes et stations spatiales sur des satellites de la Terre.

Radiocommunication satellite service

A space service for radiocommunication:

- between earth stations, in which the signals are re-transmitted by one or more space stations on earth satellites or are transmitted by reflection or by scattering from objects in orbit around the earth, or
- between earth stations and space stations on earth satellites.

B5 Station (spatiale) de satellite (de radiocommunication)

Station spatiale du service de radiocommunication par satellites, située sur un satellite de la Terre.

Note : Les mots entre parenthèses peuvent être omis quand aucune ambiguïté n'en résulte.

(Radiocommunication) satellite (space) station

A space station in the radiocommunication satellite service.

Note : The words between brackets can be omitted, when no ambiguity results.

B6 Satellite actif

Satellite de la Terre portant une station destinée à émettre ou retransmettre des signaux de radiocommunication.

Active satellite

An earth satellite carrying a station intended to transmit or re-transmit radiocommunication signals.

Annexe : 1

Annex : 1

A N N E X E

Déclarations des Délégations de la Belgique, de la France et du Portugal

Au cours des discussions qui ont eu lieu au sein du Groupe de rédaction 4A1, la Belgique, la France et le Portugal, dont l'opinion n'a pas été suivie ont formulé les remarques suivantes :

1. Le Groupe a adopté entre autres les définitions du "service spatial" et du "service de radiocommunication par satellites" en tenant compte des définitions portées à la connaissance de la C.A.E.R. par le C.C.I.R.

Ces définitions présentent de l'intérêt pour les discussions de caractère technique au sein du C.C.I.R. mais se révèlent insuffisamment adaptées aux besoins d'un règlement destiné à régir les divers services déjà définis.

Le C.C.I.R. a d'ailleurs souligné dans le Rapport N° 204 (Genève, 1963) que les termes des définitions qu'il a adoptés sont seulement destinés à servir de guide pour ses travaux.

2. Les deux définitions dont il s'agit couvrent toutes les activités des services actuellement définis dans le Règlement des radiocommunications.

La deuxième définition, en particulier, englobe - à l'exception des radiocommunications entre satellites ne provenant pas de la terre ou non destinées à la terre - tous les services : services fixe, mobile, de radiodiffusion, amateur, de radionavigation, etc. Ceux-ci sont régis par des dispositions réglementaires différentes.

3. De ce fait, de grandes difficultés apparaîtront lorsqu'il s'agira de mettre en application le tableau de répartition des bandes de fréquences ainsi que les procédures contre les brouillages nuisibles et d'enregistrement.

4. Pour ces raisons les pays susmentionnés considèrent qu'il est plus simple et plus logique de maintenir les définitions des services telles qu'elles figurent actuellement au Règlement, en ajoutant aux dénominations de ces services le qualificatif de "spatial" lorsque lesdits services font appel à des techniques spatiales.

Il convient de noter en effet à titre d'exemple que, auparavant, l'on n'a pas considéré comme de nouveaux services ceux qui font appel à la technique de diffusion troposphérique et que l'on s'est borné à définir celle-ci.

5. En conséquence les seules définitions principales nécessaires seraient celles qui concernent les stations terriennes et les stations spatiales, les satellites actifs et passifs. A ces définitions pourraient s'ajouter éventuellement des définitions de caractère plutôt secondaire concernant certains cas particuliers en matière de météorologie, de radio-navigation ou de recherche.

A N N E X

Statements by the Belgian, French and Portuguese Delegations

In the course of discussions within Drafting Working Party 4A1, Belgium, France, and Portugal (whose views did not prevail) made the following comments :

1. The Working Party adopted, among other things, the definitions of space service and satellite radio service, bearing in mind the definitions brought to the notice of the Extraordinary Conference by the International Radio Consultative Committee.

These definitions, while all very well for the purpose of technical discussions within the International Radio Consultative Committee, do not adequately meet the requirements of regulations designed to cover the various services already defined.

In fact, in its Report No. 204, the International Radio Consultative Committee emphasizes that the definitions adopted by it are designed merely as a guide in its activities.

2. These two definitions cover all the activities of the services at present defined in the Radio Regulations.

The second of the two, especially, covers all services (except inter-satellite communications not coming from Earth and not designed for reception on Earth): fixed, mobile, broadcasting, amateur, radio navigation, etc. These latter are governed by different provisions.

3. Hence much trouble will be experienced when the Frequency Allocation Table, and the procedures for registration and action against interference, have to be put into effect.

4. Accordingly, the above three countries feel that it would be better, and simpler, to keep the definitions of services as shown in the present Regulations, the word "space" being added when the services in question make use of space techniques.

For example, the services which make use of scatter have not hitherto been considered as new services, all that has been done is to define scatter technique.

5. Hence the only major definitions required would be those concerning earth and space stations, and active and passive satellites. To these might conceivably be added definitions of secondary importance concerning certain aspects of meteorology, radio navigation, or research.

SPACE
RADIOCOMMUNICATION
CONFERENCE

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WORKING GROUP 5A

DRAFT

FOURTH REPORT BY WORKING GROUP 5A

1. During the latter part of the Third Meeting of Working Group 5A the proposals for allocation of bands to the space communication service were considered.
2. Band 5725 - 6425 Mc/s
 - 2.1 The proposals for this band were first discussed. All Delegations agreed that earth stations should transmit in this band. A number of countries in Region 2 were unable to agree to the operation of the space communication service in the bands below 5925 Mc/s, since this band was heavily occupied by the radiolocation service operating in accordance with the present Table of Frequency Allocations. The U.S.S.R. indicated that, in accordance with the Table, they used the band above 6225 Mc/s for services with which it would be difficult to share with space communications.
 - 2.2 India informed the Group that she was prepared to give up her rights granted by foot-note 392. Likewise, Italy agreed to amend the band limits in foot-note 393 to read 6425 - 6575 Mc/s.
3. Band 3400 - 4200 Mc/s
 - 3.1 There was general agreement that this band would be used for transmission from space stations. Further discussion revealed, however, that the same situation as for the previous band also existed in this case. Some Administrations operate radiolocation below 3700 Mc/s. The U.S.S.R. indicated that for the same reasons as those for the previous bands it would be difficult for the U.S.S.R. to extend their proposal above 3900 Mc/s.
 - 3.2 India informed the Group that she was prepared to give up the rights granted by foot-note 380. Australia and the United Kingdom indicated that they were unable to modify foot-notes 379 and 374 respectively.



4. Band 7250 - 7750 Mc/s

It was generally agreed that this band would be used for transmission by space stations. In reply to a request from the Chairman, the U.S.S.R. indicated that it would be extremely difficult for his Administration to extend the proposed allocation higher than 7550 Mc/s. Yugoslavia and Spain referred to the band 7250-7300 Mc/s which a number of countries have proposed for exclusive use for satellite communication. Both countries indicated they could not agree to exclusivity in this band. Yugoslavia gave support to the proposal by Japan for the band 7250-7750 Mc/s.

5. In the three bands mentioned above, little progress in aligning the proposals was achieved. Therefore, no draft new Table for these bands has been prepared at the present stage.

P. MORTENSEN
Chairman
Working Group 5A

Geneva, 1963

WORKING GROUP 5A

DRAFT

THIRD REPORT BY WORKING GROUP 5A

1. The Third Meeting of Working Group 5A was held on 15 October 1963.

2. Band 267 - 273 Mc/s

The first band considered was the band 267 - 273 Mc/s, which was proposed by the U.S.S.R. for telemetering and tracking and supported by a number of Delegations. The proposal maintains the status of the existing service in the present Table. Some Delegations were opposed to this proposal, but the majority expressed a preference for the new additional allocation to be provided for in a footnote. This view was based on the fact that only a limited number of countries would be using this band for space services. Some doubts, however, were expressed as to the relationship of the proposed service to existing services from an interference protection viewpoint.

3. 148,25 Mc/s and 154,2 Mc/s

The proposals for single frequencies for telecommand purposes at the order of 150 Mc/s were discussed. There was a large measure of agreement that frequencies 148,25 Mc/s \pm 15 kc/s and 154,2 Mc/s \pm 15 kc/s were acceptable for this purpose on the conditions indicated in the proposals. A draft footnote to this effect is given in the attached Appendix.

4. 143,6 - 143,65 Mc/s

The U.S.S.R. proposal for telemetering and tracking in the band 143,6 - 143,65 Mc/s was then considered. The U.S.S.R. informed the Group that since the telemetering and tracking concerned space research, this proposal should be considered by Working Group 5B.

5. 136 - 138 Mc/s

5.1 The U.S.S.R., supported by a number of Delegations, proposed the band 136 - 137 Mc/s for telemetering and tracking and the band 137 - 138 Mc/s for space research and meteorological satellites. In both cases these services would be shared with the fixed and mobile services on a primary basis.



5.2 A number of other delegations proposed the band 136 - 137 Mc/s for space research, some for exclusive use; and others, on a shared basis with the fixed and mobile services, with the fixed and mobile services having secondary status. The band 137 - 138 Mc/s was proposed for space telemetering and tracking together with meteorological satellites as primary services. Also for this band some delegations proposed sharing with the fixed and mobile services, but with the fixed and mobile services having secondary status.

5.3 India referred to complications in handling these proposals in Working Groups 5A and 5B and made an appeal to the U.S.S.R. to consider reversing the proposal for these two bands of 1 Mc/s bandwidth.

5.4 Australia drew the Group's attention to DT/9 in which it was indicated that the band 137 - 138 Mc/s in Australia is occupied by television transmissions and that this would be a continuing requirement.

5.5 Many delegations indicated that these two bands were heavily occupied in their countries by fixed and mobile services and they could not accept exclusivity for the space services. Some indicated, however, that they might be able to vacate the band partly or in full by 1970. It was suggested that it was essential that earth stations be protected from other services but that this did not preclude an allocation on a secondary basis to the fixed and mobile services.

5.6 The proposals for the bands 136 - 138 Mc/s require further consideration, therefore, no draft new Table for this band has been prepared at the present stage.

P. MORTENSEN
Chairman
Working Group 5A

Appendix: 1

A P P E N D I X

(new) 285 bis. The frequencies $148,25 \text{ Mc/s} \pm 15 \text{ kc/s}$ and $154,20 \text{ Mc/s} \pm 15 \text{ kc/s}$ may be used for space telecommand, subject to agreement between the Administrations concerned or affected.

SPACE
RADIOCOMMUNICATION
CONFERENCE

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WORKING GROUP 5C 1

AGENDA

SECOND MEETING OF WORKING GROUP 5C 1

Friday, 18 October, at 2.30 p.m.

1. Examination of proposals concerning the distress frequencies in the aeronautical mobile space service
(Doc. 32, Rev.27 page 2 and page 10, sub-para. 5 - DT/16, page 10 - at the end).
2. Other business.

Note: The first draft report (first part Table) which Group 5C 1 prepared after the Meeting on 17 October is annexed hereto.

Maurice CHEF

Annex: 1



A N N E X

DRAFT

FIRST REPORT OF WORKING GROUP 5C 1

1. The first Meeting of Working Group 5C 1 was held on 17 October 1963.

The following delegations and international organisations were represented:

ALG - ARG - AUS - BEL - BUL - CAN - E - EGY - F - G - J - JMC -
NZL - PAK - POL - POR - TCH - URS - USA - ICAO.

2. The Group unanimously acknowledged the necessity of facilitating the combined control of air traffic for conventional type aircraft, new types (supersonic, hypersonic) and air-space craft (space ships).

These latter terms should be interpreted to mean vehicles for the transport of passengers or goods between various points on the earth's surface, but with a flight altitude higher than the limit of the earth's atmosphere to the exclusion of any other vehicle - probe, satellite or space platform.

3. Group 5C 1 unanimously adopted the following provisions for bands 117.975 - 132 and 132 - 136 Mc/s allocated to the aeronautical mobile R service (FX and MOB also in the part 132 - 136 Mc/s).

117,975 - 132		AERONAUTICAL MOBILE (R).	
		272 A 273	
132 - 136		132 - 136	FIXED
AERONAUTICAL MOBILE (R)			MOBILE 272 A 276
272 A 274 275			277 278

272 A. In the band 117.975 - 132 Mc/s and in the band 132 - 136 Mc/s, where the aeronautical mobile R service is authorized, the satellite relay stations of the aeronautical mobile R service may be used subject to coordination between the Administrations concerned.

3.1 Moreover, to facilitate the implementation of this note 272 A, the Group noted the following intentions :

- a) 274. The Delegations of BEL - F and HOL state that they no longer desire to take advantage of this number in the part 132 - 136 Mc/s.
- b) 279. The Delegation of AUS proposes the replacement of note 279 by the following :

279 (Rev.) In Australia the band 132 - 136 Mc/s is allocated to the aeronautical mobile service.

4. As regards aeronautical radionavigation, Group 5C 1, unanimously adopted the following modifications:

Mc/s

960 - 1215

AERONAUTICAL RADIONAVIGATION

341 Rev.

341 (Rev.) The band 960 - 1215 Mc/s is reserved on a world-wide basis for the use and development of airborne electronic aids to navigation and any directly associated ground-based facilities.

Mc/s

1540 - 1660

AERONAUTICAL RADIONAVIGATION

351 352 352A 352B

(New) 352 A The bands 1540 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are reserved, on a worldwide basis, for the use and development of airborne electronic aids to navigation and any directly associated ground-based facilities or satellites.

(New) 352 B The bands 1540 - 1660 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are also allocated to the aeronautical mobile R service for the use and development of systems applying space telecommunication techniques. This use and this development will be the subject of agreements and coordinating action between the Administrations concerned.

Mc/s

4200 - 4400	AERONAUTICAL RADIONAVIGATION
	<u>352 A</u> 381 382 383

5000 - 5250	AERONAUTICAL NAVIGATION
	<u>352 A</u> <u>352 B</u>

Gc/s

15.4 - 15.7	AERONAUTICAL RADIONAVIGATION
	<u>352 A</u> <u>352 B</u> 407

5. To provide for the use of frequencies in the aeronautical mobile R exclusive bands in the part 3.4 to 22 Mc/s for circuits between earth and the new types of aircraft or airspace vehicles, it was agreed that this question should be the subject of a recommendation to the forthcoming Extraordinary Administrative Aeronautical Radio Conference which will have to revise Appendix 26.

It was thought preferable that such a study should be made at a conference where numerous aeronautical specialists will be present rather than to endeavour to amend No. 429 during the present Space Conference.

6. As corollary to the new provisions in the preceding paragraphs, it was thought desirable to make a few suggestions concerning the interpretation of Nos. 33, 34, 35 and 52 of the Radio Regulations.
7. The text of the draft recommendation and that of the suggestions concerning Article 1 will be given in a page annexed to this report after their drafting by a small group.

Maurice CHEF

SPACE
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WORKING GROUP 5B1

DRAFT

SECOND REPORT BY WORKING GROUP 5B1

RADIO ASTRONOMY SERVICE

1. Band 10.68 - 10.7 Gc/s

1.1 Detailed consideration was given to all proposals concerning this band. These fall into three broad categories :

- a) the conversion of the existing allocation to the Radio Astronomy Service contained in foot-note 405 to an exclusive allocation,
- b) the transfer of the existing allocation to the body of the draft new Table with primary status on a shared basis with the existing allocation on a secondary basis to Radiolocation and with the exclusion of the Fixed and Mobile Services, and
- c) the retention of the present allocations but with an amendment to foot-note 405 making a cross-reference to the current relevant C.C.I.R. Report on protection to radio astronomy observations.

1.2 Four differing solutions were exposed as summarised below :

- a) a majority in favour of an exclusive allocation to the Radio Astronomy Service;
- b) a number of Delegations of countries in Region 1 and one in Region 2 wished to see no change to the existing allocations and associated foot-note;



- c) three Delegations of countries in Region 3 favoured the retention of the existing allocations with an amendment to foot-note 405 making a cross-reference to the current relevant C.C.I.R. Report. In this regard one Delegation suggested that while it would be appropriate to make reference in the Radio Regulations to C.C.I.R. Recommendations this was not so for C.C.I.R. Reports;
- d) one Delegation of a country in Region 1 wished to see allocation, on a primary basis, to the Radio Astronomy Service and, on a secondary basis, to the Radiolocation Service.

1.3 The Group recalls that Committee 6 is considering a new Regulation (No. 116A) relating to the extent of protection to be afforded to the Radio Astronomy Service from services in other bands.

1.4 A draft new Table for the band 10.68 - 10.7 Gc/s, reflecting the majority viewpoint as outlined above, appears in Appendix 1 attached hereto.

2. Bands 15.35-15.4 Gc/s, 19.3-19.4 Gc/s and 31.3-31.5 Gc/s

2.1 With respect to these bands Delegations supported in a similar manner solutions comparable to those mentioned in paragraphs 1.2 a), 1.2 b) and 1.2 c) above.

2.2 A draft new Table for each of the bands concerned, reflecting the majority viewpoint, appears in Appendices 2,3, and 4 respectively.

3. Band 10.23 - 10.25 Gc/s

The Delegation of the U.S.S.R. announced the withdrawal of its proposal concerning an allocation to the Radio Astronomy Service in this band.

Appendices : 4

W.A.E. NIELSEN
Chairman
Working Group 5B1

A P P E N D I X 1

Gc/s

Allocation to services		
Region 1	Region 2	Region 3
10.68 - 10.7 RADIO ASTRONOMY		

405 (sup)

A P P E N D I X 2

Gc/s

Allocation to services		
Region 1	Region 2	Region 3
15.35 - 15.4	RADIO ASTRONOMY	

405 (sup)

A P P E N D I X 3

Gc/s

Allocation to services		
Region 1	Region 2	Region 3
19.3 - 19.4	RADIO ASTRONOMY	

405 (sup)

A P P E N D I X 4

Gc/s

Allocation to services		
Region 1	Region 2	Region 3
31.3 - 31.5	RADIO ASTRONOMY	

405 (sup)

SPACE
RADIOCOMMUNICATION
CONFERENCE

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WORKING GROUP 5A

DRAFT

FIFTH REPORT OF WORKING GROUP 5A

COMMUNICATION-SATELLITE SERVICE

The Chairman, at the request of some of the smaller Delegations, gave a brief summary of the various C.C.I.R. Recommendations that had a bearing on the technical parameters governing the possibility of sharing radio frequency bands between the Communication-Satellite Service and terrestrial radio systems. He also referred to the four C.C.I.R. Recommendations which dealt with radio frequency channelling for radio relay systems in the 6 to 8 Gc/s portion of the radio spectrum, particularly in regard to the C.C.I.R. preferred frequency bands.

2. 7250 - 7300 Mc/s and 7975 - 8025 Mc/s

The Chairman then went on to make reference to the proposals for the two exclusive 50 Mc/s bands mentioned above, and pointed out that the proposed bands are situated between the C.C.I.R. preferred frequency bands for radio relay systems. He also noted that the proposals for these bands all indicated that the higher band was for transmission by earth stations, and the lower band, for transmissions by space stations. Comments on these bands were then invited. A great number of delegations stated their positions in regard to these proposals. A summary of the various positions is presented in the Annex to this report.



3. 7900 - 8400 Mc/s

3.1 The Chairman recalled that, of the proposals concerning the band 7900 - 8400 Mc/s, those relating to the exclusive allocation in the band 7925 - 8025 Mc/s had already been discussed. He therefore invited the Group to consider the proposals made by five Delegations for the Communication-Satellite Service in the remaining portion of the band. He pointed out that Japan proposed sharing between Space and the Fixed and Mobile Services in the entire band. The direction of transmission for all proposals was the same; namely, from the earth station.

3.2 The Delegations of the U.S.A., U.S.S.R., and U.K. outlined their views concerning the total amount of bandwidth considered necessary for the Communication-Satellite Service. The Delegate of Japan made reference to the sharing criteria and pointed out that for the band 6425 - 7125 Mc/s, preferred by the C.C.I.R. for radio relay systems with capacity of 2,700 telephone channels, the values recommended might prove inadequate and should therefore only be used by Administrations as a guide.

3.3 The Delegate of the U.S.S.R. indicated that he was against any use of this band for the Communication-Satellite Service.

3.4 Consideration of the proposals for this band will be continued at the next meeting.

P. MORTENSEN
Chairman
Working Group 5A

Annex : 1

A N N E X

SUMMARY OF PRESENT POSITION REGARDING
PROPOSAL FOR EXCLUSIVE ALLOCATION OF THE BANDS 7250 - 7300 Mc/s
AND 7985 - 8025 Mc/s TO COMMUNICATION-SATELLITE SERVICE

Country	7250 - 7300 Mc/s		7975 - 8025 Mc/s		Remarks
	Exclusive	Shared	Exclusive	Shared	
CAN	yes		yes		
F	yes		yes		
G	yes		yes		
USA	yes		yes		
D	yes		yes		
I	yes		yes		
HOL	yes		yes		
DNK	yes		yes		Reasonable time required to clear lower band
IRL	yes		yes		Reasonable time required to clear lower band
NZL	yes		yes		Reasonable time required to clear both bands
FOR	yes		yes		
ARG	yes		yes		FX MO required until 1970
PAK	yes		yes		
AUT	yes		yes		
CHN	yes		yes		FX MO required until 1970
CYP		yes	yes		
S		yes	yes		
LBR		yes	yes		
AES		yes	yes		
MLA		yes	yes		May be able to vacate FX and MO from lower band by 1970
GHA		yes	yes		

Country	7250 - 7300 Mc/s		7975 - 8025 Mc/s		Remarks
	Exclusive	Shared	Exclusive	Shared	
KEN		yes	yes		Awaiting information concerning possible vacation of lower band
UGA		yes	yes		
E		yes	yes		
EGY		yes	yes		
SUI		yes		yes	
YUG		yes		yes	
MRC		yes		yes	
J		yes		yes	
URS		yes	no	no	
TCH		yes	no	no	
POL		yes	no	no	
ROU		yes	no	no	
BLR		yes	no	no	
BUL		yes	no	no	
CUB		yes	no	no	
HNG		yes	no	no	

SPACE
RADIOCOMMUNICATION
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WORKING GROUP 5B2

DRAFT

SECOND REPORT BY WORKING GROUP 5B2

SPACE RESEARCH SERVICE

1. Band 2110 - 2120 Mc/s

1.1 All proposals concerning this band were considered.

1.2 The Group unanimously agreed that this particular provision could be accommodated in a new foot-note as shown in Appendix 1 attached hereto. The Delegation of Pakistan, however, stated that they could not accept harmful interference to the existing Fixed and Mobile Services from the use of this band for telecommand in deep space research, and would consider requesting the addition of a suitable foot-note, to this effect.

2. Band 5250 - 5255 Mc/s

2.1 All proposals concerning this band were considered. With regard to the Nigerian proposal which, in its published form, provides for primary allocation to the SPACE RESEARCH and RADIOLOCATION Services and the deletion of foot-note 384, the Delegate of the U.S.S.R. confirmed that he was unable to relinquish the derogation from the Table authorising the RADIO-NAVIGATION Service as an additional service in his country. The Nigerian proposal remained without support.

2.2 Since all remaining proposals amounted to an editorial change in the existing allocations, the draft new Table for this band appearing in Appendix 2 attached hereto was unanimously agreed by the Group.

3. Band 8400 - 8500 Mc/s

3.1 Detailed consideration was given to all proposals before the Conference concerning this band.



3.2 The Delegation of France confirmed that its proposal was for a world-wide allocation to the Fixed and Mobile Services on a primary basis with the Space Research Service on a secondary basis.

3.3 From the discussion three solutions emerged as follows :

- a) a clear majority of Delegations were in favour of world-wide allocation to the SPACE RESEARCH, FIXED and MOBILE Services with a modification to foot-note 394;
- b) three Delegations were in favour of the exclusive allocation to the SPACE RESEARCH Service;
- c) three Delegations were in favour of world-wide allocation to the FIXED and MOBILE Services on a primary basis and to the Space Research Service on a secondary basis.

3.4 A draft new Table for the band 8400 - 8500 Mc/s, reflecting the majority viewpoint as outlined above, appears in Appendix 3 attached hereto.

4. Band 15.25 - 15.35 Gc/s

4.1 All proposals concerning this band were considered.

4.2 Three possible solutions were found. These are enumerated in Appendix 4 attached hereto together with an indication of the Delegations which expressed their views. Appendix 4, therefore, attempts to do no more than to reflect the present position of Delegations with respect to these possible solutions.

4.3 The Delegations of Argentina and Sweden conditioned their support for the exclusive allocation to the Space Research Service on a decision that the allocation of the adjacent band, 15.15 - 15.25 Gc/s, will be to the Fixed and Mobile Services on a primary basis.

5. Band 31.5 - 31.8 Gc/s

5.1 All proposals concerning this band were considered. The Delegation of the U.S.S.R. confirmed that the allocations to the Fixed and Mobile Services in their proposal should be shown as being on a secondary basis.

5.2 Two distinct solutions emerged from the views expressed, as follows :

- a) a clear majority of Delegations were in favour of a world-wide allocation on a primary basis to the SPACE RESEARCH Service, shared with an allocation, on a secondary basis, to the Fixed and Mobile Services;

- b) the Delegations of Canada, Spain, France and the U.S.A. favoured a world-wide exclusive allocation to the SPACE RESEARCH Service.

5.3 A draft new Table for the band 31.5 - 31.8 Gc/s, reflecting the majority viewpoint as outlined above, appears in Appendix 5 attached hereto.

B. DESTA
Chairman
Working Group 5B2

Appendices : 5

APPENDIX 1

ADD 356A The band 2110 - 2120 Mc/s may be used for telecommand in conjunction with spacecraft engaged in deep space research, subject to agreement between the Administrations concerned and those whose services, operating in accordance with the Table, may be affected.

APPENDIX 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
5250 - 5255	RADIOLOCATION Space Research	
	384	

MOD

NOC 384 In Albania, Austria, Bulgaria, Hungary, Roumania, Sweden, Switzerland, Czechoslovakia and the U.S.S.R., the band 5250 - 5350 Mc/s is also allocated to the radionavigation service.

APPENDIX 3

Allocation to Services			
	Region 1	Region 2	Region 3
ADD	8400 - 8500	SPACE RESEARCH FIXED MOBILE	
MOD		394	

MOD 394 In the United Kingdom, the band 8250 - 8400 Mc/s and in Australia, the band 8250 - 8500 Mc/s are allocated to the radio-location service; in Australia, the band 8400 - 8500 Mc/s is also allocated, on a secondary basis, to the space research service.

APPENDIX 4

BAND 15.25 - 15.35 Gc/s

World-wide

SPACE RESEARCH

AFS

ARG

CAN

E

F

NOR

S

USA

World-wide

SPACE RESEARCH

FIXED

MOBILE

BUL

CUB

HNG

ROU

TCH

URS

World-wide

SPACE RESEARCH

Fixed

Mobile

AUT

D

G

J

NZL

POR

SUI

APPENDIX 5

Gc/B

Allocation to Services		
Region 1	Region 2	Region 3
31.5 - 31.8	SPACE RESEARCH Fixed Mobile	

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/35-E
20 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5C

AGENDA

SIXTH MEETING OF WORKING GROUP 5C

Monday, 21 October at 0930, Room A

1. To resume consideration of Radionavigation-Satellites
(Document No. DT/21)
2. To further consider proposals for Meteorological Satellites
(Documents Nos. DL/15 and DT/36)
3. Any other business.

J.T. PENWARDEN
Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/36-E
20 October 1963
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Geneva, 1963

WORKING GROUP 5C

METEOROLOGICAL SATELLITES

At the fifth Meeting of Working Group 5C on Thursday 17 October the numerous proposals for the allocation of bands for the use of Space Communications by the Meteorological Service were considered.

The intended use by the proposers of the bands concerned and the reasons for choosing the frequencies in question were explained in detail by the respective Delegations. It is not intended to summarise these explanations here, however the Working Group may care to consider the following features which emerged from the discussion :

- a) that, as for the Radionavigation Service, access to Space by the Meteorological Service will be of ultimate benefit to all nations irrespective of their ability to launch Meteorological Satellites at this time;
- b) that despite differences in some of the frequencies proposed there was significant agreement amongst all of the proposals on the uses to which these bands will be put and the systems to be employed.

Whilst the foregoing may suggest a simple basis for agreement by negotiation there nevertheless remains the problem of reconciling the operation of Meteorological Satellites with those of other Services at present shown in the Table or Footnotes. This is, of course, a problem in no way unique to Meteorological Satellites and it is suggested that the Working Group may prefer to consider first the possibility of achieving agreement on the basis of (a) and (b) above before returning to the problem of sharing, preparing footnotes, or whether or not exclusive use for this Service is essential.

To assist in assessing the situation the summary at the Appendix is provided.

J.T. PENWARDEN
Chairman

Appendix : 1



APPENDIX

1) 137-138 Mc/s

Region 1	Region 2	Region 3
METEOROLOGICAL SATELLITE SPACE (Telemetry and Tracking) Fixed Mobile (except Aeronautical Mobile)		

1A)

METEOROLOGICAL SATELLITE SPACE AERONAUTICAL MOBILE (OR)

Alternative proposal for Region 1

2) 400.05-401 Mc/s

METEOROLOGICAL AIDS METEOROLOGICAL SATELLITES SPACE (Telemetering and Tracking)

3) 460-470 Mc/s

METEOROLOGICAL AIDS FIXED MOBILE
--

4) 1660-1670

METEOROLOGICAL SATELLITE METEOROLOGICAL AIDS

4A)

METEOROLOGICAL SATELLITE FIXED MOBILE (except Aeromobile)

Alternative proposals appropriate for
Region 1

4B)

METEOROLOGICAL SATELLITE Fixed Mobile (except Aeromobile)

- 5A) 1690-1700 Mc/s
- | Region 1 | Region 2 | Region 3 |
|--|----------|----------|
| METEOROLOGICAL AIDS
METEOROLOGICAL SATELLITES | | |
- 5B) 1690-1700 Mc/s
- | | |
|--|--|
| METEOROLOGICAL SATELLITES
Fixed
Mobile (except Aeromobile) | Alternative proposal appropriate for
Region 1 |
|--|--|
- 5C) 1770-1790 Mc/s
- | | |
|--|--|
| METEOROLOGICAL SATELLITES
FIXED
Mobile | METEOROLOGICAL SATELLITES
FIXED
MOBILE |
|--|--|
- 6A) 7200-7250 Mc/s
- | |
|--|
| COMMUNICATIONS SATELLITES
FIXED
MOBILE |
|--|
- 6B) 7650-7750 Mc/s
- | |
|--|
| METEOROLOGICAL SATELLITE
COMMUNICATION SATELLITE
FIXED
MOBILE |
|--|
- 7A) 9800-10000 Mc/s
- A footnote to provide 100 Mc/s at this order for weather radar aboard meteorological satellites.
- 7B) 10.700-11700 Mc/s
-
- 8) 33.4-36.0 Gc/s
- A footnote to provide at either the lower or upper end of this band, 100 Mc/s for a radiolocation device for cloud detection.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/37-E
20 October, 1963

Geneva, 1963

WORKING GROUP 5B1

AGENDA

FIFTH MEETING OF WORKING GROUP 5B1

Monday, 21 October, at 2.30 p.m.

RADIO ASTRONOMY SERVICE

1. Consideration of remaining proposals

Bands 150 - 153 Mc/s (Document No. DT/10, page 4)
606 - 614 Mc/s (Document No. DT/10, page 6)
404 - 410 Mc/s (Document No. DT/10, page 5)
1664.4 - 1668.4 Mc/s (Document No. DT/10, page 7 bis)
also Document No. 17, Annexes 5, 8A, 7 and 10 respectively.

2. Adoption of Draft First Report (Document No. DT/25)

Bands 2.5 Mc/s, 5 Mc/s, 10 Mc/s, 20 Mc/s, foot-note 204
1400 - 1427 Mc/s
2690 - 2700 Mc/s
4990 - 5000 Mc/s

3. Adoption of Draft Second Report (Document No. DT/32)

Band 10.68 - 10.7 Gc/s
Bands 15.35 - 15.4 Gc/s, 19.3 - 19.14 Gc/s and 31.3 - 31.5 Gc/s.

W.A.E. NIELSEN
Chairman
Working Group 5B1



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/32-E (Rev.)
22 October, 1963
Original : English

Geneva, 1963

WORKING GROUP 5B2

DRAFT

THIRD REPORT OF WORKING GROUP 5B2

SPACE RESEARCH SERVICE

1. Band 136 - 137 Mc/s

1.1 All proposals providing for the allocation of this band to the Space Research Service were considered.

1.2 The Delegations of Canada, France, the U.S.A., Japan and South Africa proposed the exclusive allocation to the Space Research or the Space Research (Telemetry and Tracking) Service. The Delegation of Japan amended its proposal to provide for a new foot-note authorizing existing fixed and mobile operations to continue in this band but to vacate by 1 January 1969. The Delegation of the United Kingdom withdrew its proposal in favour of exclusive allocation to the Space Research Service.

1.3 There was no support for the Nigerian proposal in its published form, i.e. SPACE RESEARCH and TELEMETRY, Fixed and Mobile (except aeronautical Mobile).

1.4 Bearing in mind the proposals under consideration in the various Working Groups of Committee 5 for the two bands 136 - 137 Mc/s and 137 - 138 Mc/s, the Delegation of the U.S.S.R. amended their proposal for the band 136 - 137 Mc/s as follows:

136 - 137 Mc/s

TELEMETERING, TRACKING
METEOROLOGICAL - SATELLITE
SPACE RESEARCH
FIXED
MOBILE

275 279 281

However, in view of the complexity of the various proposals for the portion of the spectrum 136 - 138 Mc/s, the Delegation of the U.S.S.R., supported by the Delegations of Yugoslavia, India and Cuba, suggested the constitution of a joint ad hoc Group to consider the various proposals for allocations to all space services in this band.



1.5 Working Group 5B2 unanimously agreed with this suggestion and Dr. V. Popović was invited to act as Convenor of the Group.

2. Band 400.05 - 401 Mc/s

2.1 All proposals providing for an allocation in this band to the Space Research Service were considered.

2.2 The Delegation of Japan amended its published proposal to read 400.05 - 401 Mc/s.

2.3 There was no support in the Group for the Nigerian proposal to down-grade the category of the Meteorological Aids Service (RR 76) from primary to secondary status.

2.4 The Delegation of the U.S.S.R. confirmed that in its proposal Telemetering and Tracking related to the Space Research Service and that foot-notes 312 and 313 should be retained unchanged except that, if the band 400.05 - 401 Mc/s is allocated in the draft new Table to Space Services, a consequential change should be considered with respect to foot-note 313 so that it would read "also allocated".

2.5 The Delegations of Greece and Sweden agreed to amend foot-note 312 to read 400.05 Mc/s instead of 400 Mc/s, but need time in which to vacate existing fixed and mobile operations from the band 400.05 - 401 Mc/s.

2.6 There was agreement to amend foot-notes 312 and 313 so that they refer to the band 400.05 - 401 Mc/s and to amend foot-note 314 to exclude the band 400 - 401 Mc/s.

2.7 Two possible solutions were put forward, namely: sharing between METEOROLOGICAL AIDS and SPACE RESEARCH (Telemetering and Tracking) with foot-notes 312 and 313 retained, or, sharing between METEOROLOGICAL-SATELLITE and SPACE RESEARCH (Telemetering and Tracking) with foot-notes 312 and 313 retained.

2.8 The Group agreed to give further study to this band at the next meeting.

3. Band 2290 - 2300 Mc/s

3.1 All proposals for the band were considered. The proposal by Nigeria and that by Japan were not supported in their published form.

3.2 The Delegation of France clarified their proposal as relating to Region 1 and that they had no intention of implying proposals for Regions 2 and 3.

3.3 The Delegation of the United Kingdom withdrew their proposal in favour of the exclusive allocation to SPACE RESEARCH on a world-wide basis.

3.4 Two solutions were retained as follows:

- a) a large majority of Delegations were in favour of the following allocations:

Region 1

SPACE RESEARCH
(Telemetering and Tracking
in deep space)
FIXED
MOBILE

Regions 2 and 3

SPACE RESEARCH
(Telemetering and Tracking
in deep space)
FIXED
MOBILE

- b) The Delegations of Canada, the U.S.A., the United Kingdom, Spain, Argentina, Jamaica, China, South Africa and Ireland were in favour of an exclusive allocation on a world-wide basis to

SPACE RESEARCH
(Deep space research)

3.5 A draft new Table for the band 2290 - 2300 Mc/s, reflecting the majority viewpoint as outlined above, appears in the Appendix attached hereto.

B. DESTA

Chairman
Working Group 5B2

Appendix: 1

APPENDIX

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
2290 - 2300 FIXED SPACE RESEARCH (Telemetry and Tracking in deep space) Mobile	2290 - 2300 FIXED MOBILE SPACE RESEARCH (Telemetry and Tracking in deep space)	

SUP 355

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/38-E
21 October, 1963
Original : English

WORKING GROUP 5B2

DRAFT

THIRD REPORT OF WORKING GROUP 5B2

SPACE RESEARCH SERVICE

1. Band 136 - 137 Mc/s

1.1 All proposals providing for the allocation of this band to the Space Research Service were considered.

1.2 The Delegations of Canada, France, the U.S.A., Japan and South Africa proposed the exclusive allocation to the Space Research or the Space Research (Telemetering and Tracking) Service. The Delegation of Japan amended its proposal to provide for a new foot-note authorizing existing fixed and mobile operations to continue in this band but to vacate by 1 January 1969. The Delegation of the United Kingdom withdrew its proposal in favour of exclusive allocation to the Space Research Service.

1.3 There was no support for the Nigerian proposal in its published form, i.e. SPACE RESEARCH and TELEMETRY, Fixed and Mobile (except aeronautical Mobile).

1.4 Bearing in mind the proposals under consideration in the various Working Groups of Committee 5 for the two bands 136 - 137 Mc/s and 137 - 138 Mc/s, the Delegation of the U.S.S.R. amended their proposal for the band 136 - 137 Mc/s as follows:

136 - 137 Mc/s

TELEMETERING, TRACKING
METEOROLOGICAL - SATELLITE
SPACE RESEARCH
FIXED
MOBILE

275 279 281

However, in view of the complexity of the various proposals for the portion of the spectrum 136 - 138 Mc/s, the Delegation of the U.S.S.R., supported by the Delegations of Yugoslavia, India and Cuba, suggested the constitution of a joint ad hoc Group to consider the various proposals for allocations to all space services in this band.

1.5 Working Group 5B2 unanimously agreed with this suggestion and Dr. V. Popović was invited to act as Convenor of the Group.

2. Band 400.05 - 401 Mc/s

2.1 All proposals providing for an allocation in this band to the Space Research Service were considered.

2.2 The Delegation of Japan amended its published proposal to read 400.05 - 401 Mc/s.

2.3 There was no support in the Group for the Nigerian proposal to down-grade the category of the Meteorological Aids Service (RR 76) from primary to secondary status.

2.4 The Delegation of the U.S.S.R. confirmed that in its proposal Telemetering and Tracking related to the Space Research Service and that foot-notes 312 and 313 should be retained unchanged except that, if the band 400.05 - 401 Mc/s is allocated in the draft new Table to Space Services, a consequential change should be considered with respect to foot-note 313 so that it would read "also allocated".

2.5 The Delegation of France, supported by the Delegations of Yugoslavia and Spain, proposed a change in the Table providing for the band in question to begin at 400.05 Mc/s instead of 400 Mc/s and that, should the band be allocated on a shared basis to METEOROLOGICAL AIDS and SPACE RESEARCH, consequential changes to foot-notes 312, 313 and 314 should be considered.

2.6 The Delegations of Greece and Sweden agreed to amend foot-note 312 to read from 400 - 400.05 Mc/s so as to allow the new allocation to SPACE RESEARCH but need time in which to vacate existing fixed and mobile operations from the band. The Delegation of Yugoslavia, however, while agreeing to amend the foot-note to read from 400.05 - 401 Mc/s was unable to give up the derogation from the Table for the Fixed and Mobile Services.

2.7 The Delegations of Bulgaria, Hungary, Poland, Roumania, Czechoslovakia and the U.S.S.R. agreed to amend foot-note 313 to read "the band 400.05 - 401 Mc/s etc..", but were unable to give up the derogation from the Table for the Fixed and Mobile Services.

2.8 The Delegation of the United Kingdom agreed to amend foot-note 314 to exclude the portion 400 - 401 Mc/s.

2.9 The Group agreed to give further study to this band at a future meeting.

3. Band 2290 - 2300 Mc/s

3.1 All proposals for the band were considered. The proposal by Nigeria and that by Japan were not supported in their published form.

3.2 The Delegation of France clarified their proposal as relating to Region 1 and that they had no intention of implying proposals for Regions 2 and 3.

3.3 The Delegation of the United Kingdom withdrew their proposal in favour of the exclusive allocation to SPACE RESEARCH on a world-wide basis.

3.4 Two solutions were retained as follows:

- a) a large majority of Delegations were in favour of the following allocations:

Region 1

SPACE RESEARCH
(Telemetering and Tracking
in deep space)
FIXED
MOBILE

Regions 2 and 3

SPACE RESEARCH
(Telemetering and Tracking
in deep space)
FIXED
MOBILE

- b) The Delegations of Canada, the U.S.A., the United Kingdom, Spain, Argentina, Jamaica, China, South Africa and Ireland were in favour of an exclusive allocation on a world-wide basis to

SPACE RESEARCH
(Deep space research)

3.5 A draft new Table for the band 2290 - 2300 Mc/s, reflecting the majority viewpoint as outlined above, appears in the Appendix attached hereto.

B. DESTA

Chairman

Working Group 5B2

Appendix: 1

A P P E N D I X

Mc/s

Allocation to Services		
Region 1.	Region 2	Region 3
2290 - 2300 FIXED SPACE RESEARCH (Telemetry and Tracking in deep space) Mobile	2290 - 2300	FIXED MOBILE SPACE RESEARCH (Telemetry and Tracking in deep space)

SUP 355

SPACE
RADIOCOMMUNICATION
CONFERENCE

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21 October 1963
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Geneva, 1963

WORKING GROUP 5A

DRAFT

SIXTH REPORT OF WORKING GROUP 5A

COMMUNICATION-SATELLITE SERVICE

1. The Fifth Meeting of Working Group 5A was held on 18 October, 1963.
2. Band 136 - 138 Mc/s
 - 2.1 The Chairman reported to the Group that at a co-ordination meeting within Committee 5 it was agreed to invite Dr. Popovic, Head of the Yugoslavian Delegation to be Chairman of a joint ad hoc Working Group to deal with proposals for all services in the band 136 - 138 Mc/s. This Group would report to Working Groups 5A, 5B and 5C. The Chairman made the proposal and was supported by several Delegations. Dr. Popovic said he would be pleased to assume this task. Mr. Klein, speaking as Chairman of Committee 5, suggested the ad hoc Group should meet the following day.
3. Bands 7900 - 7975 Mc/s and 8025 - 8400 Mc/s
 - 3.1 The Chairman resumed discussion on these bands and invited further comment, specifically from those Delegations who might have some difficulty in agreeing to the proposals under consideration.
 - 3.2 The Delegate of the U.S.S.R. reiterated the statement made at the Fourth Meeting to the effect that an allocation of 1600 Mc/s to the Communication-Satellite Service should be sufficient. He again indicated that he was unable to agree to the proposed allocation of these bands. The U.S.S.R. position was shared by Bulgaria, Hungary, Poland, Roumania, Czechoslovakia and Cuba. No other Delegations indicated that these proposals would be unacceptable. The Group agreed to return to this band at a later meeting.



4. Bands 7250 - 7300 Mc/s and 7975 - 8025 Mc/s

The United Arab Republic referred to the Annex of Document No. DT/33 and indicated that the entries concerning his country should be amended. New Zealand also requested that an amendment be made concerning the entry for his country. Both amendments were noted for a future meeting when the draft Fifth Report contained in Document No. DT/33 will be brought before the Group for further consideration.

5. Band 6425 - 7150 Mc/s

5.1 The U.S.S.R., Bulgaria, Hungary, Poland, Roumania, Czechoslovakia and Cuba indicated that they were unable to accept the proposals for this band. Italy informed the Group that his Administration was prepared to amend the band-limits in foot-note 393 to read "6450 - 6575 Mc/s".

5.2 The direction of transmission in this band was discussed at considerable length. It was finally decided to postpone further consideration of this subject as the direction of transmission for this band might be affected by the proposals for other bands which the Group had yet to consider.

5.3 Switzerland proposed that the upper limit of this band could be changed to 6950 Mc/s to obtain a band of 300 Mc/s (6950 - 7250 Mc/s) which would not be allocated to the Space Service, and therefore could accommodate those fixed and mobile services which could not share with Space Services. Italy suggested that such a reduction should be made in the lower part of the band. It was decided to give this proposal further study and to return to it at a later meeting.

6. Band 4400 - 4700 Mc/s

6.1 The U.S.S.R. introduced this proposal. The U.S.A., United Kingdom, F.R. of Germany, Portugal, Denmark, Malaya, Italy and Canada indicated that they employed fixed and transportable equipment in this band operating with high power in excess of that recommended by the C.C.I.R. for the shared bands. No large measure of agreement for this proposal was evident at this stage.

6.2 It was decided to give this proposal further study and to return to it at a later meeting.

7. Band 1750 - 2250 Mc/s

7.1 The United Kingdom introduced this proposal and was later supported by Australia and New Zealand. Japan, Italy, Portugal, France, Cuba, the Netherlands, India, Canada, the F.R. of Germany, Belgium, Pakistan, Liberia, Indonesia, the U.S.S.R., Austria and China regretted they were unable to agree with the proposal. Switzerland was not against this proposal but was unable to withdraw foot-note 356. It appeared therefore that no large measure of agreement for this proposal existed.

7.2 It was decided to give this proposal further study and to return to it at a later meeting.

8. The Chairman pointed out that the Group had now reviewed all the proposals, and stated that he would like to establish a small ad hoc Group to assist him in finding areas where a larger measure of agreement could be reached at future meetings of Working Group 5A. Accordingly, the Group agreed to constitute Working Group 5A ad hoc under the Chairman to assist him in finding wider areas of agreement on all bands remaining in abeyance.

9. Band 449.75 - 450.25 Mc/s

The Chairman referred to Document No. DT/18 (Draft Second Report by Working Group 5A), paragraph 4 and the attached Appendix 2, and asked if the proposed foot-note for this band was acceptable. It appeared that the Group preferred a wording more in line with that proposed by the United States. A revised foot-note 319A is given in the Appendix attached hereto.

10. Bands 148.25 Mc/s and 154.2 Mc/s

The Chairman then referred to Document No. DT/30 (Draft Third Report by Working Group 5A), paragraph 3, together with its Appendix. He pointed out the similarity between the proposed foot-note for these frequencies and the one just considered. It was agreed that this foot-note should also be amended in the same manner. A revised foot-note 285A is given in the Appendix attached hereto.

P. MORTENSEN
Chairman
Working Group 5A

Appendix: 1

A P P E N D I X

Add 319A The band 449.75 - 450.25 Mc/s may be used for space telecommand, subject to agreement among the Administrations concerned and those whose services, operating in accordance with the Table, may be affected.

Add 285A The frequencies $148.25 \text{ Mc/s} \pm 15 \text{ Kc/s}$ and $154.2 \text{ Mc/s} \pm 15 \text{ Kc/s}$ may be used for space telecommand, subject to agreement among the Administrations concerned and those whose services, operating in accordance with the Table, may be affected.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/40-E (Rev.)
22 October, 1963
Original: English

WORKING GROUP 5B 1

DRAFT

THIRD REPORT BY WORKING GROUP 5B 1

RADIO ASTRONOMY SERVICE

1. Band 37.75 - 38.25 Mc/s

1.1 All proposals concerning this band were considered.

1.2 Initially a discussion centred around accomodating the new requirement for an allocation, on a secondary basis, to the Radio Astronomy Service, in a new foot-note. After the Delegations of Australia, and the United Kingdom respectively had withdrawn their proposals in favour of that submitted by Canada, unanimous agreement was reached on showing the new allocation in the body of the Table.

1.3 The resultant draft new Table for the band concerned appears in Appendix 1 attached hereto.

2. Band 73.0 - 74.6 Mc/s

2.1 In presenting the proposal for an exclusive allocation to the Radio Astronomy Service for Region 2, the Delegation of Canada suggested that consideration be given to the extension of such an allocation to Regions 1 and 3 also, with a foot-note provision authorizing the continuance of existing fixed and mobile operations on a non-interference basis to the Radio Astronomy Service and on a world-wide basis.

2.2 Strong opposition to such extension was manifested by Delegations of countries situated in Regions 1 and 3. The Delegation of Cuba stated that they were unable to accept the proposal for Region 2 and moved the retention of the present provisions contained in foot-note 253 unchanged. The resultant draft new Table for the band 73.0 - 74.6 Mc/s appears in Appendix 2 attached hereto.



3. Band 33.0 - 33.4 Gc/s

3.1 The proposal concerning this band was for an allocation on a world-wide basis to the Radio Astronomy Service in addition to the existing Radio-navigation Service. Eight Delegations were in favour of this proposal, while one expressed agreement to the allocation to the Radio Astronomy Service on a secondary basis and another was against the introduction of an allocation to the Radio Astronomy Service in this band.

3.2 A draft new Table for the band concerned, reflecting the majority viewpoint as outlined above, appears in Appendix 3 attached hereto.

4. Band 33.4 - 34.0 Gc/s

4.1 The proposal concerning this band was for a primary allocation to the Radio Astronomy Service and for a band of 100 Mc/s within this band to the Meteorological-Satellite Service with the retention of the existing foot-notes 407, 408 and 412 unchanged.

4.2 With respect to the proposed allocation to the Radio Astronomy Service, eight Delegations supported this allocation and the retention of the associated foot-notes while two were against any change to the existing Table in this regard.

4.3 In agreeing the draft new Table, with respect to the allocation to the Radio Astronomy Service, as shown in Appendix 4 attached hereto, the Group transmits the remainder of the proposal, which concerns the Meteorological-Satellite Service, to Working Group 5C for consideration and transmission to Committee 5.

5. Band 36.5 - 37.5 Gc/s

5.1 Eight Delegations supported the proposal to allocate this band to the Radio Astronomy, Fixed and Mobile Services all on a primary basis. One Delegation was unable to agree to the introduction of the Radio Astronomy Service in this band.

5.2 A draft new Table for the band concerned, reflecting the majority viewpoint as outlined above, appears in Appendix 5 attached hereto.

W.A.E. NIELSEN
Chairman
Working Group 5B 1

Appendices : 5

A P P E N D I X 1

Mc/s

ADD

Allocation to Services				
Region 1	Region 2			Region 3
37.75 - 38.25	FIXED	228	229	230 231
	MOBILE			
	Radio Astronomy			
	233	235		

NOC 228

NOC 229

NOC 230

NOC 231

NOC 233

SUP 234

235 [Working Group 5B 2]

A P P E N D I X 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
73.0 - 74.6	RADIO ASTRONOMY	
	253A	

SUP 253

ADD 253 A In Region 2, fixed and mobile service operations previously authorized in the band 73 - 74.6 Mc/s may continue to operate on a non-interference basis to the radio astronomy service.

APPENDIX 3

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
33.0 - 33.4	RADIO ASTRONOMY RADIONAVIGATION	

A P P E N D I X 4

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
ADD (WG 5C) 33.4 - 34.0	RADIO ASTRONOMY METEOROLOGICAL-SATELLITE (100 Mc/s only in this band) 407 408 412	
NOC 407		
NOC 408		
NOC 412		

A P P E N D I X 5

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
36.5 - 37.5	FIXED MOBILE RADIO ASTRONOMY	

SPACE
RADIOCOMMUNICATION
CONFERENCE

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WORKING GROUP 5B 1

DRAFT

THIRD REPORT BY WORKING GROUP 5B 1

RADIO ASTRONOMY SERVICE

1. Band 37.75 - 38.25 Mc/s

1.1 All proposals concerning this band were considered.

1.2 Initially a discussion centred around accomodating the new requirement for an allocation, on a secondary basis, to the Radio Astronomy Service, in a new foot-note. After the Delegations of Australia, and the United Kingdom respectively had withdrawn their proposals in favour of that submitted by Canada, unanimous agreement was reached on showing the new allocation in the body of the Table.

1.3 The resultant draft new Table for the band concerned appears in Appendix 1 attached hereto.

2. Band 73.0 - 74.6 Mc/s

2.1 In presenting the proposal for an exclusive allocation to the Radio Astronomy Service for Region 2, the Delegation of Canada suggested that consideration be given to the extension of such an allocation to Regions 1 and 3 also, with a foot-note provision authorizing the continuance of existing fixed and mobile operations on a non-interference basis to the Radio Astronomy Service and on a world-wide basis.

2.2 Strong opposition to such extension was manifested by Delegations of countries situated in Regions 1 and 3. The Delegation of Cuba stated that they were unable to accept the proposal for Region 2 and moved the retention of the present provisions contained in foot-note 253 unchanged. The resultant draft new Table for the band 73.0 - 74.6 Mc/s appears in Appendix 2 attached hereto.



3. Band 33.0 - 33.4 Gc/s

3.1 The proposal concerning this band was for an allocation on a world-wide basis to the Radio Astronomy Service in addition to the existing Radio-navigation Service. Eight Delegations were in favour of this proposal, while one expressed agreement to the allocation to the Radio Astronomy Service on a secondary basis and another was against the introduction of an allocation to the Radio Astronomy Service in this band.

3.2 A draft new Table for the band concerned, reflecting the majority viewpoint as outlined above, appears in Appendix 3 attached hereto.

4. Band 33.4 - 34.0 Gc/s

4.1 The proposal concerning this band was for a primary allocation to the Radio Astronomy Service and for a band of 100 Mc/s within this band to the Meteorological-Satellite Service with the retention of the existing foot-notes 407, 408 and 412 unchanged.

4.2 With respect to the proposed allocation to the Radio Astronomy Service, eight Delegations supported this allocation and the retention of the associated foot-notes while two were against any change to the existing Table in this regard.

4.3 In agreeing the draft new Table, with respect to the allocation to the Radio Astronomy Service, as shown in Appendix 4 attached hereto, the Group transmits the remainder of the proposal, which concerns the Meteorological-Satellite Service, to Working Group 5C for consideration and transmission to Committee 5.

5. Band 36.5 - 37.5 Gc/s

5.1 Eight Delegations supported the proposal to allocate this band to the Radio Astronomy, Fixed and Mobile Services all on a primary basis. One Delegation was unable to agree to the introduction of the Radio Astronomy Service in this band.

5.2 A draft new Table for the band concerned, reflecting the majority viewpoint as outlined above, appears in Appendix 5 attached hereto.

W.A.E. NIELSEN
Chairman
Working Group 5B 1

A P P E N D I X 1

Mc/s

Allocation to Services					
Region 1		Region 2		Region 3	
ADD	37.75 - 38.25	FIXED	228	229	230 231
		MOBILE			
		Radio Astronomy			
		233	235		

NOC 228

NOC 229

NOC 230

NOC 231

NOC 233

SUP 234

235 [Working Group 5B 2]

APPENDIX 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
ADD 73.0 - 74.6	RADIO ASTRONOMY	
ADD	253A	

SUP 253

ADD 253 A In Region 2, fixed and mobile service operations previously authorized in the band 73 - 74.6 Mc/s may continue to operate on a non-interference basis to the radio astronomy service.

A P P E N D I X 3

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
33.0 - 33.4	RADIO ASTRONOMY RADIONAVIGATION	

A P P E N D I X 4

Gc/s

Allocation to Services			
Region 1		Region 2	
Region 1		Region 3	
ADD (WG 5C)	33.4 - 34.0	RADIO ASTRONOMY METEOROLOGICAL-SATELLITE (100 Mc/s only in this band)	
		407	408 412
NOC	407		
NOC	408		
NOC	412		

A P P E N D I X 5

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
36.5 - 37.5	FIXED MOBILE RADIO ASTRONOMY	

CONFERENCE DES
RADIOCOMMUNICATIONS
SPATIALES

Document N° DT/41-F/E
21 octobre 1963
Original : français,
anglais

Genève, 1963

GROUPE DE TRAVAIL 4A
WORKING GROUP 4A

PROPOSITIONS PROVISOIRES POUR LES TERMES ET DEFINITIONS
TENTATIVE PROPOSALS FOR TERMS AND DEFINITIONS

Deuxième Partie

Second Part

(1ère Partie : voir Document N° DT/28)
(1st Part : See Document No. DT/28)

B7 Satellite passif

Satellite de la Terre destiné à transmettre des signaux de radio-communications par réflexion ou diffusion.

Passive Satellite

An earth satellite intended to transmit radiocommunication signals by reflection or by scattering.

B8 Station terrienne de radiocommunications par satellites

Station terrienne du service de radiocommunication par satellites.

Radiocommunication satellite earth station

An earth station in the radiocommunication-satellite system.

B9 Système à satellites

Tout ensemble de stations, coopérant entre elles, assurant un service spatial [donné], et comprenant un ou plusieurs satellites actifs ou passifs.

Satellite System

Any group of co-operating stations providing a [given] space service and including one or more active or passive satellites.



B10 Service de recherche spatiale

Service spatial dans lequel on utilise des engins spatiaux pour la recherche scientifique ou technique.

Space research service

A space service in which space craft are used for scientific or technological research purposes.

B11 Station spatiale de recherche spatiale

Station spatiale du service de recherche spatiale.

Space research space station

A space station in the space research service.

B12 Station terrienne de recherche spatiale

Station terrienne du service de recherche spatiale.

Space research earth station

An earth station in the space research service.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/42-E
21 October 1963
Original: English

WORKING GROUP 5A

AGENDA

SIXTH MEETING OF WORKING GROUP 5A

Tuesday, 22 October at 09.30 (9.30 a.m.)

Reference documents: No. DT/7, No. DT/18, No. DT/30, No. DT/29, No. DT/39,
No. DT/13 and No. DT/12.

Telecommand

1. Frequencies 148.25 Mc/s and 154.2 Mc/s (Document No. DT/39)
2. Band 449.75-450.25 Mc/s (Document No. DT/39)
3. Band 1427-1429 Mc/s (Document No. DT/7)

Telemetry and Tracking

4. Band 1535-1540 Mc/s (Document No. DT/18)
5. Band 1525-1535 Mc/s (Document No. DT/18)
6. Band 401-402 Mc/s (Document No. DT/18)
7. Band 267-273 Mc/s (Document No. DT/30)

Communication Satellites

8. Band 5725-6425 Mc/s (Document No. DT/29)
9. Band 3400-4200 Mc/s (Document No. DT/29)

P. MORTENSEN
Chairman
Working Group 5A



Geneva, 1963

WORKING GROUP 4A

PROVISIONAL PROPOSALS FOR THE
TERMS AND DEFINITIONS
FIRST AND SECOND PARTS
(SEE DOCUMENTS DT/28 AND 41)

B. SPACE SERVICES AND STATIONS AND RELATED TERMS (cont.)

B.13 Broadcasting Satellite Service¹⁾

A space service in which signals transmitted or re-transmitted by space stations, or transmitted by reflection or by scattering from objects in orbit around the earth, are intended for direct reception by the general public.

B.14 Broadcasting Satellite Space Station¹⁾

A space station in the broadcasting satellite service on an earth satellite.

B.14 bis Broadcasting Satellite Station²⁾

A broadcasting station on an earth satellite.

B.15 Broadcasting Satellite Earth Station¹⁾

An earth station in the broadcasting satellite service.

B.16 Radionavigation Satellite Service

A space service in which information for purposes of navigation is transmitted or re-transmitted by space stations on earth satellites.

B.17 Radionavigation Satellite Space Station

A space station in the radionavigation satellite service on an earth satellite.



B.18 Radionavigation Satellite Earth Station

An earth station in the radionavigation satellite service.

B.19 Meteorological Satellite Service

A space service in which meteorological information, acquired through instruments on earth satellites, is transmitted to earth stations by space stations.

B.20 Meteorological Satellite Space Station

A space station in the meteorological satellite service on an earth satellite.

B.21 Meteorological Satellite Earth Station

An earth station in the meteorological satellite service.

C. TELEMETERING, TELECOMMAND, TRACKING
AND SPACE NAVIGATION

C.1 Space Telenetering³⁾

The use of telenetering for the transmission from a space station of measurements made in a spacecraft, including those relating to the functions of the spacecraft.

C.1 bis Space Telenetering³⁾

Telenetering from a spacecraft.

C.2 Space Telecommand

The use of radiocommunication to a space station to initiate, modify or terminate functions of the space station or of the associated spacecraft.

C.3 Space tracing⁴⁾

Determination of the orbit, velocity or instantaneous position of an object in space by means of radiodetermination (excluding primary radar).

- 1) In preparing these definitions relating to broadcasting from satellites, Working Group 4A is not suggesting that any of these terms should necessarily be included in the Radio Regulations.
- 2) This definition would only be useful if the Conference decides not to include in Article 1 a definition of broadcasting satellite service (see B)
- 3) Definition C.1 is more specific than C.1 bis. Working Group 4A is of the opinion that the choice between the two must be taken in light of the requirements of the other Committees.
- 4) Working Group 4A is of the opinion that the adoption or omission of the words in parenthesis must be decided in the light of the requirements of the other Committees.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/44-E
21 October 1963
Original : French

Geneva, 1963

WORKING GROUP 5C1

AGENDA

3rd MEETING OF WORKING GROUP 5C1

Tuesday 22 October 4.30 p.m.

1. Examination of the draft recommendation to the forthcoming Extraordinary Administrative Aeronautical Radio Conference concerning the obtaining of special frequencies for the radio requirements of air-space vehicles in the aeronautical mobile R service. (Annex A)
2. Examination of suggestions for unifying certain aeronautical terms in Article 1 as a result of the adoption of the proposals concerning the frequency bands allocated to aeronautical radio-navigation and the aeronautical mobile R service. (Annex B)
3. Examination of the proposals concerning distress frequencies in the space aeronautical service (contd.). See : Doc. No. 32 (Rev. 2) page 2 and page 10, para. 5 and DT/16 page 10 at the bottom of the page.

Note 1 : Annex C gives a summary record of the discussions on this subject in the 1st and 2nd meetings of Group 5C1.

4. Other business

Note 2 : Annex D contains a revised version of the first report of Group 5C1 (Table) after its adoption at the 2nd meeting (18/10/63).

Maurice CHEF

Annexes : 4



A N N E X A

DRAFT RECOMMENDATION TO THE FORTHCOMING EXTRAORDINARY
ADMINISTRATIVE AERONAUTICAL RADIO CONFERENCE
FOR FREQUENCY REQUIREMENTS IN THE HF BANDS EXCLUSIVELY
ALLOCATED TO THE AERONAUTICAL MOBILE R SERVICE

The Space Radiocommunication Conference, Geneva 1963,

considering,

a) that for the safety of all aircraft it is essential to provide communications for routing flight of transport aircraft intended to fly between points on the earth's surface both within and beyond the major part of the atmosphere,

b) that frequencies in the decametric bands (between 2850 and 22000 kc/s) are technically suitable for such communications as well as those above 100 Mc/s now available to the Aeronautical Mobile R Service,

recommends

that at the Extraordinary Administrative Radio Conference to be called to revise Appendix 26 in accordance with Resolution No. 13 (Geneva 1959), the necessary provisions be made to provide the high frequency channels required for this purpose.

A N N E X B

SUGGESTIONS CONCERNING THE UNIFICATION OF CERTAIN AERONAUTICAL
TERMS IN ARTICLE 1 AS A RESULT OF THE ADOPTION OF PROPOSALS
CONCERNING THE FREQUENCY BANDS ALLOCATED TO AERONAUTICAL
RADIO NAVIGATION AND TO THE AERONAUTICAL MOBILE R SERVICE

1. Group 5C1, having adopted the addition of note 273A to Article 5 of the Radio Regulations, thus envisaging the possibility of using satellite relays in the band 117.975 - 136 Mc/s, would accordingly appreciate an alignment of No. 34, which defines an aeronautical station.

It would therefore suggest that the words "or on board satellites" be added.

2. Group 5C1, having adopted the addition of note 352B to Article 5 of the Radio Regulations, thus envisaging the use and development of systems applying space telecommunication techniques for links in the aeronautical mobile "R" service, and especially for future types of aircraft, would accordingly appreciate an extension of the interpretation to be given to No. 35 of the Radio Regulations concerning aircraft stations.

It would therefore suggest that the words "or of an air-space vehicle" be added.

These latter terms should be interpreted to mean vehicles for the transport of passengers or goods between various points on the earth's surface, but with a flight altitude above the major part of the earth's atmosphere to the exclusion of any other vehicle - probe, satellite or space platform.

A N N E X C

SUMMARY RECORD OF THE FIRST EXCHANGES OF VIEW ON THE
PROPOSALS AFFECTING DISTRESS FREQUENCIES IN THE SPACE AERONAUTICAL
MOBILE SERVICE

1. With representatives of the following countries present :

ALG - ARG - AUS - BEL - BUL - CAN - E - EGY - F - G - J - JMC -
NZL - PAK - POL - POR - TCH - URS - USA

together with a representative of I.C.A.O., Group 5C 1 began study of the two Soviet proposals (Document 32, Rev. 2), supported by the Administrations of the People's Republic of Bulgaria, the Hungarian People's Republic, the People's Republic of Poland, the Roumanian People's Republic and the Czechoslovak Socialist Republic (Document 68) and the Administration of Cuba (Document 86, 1st paragraph). The proposals were to reserve the guard bands 20010 - 20016 kc/s and 114.1 - 114.4 Mc/s for two distress frequencies in addition to those already existing (see Document 32, page 10, paragraph 5), so as to facilitate the detection and recovery of cosmonauts and spacecraft.

2. The U.S.S.R. Delegation described the problems which arise when a spacecraft has to make a forced landing after technical incidents and the fact that the cosmonauts may be separated from their craft. It is **thus** necessary to make a rapid survey of the points of fall which may be widely separate. The problem was thus one of detection, followed by recovery, which concerned both the safety of human life and the recuperation of scientific instruments of great value.

3. The Group agreed with the Soviet Delegation that the safety of cosmonauts was primordial.

However, it was noted that there are no worldwide methods of detection and recovery but that many countries were applying I.C.A.O. standards and procedure in this connection.

4. Since Group 5C 1 was authorised to deal only with amendments to Article 5 of the Radio Regulations, distress and security procedures were outside its competence.

5. After the first exchanges of views the following factors emerged :

- a) Number and technical choice of frequencies;
- b) Denomination of frequencies (see Radio Regulations No. 1107 - 1113 - 1323 - 1326 - 273 - 309 - 953 - 989 - 994 to 999);
- c) National organisation for detection and security.

5.1 In addition, the system of watching on each of the frequencies mentioned is also variable. Lastly, the whole of the aeronautical and maritime services are interested in any solutions to be found.

6. The U.S.S.R. Delegation explained that it was not speaking of existing equipment operating on a frequency in the 20 Mc/s band or in the 114 Mc/s band.
7. Some delegations raised the problem of spectrum economy and proposed that an examination should be made of whether the existing distress, urgency or safety frequencies could not meet the requirements described.

On the other hand, the U.S.S.R. Delegation felt that its proposals were justified, especially that for a frequency around 20 Mc/s for long-distance warnings.

8. In short, a part of Group 5C1 thought it preferable to deal with the U.S.S.R. proposals as follows :
 - a) Are additional frequencies necessary?
 - b) If so, which would be the most suitable frequency or frequencies from the technical standpoint and how are they to be found?

A N N E X DFIRST REPORT OF WORKING GROUP 5C 1

1. The first meeting of Working Group 5C 1 was held on 17 October 1963.

The following delegations and international organisation were represented :

ALG - ARG - AUS - BEL - BUL - CAN - E - EGY - F - G - J - JMC - NZL - PAK - POL - POR - TCH - URS - USA - ICAO.

2. The Group unanimously acknowledged the necessity of facilitating the combined control of air traffic for conventional type aircraft, new types (supersonic, hypersonic) and air-space craft.

These latter terms should be interpreted to mean vehicles for the transport of passengers or goods between various points on the earth's surface, but with a flight altitude above the major part of the earth's atmosphere to the exclusion of any other vehicle - probe, satellite or space platform.

3. Group 5C 1 unanimously adopted the following provisions for bands 117.975 - 132 and 132 - 136 Mc/s allocated to the aeronautical mobile R service (FX and MOB also in the part 132 - 136 Mc/s, Regions 2 and 3).

Mc/s

117.975 - 132	AERONAUTICAL MOBILE R 273 - 273A
132 - 136 AERONAUTICAL MOBILE R 273A 274 275	132 - 136 FIXED MOBILE 273A 276 277 278 279

273A.. In the band 117.975 - 132 Mc/s and in the band 132 - 136 Mc/s where the Aeronautical Mobile R is authorized, the use and development, for this Service, of systems using space communication techniques may be authorized but limited initially to satellite relay stations of the Aeronautical Mobile R Service. Such use and development shall be subject to coordination between administrations concerned.

3.1 Moreover, to facilitate the implementation of this note 273A, the Group noted the following intentions :

a) 274. The Delegations of BEL - F and HOL state that they no longer desire to take advantage of this number in the part 132 - 136 Mc/s.

b) 279. The Delegation of AUS proposes the replacement of note 279 by a new note, the part concerning aeronautics to read :

279 (Rev.) In Australia the band 132 - 136 Mc/s is allocated to the aeronautical mobile service.

4. As regards aeronautical radionavigation, Group 5C 1, unanimously adopted the following modifications :

Mc/s

960 - 1215	AERONAUTICAL RADIONAVIGATION
	341 <u>Rev.</u>

341 (Rev.) The band 960 - 1215 Mc/s is reserved on a world-wide basis for the use and development of airborne electronic aids to navigation and any directly associated ground-based facilities.

Mc/s

<u>1540</u> - 1660	AERONAUTICAL RADIONAVIGATION
	351 352 <u>352A</u> <u>352B</u>

(New) 352A The bands 1540 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are reserved, on a worldwide basis, for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

(New) 352B The bands 1540 - 1660 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are also allocated to the Aeronautical Mobile R Service for the use and development of systems using space communication techniques. Such use and development is subject to agreement and co-ordination between administrations concerned.

Mc/s

4200 - 4400	AERONAUTICAL RADIONAVIGATION
	341 <u>352A</u> 381 382 383

5000 - 5250	AERONAUTICAL NAVIGATION
	341 <u>352A</u> <u>352B</u>

Gc/s

15.4 - 15.7	AERONAUTICAL RADIONAVIGATION
	- 341 <u>352A</u> <u>352B</u> 407

5. To provide for the use of frequencies in the aeronautical mobile R exclusive bands in the part 2850 - 22000 kc/s for circuits between earth and the new types of aircraft or airspace vehicles, it was agreed that this question should be the subject of a recommendation to the forthcoming Extraordinary Administrative Aeronautical Radio Conference which will have to revise Appendix 26.

It was thought preferable that such a study should be made at a conference where numerous aeronautical specialists will be present rather than to endeavour to amend No. 429 during the present Space Conference.

6. As corollary to the new provisions in the preceding paragraphs, it was thought desirable to make a few suggestions concerning the interpretation of Nos. 33, 34, 35 and 52 of the Radio Regulations.

Maurice CHIEF

SPACE
RADIOCOMMUNICATION
CONFERENCE

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21 October, 1963
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WORKING GROUP 5C

NAVIGATION SATELLITES

During the discussion at the Sixth Meeting of Working Group 5C a draft text was tabled as a possible means of reaching agreement to the amendment of the Table of Allocations for the bands 149.9 - 150.5 Mc/s and 399.9 - 400.05 Mc/s to provide an exclusive allocation to radionavigation satellites.

This text is set out below to facilitate further discussion.

No. ... Stations of the fixed and mobile services may continue to use this band until 1 January, 1969 but administrations are urged to begin the withdrawal of such stations as soon as practicable especially those located in coastal areas. These provisions shall not apply in, whose administrations are unable to specify a cessation date at this time.

Chairman

J. PENWARDEN



Geneva, 1963

WORKING GROUP 4A

PROPOSALS BY BELGIUM, SPAIN, FRANCE AND PORTUGAL

FOR THE AMENDMENT OF ARTICLE 1 OF THE RADIO REGULATIONS

1. Basic principles for drawing up the definitions

1.1 The services between points on the surface of the earth, including ships and aircraft, should retain their names whatever the means of radio transmission employed - ionospheric reflection, ionospheric or tropospheric scatter, reflection or scatter from a passive satellite or retransmission via an active satellite.

Thus, a service between two given fixed points should always be called a "fixed service". Similarly, a service between an aeronautical and an aircraft station should always be called an "aeronautical mobile service".

1.2 For some requirements of the Regulations (Articles 9 and 9 bis and others), a distinction should be made between means of transmission that can be called conventional (ionospheric reflection, ionospheric or tropospheric scatter) and transmission using active or passive satellites or other spacecraft.

1.3 The use of artificial earth satellites and other spacecraft introduces the possibility of new services, which must be defined.

1.4 The definitions should be drawn up in such a way that they leave no doubt in their application to the Table of Frequency Allocations. This means that they should be sufficiently clear to avoid any possibility of different interpretations. It is indispensable to this end, that the texts should precisely reflect the notion to be defined.



This means discarding any system of definitions in which the stations are defined by the use of the definition of the corresponding service, since the definition of the service is itself based on the definition of the station, and such a system would merely be an unacceptable vicious circle.

1.5 The following main categories of services have to be considered:

- Conventional services : those which are defined in the Regulations (fixed, mobile, broadcasting, amateur, etc.); for the purposes of Article 9 they can be called "terrestrial services"
- Services using earth satellites or other spacecraft, that can be called "space services"
- Conventional services using earth satellites, excluding other types of spacecraft, that can be called "satellite services"
- "Satellite services" are thus a special case of "space services".

1.6 For services already defined in the Regulations, and which may, in future, use earth satellites, two possibilities exist for the revision of the Radio Regulations.

1.6.1 The first possibility would be to introduce into the Regulations a paragraph drafted as in 2.1 below.

This procedure would not overload the Regulations. One of the results, for instance, would be that a service between given fixed points on the surface of the earth using an earth satellite would become a "fixed satellite service"; each of the stations on the surface of the earth operating in this service would be a "fixed earth station".

1.6.2 The second possibility would be to insert, in the Regulations, a set of definitions, parallel with those already existing for the conventional services, when using earth satellites and also for the corresponding earth stations.

1.6.3 The first solution (1.6.1) seems more practical and it has been adopted in the following set of definitions. It is obvious that, if the second solution is preferred (1.6.2), its application would be immediate, according to the formula given for the examples shown in 2.1.

2. Definitions

Note: The definitions marked with an asterisk follow the general concept of Document No. 99 and also that in the documents of the C.C.I.R., or when the texts differ only slightly as a result of the difference of two points of view.

2.1 Paragraph to be added to the Regulations:

When, for the execution of one of the services defined in Section II of Article 1 of the present Regulations, one or more active or passive satellites are used, this service, while retaining its basic name, is then also qualified by the word "satellite".

The stations belonging to such services situated either on the surface of the earth, including on board ship, or on board an aircraft are then also qualified by the word "earth".

Examples:

2.1.1 A service of **radiocommunications** between specified fixed points in which one or more active or passive satellites are used: Fixed satellite service.

2.1.2 A station in the fixed satellite service: Fixed earth station.
Note: The adjective "earth" is also used to describe a station situated on the surface of the earth, including on board ship, or on board an aircraft, operating in association with a space station (definition 2.3).

2.1.3 A service of radiocommunication between mobile stations and land stations, or between mobile stations, in which one or more active or passive satellites are used: Mobile satellite service.

2.1.4 A station in the mobile satellite service intended to be used while in motion or during halts at unspecified points: Mobile earth station.

2.2 Space station: A station on an object outside the major part of the earth's atmosphere, including a satellite station.

2.3 Satellite station: A station on an artificial earth satellite.

2.4 Footnote: The space stations and satellite stations defined under 2.2 and 2.3 retain their name when passing through the major part of the earth's atmosphere.

2.5*) Active satellite: See (B 6 - Document No. DT/28) complete text.

2.6*) Passive satellite: An earth satellite intended to transmit radiocommunication signals by reflection or by scatter.

2.7 Earth station: A station either on the surface of the earth, including on board a ship, or on board an aircraft intended:

- to establish radiocommunication with space stations; or
- to transmit radiocommunication signals towards a passive satellite; or
- to receive radio communication signals reflected or scattered by such a satellite.

2.8 Space service: (Document No. 99 point 8) complete text.

2.9 Terrestrial service: Any radio service defined in the present Regulations, in which neither space stations nor passive satellites are used.

2.10*) Terrestrial station: A station in a terrestrial service.

2.11 Radiocommunication satellite service: A general term designating any or all services in which one or more earth stations and one or more active or passive satellites simultaneously participate.

2.12*) Satellite system: Any group of co-operating stations providing a given radiocommunication satellite service and which includes one or more active or passive satellites.

2.13*) Radioastronomy station: A station in the radioastronomy service.

2.14*) Space research service: A space service in which spacecraft are used for scientific or technical research.

2.15*) Space research space station: A space station in the space research service.

2.16*) Space research earth station: An earth station in the space research service.

2.17 Broadcasting satellite service: Application of 2.1 above.

- 2.18 Broadcasting satellite station: A station in the broadcasting satellite service.
- 2.19 Radionavigation satellite service: Application of 2.1 above.
- 2.20 Radionavigation satellite station: A satellite station in the radionavigation satellite service.
- 2.21*) Radionavigation earth station (land, mobile, or aeronautical):
Application of 2.1 above.
- 2.22 Meteorological Aids satellite service: Application of 2.1 above.
- 2.23 Satellite station in the Meteorological Aids satellite service:
A satellite station in the Meteorological Aids satellite service.
- 2.24*) Earth station in the Meteorological Aids service: Application of 2.1 above.
- 2.25*) Space telemetering: Telemetering used for the transmission from a space station of the results of measurements made in a spacecraft, including those relating to the functioning of the spacecraft.
- 2.26*) Space Telemetering: Telemetering from a spacecraft.
- 2.27*) Space Telecommand: Transmission of radiocommunication signals to a space station to put into operation the station or apparatus on board the spacecraft, or to modify or stop their functions.
- 2.28*) Space tracking: Determination of the orbit, speed, or instantaneous position of an object in space by the use of radiodetermination (excluding primary radar).

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/47-E
22 October 1963
Original : English

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WORKING GROUP 5A

DRAFT

SEVENTH REPORT BY WORKING GROUP 5A

SPACE TELEMETERING SERVICE

Reference is made to the bands 1535 - 1540 Mc/s and 1525 - 1535 Mc/s initially dealt with in paragraphs 2 and 3, and Appendix 1 of Document No. DT/18 (Draft Second Report by Working Group 5A).

Resulting from further consideration of these bands in 5A ad hoc Group, a draft new table for the band 1525 - 1540 Mc/s together with associated foot-notes, and a related draft Resolution, are attached hereto.

P. MORTENSEN

Chairman

Working Group 5A

Appendices : 2



A P P E N D I X 1

Mc/s

Allocation to Services			
	Region 1	Region 2	Region 3
ADD	1525 - 1535 SPACE TELEMETERING FIXED 350B Mobile except aeronautical mobile 350C	1525 - 1535 SPACE TELEMETERING Fixed Mobile	1525 - 1535 SPACE TELEMETERING FIXED 350B Mobile 350D
ADD	350A	350A	350A
ADD	1535 - 1540	SPACE TELEMETERING	
ADD MOD		350A	351 352

MOD 341 Delete band from 1535 - 1540 Mc/s from this foot-note, retain
1540 - 1660 Mc/s

ADD 350A Space stations employing frequencies in the band 1525 - 1540 Mc/s
may also transmit tracking signals in the band.

ADD 350B As regards the category of the fixed service, see Resolution No....

ADD 350C In Albania, Bulgaria, France, Hungary, Poland, Roumania,
Czechoslovakia and the U.S.S.R., the mobile service allocation is on a
primary basis. As regards the category of this service, see Resolution No....

ADD 350D In Japan, the mobile service allocation is on a primary basis
until 1 January 1969.

MOD 351 In Italy, the band 1535 - 1600 Mc/s is also allocated to the fixed
service until 1 January 1970.

MOD 352 In Albania, Bulgaria, Hungary, Poland, Roumania, Czechoslovakia
and the U.S.S.R. the band 1535 - 1660 Mc/s is also allocated to the fixed
service. As regards the category of the fixed service in the band
1535 - 1540 Mc/s, see Resolution No.....

ADD 352A In Austria, Indonesia and the Federal Republic of Germany, the
band 1540 - 1660 Mc/s is also allocated to the fixed service.

A P P E N D I X 2

DRAFT RESOLUTION No.

RELATING TO THE CATEGORY OF THE FIXED AND
MOBILE SERVICES IN THE BAND 1525 - 1540 Mc/s

The Extraordinary Administrative Radio Conference, Geneva, 1963,
considering

- a) that the Table of Frequency Allocations, Geneva, 1959, made certain provisions for the Fixed and Mobile Services in the sub-bands 1525 - 1535 Mc/s and 1535 - 1540 Mc/s;
- b) that a number of Administrations have Fixed and Mobile Services operating in accordance with these provisions;
- c) that the Extraordinary Administrative Radio Conference, Geneva, 1963, has agreed that the Space (Telemetering) Service shall be allocated on a primary basis in the band 1525 - 1540 Mc/s, and that continuing provision shall be made for Fixed and Mobile Services now operating in this band;
- d) the economic consequences of an early down-grading of the category of the Fixed and Mobile Services are not at present acceptable to the Administrations concerned;

resolves

that nevertheless, it is highly desirable that reception of the very weak signals of the Space (Telemetering) Service shall be afforded protection against interference from stations in the Fixed and Mobile Services;

invites

those Administrations operating stations in the Fixed and Mobile Services allocated on a primary basis in the band 1525 - 1540 Mc/s, to consider the possibility of agreeing to modify the category of these services from "primary" to "secondary" service at the earliest possible date.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/48-E
22 October 1963
Original : English

Geneva, 1963

WORKING GROUP 5B1

DRAFT
FOURTH REPORT BY WORKING GROUP 5B1

RADIO ASTRONOMY SERVICE

1. Bands 150.05 - 151 Mc/s and 151 - 153 Mc/s

1.1 The proposals by the United Kingdom concerning the above bands were considered.

1.2 The Delegations of Spain, Israel and Austria supported the proposals for the exclusive allocation to Radio Astronomy Service in the band 150.05 - 151 Mc/s. The Delegation of Spain supported the allocation to this service on a primary basis in the band 151 - 153 Mc/s with Meteorological Aids on a secondary basis but with the exclusion of the existing allocations to the Fixed and Mobile, except aeronautical mobile, Services.

1.3 Ten Delegations were against any change to the existing allocations and associated footnotes in the band 150.05 - 151 Mc/s, while twelve Delegations were against any change to those in the band 151 - 153 Mc/s.

1.4 Consequently, the Group agreed by a majority viewpoint to maintain the existing allocations without change.

2. Band 404 - 410 Mc/s

2.1 The proposals by Canada and the U.S.A. for the band 404 - 406 Mc/s and those by Australia and the Netherlands for the band 406 - 410 Mc/s were considered jointly.

2.2 The largest measure of agreement is represented by the modified footnote 317 given in Appendix 1 attached hereto.

2.3 A different point of view was held by the Delegations of Canada, the U.S.A. and Jamaica who favoured the following allocations:

404 - 406 METEOROLOGICAL AIDS

Radio Astronomy

314 315



with the exclusion of the Fixed and Mobile, except aeronautical mobile, Services from the Table and footnote 317, together with the exclusion of the band 404 - 406 Mc/s from existing footnote 316.

3. Band 606 - 614 Mc/s

3.1 The proposals concerning this band by the Netherlands and Sweden appearing in Document No. 17 and those by the U.S.A. and Australia contained in Addendum No. 1 to Document No. 8 and in Document No. 97 respectively, were considered.

3.2 The various proposals may be broadly summarized as follows:

- a) exclusive world-wide allocation to RADIO ASTRONOMY,
- b) new footnote along the lines

"In AUS AUT D KOR IND, the band 610 - 614 Mc/s is allocated exclusively to the radio astronomy service until 1 January 1969, from which date the allocations appearing in the Table will apply",

- c) amend footnote 332 to read:

"332. In Regions 1 and 3 the band 606-614 Mc/s is reserved exclusively for the radio astronomy service until the first administrative Radio Conference subsequent to January 1, 1974 which is competent to review this provision. In Region 2 the same provisions apply to the band 608 - 614 Mc/s."

- d) retain the existing allocations without change,
- e) Radio Astronomy Service to share with the existing Broadcasting Service which would be down-graded to secondary basis,
- f) sharing on a secondary basis with the existing allocations.

3.3 The Group agreed to give further consideration to this band at a later date.

W.A.E. NIELSEN
Chairman
Working Group 5B1

Appendix: 1

A P P E N D I X

MOD 317

The band 406 - 410 Mc/s is also allocated to the Radio Astronomy Service. An appropriate continuous band within these limits shall be designated on a national or area basis. In making assignments to stations of other services to which these bands are allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference. The Radio Astronomy Service shall be protected from harmful interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/49-E
22 October, 1963

Geneva, 1963

WORKING GROUP 5B1

AGENDA

SIXTH MEETING OF WORKING GROUP 5B1

Wednesday, 23 October, at 9.30 a.m.

RADIO ASTRONOMY SERVICE

1. Adoption of draft First Report (Document No. DT/25)

Bands 2.5 Mc/s, 5 Mc/s, 10 Mc/s, 20 Mc/s, foot-note 204
1400 - 1427 Mc/s
2690 - 2700 Mc/s
4990 - 5000 Mc/s

2. Adoption of draft Second Report (Document No. DT/32)

Band 10.68 - 10.7 Gc/s
Bands 15.35 - 15.4 Gc/s, 19.3 - 19.4 Gc/s and 31.3 - 31.5 Gc/s

3. Adoption of draft Third Report (Document No. DT/40)

Band 37.75 - 38.25 Mc/s
73.0 - 74.6 Mc/s
33.0 - 33.4 Gc/s, 33.4 - 34.0 Gc/s, 36.5 - 37.5 Gc/s

4. Consideration of remaining proposals

Band 606 - 614 Mc/s (Document No. DT/10, page 6 and paragraph 3,
Document No. DT/48)

Band 1664.4 - 1668.4 Mc/s (Document No. DT/10, page 7bis)

(Document No. 17, Annexes 8A and 10 also refer)

W.A.E. NIELSEN
Chairman
Working Group 5B1



SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/50-E
22 October, 1963
Original : English

WORKING GROUP 5B

SECOND REPORT BY WORKING GROUP 5B2

SPACE RESEARCH SERVICE

1. Band 2110 - 2120 Mc/s

1.1 All proposals concerning this band were considered.

1.2 The Group unanimously agreed that this particular provision could be accommodated in a new foot-note as shown in Appendix 1 attached hereto. The Delegation of Pakistan, however, stated that they could not accept harmful interference to the existing Fixed and Mobile Services from the use of this band for telecommand in deep space research, and would consider requesting the addition of a suitable foot-note, to this effect.

2. Band 5250 - 5255 Mc/s

2.1 All proposals concerning this band were considered. With regard to the Nigerian proposal which, in its published form, provides for primary allocation to the SPACE RESEARCH and RADIOLOCATION Services and the deletion of foot-note 384, the Delegate of the U.S.S.R. confirmed that he was unable to relinquish the derogation from the Table authorising the RADIO-NAVIGATION Service as an additional service in his country. The Nigerian proposal remained without support.

2.2 Since all remaining proposals amounted to an editorial change in the existing allocations, the draft new Table for this band appearing in Appendix 2 attached hereto was unanimously agreed by the Group.

3. Band 8400 - 8500 Mc/s

3.1 Detailed consideration was given to all proposals before the Conference concerning this band.



3.2 The Delegation of France confirmed that its proposal was for a world-wide allocation to the Fixed and Mobile Services on a primary basis with the Space Research Service on a secondary basis.

3.3 A draft new Table for the band 8400 - 8500 Mc/s, reflecting the majority viewpoint as outlined above, appears in Appendix 3 attached hereto.

3.4 The Delegations of Canada, Japan and the U.S.A. were in favour of the exclusive allocation to the SPACE RESEARCH Service, while three Delegations were in favour of world-wide allocation to the FIXED and MOBILE Services on a primary basis and to the Space Research Service on a secondary basis.

4. Band 31.5 - 31.8 Gc/s

4.1 All proposals concerning this band were considered. The Delegation of the U.S.S.R. confirmed that the allocations to the Fixed and Mobile Services in their proposal should be shown as being on a secondary basis.

4.2 Two distinct solutions emerged from the views expressed, as follows :

- a) a clear majority of Delegations were in favour of a world-wide allocation on a primary basis to the SPACE RESEARCH Service, shared with an allocation, on a secondary basis, to the Fixed and Mobile Services;
- b) the Delegations of Canada, Spain, France and the U.S.A. favoured a world-wide exclusive allocation to the SPACE RESEARCH Service.

4.3 A draft new Table for the band 31.5 - 31.8 Gc/s, reflecting the majority viewpoint as outlined above, appears in Appendix 4 attached hereto.

B. DESTA
Chairman
Working Group 5B2

Appendices : 4

APPENDIX 1

ADD 356A

The band 2110 - 2120 Mc/s may be used for telecommand in conjunction with spacecraft engaged in deep space research, subject to agreement between the Administrations concerned and those whose services, operating in accordance with the Table, may be affected.

APPENDIX 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
5250 - 5255	RADIOLOCATION Space Research	
	384	

MOD

NOC 384

In Albania, Austria, Bulgaria, Hungary, Poland, Roumania, Sweden, Switzerland, Czechoslovakia and the U.S.S.R., the band 5250 - 5350 Mc/s is also allocated to the radionavigation service.

APPENDIX 3

Allocation to Services			
	Region 1	Region 2	Region 3
ADD	8400 - 8500	SPACE RESEARCH FIXED MOBILE	
MOD		394	

MOD 394 In the United Kingdom, the band 8250 - 8400 Mc/s and in Australia, the band 8250 - 8500 Mc/s are allocated to the radio-location service; in Australia, the band 8400 - 8500 Mc/s is also allocated, on a secondary basis, to the space research service.

APPENDIX 4

Gc/s

MOD

Allocation to Services		
Region 1	Region 2	Region 3
31.5 - 31.8	SPACE RESEARCH Fixed Mobile	

Geneva, 1963

WORKING GROUP 5B2

FIRST REPORT BY WORKING GROUP 5B2

SPACE RESEARCH

1. Bands 10,003 - 10,005 kc/s, 19,990 - 20,010 kc/s and 39,986 - 40,002 Mc/s

Unanimous agreement was reached on the amendments proposed to footnote 215 to the Table of Frequency Allocations. The agreed draft new text of No. 215 of the Radio Regulations appears in Appendix 1 attached hereto.

2. Band 183.1 - 184.1 Mc/s

2.1 During the detailed consideration of the relevant proposals, the Delegation of the U.S.S.R. agreed to the deletion of the word "deep" from their proposal and the Group quickly arrived at full agreement that

- a) the allocation to the space research service should take the form of a footnote;
- b) this allocation would be in addition to the existing allocations appearing in the Table of Frequency Allocations and associated footnote; and
- c) the space research service should be a secondary service.

2.2 Differing views were expressed concerning the formulation of the footnote required. On the one hand some delegations favoured the existing expression "subject to causing no harmful interference" while others felt that "on a secondary basis" was appropriate. From a detailed analysis of No. 139 of the Radio Regulations, it was generally agreed that the category of service concerned was "secondary". Furthermore, the Group had difficulty in choosing between "allocated" and "also allocated"; views were shared on this point also. Finally, upon the suggestion of the U.S.A., the Group agreed that the Chairman should prepare a draft text in consultation with Mr. V.V. Rao, (Delegate of India) and Mr. A.H. Catá, member of the I.F.R.B.



2.3 The resultant text appears in Appendix 2 attached hereto.

B. DESTA
Chairman
Working Group 5B2

Appendices: 2

A P P E N D I X 1

MOD. 215 The bands 10,003 - 10,005 kc/s, 19,990 - 20,010 kc/s and
39,986 - 40,002 Mc/s are also allocated, on a secondary basis, to the
space research service.

A P P E N D I X 2

MOD. 294 . The band 183.1 - 184.1 Mc/s is also allocated, on a
secondary basis, to the space research service.

CONFERENCE DES
RADIOCOMMUNICATIONS
SPATIALES

Genève, 1963

Document N° DT/52-F/E/S
22 octobre 1963
Original : français,
anglais,
espagnol

GROUPE DE TRAVAIL 4A
WORKING GROUP 4A
GRUPO DE TRABAJO 4A

PROPOSITION PROVISOIRE POUR LES TERMES ET DEFINITIONS

PREMIERE, DEUXIEME ET TROISIEME PARTIES
(Voir les Documents N°s DT/28, DT/41 et DT/43)

PROVISIONAL PROPOSAL FOR THE TERMS AND DEFINITIONS

FIRST, SECOND AND THIRD PARTS
(See Documents Nos. DT/28, DT/41 and DT/43)

TÉRMINOS Y DEFINICIONES (PROPOSICIÓN PROVISIONAL)

PRIMERA, SEGUNDA Y TERCERA PARTES
(Véanse los Documentos N.°s DT/28, DT/41 y DT/43)

D. ESPACE
D. SPACE
D. ESPACIO

D1 Espace lointain

Région de l'espace à des distances égales ou plus grandes que la distance entre la Terre et la Lune.

D1 Deep space

Space at distances equal to or greater than the distance between the Earth and the Moon.

D1 Espacio lejano

Región del espacio cuya distancia es igual o superior a la existente entre la Tierra y la Luna.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/53-E
22 October, 1963
Original : English

Geneva, 1963

WORKING GROUP 5B2

DRAFT
FOURTH REPORT BY WORKING GROUP 5B2

SPACE RESEARCH SERVICE

1. Band 15.25 - 15.35 Gc/s

1.1 All proposals pertaining to this band were considered.

1.2 Several suggestions were made. Among them the possible interchange of the existing allocations in the band 15.15 - 15.25 Gc/s with those in the band 15.25 - 15.35 Gc/s, in order to place the SPACE RESEARCH allocation, with Fixed and Mobile on a secondary basis, adjacent to the existing RADIO ASTRONOMY allocation in the band 15.35 - 15.4 Gc/s (RR 405).

1.3 It was agreed to set up a 5B2 ad hoc Group composed of the Delegations of Canada, the U.S.S.R. and New Zealand with Mr. H.A. Kieffer of the Swiss Delegation acting as Convenor. It was further agreed that 5B2 ad hoc Group would take into consideration possible consequential changes to existing allocations in the adjacent band 15.15 - 15.25 Mc/s.

2. Band 2450 - 2550 Mc/s

The Delegation of the United Kingdom confirmed the withdrawal of their proposal concerning this band.

3. Band 30.005 - 30.010 Mc/s

3.1 The proposal by the Delegation of the U.S.S.R. was considered.

3.2 There were seven delegations supporting the allocation to the SPACE RESEARCH Service on a primary basis.



3.3 The Delegations of the United Kingdom, the U.S.A., Portugal and Australia, while not objecting to the Space Research Service, preferred that it be on a secondary basis.

3.4 A draft new Table for the band 30.005 - 30.010 Mc/s, reflecting the majority viewpoint as outlined above, appears in the Appendix attached hereto.

B. DESTA
Chairman
Working Group 5B2

Appendix : 1

APPENDIX

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
30.005 - 30.010	FIXED 228 229 230 231	
ADD	SATELLITE IDENTIFICATION	
	MOBILE	
ADD	SPACE RESEARCH	
	233	

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/54-E
22 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5B

AGENDA

THIRD MEETING OF WORKING GROUP 5B

Wednesday, 23 October 1963 at 1430 hours (2.30 p.m.)

SPACE RESEARCH and RADIO ASTRONOMY SERVICES

1. Adoption of First Report by Working Group 5B2 (Doc. No. DT/51)
2. Adoption of Second Report by Working Group 5B2 (Doc. No. DT/50)
3. Adoption of Third Report by Working Group 5B2 (ex-para. 3, Doc. No. DT/38(Rev.))
4. Adoption of Fourth Report by Working Group 5B2 (Doc. No. DT/53)
5. Adoption of First Report by Working Group 5B1 (Doc. No. DT/25(Rev.))
6. Adoption of Second Report by Working Group 5B1 (Doc. No. DT/32)
7. Adoption of Third Report by Working Group 5B1 (Doc. No. DT/40(Rev.))
8. Adoption of Fourth Report by Working Group 5B1 (Doc. No. DT/48)
9. Any other business

V.V. RAO
Chairman
Working Group 5B



SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/55-E
23 October 1963
Original : English

SUB-WORKING GROUP 5B2

REPORT BY 5B2 AD HOC GROUP

Band 15.25 - 15.35 Gc/s

Reference Document No. DT/34, page 7

During the first discussion within the group, agreement was reached on the place for the allocation of space-research in this portion of the spectrum as follows :

14.4 - 15.25 GHZ	FIXED MOBILE
15.25 - 15.35 GHZ	SPACE RESEARCH *) **)

- *) It is to be understood that this entry shall be the equivalent to
- | | |
|-------------|-----|
| SPACE | 280 |
| EARTH-SPACE | 280 |

as contained in the Radio Regulations, Geneva 1959

- **) Upon the additional allocation of Fixed and Mobile Services and their status, no agreement was reached.
The following suggestion, acceptable to New Zealand was put forward as a possible basis of discussion :

15.25 - 15.35 GHZ	SPACE RESEARCH Fixed Mobile 405 A
-------------------	--



405 A New : Within and between Bulgaria, Cuba, Hungary, Roumania,
Czechoslovakia, U.S.S.R., Poland, Bielorussia and Ukrainia, the Space
Research, Fixed and Mobile Services shall have equal right to operate.

 Since the general problems of sharing also appears in other
portions of the spectrum, it is suggested to discuss this, e.g. at
committee level.

H. A. KIEFFES
Convenor
SWG 5B2 ad hoc

CONFERENCE DES
RADIOCOMMUNICATIONS
SPATIALES

Genève, 1963

Document N° DT/56-F/E/S
23 octobre 1963
Original : français
 anglais
 espagnol

COMMISSION 4

REFERENCE DOCUMENT N° DT/28

(Texte suggéré par le Groupe de rédaction)

B.4 Service de radiocommunication par satellites

Service spatial :

- entre stations terriennes, pour les radiocommunications du service fixe ou du service mobile, lorsqu'il est fait emploi de satellites actifs ou passifs, ou
- entre une station terrienne et des stations sur des satellites actifs, en vue de retransmission vers des stations du service mobile.

REFERENCE DOCUMENT No. DT/28

(Text suggested by Drafting Group)

B.4 Radiocommunication - satellite service

A space service:

- between earth stations, for radiocommunications of the fixed or mobile service, when using active or passive satellites, or
- between an earth station and stations on active satellites, for retransmission to stations in the mobile service.

REFERENCIA DOCUMENTO N.° DT/28

(Texto sugerido por el Grupo de Redacción)

B.4 Servicio de radiocomunicación por satélites

Servicio espacial:

- entre estaciones terrenas, para las radiocomunicaciones del servicio fijo o del servicio móvil, cuando se emplean satélites activos o pasivos, o
- entre una estación terrena y estaciones sobre satélites activos, con objeto de retransmisiones hacia estaciones del servicio móvil.



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/57-E
23 October, 1963
Original : French/English

Geneva, 1963

WORKING GROUP 5C

REPORT BY SUB-WORKING GROUP 5C1
TO WORKING GROUP 5C

AERONAUTICAL SERVICES

1. The Group met three times, on 17, 21 and 22 October. The following delegations and international organizations were represented:

Algeria, Argentina, Australia, Belgium, Bulgaria, Canada, Spain, Egypt, France, the United Kingdom, Greece, the Netherlands, Japan, Jamaica, New Zealand, Pakistan, Poland, Portugal, Sweden, Switzerland, Czechoslovakia, the U.S.S.R., the U.S.A. and the International Civil Aviation Organization.

- 2.

- 2.1 The Group unanimously acknowledged the necessity of facilitating the combined control of air traffic for conventional type aircraft, new types (supersonic, hypersonic) and air-space craft.

- 2.2 These latter terms should be interpreted to mean vehicles for the transport of passengers or goods between various points on the earth's surface, but with a flight altitude above the major part of the earth's atmosphere to the exclusion of any other vehicle, for example, probe, satellite or space platform.

3. Bands 117.975 - 132 Mc/s and 132 - 136 Mc/s

- 3.1 The Group unanimously agreed to the draft new Table appearing in Appendix 1.

- 3.2 To facilitate the implementation of the new foot-note 273A

- a) the Delegations of Belgium, France and the Netherlands agreed to the deletion of the band 132 - 136 Mc/s from the existing foot-note 274, and



- b) the Delegation of Australia indicated its intention to replace foot-note 279 by a new note and that the part concerning the aeronautical service would read:

279 (Rev.) In Australia the band 132 - 136 Mc/s is allocated to the aeronautical mobile service.

4. Band 960 - 1215 Mc/s

The Group agreed unanimously to the draft new Table appearing in Appendix 2 attached hereto.

5. Band 1535 - 1660 Mc/s

The Group agreed unanimously to the draft new Table and its associated new foot-notes appearing in Appendix 3 attached hereto. (Note: The Working Group will note that the band 1525 - 1535 Mc/s has been dealt with in another Group)

6. Band 4200 - 4400 Mc/s

The Group agreed unanimously to the draft new Table appearing in Appendix 4 attached hereto to which the foot-note 352A, appearing in Appendix 3, also applies.

7. Band 5000 - 5250 Mc/s

The Group agreed unanimously to the draft new Table appearing in Appendix 5 attached hereto to which both foot-notes 352A and 352B, appearing in Appendix 3, also apply.

8. Band 15.4 - 15.7 Gc/s

The Group agreed unanimously to the draft new Table appearing in Appendix 6 attached hereto to which both foot-notes 352A and 352B, appearing in Appendix 3, also apply.

9.

9.1 To provide for the use of frequencies in the aeronautical mobile (R) exclusive bands in the part 2850 - 22,000 kc/s for circuits between earth and the new types of aircraft or airspace vehicles, the Group agreed that this question should be the subject of a recommendation to the forthcoming Extraordinary Administrative Aeronautical Radio Conference which will have to revise Appendix 26.

9.2 It was thought preferable that such a study should be made at a conference where numerous aeronautical specialists will be present rather than to endeavour to amend No. 429 during the present Space Conference.

9.3 The Group accordingly unanimously agreed to the draft Recommendation appearing in Appendix 7 attached hereto.

10. As a consequence to the new provisions described above and set out in the attached Appendices, the Group unanimously agreed on the desirability of amending certain of the definitions in Article 1 of the Radio Regulations. The definitions concerned are Nos. 34 and 35 for aeronautical station and aircraft station respectively. The Group recognized that this work is appropriate to Committee 4 and accordingly, in Appendix 8 suggestions are made for the consideration of that Committee.

M. CHEF
Chairman
Working Group 5C1

Appendices : 8

APPENDIX 1

Mc/s

Region 1	Region 2	Region 3
117.975 - 132	AERONAUTICAL MOBILE (R)	
	273 - 273A	
132 - 136	132 - 136	FIXED
AERONAUTICAL MOBILE (R)		MOBILE 273A 276
273A 274 275		277 278 279

273A In the band 117.975 - 132 Mc/s and in the band 132 - 136 Mc/s where the Aeronautical Mobile (R) is authorized, the use and development, for this Service, of systems using space communication techniques may be authorized but limited initially to satellite relay stations of the Aeronautical Mobile (R) Service. Such use and development shall be subject to co-ordination between administrations concerned.

APPENDIX 2

Mc/s

960 - 1215

AERONAUTICAL RADIONAVIGATION

341 Rev.

341 (Rev.) The band 960 - 1215 Mc/s is reserved on a world-wide basis for the use and development of airborne electronic aids to navigation and any directly associated ground-based facilities.

APPENDIX 3

Mc/s

<u>1540</u> - 1660	AERONAUTICAL RADIONAVIGATION
341 351 352 <u>352A</u> <u>352B</u>	

ADD 352A The bands 1540 - 1660 Mc/s, 4200 - 4400 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are reserved, on a world-wide basis, for the use and development of airborne electronic aids to air navigation and any directly associated ground-based or satellite-borne facilities.

ADD 352B The bands 1540 - 1660 Mc/s, 5000 - 5250 Mc/s and 15.4 - 15.7 Gc/s are also allocated to the Aeronautical Mobile (R) Service for the use and development of systems using space communication techniques. Such use and development is subject to agreement and co-ordination between administrations concerned.

APPENDIX 4

Mc/s

4200 - 4400	AERONAUTICAL RADIONAVIGATION 341 <u>352A</u> 381 382 383
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APPENDIX 5

Mc/s

5000 - 5250

AERONAUTICAL RADIONAVIGATION

~~341~~ 352A 352B

APPENDIX 6

Gc/s

15.4 - 15.7

AERONAUTICAL RADIONAVIGATION

~~341~~ 352A 352B 407

APPENDIX 7

DRAFT RECOMMENDATION TO THE FORTHCOMING EXTRAORDINARY
ADMINISTRATIVE AERONAUTICAL RADIO CONFERENCE
FOR FREQUENCY REQUIREMENTS IN THE HF BANDS EXCLUSIVELY
ALLOCATED TO THE AERONAUTICAL MOBILE (R) SERVICE

The Extraordinary Administrative Radio Conference, Geneva, 1963,
considering,

- a) that for the safety of all aircraft it is essential to provide communications for routine flight of transport aerospace vehicles intended to fly between points on the earth's surface both within and beyond the major part of the atmosphere,
- b) that frequencies in the decametric bands (between 2850 and 22,000 kc/s) are technically suitable for such communications as well as those above 100 Mc/s now available to the Aeronautical Mobile (R) Service,

recommends

that at the Extraordinary Administrative Radio Conference to be called to revise Appendix 26 in accordance with Resolution No. 13 (Geneva, 1959), the necessary provisions be made to provide the high frequency channels required for this purpose.

APPENDIX 8

SUGGESTIONS CONCERNING THE UNIFICATION OF CERTAIN AERONAUTICAL
TERMS IN ARTICLE 1 AS A RESULT OF THE ADOPTION OF PROPOSALS
CONCERNING THE FREQUENCY BANDS ALLOCATED TO AERONAUTICAL
RADIONAVIGATION AND TO THE AERONAUTICAL MOBILE (R) SERVICE

1. Group 5C1, having adopted the addition of note 273A to Article 5 of the Radio Regulations, thus envisaging the possibility of using satellite relays in the band 117.975 - 136 Mc/s, would accordingly appreciate an alignment of No. 34, which defines an aeronautical station.

It would therefore suggest that the words "or on board satellites" be added.

2. Group 5C1, having adopted the addition of note 352B to Article 5 of the Radio Regulations, thus envisaging the use and development of systems applying space telecommunication techniques for links in the aeronautical mobile "R" service, and especially for future types of aircraft, would accordingly appreciate an extension of the interpretation to be given to No. 35 of the Radio Regulations concerning aircraft stations.

It would therefore suggest that the words "or of an air-space vehicle" be added.

These latter terms should be interpreted to mean vehicles for the transport of passengers or goods between various points on the earth's surface, but with a flight altitude above the major part of the earth's atmosphere to the exclusion of any other vehicle - probe, satellite or space platform.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/58-E
23 October 1963
Original : French

WORKING GROUP 5C1

SECOND SUMMARIZED REPORT ON EXCHANGES
OF VIEWS CONCERNING PROPOSALS ON DISTRESS SIGNALS
IN THE SPACE AERONAUTICAL MOBILE SERVICE

1. At its 3rd meeting on 22 October 1963, Working Group 5C1, composed of representatives of the following delegations :

ARG - AUS - BEL - BUL - CAN - E - EGY - F - G - GRC - J - JMC -
NZL - PAK - POL - POR - S - SUI - TCH - URS - USA, and of the observer of
I.C.A.O.,

considered the two U.S.S.R. proposals on supplementary distress frequencies for the detection and recovery of cosmonauts and spacecraft.

2. This first report on the preliminary study of this problem (cf. Document No. DT/44 - Annex C) was approved without any change.
3. Group 5C1 then examined appropriate methods of meeting the requirements expressed.

In this connection a number of suggestions were submitted :

- a) To draft a recommendation to entrust to competent specialized agencies the task of thoroughly dealing with the problem of distress frequencies peculiar to the space service (I.C.A.O. and I.M.C.O. for instance).
- b) To refer to the aeronautical E.A.R.C. (in accordance with Resolutions 13 and 14, Geneva 1959) the task of allotting a frequency in the 20 Mc/s band in order to meet detection and recovery requirements.

There appears to be no need for a supplementary frequency in the VHF bands, in view of the frequencies already in service in aeronautics (121.5 and 243 Mc/s in particular).



Nevertheless, as the U.S.S.R. Delegation expressed a preference for the question to be dealt with at the present Conference, no decision has yet been taken by the Group in regard to any action concerning the subsequent operation of any frequencies which may be selected.

4. The U.S.S.R. Delegation justified its point of view by the fact that the proposed band (20010 - 20016 kc/s) is not included in the exclusive bands allocated to the aeronautical mobile service.

Having regard to this factor, Group 5C1 then considered the possibility of choosing some other adjacent band, for example in the 19990 - 20010 kc/s section.

Although attention was drawn to the low power of the alarm transmitters used by cosmonauts, it may be assumed that listening to signals different from those emitted on the standard frequency is, nevertheless, possible.

It has not, however, been possible to adopt any conclusion, as a more detailed study of the various suggestions must be made by the delegates before the next meeting.

5. Passing then to consider the case of a possible additional frequency in the VHF range, the Group unanimously recognized that the 121.5 Mc/s frequency already gives complete satisfaction for urgent aeronautical requirements.

As regards the proposal for the 114.1 - 114.4 Mc/s section situated in a band allocated to aeronautical radionavigation, most members of the Group were against its adoption. Very full regional plans for the assignment of frequencies to radio aids are already being applied in the 108 - 117.975 Mc/s band. I.C.A.O. is even contemplating in the near future a 50 kc/s spacing in this band to facilitate the development of installations, particularly in Western Europe.

5.1 Accordingly, it is proposed that the U.S.S.R. Delegation should examine the possibility of selecting one of the frequencies designated in the mobile service for search and rescue requirements, e.g. 243 Mc/s.

5.2 To offset this, one suggestion would be to investigate the possibility of clearing, in addition to frequency 121.5 Mc/s, a particular frequency in the 117.975 - 136 Mc/s band of the aeronautical mobile R service.

6. Lastly, in its desire to assess the value of each of the suggestions submitted, Group 5C1 decided to adjourn, it being left to the Chairman to fix the date of the next meeting, after consulting the delegates primarily concerned and also the Chairman of Committee 5C.

Maurice CHEF

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/59-E
23 October, 1963
Original: English

WORKING GROUP 5C

AGENDA

SEVENTH MEETING OF WORKING GROUP 5C

Thursday, 24 October, 1963 at 0930 hours

Room A

1. Adoption of First Report of Working Group 5C1 (Doc. No. DT/57)
2. To resume consideration of NAVIGATION SATELLITES
3. To resume consideration of METEOROLOGICAL SATELLITES

J. PENWARDEN

Chairman
Working Group 5C.



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/60-E
23 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5A

AGENDA

SEVENTH MEETING OF WORKING GROUP 5A

Thursday, 24 October at 14.30 (2.30 p.m.)

Reference working documents:

Doc. No. 17, Annexes 4, 6A, 7, 10, 11, 13 and 14

Doc. No. DT/12

Doc. No. DT/13

Telemetering and Tracking

1. Bands 1525 - 1535 Mc/s and 1535 - 1540 Mc/s (Doc. Nos. DT/18, DT/47)
2. Band 401 - 402 Mc/s (Doc. No. DT/18)
3. Band 267 - 273 Mc/s (Doc. No. DT/30)
4. Band 137 - 138 Mc/s (vice 5 ad hoc 136 - 138 Mc/s)

Communication-Satellites

5. Band 5725 - 6425 Mc/s (Doc. No. DT/29)
6. Band 3400 - 4200 Mc/s (Doc. No. DT/29)
7. Band 4400 - 4700 Mc/s (Doc. No. DT/39)
8. Band 1750 - 2250 Mc/s (Doc. No. DT/39)
9. Band 7900 - 8400 Mc/s (Doc. Nos. DT/33, DT/39)
(including 7975 - 8025 Mc/s on exclusive basis)
10. Band 7250 - 7750 Mc/s (Doc. Nos. DT/29, DT/33, DT/39)
(including 7250 - 7300 Mc/s on exclusive basis)
11. Band 6425 - 7150 Mc/s (Doc. No. DT/39)

P. MORTENSEN

Chairman of the Working Group 5A



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/61-E (Rev.)
25 October, 1963
Original: French,
English, Spanish

Geneva, 1963

WORKING GROUP 4C1

FIRST REPORT OF WORKING GROUP 4C1

SHARING CRITERIA

1. Annex 1 is a draft addendum to Article 7 of the Radio Regulations. This draft contains the sharing criteria which the Working Group has agreed to date.
2. The attention of Committee 4 is especially drawn to the following comments on the proposed Regulations.
Regulations 470A and 470E
3. It is recognized by the Working Group that the E.A.R.C. may wish to refer to that part of the Radio Regulations concerned with coordination procedures. However, the majority view was that reference to the pertinent C.C.I.R. Recommendations was not only acceptable but more **desirable**.
Regulations 470B, 470C and 470D
4. The Working Group has taken note of the provisional nature of C.C.I.R. Recommendation No. 406. In the absence of any further data it has proposed, in the text, the same values of power limitation as are given in that Recommendation. However it considers it important that the C.C.I.R. should be requested to continue further studies of this subject on an urgent basis and a draft Recommendation to this effect is suggested later.
Regulations 470F, 470G, 470H and 470I
5. The Working Group has taken note of the provisional nature of C.C.I.R. Recommendation No. 358. In the absence of any further data it has proposed, in the text, the same values of power flux limitations as are given in that Recommendation. However it considers it important that the C.C.I.R. should be requested to continue further studies of this subject on an urgent basis and this requirement also is covered in the draft Recommendation suggested later.



Regulations 470K, 470L and 470M

6. The Working Group has taken note that no C.C.I.R. Recommendation exists on the conditions of sharing of frequency bands between meteorological satellite services and terrestrial services. It has, for the present, therefore, proposed that the limits of power flux at the earth's surface applicable to communication-satellite services be also applied to meteorological-satellite services in bands shared with terrestrial services. However it is considered important that the C.C.I.R. be requested to study this subject on an urgent basis and this requirement also is covered in the draft Recommendation suggested later.

Regulations 470D, 470I and 470M

7. The Working Group assumes that Regulations 470D, 470I and 470M will be amended to indicate specifically the frequency bands concerned, when these have been determined.

Footnotes 1), 2), 3) and 4)

8. Apart from foot-note 5) which was fully agreed to, there was not complete agreement on the necessity of providing the other four foot-notes. In this respect, foot-notes 1) and 2) may be referred to Committee 5, foot-note 3) to Working Group 4A and foot-note 4) to Committee 4 as a whole.

Frequency sharing between other space services and terrestrial services

9. At the present no technical limitations have been prepared by the Working Group on the sharing of frequency bands between space services other than communication-satellite and meteorological-satellite services and terrestrial services. Whether such limitations will be needed is dependent upon the agreements to be reached in Committee 5.

Subject to the decisions of Committee 5, it may for example be necessary to include reference to such services as the radionavigation-satellite service and the space-research service in the text of the proposed Recommendation to the C.C.I.R.

PROPOSED RECOMMENDATION

10. In view of the foregoing, the Working Group proposes to prepare a Recommendation along the following lines:

"that in view of

- a) the provisional nature of C.C.I.R. Recommendations referring to the sharing of frequency bands between communication-satellite services and terrestrial services and

b) the lack of Recommendations referring to sharing of frequency bands between the meteorological-satellite service and terrestrial service;

the C.C.I.R. is requested

1. to continue its study of this subject on an urgent basis;
 2. to amend its Recommendations at its XI and subsequent Plenary Assemblies if changes in the present Recommendations are needed in the light of new data, to ensure more effective sharing of frequency bands on an equal basis by communication-satellite services and terrestrial services;
 3. to make such Recommendations as may be necessary to ensure sharing of frequency bands on an equal basis by the meteorological-satellite service and terrestrial services."
11. The object of this Recommendation is to ensure that if new Recommendations on these subjects are prepared by the C.C.I.R., they should be brought to the attention of the appropriate Radio Frequency Conference which may be held at a date later than the C.C.I.R. XIth Plenary Assembly and at which the present proposed revisions of Article 7 may be revised.
12. If Committee 4 accepts in principle the proposal to prepare such a Recommendation it is the intention of Working Group 4C to prepare **a final draft accordingly.** Account should be taken of existing C.C.I.R. Study Programs 235A and 235B, in addition to parallel Recommendations submitted by Administrations through the E.A.R.C.

J.R. MARCHAND
Chairman

Annex : 1

A N N E X

SECTION VII. TERRESTRIAL SERVICES SHARING
FREQUENCY BANDS WITH SPACE SERVICES
BETWEEN 1 Gc/s AND 10 Gc/s

Choice of Sites and Frequencies

- 470A 18. Sites and frequencies¹⁾ for terrestrial stations, operating in frequency bands shared on an equal basis between terrestrial and space services, shall be selected having regard to the relevant recommendations of the C.C.I.R. with respect to the geographical separation from earth stations.

Power Limitations

- 470B 19. 1) The maximum effective radiated power level of the transmitter and associated antenna, of a station in the fixed or mobile services, shall not exceed + 55 dbW.
- 470C 2) The power level delivered by a transmitter to the antenna of a station in the fixed or mobile services shall not exceed + 13 dbW.
- 470D 3) The limitations given in 470B and 470C apply in those frequency bands allocated to reception by space stations in the communications satellite service, shared with fixed or mobile services.

SECTION VIII. SPACE SERVICES SHARING
FREQUENCY BANDS WITH TERRESTRIAL SERVICES
BETWEEN 1 Gc/s AND 10 Gc/s

Choice of Sites and Frequencies

- 470E 20. Sites and frequencies²⁾ for earth stations, operating in frequency bands shared on an equal basis between terrestrial and space services shall be selected having regard to the relevant recommendations of the C.C.I.R. with respect to the geographical separation from terrestrial stations.

Footnotes:

- 1) Terrestrial station frequencies shall be assigned in bands allocated to terrestrial station transmissions.
- 2) Earth station frequencies shall be assigned in bands allocated to earth station transmissions.

Power Flux Density Limitations

470F 21. 1) Communications Satellites

470G a) The total power flux density level at the earth's surface, produced by an emission from an active communications satellite, or reflected (or scattered) from a passive communications satellite, where wide deviation frequency (or phase) modulation is used, shall in no case exceed -130 dBW/m^2 for all angles of arrival. In addition, such signals shall be continuously modulated, if necessary by a suitable waveform, so that the power flux density level shall in no case exceed -149 dBW/m^2 in any 4 Kc/s band for all angles of arrival.

470H b) The power flux density level at the earth's surface, produced by an emission from an active communications satellite, or reflected (or scattered) from a passive communications satellite, where modulation other than wide deviation frequency (or phase) modulation is used, shall in no case exceed -152 dBW/m^2 in any 4 Kc/s band for all angles of arrival.

470I c) The limitations given in 470G and 470H apply in those frequency bands allocated to transmissions by space stations in the communications satellite service, shared with fixed or mobile services.

470J 2) Meteorological Satellites 3) 4)

470K a) The power flux density level at the earth's surface, produced by the emission from an active satellite in the meteorological satellite service, where wide deviation frequency (or phase) modulation is used, shall in no case exceed -130 dBW/m^2 for all angles of arrival. In addition, such signals shall be continuously modulated, if necessary by a suitable waveform, so that the power flux density level shall in no case exceed -149 dBW/m^2 in any 4 Kc/s band for all angles of arrival.

Footnotes:

- 3) The emissions from an active satellite in the meteorological service, considered in 470K, 470L and 470M, are those used for the transmissions to earth of meteorological information obtained directly through instruments on board such a satellite.
- 4) In view of the absence of any C.C.I.R. Recommendations on Meteorological satellites, the provisional C.C.I.R. Recommendations on power flux density levels for Communications satellites are extended to Meteorological satellites.

- 470L b) The power flux density level at the earth's surface, produced by an active satellite in the meteorological satellite service, where modulation other than wide deviation frequency (or phase) modulation is used, shall in no case exceed -152 dBW/m^2 in any 4 Kc/s band for all angles of arrival.
- 470M c) The limitations given in 470K and 470L apply in those frequency bands allocated to reception by earth stations in the meteorological satellite service, shared with fixed or mobile services.

SECTION IX. SPACE SERVICES

Cessation of Emissions

- 470N 22. Space stations shall be made capable of ceasing radio emissions by the use of appropriate devices⁵⁾ that will ensure definite cessation of emissions.

Footnote:

- 5) Battery life, timing devices, ground command, etc.

Geneva, 1963

WORKING GROUP 4C1

FIRST REPORT OF WORKING GROUP 4C1

SHARING CRITERIA

1. Annex 1 is a draft addendum to Article 7 of the Radio Regulations. This draft contains the sharing criteria which the Working Group has agreed to date.

2. The attention of Committee 4 is especially drawn to the following comments on the proposed Regulations.

Regulations 470B, 470C and 470D

3. The Working Group has taken note of the provisional nature of C.C.I.R. Recommendation No. 406. In the absence of any further data it has proposed, in the text, the same values of power limitation as are given in that Recommendation. However it considers it important that the C.C.I.R. should be requested to continue further studies of this subject on an urgent basis and a draft Recommendation to this effect is suggested later.

Regulations 470F, 470G, 470H and 470I

4. The Working Group has taken note of the provisional nature of C.C.I.R. Recommendation No. 358. In the absence of any further data it has proposed, in the text, the same values of power flux limitations as are given in that Recommendation. However it considers it important that the C.C.I.R. should be requested to continue further studies of this subject on an urgent basis and this requirement also is covered in the draft Recommendation suggested later.

Regulations 470K, 470L and 470M

5. The Working Group has taken note that no C.C.I.R. Recommendation exists on the conditions of sharing of frequency bands between meteorological satellite services and terrestrial services. It has, for the present, therefore, proposed that the limits of power flux at the earth's surface applicable to communication-satellite services be also applied to meteorological-satellite services in bands shared with terrestrial services. However it is considered important that the C.C.I.R. be requested to study this subject on an urgent basis and this requirement also is covered in the draft Recommendation suggested later.

Frequency sharing between other space services and terrestrial services

6. At the present no technical limitations have been prepared by the Working Group on the sharing of frequency bands between space services other than communication-satellite and meteorological-satellite services and terrestrial services. Whether such limitations will be needed is dependent upon the agreements to be reached in Committee 5.



7. Subject to the decisions of Committee 5, it may also be necessary to include reference to such services as the radionavigation-satellite service and the space-research service in the text of the proposed Recommendation to the C.C.I.R.

PROPOSED RECOMMENDATION

8. In view of the foregoing, the Working Group proposes to prepare a Recommendation along the following lines :

"that in view of

- a) the provisional nature of C.C.I.R. Recommendations referring to the sharing of frequency bands between communication-satellite services and terrestrial services and
- b) the lack of Recommendations referring to sharing of frequency bands between the meteorological-satellite service and terrestrial service;

the C.C.I.R. is requested

- 1. to continue its study of this subject on an urgent basis;
 - 2. to make new Recommendations at its XI Plenary Assembly if changes in the present Recommendations are needed to ensure sharing of frequency bands on an equal basis by communication-satellite services and terrestrial services;
 - 3. to make such Recommendations as may be necessary to ensure sharing of frequency bands on an equal basis by the meteorological-satellite service and terrestrial services."
9. The object of this Recommendation is to ensure that if new Recommendations on these subjects are prepared by the C.C.I.R., they should be brought to the attention of the appropriate Radio Frequency Conference which may be held at a date later than the C.C.I.R. XIth Plenary Assembly and at which the present proposed revisions of Article 7 may be revised.
10. If Committee 4 accepts in principle the proposal to prepare such a Recommendation it is the intention of Working Group 4C to prepare a final draft accordingly.

J.R. MARCHAND
Chairman

Annex: 1

A N N E X

SECTION VII. TERRESTRIAL SERVICES SHARING
FREQUENCY BANDS WITH SPACE SERVICES
BETWEEN 1 Gc/s AND 10 Gc/s

Choice of Sites and Frequencies

- 470A 18. Sites and frequencies¹⁾ for terrestrial stations, operating in frequency bands shared on an equal basis between terrestrial and space services, shall be selected having regard to the relevant recommendations of the C.C.I.R. with respect to the geographical separation from earth stations.

Power Limitations

- 470B 19. 1) The maximum effective radiated power level of the transmitter and associated antenna, of a station in the fixed or mobile services, shall not exceed + 55 dbW.
- 470C 2) The power level delivered by a transmitter to the antenna of a station in the fixed or mobile services shall not exceed + 13 dbW.
- 470D 3) The limitations given in 470B and 470C apply in those frequency bands allocated to reception by space stations in the communications satellite service, shared with fixed or mobile services.

SECTION VIII. SPACE SERVICES SHARING
FREQUENCY BANDS WITH TERRESTRIAL SERVICES
BETWEEN 1 Gc/s AND 10 Gc/s

Choice of Sites and Frequencies

- 470E 20. Sites and frequencies²⁾ for earth stations, operating in frequency bands shared on an equal basis between terrestrial and space services shall be selected having regard to the relevant recommendations of the C.C.I.R. with respect to the geographical separation from terrestrial stations.

Footnotes:

- 1) Terrestrial station frequencies shall be assigned in bands allocated to terrestrial station transmissions.
- 2) Earth station frequencies shall be assigned in bands allocated to earth station transmissions.

Power Flux Density Limitations

470F 21. 1) Communications Satellites

470G a) The total power flux density level at the earth's surface, produced by an emission from an active communications satellite, or reflected (or scattered) from a passive communications satellite, where wide deviation frequency (or phase) modulation is used, shall in no case exceed -130 dBW/m^2 for all angles of arrival. In addition, such signals shall be continuously modulated, if necessary by a suitable waveform, so that the power flux density level shall in no case exceed -149 dBW/m^2 in any 4 Kc/s band for all angles of arrival.

470H b) The power flux density level at the earth's surface, produced by an emission from an active communications satellite, or reflected (or scattered) from a passive communications satellite, where modulation other than wide deviation frequency (or phase) modulation is used, shall in no case exceed -152 dBW/m^2 in any 4 Kc/s band for all angles of arrival.

470I c) The limitations given in 470G and 470H apply in those frequency bands allocated to transmissions by space stations in the communications satellite service, shared with fixed or mobile services.

470J 2) Meteorological Satellites 3) 4)

470K a) The power flux density level at the earth's surface, produced by the emission from an active satellite in the meteorological satellite service, where wide deviation frequency (or phase) modulation is used, shall in no case exceed -130 dBW/m^2 for all angles of arrival. In addition, such signals shall be continuously modulated, if necessary by a suitable waveform, so that the power flux density level shall in no case exceed -149 dBW/m^2 in any 4 Kc/s band for all angles of arrival.

Footnotes:

3) The emissions from an active satellite in the meteorological service, considered in 470K, 470L and 470M, are those used for the transmissions to earth of meteorological information obtained directly through instruments on board such a satellite.

4) In view of the absence of any C.C.I.R. Recommendations on Meteorological satellites, the provisional C.C.I.R. Recommendations on power flux density levels for Communications satellites are extended to Meteorological satellites.

- 470L b) The power flux density level at the earth's surface, produced by an active satellite in the meteorological satellite service, where modulation other than wide deviation frequency (or phase) modulation is used, shall in no case exceed -152 dBW/m^2 in any 4 Kc/s band for all angles of arrival.
- 470M c) The limitations given in 470K and 470L apply in those frequency bands allocated to reception by earth stations in the meteorological satellite service, shared with fixed or mobile services.

SECTION IX. SPACE SERVICES

Cessation of Emissions

- 470N 22. Space stations shall be made capable of ceasing radio emissions by the use of appropriate devices⁵⁾ that will ensure definite cessation of emissions.

Footnote:

- 5) Battery life, timing devices, ground command, etc.

CONFERENCE DES
RADIOCOMMUNICATIONS
SPATIALES

Genève, 1963

Document N° DT/62-F/E 13
24 octobre 1963
Original : français

GROUPE DE TRAVAIL 4B

Réunion du 25 octobre 1963 à 14 h. 30

ORDRE DU JOUR

1. Etude du Document N° DL/12.
2. Approbation du Document N° DL/25 (rapport).
3. Divers.

Le Président
P. BOUCHIER

Document No. DT/62-E
24 October, 1963
Original : French

WORKING GROUP 4B

Meeting at 2.30 p.m., 25 October, 1963

AGENDA

1. Study of Document No. DL/12.
2. Approval of Document No. DL/25 (report).
3. Various.

Chairman.
P. BOUCHIER

Documento N.° DT/62-S
24 de octubre de 1963
Original: francés

GRUPO DE TRABAJO 4B

Sesión del 25 de octubre de 1963, a las 2 y media de la tarde

ORDEN DEL DÍA

1. Documento N.° DL/12.
2. Documento N.° DL/25 (Informe).
3. Otros asuntos.

El Presidente,
P. BOUCHIER



SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/63-E
24 October 1963
Original : French

WORKING GROUP 5C1

AGENDA

4th MEETING OF WORKING GROUP 5C1

Saturday 26 October, 11.15 a.m.

1. Adoption of the summary report on the study of urgency signal frequencies in the aeronautical mobile service (Document No. DT/58).
2. Further examination of the proposals for detection and recovery frequencies in the aeronautical mobile space service (Document No. DT/16, page 10, last two paragraphs).
3. Any other business.

Maurice CHEF
Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/64-E
24 October, 1963
Original : English

Geneva, 1963

WORKING GROUP 5C

AGENDA

EIGHTH MEETING OF WORKING GROUP 5C

Friday, 25 October, 1963 at 0930 hours

Room A

1. To resume consideration of METEOROLOGICAL SATELLITES (Doc. No. DT/65)
2. To resume consideration of NAVIGATION SATELLITES
3. Any other business

J. PENWARDEN
Chairman

Working Group 5C



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/65-E
24 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5C

METEOROLOGICAL SATELLITES

Reference Document No. DT/36

At the meeting of the ad hoc Group of 5C on Tuesday, considerable discussion took place on the proposal to allocate the band 460 - 470 Mc/s to METEOROLOGICAL SATELLITES.

A possible solution to the problem of safeguarding existing services in this band was suggested, as follows:

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
420 - 460	FIXED MOBILE 318	
460 - 470	FIXED MOBILE METEOROLOGICAL SATELLITES 318A	

NOC 318

ADD 318A

Stations of the FIXED and MOBILE Services shall be protected from harmful interference by transmissions from METEOROLOGICAL SATELLITES whose operations should be co-ordinated under the provisions of Recommendation "X".



Recommendation "X"

A suitable Recommendation on the lines of No. 33 of the Radio Regulations, Geneva, 1959, to Administrations and the World Meteorological Organisation to effect such co-ordination as is necessary.

J. PENWARDEN

Chairman
Working Group 5C

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/66-E
24 October 1963
Original : English

Geneva, 1963

WORKING GROUP 5A

DRAFT

SECOND REPORT BY WORKING GROUP 5A
TO COMMITTEE 5 (Allocations)

TELEMETERING

1. Band 1525 - 1540 Mc/s

1.1 All proposals before the Conference concerning this band have been considered.

1.2 The largest measure of agreement is represented by the draft new Table with new and revised footnotes, given in the Appendix 1 attached hereto.

1.3 A different point of view was expressed by the Delegation of Cuba who favoured the retention in Region 2 of the existing primary category for the mobile service in the band 1525 - 1535 Mc/s. The Delegations of the U.S.A. and Canada objected to the inclusion of a footnote to this effect for Cuba.

1.4 The Delegations of the U.S.S.R., Poland, Czechoslovakia and Bulgaria reserved their positions and the right to return to this subject, if they still so desire, at a later stage.

2. Band 401 - 402 Mc/s

2.1 All proposals before the Conference concerning this band have been considered.

2.2 General agreement was obtained and is represented by the draft new Table with associated footnotes given in the Appendix 2 attached hereto.

Rapporteur
J.W. JEWERS

Chairman
Working Group 5A
P. MORTENSEN

Appendices: 2.



A P P E N D I X 1

Mc/s

Allocation to Services			
	Region 1	Region 2	Region 3
ADD	1525 - 1535 SPACE TELEMETERING 350A FIXED 350B Mobile except aeronautical Mobile 350C	1525 - 1535 SPACE TELEMETERING 350A Fixed Mobile	1525 - 1535 SPACE TELEMETERING 350A FIXED 350B Mobile 350D
ADD ADD MOD	1535 - 1540	SPACE TELEMETERING 350A 351 352	

MOD 341 Delete band from 1535 - 1540 Mc/s from this footnote, retain 1540 - 1660 Mc/s/

ADD 350A Space stations employing frequencies in the band 1525 - 1540 Mc/s may also transmit tracking signals in the band.

ADD 350B As regards the category of the fixed service, see Resolution No....

ADD 350C In Albania, Bulgaria, France, Hungary, Poland, Roumania, Czechoslovakia and the U.S.S.R., the mobile service allocation is on a primary basis. As regards the category of this service, see Resolution No....

ADD 350D In Japan, the mobile service allocation is on a primary basis until 1 January 1969.

MOD 351 In Italy, the band 1535 - 1600 Mc/s is also allocated to the fixed service until 1 January 1970.

MOD 352 In Albania, Bulgaria, Hungary, Poland, Roumania, Czechoslovakia and the U.S.S.R. the band 1535 - 1660 Mc/s is also allocated to the fixed service. As regards the category of the fixed service in the band 1535 - 1540 Mc/s, see Resolution No.....

ADD 352A In Austria, Indonesia and the Federal Republic of Germany, the band 1540 - 1660 Mc/s is also allocated to the fixed service.

A P P E N D I X 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
401 - 402	METEOROLOGICAL AIDS SPACE TELEMETERING 315A Fixed Mobile except aeronautical mobile 314 315 316	

MOD 314 In the United Kingdom, the band 400,05 - 420 Mc/s is also allocated to the radiolocation service; however, between 400,05 and 410 Mc /s the allocation to the radiolocation service is on a secondary basis.

ADD 315A Space stations employing frequencies in the band 401 - 402 Mc/s may also transmit tracking signals in the band.

NOC 315

NOC 316

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/67-E
24 October, 1963
Original : English

Geneva, 1963

WORKING GROUP 5A

TELEMETERING

Transitional text as a basis for discussion only.

Band 267 - 273 Mc/s

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
267 - 272	FIXED MOBILE Space Telemetry	309A 309B
272 - 273	SPACE TELEMETERING FIXED MOBILE except aeronautical mobile	309A

ADD 309A Space stations employing frequencies in the band 267 - 273 Mc/s may also transmit tracking signals in the band.

ADD 309B In those countries where the band 267 - 272 Mc/s is used by the space telemetry service, this service is a primary service.

P. MORTENSEN
Chairman
Working Group 5A



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/68-E
25 October 1963
Original : English

Geneva, 1963

WORKING GROUP 4C2

FIRST REPORT OF WORKING GROUP 4C2

COORDINATION DISTANCE PROCEDURE IN THE 1-10 Gc/s BAND

The text of a proposed Appendix to the Regulations, dealing with the procedure for calculating the coordination distance between earth stations and terrestrial stations sharing the same frequency band, is given in this document. The calculation of coordination distance, as shown in Tables 1 and 2, is based on the worst possible sharing conditions i.e. co-channel operation of the two services, and the situation when the receiving station antenna has the maximum horizontal antenna gain in the direction of the transmitting station. These are the assumptions that are made in computing the coordination distance.

If the calculation of coordination distance is uniquely carried out by the Administration planning an earth station, as in C.C.I.R. Recommendation 359, then a few minor changes in the text of this document will be necessary. However, this depends upon the precise procedures which Committee 6 will decide to adopt and the calculation procedures outlined herein are therefore more general than may be necessary for the proposed Appendix.

At a later time, the separation distances between the earth stations and terrestrial stations would be calculated in required instances, taking account of the precise frequency spacings, effective antenna directivities and other known parameters of both the terrestrial and earth stations. Under these conditions, the required separation distances will usually be much less than the corresponding coordination distances. In this connection, it is thought that Committee 6 may be interested to note the reduction of permissible basic transmission loss which could arise when "offset" or "inter-leaved" operation of an earth station and a terrestrial station takes place. A specific example of offset operation is computed in Tables A and B, using the system parameters and frequency offset described in C.C.I.R. Report 209, Annex 1. The reduction in permissible basic transmission loss due to a nominal frequency offset of about 10 Mc/s in this case may be noted by comparing the attached Tables A and B with Tables 1 and 2, respectively, of the text.



It should be noted in comparing Tables 1 and A that the former uses the power per 4 kc/s as a parameter whereas the latter employs the total power as a parameter. In order to compare the results on a proper basis the transmission loss formula of Table 1 must be converted for a total power parameter by subtracting 19 db from the constant term - i.e. change 174 to 155. And for this example the improvement because of frequency offset is some 16 db for both pairs of tables.

Committee 4 has not prepared a formal draft of the proposed Recommendation to attach to the Appendix, but seeks guidance from Committee 6 as the appropriate form which this should take for the Regulations.

This covering Memorandum is provided for the information of the Members of Committees 4 and 6 and is not intended to be a necessary part of the Regulations.

TABLE A

INTERFERENCE FROM AN EARTH STATION TRANSMITTER TO A TERRESTRIAL
LINE-OF-SIGHT RADIO-RELAY SYSTEM

OFFSET CHANNEL CASE

	Percentage of time not exceeded	Values for offset channel case
Permissible total interference in any telephone channel	0.01%	-40 dbm0
Permissible interference from one earth station to one radio-relay system receiver, assuming 4 such non-simultaneous interference entries may occur	0.0025%	-40 dbm0
Receiver Transfer Characteristic assuming heavy loading of interfering transmission.	-	17 db
Hence maximum value of unwanted-to wanted signal ratio at the receiver	0.0025%	-23 db
Minimum level of wanted signal at receiver input	-	-74 db W
Hence, permissible level of unwanted signal at receiver input	0.0025%	-97 db W
Radio-relay station antenna gain less feeder losses	-	42 db
Effective earth station antenna gain in the horizontal plane less feeder and polarization losses	2.5	G_{earth} db
Power supplied by earth station transmitter to the antenna	-	P_{earth}^* db W
Earth Station Site-Shielding factor if applicable	-	F_s db
Minimum permissible basic transmission loss, L_b , in decibels	0.1%	$P_{\text{earth}} + G_{\text{earth}} - F_s + 139$

*) Note. P_{earth} is total power supplied by earth station transmitter to the antenna.

TABLE B

INTERFERENCE FROM A TERRESTRIAL LINE-OF-SIGHT RADIO-RELAY
TRANSMITTER TO A COMMUNICATION-SATELLITE EARTH STATION RECEIVER
(OFFSET CHANNEL CASE)

	Percentage of Time not exceeded	Values for offset Channel Case
Permissible total interference in any telephone channel	0.02%	- 38 dbm0
Permissible interference from one terrestrial station to one earth station, assuming 4 such non-simultaneous interference entries may occur	0.005%	- 38 dbm0
Receiver Transfer Characteristic assuming heavy loading of the wanted signal	-	26 db
Hence, maximum value of unwanted-to-wanted signal ratio at the receiver input	0.005%	- 12 db
Minimum level of wanted signal at receiver input	-	- 117 db W
Hence, permissible level of unwanted signal at receiver input	0.005%	- 129 db W
Effective earth station antenna gain in the horizontal plane	5%	G_{earth} db
Radio-relay station antenna gain less feeder loss	-	$G_{\text{terr.}}$ db
Earth Station Site-Shielding Factor where applicable	-	F_s db
Power supplied by terrestrial station transmitter to its antenna	-	P_{terr} db W
Minimum basic transmission loss, L_b , in decibels	0.1%	$P_{\text{terr}} + G_{\text{terr}}$ - F_s + $G_{\text{earth}} + 129$

PROCEDURE FOR CALCULATING COORDINATION DISTANCE
BETWEEN EARTH STATIONS OF SPACE SERVICES AND TERRESTRIAL
STATIONS SHARING THE SAME FREQUENCY BAND IN THE RANGE 1 - 10 Gc/s

1. Objectives

Coordination is required when earth stations and terrestrial stations operate in shared frequency bands on an equal basis. In specific circumstances, coordination may involve two or more Administrations depending upon the siting of the stations and the coordination distances*) involved. The coordination area around an earth station is arrived at by ascertaining the coordination distance measured in the various azimuths from that station.

For the calculation of coordination distance two separate cases must be considered:

- a) interference from an earth station transmitter to terrestrial station receivers;
- b) interference from terrestrial station transmitters to an earth station receiver.

In the case of a) it has been assumed that the terrestrial receiving station is a line-of-sight radio relay station designed according to C.C.I.R. standards. In the case of b) it has been assumed that the earth station forms a part of a communication satellite system. Further, in order to ensure that a safe value of coordination distance shall be obtained, it has been assumed that in both cases the receiving station antenna is of typically high gain. For the same reason, in both cases, appropriately low-noise sensitive receivers are assumed.

While the characteristics thus assumed for the receiving stations apply particularly to frequency sharing between communication satellite systems and line-of-sight radio-relay systems they are sufficiently conservative to cover coordination with other forms of frequency sharing that may be necessary between space services and terrestrial services in the 1-10 Gc/s range, e.g., between meteorological satellite services and terrestrial services.

*) Coordination distance is defined in R.R.

2. Minimum Permissible Basic Transmission Loss (L_b)

The general formula for calculating the required minimum permissible basic transmission loss is :

$$(1) \quad L_b = (P_t + G_t) - F_s - (P_r - G_r)$$

where P_t :- Power in dbW supplied by the interfering transmitter to its antenna

G_t :- Effective gain in dB of transmitting antenna of the interfering station in direction of the receiver liable to interference, including the effect of all feeder losses, polarization discrimination and losses due to any artificial screens.

F_s :- The earth station site-shielding factor in dB, discussed later.

P_r :- The maximum permissible interference level in dbW at the receiver input of the affected station.

G_r :- The gain in dB of the receiving antenna of the affected station in the direction of the interfering transmitter, less feeder loss and polarization discrimination if applicable.

When considering interference to telephone transmission systems, particularly in the case of systems using frequency modulation, it is convenient to operate in terms of the power densities in any 4 kc/s bandwidth. Therefore, in the case of interference from an earth station transmitter to terrestrial radio relay systems, P_t is taken as the maximum power density in any 4 kc/s bandwidth supplied by the earth station transmitter to its antenna, and similarly P_r is the maximum permissible power density for any 4 kc/s bandwidth at the receiver input.

When considering interference from a terrestrial transmitter to an earth station receiver, it is more convenient to consider P_t and P_r of (1) as total powers rather than power densities.

It is assumed in computing coordination distances that the communication satellite system is employing carrier energy dispersal techniques when lightly loaded.

3. Computations for Minimum Permissible Basic Transmission Loss

In any direction from the transmitting station, the required minimum value of permissible basic transmission loss (L_b) is obtained as shown in Tables 1 and 2 below.

TABLE 1

INTERFERENCE FROM AN EARTH STATION TRANSMITTER TO A TERRESTRIAL
LINE OF SIGHT RADIO-RELAY SYSTEM

	Percentage of time	Values to be assumed for coordination
Permissible total interference in any telephone channel	0.01%	-40 dbm0
Permissible interference from one earth station to one radio-relay system receiver, assuming 4 such non simultaneous interference entries may occur	0.0025%	-40 dbm0
Receiver Transfer Characteristic assuming carrier energy dispersion to distribute interference uniformly over at least 300 kc/s bandwidth	-	1 db (light loading worst case)
Hence maximum value of unwanted-to wanted signal ratio at the receiver	0.0025%	-39 db
Minimum level of wanted signal at receiver input	-	-74 db W
Hence, permissible level of unwanted signal at receiver input, assuming carrier energy dispersion, as above	0.0025%	-113 db W
Factor for conversion of interference bandwidth from 300 kc/s to 4 kc/s	-	19 db
Hence, permissible level of unwanted signal at receiver input in any 4 kc/s bandwidth	0.0025%	-132 db W (per 4 kc/s)
Radio-relay station antenna gain less feeder losses (See Note 1)	-	G _{terr.} db (maximum value 42 db)
Effective earth station antenna gain in the horizontal plane loss feeder and polarization losses (Note 2)	2.5%	G _{earth} db
Power supplied by earth station transmitter to the antenna per 4 kc/s bandwidth	-	P _{earth} dbW
Earth Station Site-Shielding Factor if applicable	-	F _s db
Minimum permissible basic transmission loss, L _b , in decibels	0.1%	P _{earth} + G _{earth} - F _s + 174

Note 1 Since no other information would be available, the maximum value of 42 dB for G_{terr} , as given in Table 1 applies. However, when the sensitivity to interference of the terrestrial system is known to be greater than 42 dB, correspondingly larger values of G_{terr} may be used. Using a value of 42 dB for G_{terr} , the formula for the minimum permissible basic transmission loss exceeded for all but 0.1 % of the time becomes:

$$L_b = P_{earth} + G_{earth} - F_s + 174 \text{ db}$$

Note 2 For simplicity, the appropriate value of G_{earth} to be used shall be the maximum value obtained in the horizontal plane in the pertinent azimuthal direction rather than the value exceeded for 2.5 % of the time. However, when site-shielding is allowed, the value to be used shall be that maximum value obtaining at the angle of elevation of the screening obstacle.

TABLE 2

INTERFERENCE FROM A TERRESTRIAL LINE-OF-SIGHT RADIO-RELAY
TRANSMITTER TO A COMMUNICATION-SATELLITE EARTH STATION RECEIVER

	Percentage of Time	Values to be assumed for coordination
Permissible total interference in any telephone channel	0.02%	- 38 dbm0
Permissible interference from one terrestrial station to one earth station, assuming 4 such non-simultaneous interference entries may occur.	0.005%	- 38 dbm0
Receiver Transfer Characteristic assuming carrier energy dispersion of the wanted signal	-	10 db
Hence, maximum value of unwanted-to-wanted signal ratio at the receiver input	0.005%	- 28 db
Minimum level of wanted signal at receiver input	-	- 117 db W
Hence, permissible level of unwanted signal at receiver input	0.005%	- 145 db W
Effective earth station antenna gain in the horizontal plane (Note 1)	5%	G _{earth} db
Radio-relay station antenna gain less feeder loss (Note 1)	-	G _{terr.} db
Earth Station Site-Shielding Factor where applicable	-	F _s db
Power supplied by terrestrial station transmitter to its antenna	-	P _{terr} db W
Minimum permissible basic transmission loss, L _b , in decibels. (Note 2)	0.1%	P _{terr} + G _{terr} - F _s + G _{earth} + 145

Note 1 For simplicity, the appropriate value of G_{earth} to be used shall be that maximum value obtained in the horizontal plane in the pertinent azimuthal direction rather than the value exceeded for 5% of the time. However, when site-shielding is allowed, the value to be used shall be that maximum value obtaining at the angle of elevation of the obstacle. If the value of G_{earth} is not known, a value of 20 dB should be employed and the formula for the minimum permissible basic transmission loss exceeded for all but 0.1% of the time becomes:

$$L_b = P_{terr.} + G_{terr.} - F_s + 165 \text{ dB}$$

Note 2 The application of coordination distance procedures for frequency sharing of this type may be facilitated by the administration desiring to set up an earth station preparing contours of coordination distance in the various azimuthal directions for several discrete levels of radiated power from the terrestrial station.

4. Site Shielding Factor

In cases where earth stations are sited below the level of surrounding or nearby terrain it is necessary to adopt the following procedure. Thus, if, in a given azimuthal direction, an obstacle provides an angle of elevation, α , to the earth station then - for that azimuthal direction - it is necessary, in calculating coordination distance, to employ the maximum earth station antenna gain at the angle of elevation, α , rather than the maximum gain along the horizontal.

As previously discussed, where site-shielding applies, the value of required basic transmission loss, L_b , may be reduced by a site-shielding factor, F_s , expressed in decibels. The following values of site-shielding factor shall apply when the obstacle limiting the angle of elevation is situated more than 5 kilometres away from the earth station.

Minimum angle of elevation, α , of obstacle as seen from earth station	Allowable value of site-shielding factor; F_s , in decibels
below 1°	0
between 1° and 2°	5
between 2° and 3°	8
between 3° and 4°	11
between 4° and 5°	13
More than 5°	15

In the case of nearer obstacles the values of site shielding factor which apply may be obtained by multiplying the tabulated values by the fraction $d/5$, where d is the distance from the earth station to the obstacle in kilometres.

5. Equivalent basic transmission loss at 4 Gc/s (L_b')

The propagation data considered in the next paragraph relates to a frequency of 4 Gc/s and it is therefore in general necessary to convert the minimum permissible basic transmission loss (L_b) into an equivalent loss at 4 Gc/s (L_b') before using these data to find the coordination distance.

The equivalent loss in decibels at 4 Gc/s is given by:

$$L_p' = L_p + 13 - 21.6 \log_{10} f$$

where f is the assigned frequency in Gc/s. This relationship is shown in Fig. 1.

Coordination distance

6. World Radio Climatic Conditions and Propagation Data.

The propagation curves of Figure 2 are labelled A, B, and C, and correspond to the various basic radio-climatic regions of the world as follows:-

Zone A: Land

Zone B: Sea, at latitudes greater than
23.5° N and 23.5° S

Zone C: Sea, at latitudes between 23.5° N
and 23.5° S inclusive.

In any direction from the earth station the required coordination distance is found as follows:

(i) if the equivalent basic transmission loss L_p' is such that the coordination distance in the given direction lies wholly within one of the zones, the coordination distance may be obtained directly from Figure 2 using the appropriate curve;

(ii) if the coordination distance lies partly in one zone and partly in another, the curves for mixed paths, Figures 3, 4 and 5 should be used. These curves show the loss L_p' as a function of the path length in each of the two zones separately. Thus, if the path length in one zone and the required loss are known, the path length in the other zone can be determined. The path length in the first zone is the known distance from the earth station to the zone boundary in the direction concerned, hence the further length in the second zone can be found. The total path length, or coordination distance, is the sum of these two paths lengths. Figures 3, 4 and 5 cover all cases of mixed paths in two zones as follows:

Fig. 3: Zones A and B,

Fig. 4: Zones A and C,

Fig. 5: Zones B and C.

An example of the coordination distance calculation for a mixed path is worked out in the Annex.

(iii) In certain geographical areas where propagation losses are known to be less than the values given by the pertinent zonal propagation curves, coordination distances should be computed on the basis of the better propagation data.

7. Coordination distances for paths in Zone A only *)

The calculation of coordination distance will in many cases involve propagation over land only, for which curve A of Fig. 2 applies. Under such conditions the coordination distances can be plotted against the effective radiated power less earth station site shielding factor - i.e. $P_{\text{earth}} + G_{\text{earth}} - F_s$ for one direction and $P_{\text{terr}} + G_{\text{terr}} - F_s$ for the other direction. These parameters are plotted in Figures 6 and 7 versus coordination distance.

*) This paragraph is provided for the information of members of Committees 4 and 6 and may not be a necessary part of the Regulations.

A N N E X

EXAMPLE OF CO-ORDINATION DISTANCE CALCULATION
FOR A MIXED PATH

The procedure to be followed in the case of a mixed path is illustrated by the following example, in which it is assumed that a basic transmission loss of 190 db is required to avoid interference from an earth station to terrestrial services in a given direction.

As shown in Fig. 8a, the earth station is situated 50 km from the coast and there is an oversea path of 150 km before the coastline of a neighbouring country is reached. It is required to find the co-ordination distance from the earth station in the given direction using the mixed paths propagation chart represented by Fig. 8b. The procedure is as follows:

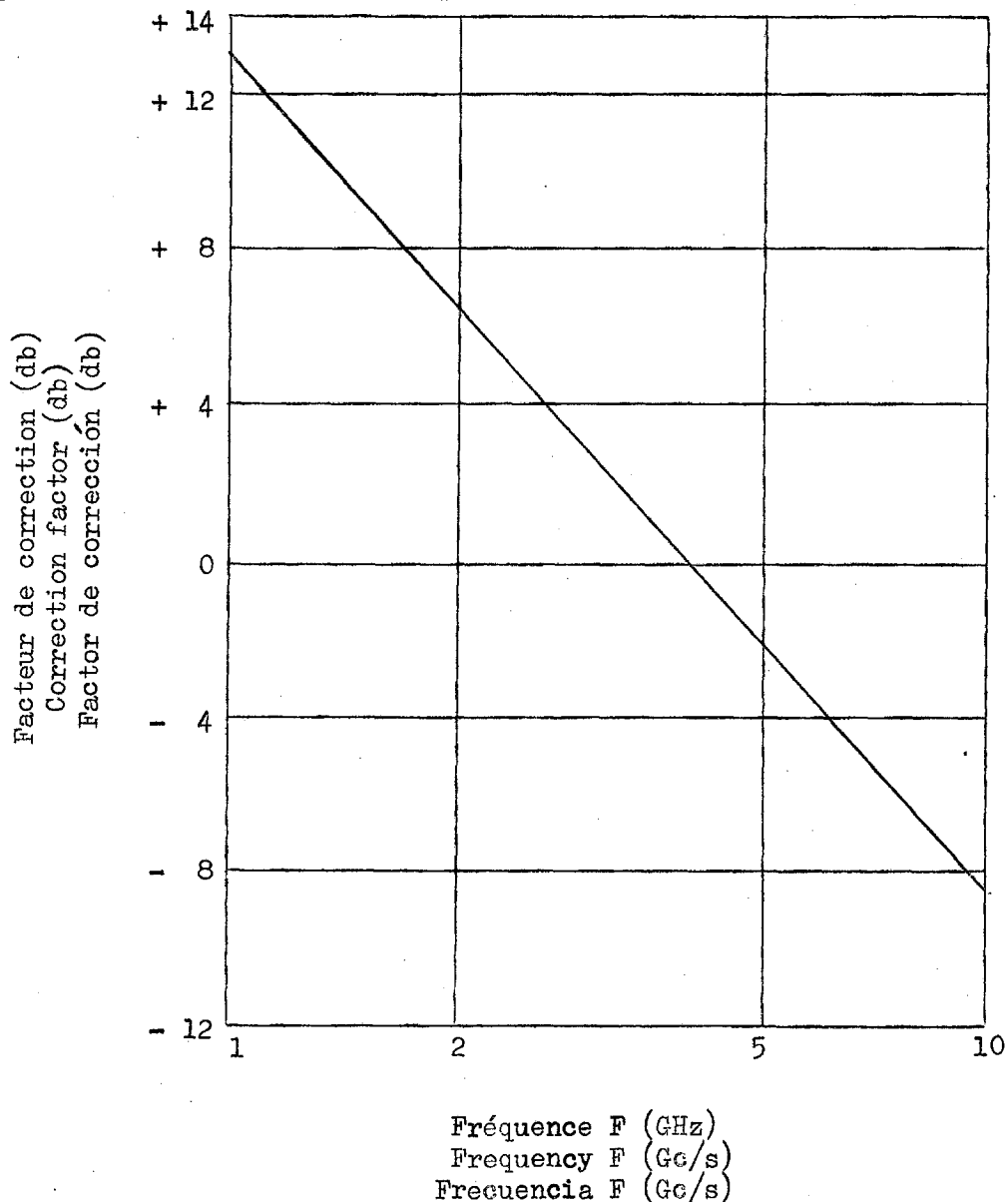
- 1) Starting from the origin, the distance of 50 km from the earth station to the coastline is set off along the A axis of the chart as indicated by the point A₁.
- 2) The oversea path length of 150 km is then set off parallel to the B axis of the chart as indicated by the point B₁.
- 3) The further overland distance required is then measured parallel to the A axis from the point B₁ to the point of intersection with the 190 db curve, as indicated by X. This distance is found to be 75 km.
- 4) The co-ordination distance is the sum of the A and B co-ordinates of the point X and is equal to $50 + 150 + 75 = 275$ km.

FIG. 1

FACTEUR DE CORRECTION A AJOUTER A L'AFFAIBLISSEMENT DE TRANSMISSION REQUIS L_b A LA FREQUENCE F POUR OBTENIR L'AFFAIBLISSEMENT EQUIVALENT L_b' A LA FREQUENCE 4 GHz
CORRECTION FACTOR TO BE ADDED TO THE REQUIRED LOSS L_b AT FREQUENCY F TO OBTAIN THE EQUIVALENT LOSS L_b' AT 4 Gc/s

FACTOR DE CORRECCIÓN QUE HA DE AÑADIRSE A LA PÉRDIDA REQUERIDA L_b EN LA FRECUENCIA F PARA OBTENER LA PÉRDIDA EQUIVALENTE L_b' EN 4 Gc/s

$L_b' = L_b + \text{facteur de correction} - L_b' = L_b + \text{correction factor} - L_b' = L_b + \text{factor de corrección}$



CURVAS SIMPLIFICADAS DE PROPAGACIÓN TROPOSFÉRICA PARA EL CÁLCULO DE LA DISTANCIA DE COORDINACIÓN. PERDIDA BÁSICA DE TRANSMISIÓN EXCEDIDA DURANTE TODO EL TIEMPO SALVO EL 0,1 % EN 4 Gc/s

COURBES DE PROPAGATION TROPOSPHERIQUE SIMPLIFIÉES POUR LE CALCUL DE LA DISTANCE DE COORDINATION. AFFAIBLISSEMENT DE TRANSMISSION DE REFERENCE DEPASSE PENDANT TOUT LE TEMPS, SAUF 0,1 %, A LA FREQUENCE 4 GHz

SIMPLIFIED TROPOSPHERIC PROPAGATION CURVES FOR CALCULATION OF CO-ORDINATION DISTANCE. BASIC TRANSMISSION LOSS EXCEEDED FOR ALL BUT 0,1 % OF THE TIME AT 4 Gc/s

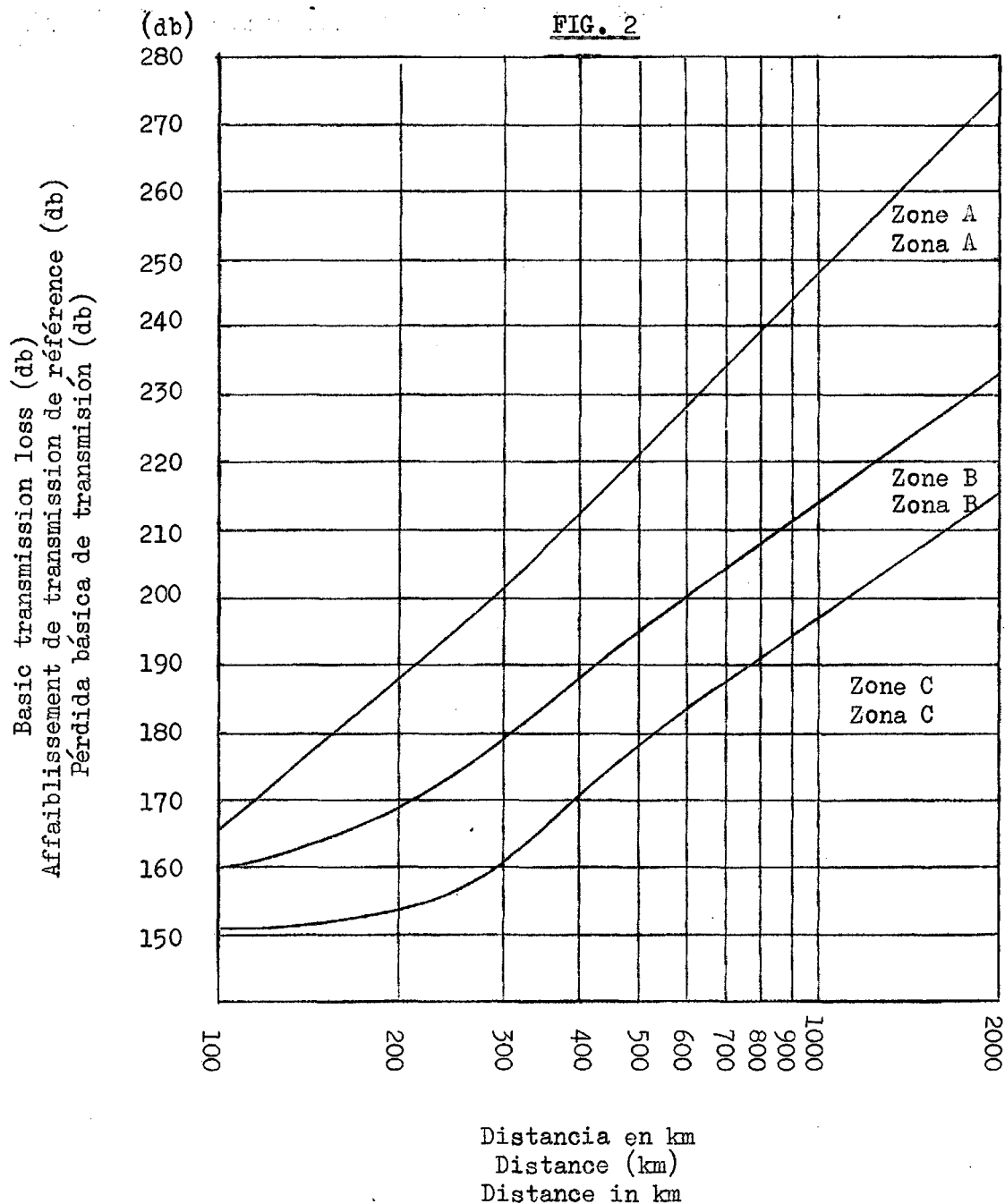


FIG. 3

DIAGRAMME POUR LE CALCUL DE LA DISTANCE DE COORDINATION - TRAJETS MIXTES (ZONES A ET B)

CHART FOR CO-ORDINATION DISTANCE CALCULATIONS - MIXED PATHS IN ZONES A & B

GRÁFICO PARA CALCULAR LA DISTANCIA DE COORDINACIÓN - TRAYECTOS MIXTOS EN LAS ZONAS A Y B

Affaiblissement de transmission de référence à 4 GHz, L_b' (db)

Basic transmission loss in decibels at 4 Gc/s L_b'

Pérdida básica de transmisión (db) en 4 Gc/s, L_b'

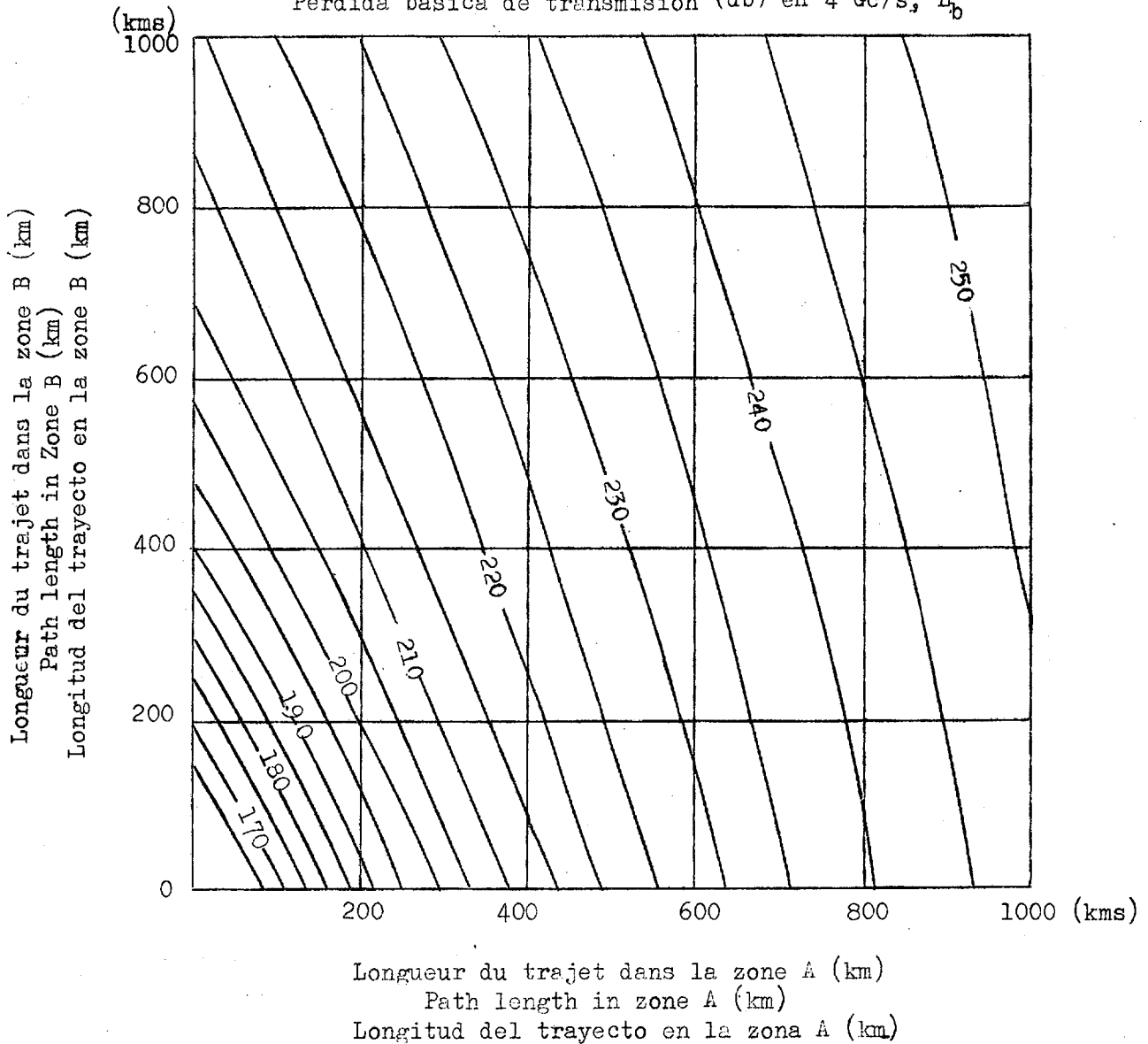


FIG. 4

DIAGRAMME POUR LE CALCUL DE LA DISTANCE DE COORDINATION

TRAJETS MIXTES (ZONES A ET C)

CHART FOR CO-ORDINATION DISTANCE CALCULATIONS

MIXED PATHS IN ZONES A & C

GRÁFICO PARA CALCULAR LA DISTANCIA DE COORDINACIÓN

TRAYECTOS MIXTOS EN LAS ZONAS A Y C

Affaiblissement de transmission de référence à 4 GHz, L_b' (db)

Basic transmission loss in decibels at 4 Gc/s L_b'

Pérdida básica de transmisión (db) en 4 Gc/s, L_b'

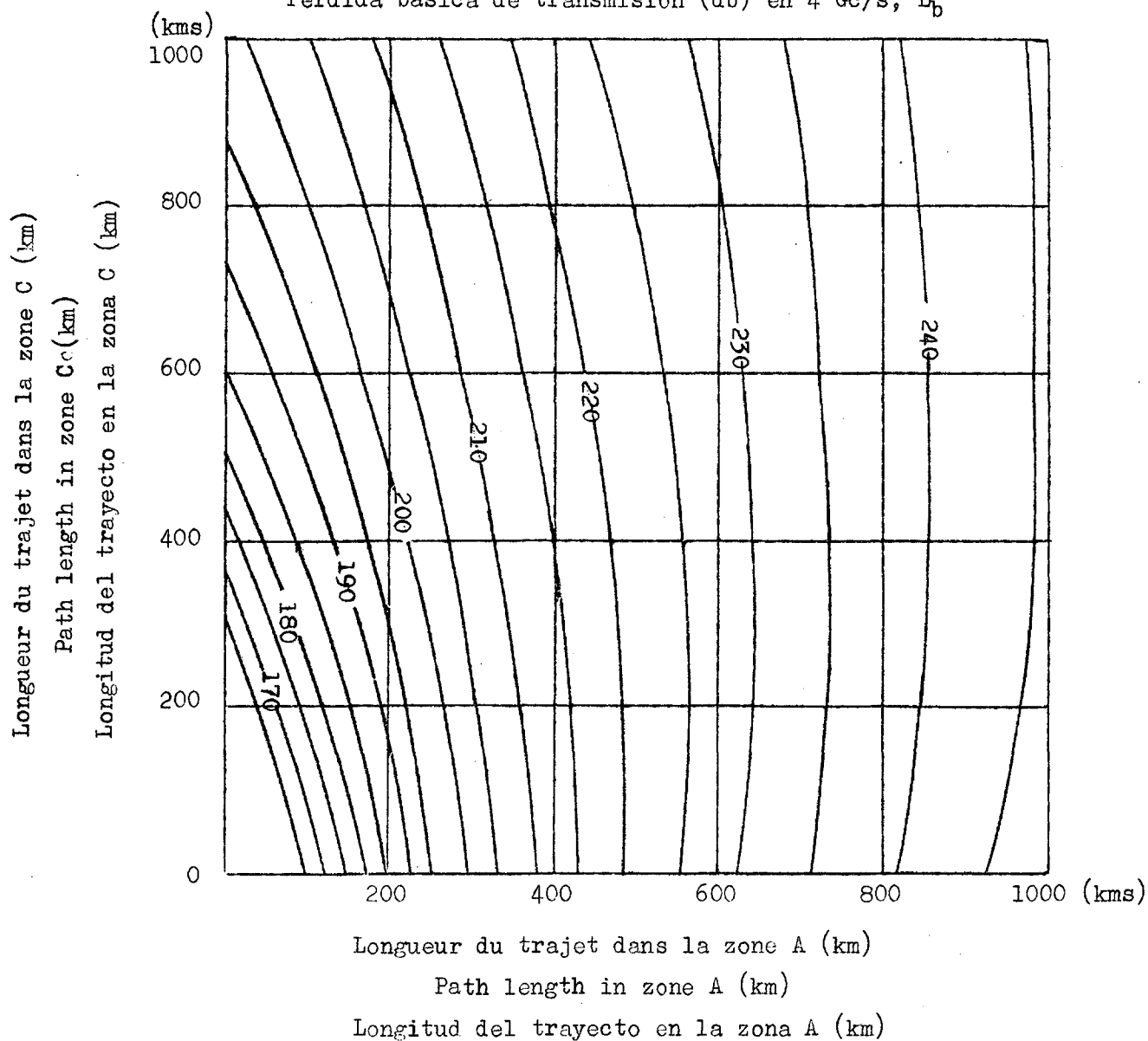


FIG. 5

DIAGRAMME POUR LE CALCUL DE LA DISTANCE DE COORDINATION
TRAJETS MIXTES (ZONES B ET C)

CHART FOR CO-ORDINATION DISTANCE CALCULATIONS
MIXED PATHS IN ZONES B & C

GRÁFICO PARA CALCULAR LA DISTANCIA DE COORDINACIÓN
TRAYECTOS MIXTOS EN LAS ZONAS B Y C

Affaiblissement de transmission de référence à 4 GHz, L'_b (db)

Basic transmission loss in decibels at 4 Gc/s L'_b

Pérdida básica de transmisión (db) en 4 Gc/s, L'_b

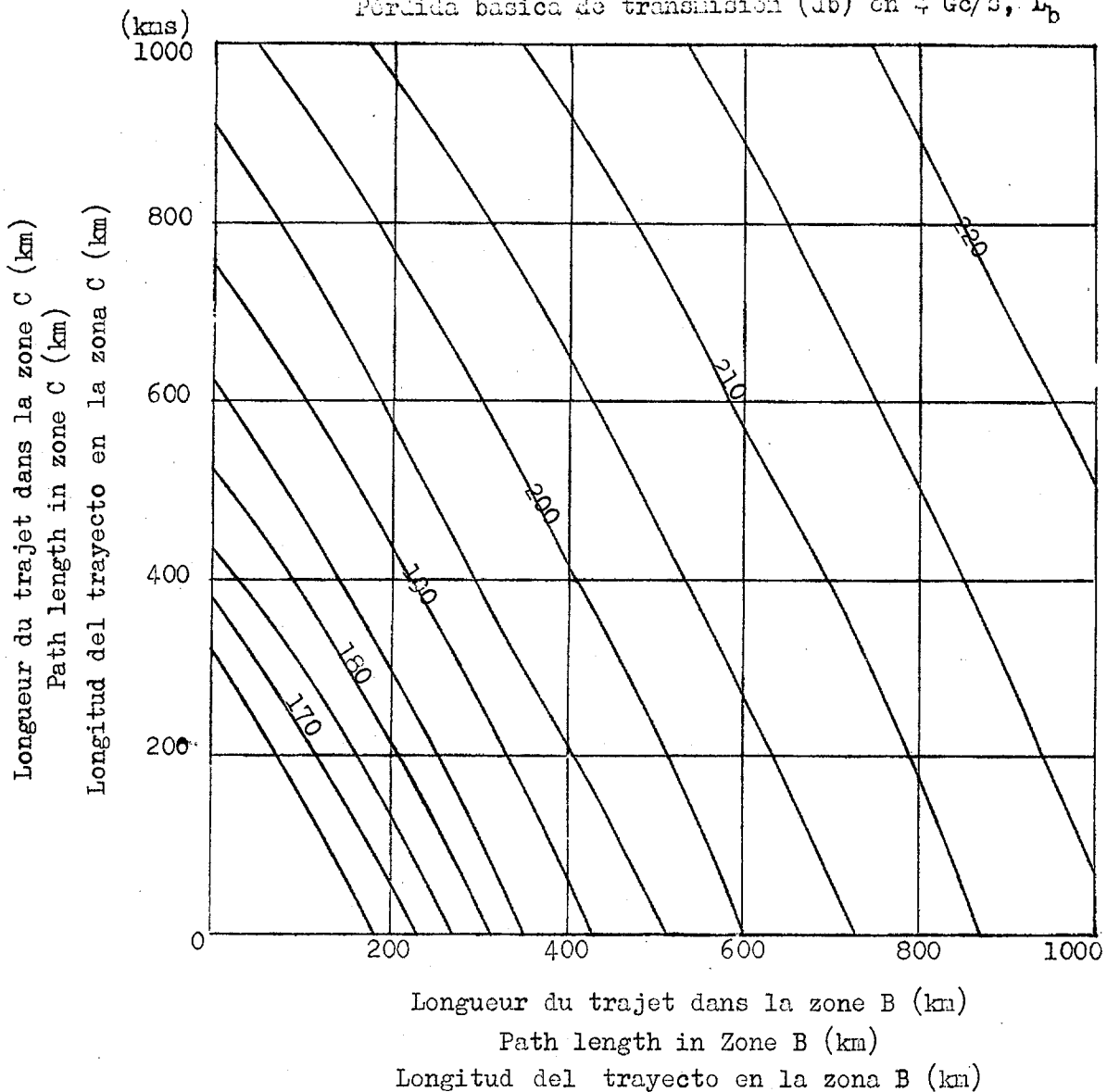
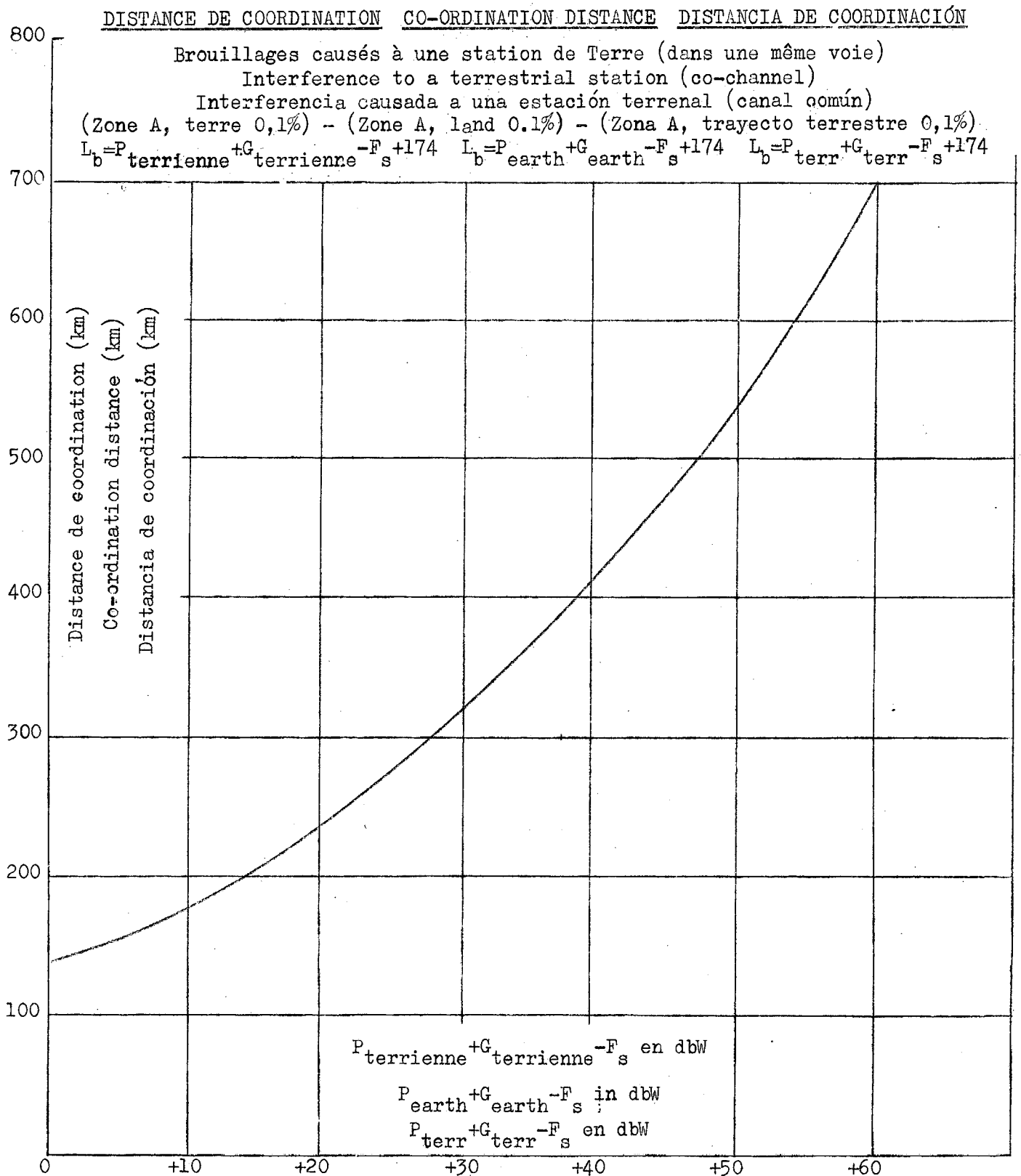


FIG. 6



PUISSANCE DE SORTIE DE L'EMETTEUR DE LA STATION TERRIENNE

DANS TOUTE LA LARGEUR DE BANDE DE 4 kHz

EARTH STATION TRANSMITTER OUTPUT POWER IN ANY 4 Kc/s BAND

POTENCIA DE SALIDA DEL TRANSMISOR DE LA ESTACIÓN TERRENA EN CUALQUIER BANDA DE 4 Kc/s

FIG. 7

DISTANCE DE COORDINATION CO-ORDINATION DISTANCE DISTANCIA DE COORDINACIÓN

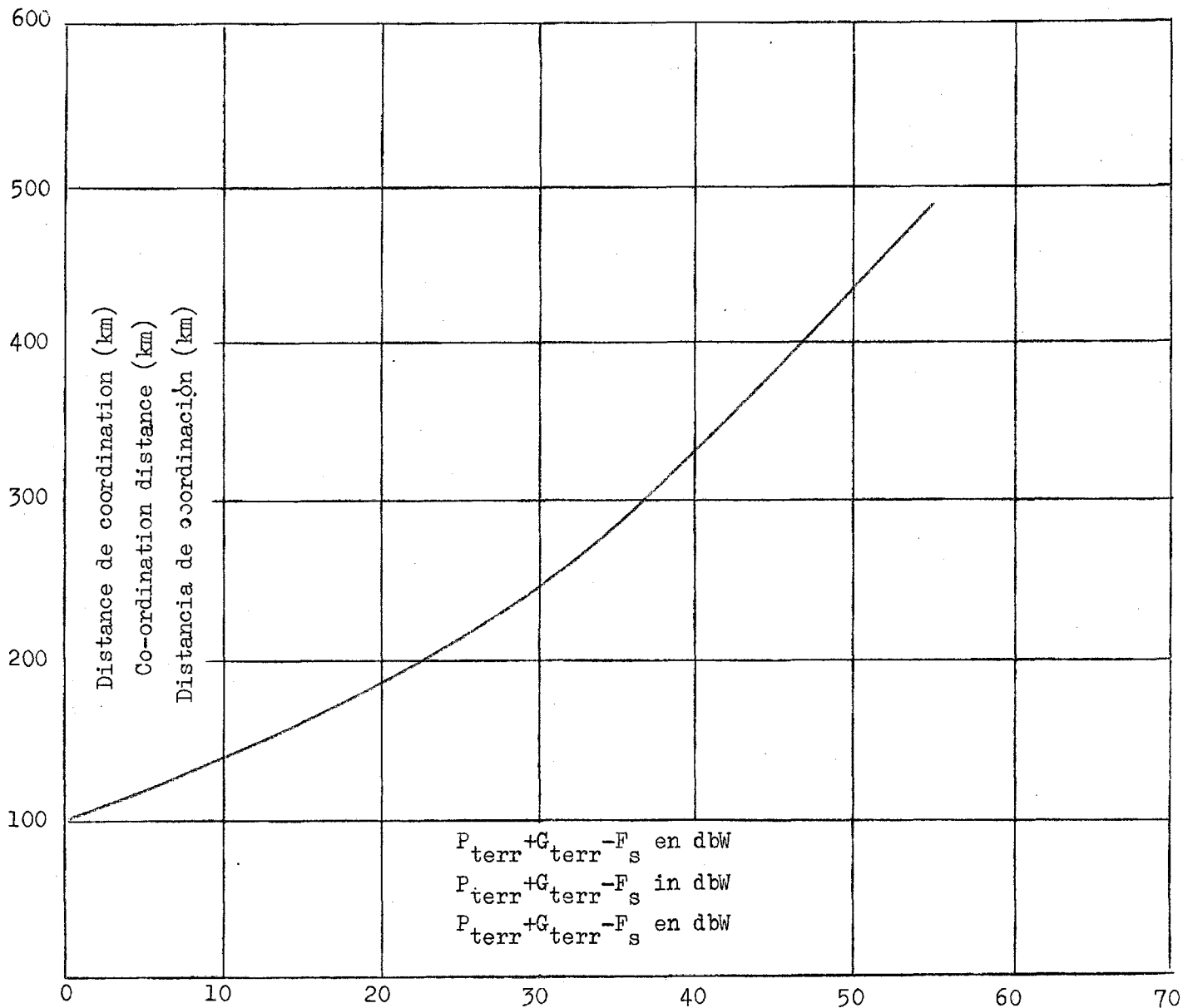
Brouillages causés à une station terrienne (dans une même voie)

Interference to an earth station (co-channel)

Interferencia causada a una estación terrena (canal común)

(Zone A, terre 0,1%) - (Zone A, land 0.1%) - (Zona A, trayecto terrestre 0,1%)

$L_b = P_{\text{terrienne}} + G_{\text{terrienne}} - F_s + 165$ $L_b = P_{\text{terr}} + G_{\text{terr}} - F_s + 165$ $L_b = P_{\text{terr}} + G_{\text{terr}} - F_s + 165$



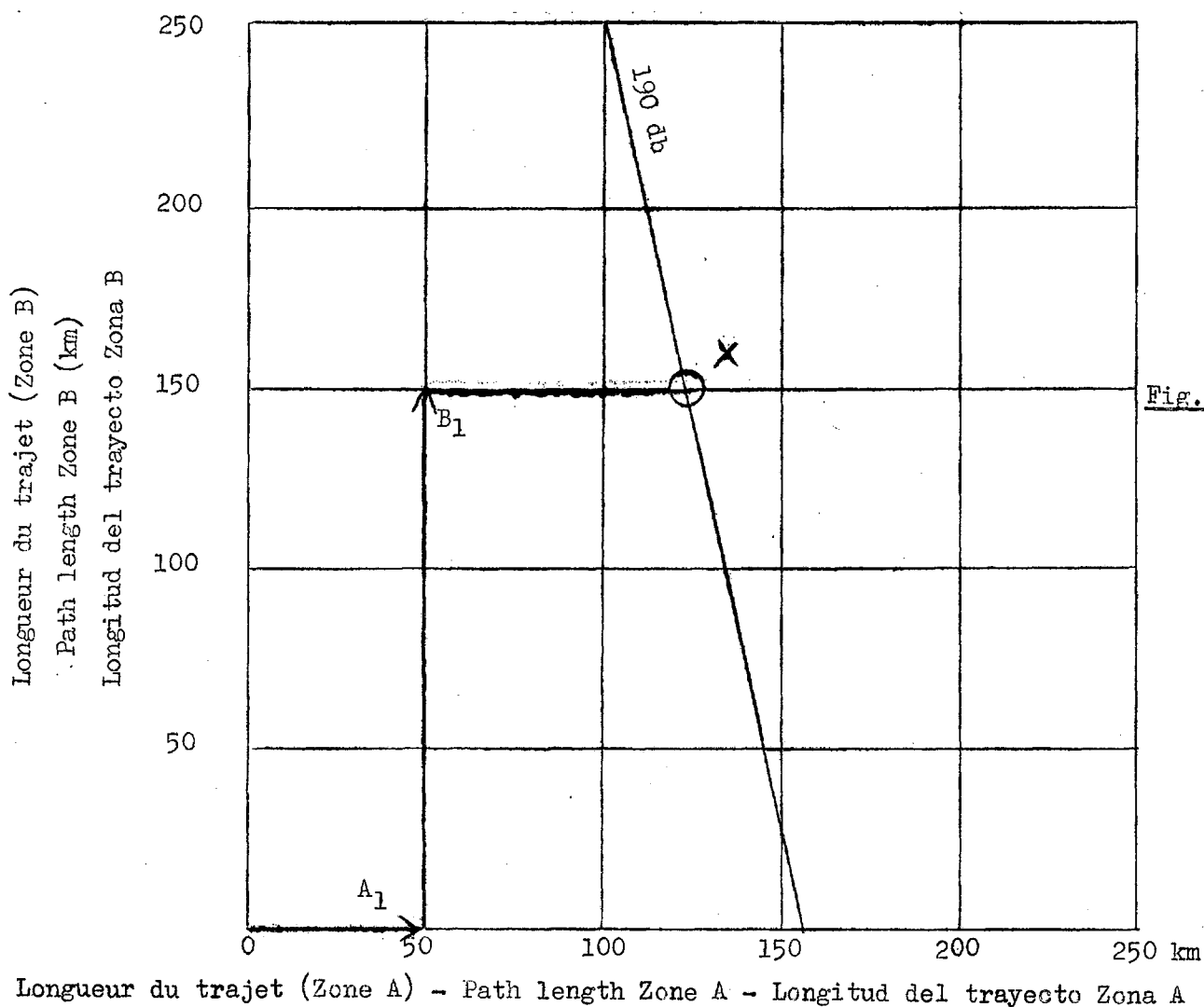
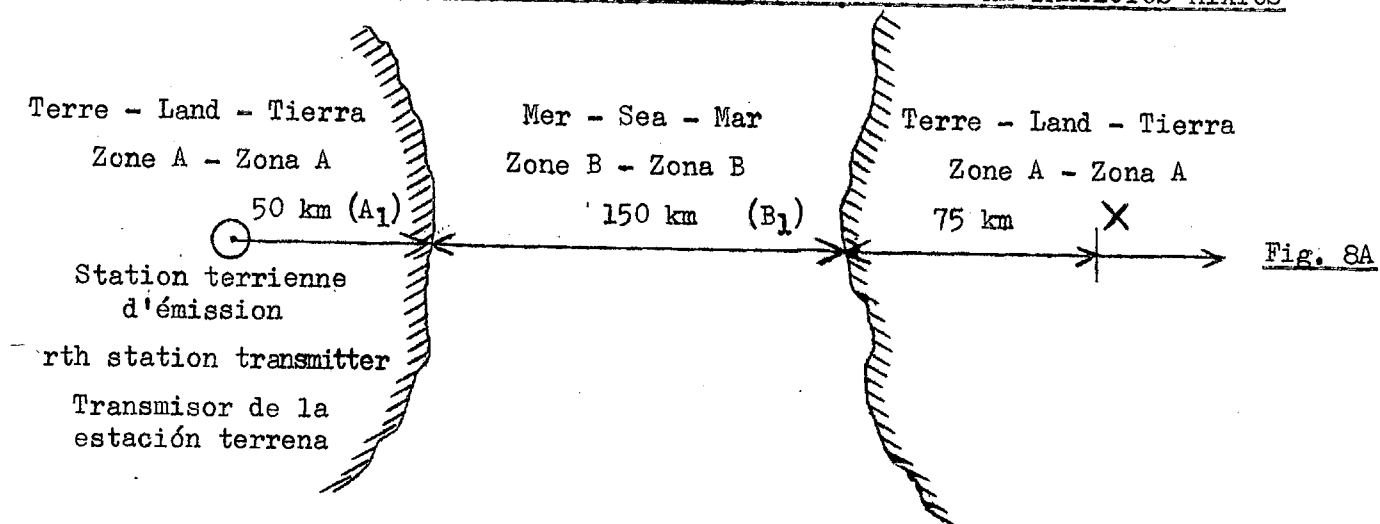
PUISSANCE APPARENTE RAYONNÉE PAR LA STATION DE TERRE
TERRESTRIAL STATION EFFECTIVE RADIATED POWER
POTENCIA RADIADA APARENTE DE LA ESTACIÓN TERRENAL

FIG. 8

EXEMPLE DE CALCUL DE LA DISTANCE DE COORDINATION DANS LE CAS D'UN TRAJET MIXTE

EXAMPLE OF COORDINATION DISTANCE. CALCULATION FOR MIXED PATHS

EJEMPLO DE CÁLCULO DE LA DISTANCIA DE COORDINACIÓN PARA TRAYECTOS MIXTOS



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/69-E
25 October 1963
Original : English

Geneva, 1963

SUB-WORKING GROUP 5B2

DRAFT

FIFTH REPORT BY SUB-WORKING GROUP 5B2

1. Band 1700 - 1710 Mc/s

- 1.1 All proposals concerning allocations to SPACE RESEARCH in this band were considered.
- 1.2 The Group agreed on the draft new Table and associated footnote as shown in the Appendix attached hereto.
- 1.3 The Delegation of Cuba wished to retain the existing allocations to FIXED and MOBILE Services for his country.
- 1.4 The Delegation of the U.S.S.R. preferred the retention of the existing allocations and associated footnote 355 unchanged.

B. DESTA

Chairman
Sub-Working Group 5B2

Appendix : 1



A P P E N D I X

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
1700 - 1710 FIXED SPACE RESEARCH (Telemetering and Tracking) Mobile	1700 - 1710 SPACE RESEARCH 355A	1700 - 1710 FIXED SPACE RESEARCH (Telemetering and Tracking) MOBILE

ADD 355A In Cuba, the band 1700 - 1710 Mc/s is also allocated to the fixed and mobile services.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/70-E
25 October, 1963
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SUB-WORKING GROUP 5B2

DRAFT

SIXTH REPORT BY SUB-WORKING GROUP 5B2

1. Bands 15,762 - 15,768 kc/s and 18,030 - 18,036 kc/s

Three possible solutions for each of these bands emerged, firstly, to add SPACE RESEARCH to the existing FIXED Service on a world-wide basis; secondly, to retain the FIXED allocation on a primary basis and to add Space Research Service on a secondary basis as a world-wide allocation, and thirdly, to retain the existing exclusive FIXED allocation on a world-wide basis, without change.

2. Band 143.6 - 143.65 Mc/s

2.1 The Delegation of Australia proposed the exclusion from foot-note 279 of the portion between 143.6 - 143.65 Mc/s.

2.2 The Delegation of New Zealand confirmed that for this band foot-note 278 should be retained without change.

2.3 The Delegation of the U.S.A. proposed the retention of the existing allocation, on a permitted basis, to the RADIOLOCATION Service.

2.4 Two possible solutions emerged, firstly, the allocation, on a primary basis, to the SPACE RESEARCH Service (Telemetering and Tracking) on a world-wide basis, together with the existing primary allocations; (in Region 1 to the AERONAUTICAL MOBILE (OR) Service and in Regions 2 and 3 to the FIXED and MOBILE Services); secondly, the retention of the existing allocations and associated foot-notes without change.

2.5 Some Delegations, however, requested time until the next meeting in which to further study the proposal.

3. Bands 31.0 - 31.3 Gc/s, 31.8 - 32.3 Gc/s and 34.2 - 35.2 Gc/s

Reference Document No. DT/11, pages 20, 21 and 22.

The Group agreed to give further study to these proposals and to consider them at the next meeting.

B. DESTA
Chairman

Sub-Working Group 5B2



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/71-E
25 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 4C

DRAFT

2nd REPORT OF WORKING GROUP 4C

Saturday, 19 October, 1963

Allocation of Documents Nos. 2 and 88 to the Working Group was noted.

The Delegation of Japan submitted Document No. DL/5 for information and it was agreed that the Document should be allocated to Subgroup 4C-1 for discussion.

The Working Group considered Document No. 34 and agreed to refer this Document to Committee 4, drawing attention to page 7 of the Document with the recommendation that the E.A.R.C. invite the C.C.I.R. to continue the study of radio propagation and radio noise as it affects the sharing and coordination between space and terrestrial services and the operation of space services in general.

The Working Group agreed to recommend to Committee 4 that the items pertaining to Radio Regulations Nos. 469, exchange of synoptic meteorological information, and 422, Broadcasting Service, shall be considered in Committee 6.

The Chairmen of Subgroups 4C-1 and 4C-2 reported on the progress of the work.

Members of the Working Group were advised by the Chairman that every effort should be made to complete the work before the end of next week.

W.A.C. SCHULTZ

Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/72-E
25 October 1963
Original : French

Geneva, 1963

COMMITTEE 5

REPORT BY WORKING GROUP 5 AD HOC

(136 - 138 Mc/s)

TO COMMITTEE 5

1. The Group examined all the proposals and amendments concerning two frequency bands, i.e. 136 - 137 Mc/s and 137 - 138 Mc/s.
2. In a spirit of understanding, the members of the Group 5 ad hoc reached agreement on the use of the above-mentioned bands for space services allocated on a world-wide basis, as can be seen from the attached Appendix.
3. However, for the allocations to other services existing in the Table of Frequency Allocations, Geneva 1959, complete agreement was not reached, although there were several proposals aimed at satisfying the requirements of the countries concerned.

One of the formulae likely to be found acceptable is also given in the Table in the Appendix.

4. The Group agreed that the draft new Table could not be finalized until Committee 5 had been presented with all the foot-note references and derogations requested by the countries concerned.

V. POPOVIC

Appendix : 1



A P P E N D I X

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
136 - 137 SPACE RESEARCH ¹⁾ (Telemetering) ³⁾ [FIXED] [MOBILE] *)	136 - 137 SPACE RESEARCH ¹⁾ (Telemetering) ³⁾ **)	136 - 137 SPACE RESEARCH ¹⁾ (Telemetering) ³⁾ ***))
137 - 138 SPACE RESEARCH ²⁾ SPACE TELEMETERING ³⁾ METEOROLOGICAL- SATELLITE [AERONAUTICAL MOBILE (OR)] *))	137 - 138 SPACE RESEARCH ²⁾ SPACE TELEMETERING ³⁾ METEOROLOGICAL- SATELLITE [Fixed] [Mobile except aeronautical mobile] **))	137 - 138 SPACE RESEARCH ²⁾ SPACE TELEMETERING ³⁾ METEOROLOGICAL- SATELLITE [Fixed] [Mobile except aeronautical mobile] ***))

*) **) ***) *)) **)) ***) [References numbered by Committee 5]

- 1) This band will be primarily used for basic research.
- 2) This band will be primarily used for research on the development and maintenance of operational systems in the space services.
- 3) The space stations using frequencies in this band may also emit tracking signals.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/73-E
25 October 1963
Original : English

Geneva, 1963

SUB-WORKING GROUP 5B2

AGENDA

LAST MEETING OF SUB-WORKING GROUP 5B2

Saturday, 26 October, 1963 at 1100 hours

1. Adoption of the draft Fifth Report by Sub-Working Group 5B2
(Document No. DT/69)
2. Consideration of the draft Sixth Report by Sub-Working Group 5B2
(Document No. DT/70)

Bands 15,762 - 15,768 kc/s and 18,030 - 18,036 kc/s
143.6 - 143.65 Mc/s and
31.0 - 31.3 Gc/s, 31.8 - 32.3 Gc/s and 34.2 - 35.2 Gc/s

3. Consideration of the Report by Sub-Working Group 5B2 ad hoc
(Document No. DT/55)

Band 15.25 - 15.35 Gc/s

4. Consideration of proposals for the band 400.05 - 401 Mc/s
(See Appendix attached hereto)
5. Any other business

B. DESTA
Chairman
Sub-Working Group 5B2

Appendix: 1



A P P E N D I X

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
400.05 - 401 SPACE RESEARCH (telemetry and tracking) 312 312A 313 314		

- MOD 312 In Greece, the band 400.05 - 401 Mc/s is also allocated to the fixed and mobile services.
- ADD 312A In Yugoslavia and Sweden, the band 400.05 - 401 Mc/s is also allocated to the fixed and mobile services until 1 January, 1970.
- MOD 313 In Albania, Bulgaria, Hungary, Poland, Roumania, Czechoslovakia and the U.S.S.R., the band 400.05 - 401 Mc/s, is also allocated to the fixed and mobile services.
- MOD 314 In the United Kingdom, the band 400,05 - 420 Mc/s is also allocated to the radiolocation service; however, between 400,05 and 410 Mc/s the allocation to the radiolocation service is on a secondary basis.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/74-E
25 October, 1963
Original : English

Geneva, 1963

WORKING GROUP 5B

THIRD REPORT BY WORKING GROUP 5B
TO COMMITTEE 5 (ALLOCATIONS)
RADIO ASTRONOMY SERVICE

1. Band 10.68 - 10.7 Gc/s

1.1 Two views emerged as summarised below: A number of administrations preferred to see

- a) exclusive allocation to the Radio Astronomy Service;
- b) Several administrations preferred the retention of the existing allocations with an amendment to foot-note 405 making a cross-reference to the current relevant C.C.I.R. Report. In this regard the Italian Delegation suggested that while it would be appropriate to make reference in the Radio Regulations to C.C.I.R. Recommendations this was not so for C.C.I.R. Reports.

1.2 A draft new Table for the band 10.68 - 10.7 Gc/s, reflecting the viewpoints outlined in 1.1.a) above appears in the Appendix 1 attached hereto, while a draft new Table, reflecting the viewpoints outlined in 1.1.b) above appears in Appendix 2.

2. Bands 15.35 - 15.4 Gc/s, 19.3 - 19.4 Gc/s and 31.3 - 31.5 Gc/s

2.1 With respect to these bands Delegations supported two solutions similar to those mentioned in paragraphs 1.1 a), and 1.1 b) above.

2.2 Two draft new Tables for each of the bands concerned, reflecting these viewpoints appear in Appendices 3 and 4, 5 and 6 and 7 and 8, respectively.

V.V. RAO
Chairman
Working Group 5B

Appendices : 8



A P P E N D I X 1

Gc/s

Allocation to services		
Region 1	Region 2	Region 3
10.68 - 10.7	RADIO ASTRONOMY	

SUP 405

A P P E N D I X 2

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
10.55 - 10.7 FIXED MOBILE Radiolocation 405		

MOD 405 The bands 10.68 - 10.7 Gc/s, 15.35 - 15.4 Gc/s, 19.3 - 19.4 Gc/s and 31.3 - 31.5 Gc/s are also allocated to the radio astronomy service. In making assignments to stations of other services to which these bands are allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference to the extent indicated in the current relevant C.C.I.R. Report.*) The radio astronomy service shall be protected from interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

*) Subject to the remark of the Italian Delegation covered in paragraph 1.1.b).

A P P E N D I X 3

Gc/s

Allocation to services		
Region 1	Region 2	Region 3
15.35 - 15.4		
RADIO ASTRONOMY		

SUP 405

A P P E N D I X 4

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
15.3 - 15.4	FIXED MOBILE 405	

MOD 405 The bands 10.68 - 10.7 Gc/s, 15.35 - 15.4 Gc/s, 19.3 - 19.4 Gc/s and 31.3 - 31.5 Gc/s are also allocated to the radio astronomy service. In making assignments to stations of other services to which these bands are allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from ~~harmful~~ interference to the extent indicated in the current relevant C.C.I.R. Report.*) The radio astronomy service shall be protected from interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

*) Subject to the remark of the Italian Delegation covered in paragraph 1.1 b).

A P P E N D I X 5

Gc/s

Allocation to services		
Region 1	Region 2	Region 3
19.3 - 19.4		
RADIO ASTRONOMY		

SUP 405

A P P E N D I X 6

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
19.3 - 19.4	FIXED MOBILE 405	

MOD 405 The bands 10.68 - 10.7 Gc/s, 15.35 - 15.4 Gc/s, 19.3 - 19.4 Gc/s and 31.3 - 31.5 Gc/s are also allocated to the radio astronomy service. In making assignments to stations of other services to which these bands are allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference to the extent indicated in the current relevant C.C.I.R. Report.*) The radio astronomy service shall be protected from interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

*) Subject to the remark of the Italian Delegation covered in para. 1.1 b).

A P P E N D I X 7

Gc/s

Allocation to services		
Region 1	Region 2	Region 3
31.3 - 31.5 RADIO ASTRONOMY		

SUP 405

A P P E N D I X 8

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
31.3 - 31.8	FIXED MOBILE 405	

MOD 405

The bands 10.68 - 10.7 Gc/s, 15.35 - 15.4 Gc/s, 19.3 - 19.4 Gc/s and 31.3 - 31.5 Gc/s are also allocated to the radio astronomy service. In making assignments to stations of other services to which these bands are allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference to the extent indicated in the current relevant C.C.I.R. Report.*) The radio astronomy service shall be protected from interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

*) Subject to the remarks of the Italian delegation covered in paragraph 1.1.b).

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/75-E
25 October, 1963
Original : English

WORKING GROUP 5B1

AGENDA

EIGHTH MEETING OF WORKING GROUP 5B1

Saturday, 26 October, 1963, at 0930 hours

RADIO ASTRONOMY SERVICE

1. Adoption of draft Fourth Report (Document No. DT/48)

Bands 150.05 - 151 Mc/s and 151 - 153 Mc/s
404 - 410 Mc/s

2. Consideration of remaining proposals

Bands 606 - 614 Mc/s (Document No. DT/10, page 6 and paragraph 3,
Document No. DT/48)

1664.4 - 1668.4 Mc/s (Document No. DT/10, page 7bis)

33.4 - 34.0 Gc/s, 36.5 - 37.5 Gc/s (Document No. DT/40 Rev.)

Foot-note 354 (Document No. DT/10, page 7)

(Document No. 17, Annexes 8A, 10 and 21 also refer)

3. Any other business.

W.A.E. NIELSEN
Chairman
Working Group 5B1



SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/76-E
25 October 1963
Original : English

WORKING GROUP 5C

A G E N D A

NINTH MEETING OF WORKING GROUP 5C

Saturday, 26 October, 1963 at 0930 hours

Room C

1. To resume consideration of NAVIGATION SATELLITES
2. Any other business

J. PENWARDEN
Chairman
Working Group 5C



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/77-E
25 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5B

RADIO ASTRONOMY SERVICE

Transitional text as a basis for discussion

Band 2690 - 2700 Mc/s

Appendices 1 and 2 attached hereto attempt to reflect the two main trends of the discussion to date, as recorded by the Chair.

V.V. RAO
Chairman
Working Group 5B

Appendices: 2



A P P E N D I X 1

Mc/s

Allocation to Services			
Region 1	Region 2		Region 3
MOD 2690 - 2700	RADIO ASTRONOMY		
	363	363A 364	364A

MOD 363 In the Federal Republic of Germany, the band 2550 - 2690 Mc/s is allocated to the fixed service and the band 2690 - 2700 Mc/s is also allocated to the fixed service.

ADD 363A In Israel,,, and, the band 2690 - 2700 Mc/s is also allocated to the fixed and mobile services.

MOD 364 In Region 1, tropospheric scatter systems may operate in the band 2550 - 2690 Mc/s under agreements concluded between Administrations concerned and those having services, operating in accordance with the Table, which may be affected.

ADD 364A In,,, and, tropospheric scatter systems may operate in the band 2690 - 2700 Mc/s under agreements concluded between Administrations concerned and those having services, operating in accordance with the Table, which may be affected.

SUP 365

A P P E N D I X 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
2690 - 2700 FIXED MOBILE RADIO ASTRONOMY 364 365	2690 - 2700 364A	RADIO ASTRONOMY

MOD 363 In the F.R. of Germany, the band 2550 - 2690 Mc/s is allocated to the fixed service.

NOC 364

ADD 364A In Cuba, the band 2690 - 2700 Mc/s is also allocated to the fixed and mobile services. Tropospheric scatter systems may operate in the band 2690 - 2700 Mc/s under agreements concluded between Administrations concerned and those having services, operating in accordance with the Table, which may be affected. The provisions of No. 365 also apply.

MOD 365 In making assignments to stations of services other than the radio astronomy service to which this band is allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference. The radio astronomy service shall be protected from harmful interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/78-E
26 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5B

THIRD REPORT BY WORKING GROUP 5B 1

RADIO ASTRONOMY SERVICE

1. Band 37.75 - 38.25 Mc/s

1.1 All proposals concerning this band were considered.

1.2 Initially a discussion centred around accomodating the new requirement for an allocation, on a secondary basis, to the Radio Astronomy Service, in a new foot-note. After the Delegations of Australia, and the United Kingdom respectively had withdrawn their proposals in favour of that submitted by Canada, unanimous agreement was reached on showing the new allocation in the body of the Table.

1.3 The resultant draft new Table for the band concerned appears in Appendix 1 attached hereto.

2. Band 73.0 - 74.6 Mc/s

2.1 In presenting the proposal for an exclusive allocation to the Radio Astronomy Service for Region 2, the Delegation of Canada suggested that consideration be given to the extension of such an allocation to Regions 1 and 3 also, with a foot-note provision authorizing the continuance of existing fixed and mobile operations on a non-interference basis to the Radio Astronomy Service and on a world-wide basis.

2.2 Strong opposition to such extension was manifested by Delegations of countries situated in Regions 1 and 3. The Delegation of Cuba stated that they were unable to accept the proposal for Region 2 and moved the retention of the present provisions contained in foot-note 253 unchanged. The resultant draft new Table for the band 73.0 - 74.6 Mc/s appears in Appendix 2 attached hereto.



3. Band 33.0 - 33.4 Gc/s

3.1 The proposal concerning this band was for an allocation on a world-wide basis to the Radio Astronomy Service in addition to the existing Radio-navigation Service. Eight Delegations were in favour of this proposal, while one expressed agreement to the allocation to the Radio Astronomy Service on a secondary basis and another was against the introduction of an allocation to the Radio Astronomy Service in this band.

3.2 A draft new Table for the band concerned, reflecting the majority viewpoint as outlined above, appears in Appendix 3 attached hereto.

W.A.E. NIELSEN
Chairman
Working Group 5B 1

Appendices: 3

APPENDIX 1

Mc/s

Allocation to Services					
Region 1		Region 2		Region 3	
37.75 - 38.25		FIXED	228	229	230 231
		MOBILE			
		Radio Astronomy			
		233	235		

ADD

NOC 228

NOC 229

NOC 230

NOC 231

NOC 233

SUP 234

235 [Working Group 5B 2]

APPENDIX 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
	73.0 - 74.6 RADIO ASTRONOMY 253A	

ADD

SUP 253

ADD 253 A In Region 2, fixed, mobile and broadcasting service operations previously authorized in the band 73 - 74.6 Mc/s may continue to operate on a non-interference basis to the radio astronomy service.

A P P E N D I X 3

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
33.0 - 33.4 RADIO ASTRONOMY RADIONAVIGATION	33.0 - 33.4 RADIONAVIGATION 412A	

ADD 412A. In Cuba and India, the band 33.0 - 33.4 Gc/s is also allocated to the Radio Astronomy Service.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/79-E
26 October 1963
Original : English

Geneva, 1963

WORKING GROUP 5A

DRAFT

THIRD REPORT BY WORKING GROUP 5A
TO COMMITTEE 5 (ALLOCATIONS)

TELEMETERING

1. Band 267 - 273 Mc/s

- 1.1 The proposal before the Conference concerning this band has been considered.
- 1.2 General agreement was obtained and is represented by the draft new Table with new footnotes given in Appendix 1 attached hereto.
- 1.3 The Delegations of the United Kingdom, Pakistan and Japan, however, reserved the right to return to this subject, if they still so desire, at a later stage.

COMMUNICATION-SATELLITE SERVICE

2. Band 5725 - 6425 Mc/s

- 2.1 All proposals before the Conference concerning this band have been considered.
- 2.2 The largest measure of agreement is represented by the draft new Table with new, revised or cancelled footnotes, as appropriate, given in Appendix 2 attached hereto.
- 2.3 A different point of view was expressed by the Delegations of Bulgaria, Cuba, Hungary, Poland, Roumania, Czechoslovakia and the U.S.S.R. who favoured allocation of the band 5725 - 6225 Mc/s for the same purpose.
- 2.4 The Delegations of India, Israel and Yugoslavia reserved the right to return to this subject, if they still so desire, at a later stage.
- 2.5 There was general agreement on the allocation of the band 5925 - 6225 Mc/s.



2.6 The Chairman suggested as a possible compromise that the band 5850 - 6425 Mc/s might be allocated to the Communication-Satellite Service and the Fixed and Mobile Services on a world-wide basis with a provision that dates of implementation for bands 5850 - 5925 Mc/s and 6225 - 6425 Mc/s would be decided upon at a future conference. Some Delegations indicated that they would like to study this suggestion.

2.7 The Delegations of Sweden and Switzerland indicated that they could agree to a lower band limit of 5850 Mc/s and an upper limit of 6425 Mc/s.

3. Band 3400 - 4200 Mc/s

3.1 All proposals before the Conference concerning this band have been considered.

3.2 The largest measure of agreement is represented by the draft new Table with new, revised or cancelled footnotes, as appropriate, given in Appendix 3 attached hereto.

3.3 A different point of view was expressed by the Delegations of Bulgaria, Cuba, Hungary, Poland, Roumania, Czechoslovakia and the U.S.S.R. who favoured allocation of the band 3400 - 3900 Mc/s for the same purpose.

3.4 There was general agreement on the allocation of the band 3700 - 3900 Mc/s.

4. Band 4400 - 4700 Mc/s

4.1 The proposal before the Conference concerning this band has been considered.

4.2 The proposal did not obtain a majority support in the Working Group.

5. Band 1750 - 2250 Mc/s

5.1 The proposal before the Conference concerning allocation of this band to the Communication-Satellite Service has been considered.

5.2 The proposal did not obtain a majority support in the Working Group.

J. W. JEWERS
Rapporteur

P. MORTENSEN
Chairman
Working Group 5A

Appendices: 3

A P P E N D I X 1

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
267 - 272	FIXED	
	MOBILE	
	Space Telemetering	309A 309B
272 - 273	SPACE TELEMETERING	309A
	FIXED	
	MOBILE	309C

ADD 309A Space stations employing frequencies in the band 267 - 273 Mc/s may also transmit tracking signals in the band.

ADD 309B In the band 267 - 272 Mc/s individual administrations may use space telemetering in their countries on a primary basis.

ADD 309C In the band 272 - 273 Mc/s the Aeronautical Mobile Service is on a secondary basis with respect to the Space Telemetering Service.

A P P E N D I X 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
5925 - 6425	<p>COMMUNICATION-SATELLITE 392A (Earth to satellite)</p> <p>FIXED</p> <p>MOBILE</p> <p>391A</p>	

ADD 391A The conditions for the use of this band are specified in Article 7, Section VII, of these Regulations.

ADD 392A This band may also be used for the transmission of telecommand signals associated with communication-satellite earth stations operating in the same band.

SUP 392

MOD 393 In Italy, the band 6425 - 6575 Mc/s is also allocated to the Radiolocation Service.

A P P E N D I X 3

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
3700 - 4200 ADD COMMUNICATION-SATELLITE 374A (Satellite to earth) FIXED Mobile 374 374B	3700 - 4200 COMMUNICATION-SATELLITE 374A (Satellite to earth) FIXED MOBILE 379	

NOC 374

ADD 374A This band may also be used for the transmission of telemetering and tracking signals associated with communication-satellite space stations operating in the same band.

ADD 374B The conditions for the use of this band are specified in Article 7, Section VII, of these Regulations.

NOC 379

SUP 380

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/80-E
27 October, 1963
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Geneva, 1963

WORKING GROUP 5B

FOURTH REPORT BY WORKING GROUP 5B1

RADIO ASTRONOMY SERVICE

1. Bands 150.05 - 151 Mc/s and 151 - 153 Mc/s

1.1 The proposals by the United Kingdom concerning the above bands were considered.

1.2 The Delegations of Spain, Israel and Austria supported the proposals for the exclusive allocation to Radio Astronomy Service in the band 150.05 - 151 Mc/s. The Delegation of Spain supported the allocation to this service on a primary basis in the band 151 - 153 Mc/s with Meteorological Aids on a secondary basis but with the exclusion of the existing allocations to the Fixed and Mobile, except aeronautical mobile, Services.

1.3 Ten Delegations were against any change to the existing allocations and associated foot-notes in the band 150.05 - 151 Mc/s, while twelve Delegations were against any change to those in the band 151 - 153 Mc/s.

1.4 Consequently, the Group agreed by a majority viewpoint to maintain the existing allocations without change.

2. Band 404 - 410 Mc/s

2.1 The proposals by Canada and the U.S.A. for the band 404 - 406 Mc/s and those by Australia and the Netherlands for the band 406 - 410 Mc/s were considered jointly.

2.2 The largest measure of agreement is represented by the modified foot-note 317 given in Appendix 1 attached hereto.



3. Band 606 - 614 Mc/s

3.1 The proposals concerning this band by the Netherlands and Sweden appearing in Document No. 17 and those by the U.S.A. and Australia contained in Addendum No. 1 to Document No. 8 and in Document No. 97 respectively, were considered.

3.2 The principal positions taken by Delegations may be summarized as follows :

- a) Support was given to a solution by Regions as shown in Appendix 2 attached hereto, which also includes a new foot-note reflecting the unanimous expressed viewpoint of Delegations of countries situated in the African Region, as defined in the African Regional Agreement, Geneva, 1963.
- b) The Delegations of Belgium, Ethiopia, Morocco, the Netherlands, the Republic of South Africa, Sweden and Switzerland, while not objecting to the above viewpoints, preferred an exclusive allocation to Radio Astronomy on a world-wide basis.
- c) The Delegations of Cuba, Bielorussia, Japan, Poland, the United Kingdom and the U.S.S.R. favoured the retention of the existing allocations and associated foot-notes without change.

3.3 The Delegations mentioned in 3.2 c) above reserved the right to return to this subject, if they still so desire, at a later stage.

W.A.E. NIELSEN
Chairman
Working Group 5B1

Appendices: 2

A P P E N D I X 1

NOC

Table

MOD 317 The band 404 - 410 Mc/s in Region 2, and the band 406 - 410 Mc/s in Regions 1 and 3 are also allocated to the radio astronomy service. An appropriate continuous **band** within these limits shall be designated on a national or area basis. In making assignments to stations of other services to which these bands are allocated, administrations are urged to take all practicable steps to protect radio astronomy observations from harmful interference. The radio astronomy service shall be protected from harmful interference from services operating in other bands in accordance with the provisions of these Regulations, only to the extent that these services are protected from each other.

A P P E N D I X 2

NOC

Table

ADD 330A In the African Broadcasting Area, as defined in the Regional Agreement for the African Broadcasting Area, Geneva, 1963, the band 606 - 614 Mc/s is allocated to the radio astronomy service.

MOD 332 In Region 1, the band 606 - 614 Mc/s, and in Region 3, the band 610 - 614 Mc/s are also allocated to the radio astronomy service. Administrations shall do everything possible to avoid using the bands concerned for the broadcasting service before 1 January 1969 and, from this date, to limit its use to very low power stations. In Region 2, the band 608 - 614 Mc/s is reserved exclusively for the radio astronomy service until the first Administrative Radio Conference subsequent to 1 January 1974 which is competent to review this provision.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/81-E
27 October, 1963
Original : English

WORKING GROUP 5B

FIFTH REPORT BY SUB-WORKING GROUP 5B2

SPACE RESEARCH SERVICE

1. Band 1700 - 1710 Mc/s

1.1 All proposals concerning allocations to SPACE RESEARCH in this band were considered.

1.2 The Group agreed on the draft new Table and associated footnote as shown in the Appendix attached hereto.

1.3 The Delegation of Cuba wished to retain the existing allocations to FIXED and MOBILE Services for his country.

1.4 While agreeing with the draft new Table for Region 1, shown in the Appendix attached hereto, the Delegations of Liberia, Sweden and Switzerland expressed a preference for an allocation in the band 1690 - 1700 Mc/s for the Space Research Service.

B. DESTA
Chairman

Appendix : 1



A P P E N D I X

Mc/s

Allocation to Services			
	Region 1	Region 2	Region 3
MOD	1700 - 1710 FIXED SPACE RESEARCH (Telemetering and Tracking)	1700 - 1710 SPACE RESEARCH (Telemetering and Tracking)	1700 - 1710 FIXED SPACE RESEARCH (Telemetering and Tracking)
	Mobile		MOBILE
ADD	355A	355B	

ADD 355A In Switzerland, the band 1700 - 1710 Mc/s is allocated to the fixed and mobile services.

ADD 355B In Cuba, the band 1700 - 1710 Mc/s is also allocated to the fixed and mobile services.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/82-E
27 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5B

SIXTH REPORT BY SUB-WORKING GROUP 5B2 TO WORKING GROUP 5B2

SPACE RESEARCH SERVICE

1. Bands 15,762 - 15,768 kc/s and 18,030 - 18,036 kc/s

Three possible solutions for each of these bands emerged, firstly, to add SPACE RESEARCH to the existing FIXED Service on a world-wide basis; secondly, to retain the FIXED allocation on a primary basis and to add Space Research Service on a secondary basis as a world-wide allocation, and thirdly, to retain the existing exclusive FIXED allocation on a world-wide basis, without change. Further suggestions were made inviting the proposers to consider modifying their proposal to relate to other bands in this point of the spectrum for presentation to Working Group 5B on Monday, 28 October 1963.

2. Band 143.6 - 143.65 Mc/s

2.1 The Delegation of Australia opposed the exclusion from foot-note 279 of the portion between 143.6 - 143.65 Mc/s.

2.2 The Delegation of New Zealand confirmed that for this band foot-note 278 should be retained without change.

2.3 The Delegation of the U.S.A. proposed the retention for Region 2 of the existing allocation, on a permitted basis, to the RADIOLOCATION Service.

2.4 Two possible solutions emerged, firstly, the allocation, on a primary basis, to the SPACE RESEARCH Service (Telemetry and Tracking) on a world-wide basis, together with the existing primary allocations; (in Region 1 to the AERONAUTICAL MOBILE (OR) Service and in Regions 2 and 3 to the FIXED and MOBILE Services); secondly, the retention of the existing allocations and associated foot-notes without change.

B. DESTA
Chairman
Sub-Working Group 5B2



Geneva, 1963

WORKING GROUP 5C

DRAFT

FOURTH REPORT OF WORKING GROUP 5C

RADIONAVIGATION-SATELLITE SERVICE

1. Introduction

1.1 The Group unanimously agreed that the Radionavigation Service should have access under the Radio Regulations to space radio techniques and no objection was stated to the principle that suitable allocations should be made in Article 5 for Radionavigation Satellites.

1.2 The Group considered proposals for the exclusive allocation of specific bands around 150 Mc/s, 400 Mc/s and 14.35 Gc/s noting that the two bands proposed below 1000 Mc/s comprise the two related channels of one radionavigation system. This system was acknowledged to be in conformity with the description in Report No. 216 of the C.C.I.R. and that all three proposals satisfied Recommendation No. 361.

1.3 The draft new Tables at Appendices 1 to 3 reflect the extent to which the Group felt able to accept the proposals in view of the necessity to maintain existing services.

1.4 In considering these Appendices for presentation to Committee 5, it is emphasised that there are no sharing criteria or definitions of co-ordination distances for the Radionavigation-satellite Service sharing radio frequencies with stations of other services. The advice of the Technical Committee has been sought on this question and this report is accordingly subject to further information likely to be received in response. The Group's Report, at this stage, is therefore subject to the following proviso :

1.4.1 In the event that Committee 4, in response to the request from Committee 5, is able to furnish suitable sharing criteria for application to the Radionavigation-satellite Service these changes to Article 5, and particularly to the foot-notes proposed, may be reviewed.

J. PENWARDEN
Chairman
Working Group 5C

Appendices: 3



A P P E N D I X 1

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
14.3 - 14.4	RADIONAVIGATION-SATELLITE 407	

MOD

NOC 407

A P P E N D I X 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
399.9 - 400.05	RADIONAVIGATION-SATELLITE Fixed Mobile 274A 312A 314 314A	

ADD

MOD

ADD

MOD

ADD

MOD

NOC

ADD

274A (See Appendix 3 - 149.9 - 150.05 Mc/s.)

312 In Greece, Yugoslavia and Sweden, the band 400.05 - 401 Mc/s is also allocated to the fixed and mobile services.

312A In Albania, Bulgaria, Cuba, Greece, Hungary, Poland, Yugoslavia, Roumania, Czechoslovakia and the U.S.S.R., the band 399.9 - 400.05 Mc/s is also allocated [RR 143] to the fixed and mobile services until no longer required.

313 In Albania, Bulgaria, Hungary, Poland, Roumania, Czechoslovakia and the U.S.S.R., the band 400.05 - 401 Mc/s is allocated to the fixed and mobile services.

314

314A In Morocco and the Philippines, the band 400 - 400.05 Mc/s is also allocated to the meteorological aids service.

A P P E N D I X 3

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
ADD 149.9 - 150.05 RADIONAVIGATION-SATELLITE Fixed Mobile except aero-nautical mobile (R) 274 274A	149.9 - 150.05 RADIONAVIGATION-SATELLITE Fixed Mobile 274A	

NOC 274

ADD 274A This band will eventually become allocated exclusively to the radionavigation-satellite service and administrations are urged to begin the withdrawal of the stations of other services operating in this band at the earliest possible moment. Priority for withdrawal should be given to stations located in coastal areas and this not later than 1 January 1969.

SUP 285

SUP 286

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/84-E
27 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5C

METEOROLOGICAL-SATELLITE SERVICE
(Reference Documents Nos. DT/36, DT/65)

1. At the Eighth Meeting of the Working Group on Friday, 25 October considerable discussion took place on the problem of accommodating new allocations for Meteorological Satellites in bands at present occupied by other services. In bands where these other services are operating to an extent that adequate channels cannot be cleared for the reception of signals from Meteorological Satellites many Delegations were unable to agree to some of the proposed allocations.
2. Against the background that all Delegations regard the Meteorological service as being of great benefit to all and are agreed that it should unquestionably have access to space techniques under the Radio Regulations this situation presented a difficult problem.
3. The proposals for the allocation of 950 kc/s at 400.05 - 401 Mc/s and 10 Mc/s between 460 - 470 Mc/s are specific examples of this problem. In the absence of agreement in the Working Group, certain Delegates undertook to study the problem in an ad hoc Group. The results of this study have proved gratifying and justify this note of explanation as a means of furthering the work.
4. Firstly, much of the concern expressed by Delegates was based on the fact that because of their existing commitments to other services they would be unable to receive the transmissions from a satellite and thus deprived of valuable information. Secondly, they could not undertake any obligation to offer protection to meteorological satellite receivers in their countries from harmful interference caused by their own fixed or mobile services.



5. The ad hoc Group's study has established that these fears appear groundless as the system envisaged on these frequencies is not primarily intended for reception at any point on the earth's surface but rather at only a few selected points where the necessary special equipment is installed. The number of these points may be limited, for instance, to one focal point in each W.M.O. Region. The desire for other countries to receive the information can then be easily satisfied by retransmission of the received data over conventional terrestrial circuits.

6. On this basis it will be clear to the Working Group that provided sufficient suitably located countries are able to accommodate the reception points the system requirements are met. Furthermore the world-wide clearance of the relevant bands is not essential.

7. The Group may wish therefore, to reconsider these proposals subject to the inclusion of a note on the following lines:

"It is intended that transmissions from the METEOROLOGICAL SATELLITES will be made to a small number of receiving points on the earth's surface. The selection of these points will be a matter for agreement between administrations concerned."

It is suggested that similar treatment may be given to the proposals for the bands 1660 - 1670 Mc/s, 1690 - 1700 Mc/s and 1770 - 1790 Mc/s.

8. With regard to the related question of potential interference to existing terrestrial services by signals from the satellites it is felt that this can best be covered by an extension of the formula provided by the C.C.I.R. or developed by Committee 4, on the following lines:

"The power flux density at the surface of the earth is not to exceed dbw/m²/c/s and so will not be a source of harmful interference to typical fixed and mobile operations at sites other than those agreed for reception points of the METEOROLOGICAL SATELLITE Service in the bands, 460 - 470 Mc/s, 1660 - 1670 Mc/s, 1690 - 1700 Mc/s, 1770 - 1790 Mc/s, etc."

J. PENWARDEN
Chairman
Working Group 5C

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/85-E
27 October, 1963
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WORKING GROUP 4C

SECOND REPORT OF WORKING GROUP 4C1

SHARING CRITERIA

1. Annex 1 to this report is a second draft Addendum to Article 7 of the Radio Regulations and is submitted as a supplement to the Annex of Document No. DT/61-E (Rev.).

2. The attention of Committee 4 is drawn to the following comments on the proposed Regulations.

Regulation 470 MB

3. A limitation on total ERP was not deemed necessary for the present. However, it is requested that the C.C.I.R. study this requirement, in the light of further developments and studies, including tropospheric scatter effects, scattering from rain, etc.

Regulations 470 ME and 470 MH

4. The Working Group assumes that Regulations 470 ME and 470 MH will be amended to indicate specifically the frequency bands concerned, when these have been determined.

J.R. MARCHAND
Chairman

Annex : 1



A N N E X

Power Limitations

- 470 MA 21A. Earth stations in the Communication-Satellite Service
- 470 MB a) The level of the mean effective radiated power transmitted by an earth station in any direction in the horizontal plane¹⁾ shall not exceed + 55 dBW in any 4 Kc/s band, except that it may be increased subject to the provisions of 470 MC or 470 MD. However, in no case shall it exceed a value of + 65 dBW in any 4 Kc/s band.
- 470 MC b) In any direction where the distance from an earth station to the boundary of the territory of another Administration exceeds 400 km, the limitation of + 55 dBW in any 4 Kc/s band may be increased in that direction by 2 db for each 100 km in excess of 400 km.
- 470 MD c) The limitation of + 55 dBW in any 4 Kc/s band may be exceeded by agreement between the Administrations concerned or affected.
- 470 ME d) The limitations given in 470 MB apply in the bands allocated to transmissions by earth stations in the communication-satellite service, shared on an equal basis with fixed or mobile services.

Minimum Angle of Elevation

- 470 MF 21B Earth stations in the Communication -Satellite Service
- 470 MG a) Earth station antennas shall not be employed for transmission at elevation angles less than 3 degrees, measured from the horizontal plane to the central axis of the main lobe, except when agreed to by the Administrations concerned or affected.

Note :

- 1) For the purpose of this Regulation, the effective radiated power transmitted in the horizontal plane shall be taken to mean the effective radiated power actually transmitted towards the horizon, reduced by the Site Shielding Factor that may be applicable.

The value of this Site Shielding Factor shall be determined as indicated in / Section 4 of Document No. DT/68-E7

470 MH

- b) The limitation given in 470 MG applies in the bands allocated to transmission by earth stations in the communication-satellite service, shared on an equal basis with fixed or mobile services.

SPACE
RADIOCOMMUNICATION
CONFERENCE

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28 October, 1963
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WORKING GROUP 6B

AGENDA

THIRD MEETING OF WORKING GROUP 6B

Wednesday, 30 October, 1963 at 0930 hours

Room C

1. Consideration of Appendices 9 and 10 (Document No. 24 (Rev.))
2. Proposal for the amendment of No. 695 RR (Document No. 34, page 5)
3. Proposal for the amendment of Article 13 RR (Document No. 36, page 3)
4. Any other business.

P.E. WILLEMS
Chairman
Working Group 6B



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/87-E
28 October, 1963
Original: French

Geneva, 1963

WORKING GROUP 5C1

A THIRD SUCCINCT REPORT
ON
DISCUSSIONS ABOUT PROPOSALS
IN CONNECTION WITH SEARCH
AND RESCUE FREQUENCIES IN
THE SPACE AERONAUTICAL MOBILE
SERVICE

1. On 26 October, 1963, at its fourth meeting, Working Group 5C1 (made up of delegates from the Argentine Republic, Australia, Belgium, the People's Republic of Bulgaria, Canada, Cuba, Spain, the United Arab Republic, France, the United Kingdom of Great Britain and Northern Ireland, Japan, New Zealand, Pakistan, the People's Republic of Poland, Portugal, Switzerland, Sweden, the Czechoslovak Socialist Republic, the Ukrainian Soviet Socialist Republic, the Union of Soviet Socialist Republics and the United States, together with an observer from I.C.A.O.) continued its examination of the two Soviet proposals about additional distress frequencies for the search for, and rescue of, spacemen and space vehicles.
2. The second succinct report on this matter (Document No. DT/58) was adopted unchanged.
3. Choice of a frequency from the Decametric-Wave Bands:

The great majority of the Working Group felt it was better to choose a definite frequency rather than to have a distress guard band, for the following reasons:



- a) To have an additional distress frequency with its guard band (arrangements at present applicable to the frequencies 500 and 2,182 kc/s only) would entail a permanent watch, and many Administrations could not accept this. This is a matter which would in any event have to be given careful consideration by Committee 6 before any decision is taken.
- b) When reception of particular signals proves necessary, listening-in is easier if the frequency concerned is known beforehand.
- c) The frequency assigned in a particular band is better protected, and no trouble is caused by neighbouring transmissions. Nor is there any reason to stop the transmission of signals on the standard frequency, 20 Mc/s.

4. After some discussion, Working Group 5C1, in view of the above considerations, unanimously decided in favour of 20,007 kc/s, plus or minus 3 kc/s.

It was agreed that a footnote should describe the purposes for which the frequency would be used.

Hence Working Group 5C1 suggests a change in Article 5 of the Radio Regulations (see annex hereinafter).

5. Choice of a Frequency from the Metric-Wave Bands:

The Soviet Delegation, supported by the delegations of the countries which signed Documents Nos. 5, 68, and 86, maintained its proposal to reserve the band 114.1 to 114.4 Mc/s for the additional requirements of space search and rescue operations. It agreed, however, that this should be applicable "in certain countries" only, and should take the form of a footnote (No. 272A).

On the other hand, the other delegations felt that there was no call for another frequency in this particular band, in view of the provision already made (Nos. 273 and 309). Incidentally, as shown in Document No. 41 (Annex 4), the band 112 - 117.975 Mc/s, exclusively allocated for aeronautical radio navigation, is widely used, throughout the world, by omnidirectional radiobeacons (VOR), used for the guidance of aircraft on air routes.

5.1. It would not be possible to stop these aids from working during space search and rescue operations proceeding in a neighbouring country. Furthermore, there would be a definite risk of mutual harmful interference if, in emergency, a space vehicle was to land in an area in which VORs were working.

5.2. The I.C.A.O. Observer offered a statement designed to show how the Members of his organization felt about this matter:

"At first glance and in the absence of further discussion and explanation, the proposal in the form presented appeared to him to give rise to some difficulties. The band 114.1 to 114.4 Mc/s was extensively used for navigational aids, particularly in congested areas such as the European Mediterranean area and in North America. It would be virtually impossible to demand that transmissions in this band should cease in an emergency. Indeed, any such interruption in the working of navigational aids might endanger many aircraft which relied on the proper functioning of these navigational aids for the conduct of their flights under appropriate air traffic control arrangements. If it were not intended that existing transmissions should stop during a space emergency, he could not see the advantage of choosing that particular band for the purposes described, throughout much of the world."

6. Many delegations considered that it would be unwise to adopt the proposal in connection with the band 114.1 to 114.4 Mc/s, and wanted the matter argued out in Committee 5, where more countries were represented.

This view, as they saw it, was justified by the fact that existing search and rescue arrangements for transport aircraft should be satisfactory for space search and rescue as well, especially as there were still so few space vehicles.

Maurice CHEF

Annex: 1

A N N E X AChange in Article 5 of the Radio Regulations

kc/s

Allocation to Services		
Region 1	Region 2	Region 3
19,990 - 20,010	STANDARD FREQUENCY 204 - 220 - 221 A - 215	

MOD

NOC 204 (see Document 112)

NOC 220

SUP 221 (see Document 111)

MOD 215 (see Document 111)

ADD 221 A The frequency 20,007 kc/s \pm 3kc/s may also be used, in emergency, in the search for, and rescue of, astronauts and space vehicles.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/88-E
28 October 1963
Original : French

Geneva, 1963

WORKING GROUP OF
COMMITTEE 2

A G E N D A

OF THE 2nd MEETING OF THE WORKING GROUP OF COMMITTEE 2 (CREDENTIALS)

Wednesday, 30 October 1963, 11 a.m., (Room E)

To examine the situation regarding the credentials of the various countries attending the Conference, Document No. 98-E.

Chairman of the Committee 2:
F. NICOTERA



SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/89-E
28 October 1963
Original : English

WORKING GROUP 5C

A G E N D A

TENTH MEETING OF WORKING GROUP 5C

Tuesday, 29 October 1963, at 1430 hours (2.30 p.m.)

Room B

1. Allocations for the METEOROLOGICAL-SATELLITE SERVICE
(Reference Document No. DT/36, Document No. DT/65, Document No. DT/84)
2. Allocations for the RADIONAVIGATION-SATELLITE SERVICE
(Reference Document No. DT/21, Document No. DT/45, Document No. DT/83)

J. PENWARDEN
Chairman
Working Group 5C



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/90-E
28 October 1963
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Geneva, 1963

WORKING GROUP 5B

FIFTH AND LAST REPORT BY WORKING GROUP 5B1

TO WORKING GROUP 5B

RADIO ASTRONOMY SERVICE

1. Band 1664.4 - 1668.4 Mc/s

1.1 The Delegations of Canada and the U.S.A. confirmed that the METEOROLOGICAL AIDS Service should be retained and accordingly appear in the body of the Table.

1.2 Two possible solutions for this band were suggested. They are shown in Appendices 1 and 2 respectively.

2. Footnote 354

2.1 The Delegation of the U.S.S.R. explained that his Administration's proposal appearing under "Some Additions and Comments" on page 8 of Document No. 32 (Rev.) paragraph 4, referred not only to the band 1400 - 1427 Mc/s but also to the insertion in the Table of the Radio Astronomy Service on a secondary basis in each of the bands mentioned in footnote 354.

2.2 The Group agreed that, as this was an entirely new interpretation of the paragraph 4 in question, the U.S.S.R. Delegation should, if it still so desires, place a paper before Working Group 5B explaining the full scope of this proposal. The Delegation of the U.S.S.R. and the Chairman of Working Group 5B accepted this procedure.



3. Band 33.4 - 34.0 Gc/s

3.1 Recalling that the study of this band with respect to Meteorological-satellite Service allocations was still going on in Working Group 5C, the Group agreed to refer the conclusions reached at its previous meeting, as reported in Document No. DT/40 (Rev.) to Working Group 5B.

3.2 The proposal concerning this band was for a primary allocation to the Radio Astronomy Service and for a band of 100 Mc/s within this band to the Meteorological-satellite Service with the retention of the existing footnotes 407, 408 and 412 unchanged.

3.3 With respect to the proposed allocation to the Radio Astronomy Service, eight Delegations supported this allocation and the retention of the associated footnotes while two were against any change to the existing Table in this regard.

3.4 The draft new Table, with respect to the allocation to the Radio Astronomy Service, as shown in Appendix 3 attached hereto, is a transitional text for further consideration in Working Group 5B.

4. Band 36.5 - 37.5 Gc/s

4.1 Eight Delegations supported the proposal to allocate this band to the Radio Astronomy, Fixed and Mobile Services all on a primary basis. Three Delegations were unable to agree to the introduction of the Radio Astronomy Service in this band. One Delegation suggested that the Radio Astronomy Service should be on a secondary basis.

4.2 A draft new Table for this band appears in Appendix 4 attached hereto, and is forwarded to Working Group 5B for further consideration.

W.A.E. NIELSEN
Chairman
Working Group 5B1

Appendices : 4

A P P E N D I X 1

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
1664.4 - 1668.4	METEOROLOGICAL AIDS [METEOROLOGICAL-SATELLITE] Radio Astronomy 354 354A	

[W.G. 5C]

ADD

(MOD) 354

ADD 354A In Bulgaria, Cuba, Hungary, Poland, Roumania, Czechoslovakia and the U.S.S.R., the band 1664.4 - 1668.4 Mc/s is also allocated to the fixed service and the mobile, except aeronautical mobile, service.

A P P E N D I X 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
1664.4 - 1668.4 METEOROLOGICAL AIDS FIXED MOBILE except aeronautical mobile 353 354 354A		

NOC

NOC 353

NOC 354

ADD 354A In Australia, Canada, France, the United Kingdom, Japan and Sweden, the band 1664.4 - 1668.4 Mc/s is allocated to the meteorological aids and /meteorological-satellite/ services and, on a secondary basis, to the radio astronomy service.

A P P E N D I X 3

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
33.4 - 34.0 RADIO ASTRONOMY METEOROLOGICAL-SATELLITE (100 Mc/s only in this band) 407 408 412		

ADD
[W.G. 5C]

NOC 407

NOC 408

NOC 412

A P P E N D I X 4

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
36.5 - 37.5		
FIXED		
MOBILE		
RADIO ASTRONOMY		

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/91-E
28 October 1963
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WORKING GROUP 5B

AGENDA

WORKING GROUP 5B

Tuesday, 29 October 1963, at 0930 hours

RADIO ASTRONOMY SERVICE

1. Adoption of the Third Report by Working Group 5B1 (Document No. DT/78)
2. Adoption of the Fourth Report by Working Group 5B1 (Document No. DT/80)
3. Adoption of the Fifth and last Report by Working Group 5B1 (Document No. DT/90)

V.V. RAO
Chairman
Working Group 5B



Geneva, 1963

WORKING GROUP 5B

SEVENTH AND LAST REPORT BY WORKING GROUP 5B2

TO WORKING GROUP 5B

SPACE RESEARCH SERVICE

1. Band 400.05 - 401 Mc/s

1.1 All proposals before the Conference concerning the allocation to the Space Research Service in this band were considered.

1.2 The draft new Table, with new and revised foot-notes, as appropriate, given in Appendix I attached hereto was agreed, subject to the consideration, in Working Group 5C, of proposals concerning the Meteorological-satellite Service.

2. Band 15.15 - 15.35 Gc/s

2.1 All proposals before the Conference concerning the allocation to the Space Research Service in the band 15.25 - 15.35 Gc/s were considered.

2.2 The proposers of this allocation pointed out that this proposal had, as a consequential change, the up-grading of the existing allocations to the Fixed and Mobile Services, in the band 15.15 - 15.25 Gc/s, from secondary services to primary services. The Fixed and Mobile Services would then be allocated, in the draft new Table, on a primary basis for a continuous band from 14.4 Gc/s to 15.25 Gc/s.

2.3 There was no objection to the allocation on a primary basis in the band 15.25 - 15.35 Gc/s to the Space Research Service. However, the Delegations of the U.S.S.R. and Poland reiterated the proposal to place in the draft new Table for Region 1 to the Space Research, Fixed and Mobile Services on an equal status of primary services.



2.4 The draft new Table and associated foot-notes reflecting the above agreement appears at Appendix 2 attached hereto.

2.5 Upon arriving at the above result, the Group expressed its appreciation to the Delegations of Canada, New Zealand and the U.S.S.R., with Mr. H.A. KIEFFER of the Swiss Delegation as Convenor, who formed an ad hoc Group and prepared the useful transitional text appearing in Document No. DT/55.

3. Bands 31.0 - 31.3 Gc/s, 31.8 - 32.3 Gc/s and 34.2 - 35.2 Gc/s

3.1 All proposals before the Conference concerning these bands were considered.

3.2 The proposers agreed that the term "Deep Space Research" in the proposals could be replaced by "Space Research".

3.3 There was general agreement on the draft new Tables for the bands concerned as given at Appendices 3, 4 and 5, respectively. However, in regard to the band 31.0 - 31.3 Gc/s, the Delegations of Canada, France and the U.S.A. were not able to support the allocation to the Space Research Service on a shared basis with the Fixed and Mobile Services, since they felt unable to assure the necessary protection to the Space Research Service in this band in their countries. Also, in regard to the band 34.2 - 35.2 Gc/s, the Delegation of Sweden confirmed their need to retain the existing allocation to the Radiolocation Service.

B. DESTA
Chairman
Working Group 5B2

Appendices: 5

A P P E N D I X 1

Mc/s

Allocation to Services			
Region 1	Region 2		Region 3
400.05 - 401	<u>METEOROLOGICAL AIDS</u> <u>METEOROLOGICAL-SATELLITE</u> SPACE RESEARCH (Telemetry) 314A 312 312A 313 314		

WG.5C

ADD

MOD 312 In Greece, the band 400.05 - 401 Mc/s is also allocated to the fixed and mobile services.

ADD 312A In Yugoslavia and Sweden, the band 400.05 - 401 Mc/s is also allocated to the fixed and mobile services until January, 1970.

MOD 313 In Albania, Bulgaria, Hungary, Poland, Roumania, Czechoslovakia and the U.S.S.R., the band 400.05 - 401 Mc/s, is also allocated to the fixed and mobile services.

MOD 314 In the United Kingdom, the band 400.05 - 420 Mc/s is also allocated to the radiolocation service; however, between 400.05 and 410 Mc/s the allocation to the radiolocation service is on a secondary basis.

ADD 314A Space research stations employing frequencies in the band 400.05 - 401 Mc/s may also transmit tracking signals in this band.

Same text
as 350A on
page 2
DT/66/

A P P E N D I X 2

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
14.4 - 15.25	FIXED MOBILE	
15.25 - 15.35	SPACE RESEARCH	
	409A 409B	

ADD 409A In Bulgaria, Hungary, Egypt *), Kuwait, Poland, Roumania, Czechoslovakia and the U.S.S.R., the band 15.25 - 15.35 Gc/s is also allocated to the fixed and mobile services.

ADD 409B In Austria, Israel, Japan, the Netherlands, Portugal, the Federal Republic of Germany and Switzerland, the band 15.25 - 15.35 Gc/s is also allocated, on a secondary basis, to the fixed and mobile services.

*)
"Egypt" or "the U.A.R."

A P P E N D I X 3

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
31.0 - 31.3	SPACE RESEARCH	
	FIXED	
	MOBILE	

ADD

A P P E N D I X 4

Gc/s

Allocation to Services		
Region 1	Region 2	Region 3
31.8 - 32.3	SPACE RESEARCH RADIONAVIGATION	

ADD

A P P E N D I X 5

Gc/s

Allocation to Services			
Region 1	Region 2		Region 3
34.2 - 35.2	SPACE RESEARCH		
	407	408	412 412A

NOC 407

NOC 408

NOC 412

ADD 412A In Sweden, the band 34.2 - 35.2 Gc/s is also allocated to the Radiolocation Service.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/93-E
29 October 1963
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WORKING GROUP 5B

AGENDA

SIXTH MEETING WORKING GROUP 5B

Wednesday, 30 October 1963, at 0930 hours

RADIO ASTRONOMY AND SPACE RESEARCH SERVICES

Radio Astronomy Service

1. Adoption of the Fifth and last Report by Working Group 5B1
(Document No. DT/90) paragraphs 2,3 and 4

Space Research Service

2. Adoption of the Fifth Report by Working Group 5B2 (Document No. DT/81)
3. Adoption of the Sixth Report by Working Group 5B2 (Document No. DT/82)
4. Adoption of the Seventh and last Report by Working Group 5B2
(Document No. DT/92)
5. Consideration of the proposals for the band 5670-5725 Mc/s
(Document No. DT/11, page 16)
6. Any other business

V.V. RAO
Chairman
Working Group 5B



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/94-E
29 October, 1963
Original : ~~French~~
English
Spanish

Geneva, 1963

WORKING GROUP 6A

APPENDIX 1A

NOTICES RELATING TO STATIONS IN THE SPACE AND RADIO ASTRONOMY SERVICES

(See Article 9 A)

Section A - General Instructions

1. A separate notice in a form convenient to the notifying administration shall be sent to the International Frequency Registration Board for notifying:

- each new frequency assignment,
- any change in the characteristics of a frequency assignment recorded in the Master International Frequency Register (hereinafter called the Master Register),
- any total deletion of a frequency assignment recorded in the Master Register.

2. When submitting notices under No. 639A for earth and space transmitting assignments and under No. 639B for space and earth receiving assignments, separate notices shall be submitted. In the case of a passive system, only earth transmitting and receiving assignments shall be notified.

3. In the case of a satellite system employing multiple space stations with the same general characteristics:

- for stationary satellites, a separate notice shall be submitted for each space station; and
- for non-stationary satellites, one notice covering all the space stations may be submitted.



4. The following information should be shown on the notice:
- a) the serial number of the notice and the date on which the notice is sent to the Board;
 - b) the name of the notifying administration;
 - c) sufficient data to identify the particular satellite system in which the earth or space station will operate;
 - d) whether the notice reflects
 - 1) the first use of a frequency by a station,
 - 2) the first use of an additional frequency by a station,
 - 3) a change in the characteristics of a frequency assignment recorded in the Master Register (indicate whether the change is a replacement, addition or deletion of existing characteristics), or
 - 4) a deletion of an assignment in all of its notified characteristics),
 - e) the identity of the operating administration or company and the postal and telegraphic addresses of the administration to which communication should be sent on urgent matters regarding interference, quality of emissions and questions referring to the technical operation of stations (see Article 15); and
 - f) any other information which the administration considers to be relevant, e.g., any special channelling arrangements or methods of modulation, the degree of terrain shielding throughout all azimuthal angles for the earth stations, an indication that the assignment concerned would be operating in accordance with No. 115, information concerning the use of the notified frequency if such use is restricted, or, in the case of notices pertaining to space stations, if the transmissions of the station are to be permanently switched off after a certain period.

Section B - Basic Characteristics to be furnished in Notices relating to
Frequencies used by Earth Stations for transmitting

Item 1 Assigned frequency

Indicate the assigned frequency as defined in Article 1, in kc/s up to 30 000 kc/s inclusive, and in Mc/s above 30 000 kc/s.

Item 2 Date of putting into use

- a) In the case of a new assignment, indicate the date (actual or foreseen, as appropriate) of putting the frequency assignment into use.
- b) Whenever the assignment is changed in any of its basic characteristics, as shown in this Section (except in the case of a change in Items 3 or a), the date to be given shall be that of the latest change (actual or foreseen, as appropriate).

Item 3 Call sign (Identification)

Indicate the call sign or other identification used in accordance with Article 19.

Item 4 Identity and location of the earth station

- a) Indicate the name by which the station is known or the name of the locality in which it is situated.
- b) Indicate the country in which the station is located. Symbols from the preface to the International Frequency List should be used.
- c) Indicate the geographical co-ordinates (in degrees and minutes) of the transmitter site.

Item 5 Station(s) with which communication is to be established

Identify the associated receiving space station(s) by reference to the notification thereof or in any other appropriate manner, or, in the case of a passive system, the identity of the satellite(s) and the location of the receiving earth station(s).

Item 6 Class of station and nature of service

Indicate the class of station and nature of service performed, using the symbols shown in Appendix 10.

Item 7 Class of emission, necessary bandwidth and description of transmission

a) Indicate the class of emission, necessary bandwidth and description of transmission, in accordance with Article 2 and Appendix 5.

b) In the case where there are one or more reference frequencies in a particular emission, indicate such frequencies.

Item 8 Power (kW)

The power supplied to the antenna shall be notified as follows, according to the class of emission:

- Mean power (P_m) for amplitude modulated emissions using unkeyed full carrier, and for all frequency modulated emissions (see No. 96);
- Peak envelope power (P_p) for all classes of emission other than those referred to above.

Item 9 Transmitting antenna characteristics

a) Indicate in degrees from the horizontal plane the planned minimum operating angle of elevation of the antenna.

b) Indicate in degrees (clockwise) from True North the range of azimuthal angles.

c) Indicate the beamwidth, in degrees, between the half power points (describe in detail if not symmetrical).

c) Indicate the angle, in degrees, within which the power in any direction does not fall more than 6 db below the power in the direction of the main lobe (describe in detail if not symmetrical).

d) Indicate the gain (db) of the antenna in the direction of maximum radiation (see No. 100).

e) Indicate the maximum gain (db) of the antenna in the horizontal plane with the antenna at any angle above the minimum angle of elevation (see No. 100).

f) Indicate the height (metres) of the antenna above mean sea level.

Item 10 Maximum hours of operation

Indicate in G.M.T. the maximum hours of operation on the frequency shown in Item 1.

Item 11 Co-ordination

Indicate the name of any administration with which co-ordination has been effected for the use of this frequency, and, if appropriate, the name of any administration with which co-ordination has been sought but not effected.

Section C - Basic Characteristics to be furnished in Notices relating to Frequencies to be received by Earth Stations

Item 1 Assigned frequency

Indicate the assigned frequency of the emission to be received, in kc/s up to 30 000 kc/s inclusive, and in Mc/s above 30 000 kc/s.

Item 2 Date of putting into use

a) In the case of a new assignment indicate the date (actual or foreseen, as appropriate) when actual reception of the assigned frequency begins.

b) Whenever the assignment is changed in any of its basic characteristics, as shown in this Section (except in the case of a change in Item 3a), the date to be given shall be that of the latest change (actual or foreseen, as appropriate).

Item 3 Identity and location of the receiving earth station

a) Indicate the name by which the receiving earth station is known or the name of the locality in which it is situated.

b) Indicate the country in which the receiving earth station is located. Symbols from the Preface to the International Frequency List should be used.

c) Indicate the geographical co-ordinates (in degrees and minutes) of the receiver site.

Item 4 Associated transmitting station(s)

Identify the associated transmitting space station(s) by reference to the notification thereof or in any other appropriate manner, or, in the case of a passive system, the identity of the satellite(s) and the associated transmitting earth station(s).

Item 5 Class of station and nature of service

Indicate the class of station and nature of service performed, using the symbols shown in Appendix 10.

Item 6 Class of emission, necessary bandwidth and description of the transmission to be received

a) Indicate the class of emission, necessary bandwidth and description of the transmission to be received, in accordance with Article 2 and Appendix 5.

b) In any case where there are one or more reference frequencies in a particular received emission, indicate such frequencies.

Item 7 Earth station receiving antenna characteristics

a) Indicate in degrees from the horizontal plane the planned minimum operating angle of elevation of the antenna.

b) Indicate in degrees (clockwise) from True North the range of azimuthal angles.

[c) Indicate the beamwidth, in degrees, between the half power points (describe in detail if not symmetrical).]

[c) Indicate the angle, in degrees, within which the power in any direction does not fall more than 6 db below the power in the direction of the main lobe (describe in detail if not symmetrical).]

d) Indicate the gain (db) of the antenna in the direction of the main lobe (see No. 100).

e) Indicate the maximum gain (db) of the antenna in the horizontal plane with the antenna at any angle above the minimum angle of elevation (see No. 100).

f) Indicate the height (metres) of the antenna above mean sea level.

Item 8 Maximum hours of reception

Indicate in G.M.T. the maximum hours of reception of the frequency shown in Item 1.

Item 9 Co-ordination

Indicate the name of any administration with which co-ordination has been effected for the use of the frequency, and, if appropriate, the name of any administration with which co-ordination has been sought but not effected.

Item 10 Noise temperature

Indicate the overall receiving system operating noise temperature ($^{\circ}\text{K}$) under "quiet sky" conditions at the planned minimum operating angle of the antenna.

Section D - Basic Characteristics to be furnished in Notices relating to Frequencies used by Space Stations for transmitting

Item 1 Assigned frequency

Indicate the assigned frequency as defined in Article 1, in kc/s up to 30 000 kc/s inclusive, and in Mc/s above 30 000 kc/s.

Item 2 Date of putting into use

a) In the case of a new assignment, indicate the date (actual or foreseen, as appropriate) of putting the frequency assignment into use.

b) Whenever the assignment is changed in any of its basic characteristics, as shown in this Section (except in the case of a change in Items 3 or 4), the date to be given shall be that of the latest change (actual or foreseen, as appropriate).

Item 3 Call sign (Identification)

Indicate the call sign or other identification used in accordance with Article 19.

Item 4 Identity of the space station

Indicate the identity of the space station.

Item 5 Area of coverage

Indicate the area of intended coverage or the name of the locality and country in which the associated receiving station is located.

Item 6 Orbital information

Indicate, where applicable, the inclination of plane and the period of orbit and the apogee and perigee in kilometers, measured from the surface of the earth, of the space station(s). In the case of a space station aboard a stationary satellite, indicate the geographical longitude of the projection of the satellite's position on the surface of the earth.

Item 7 Class of station and nature of service

Indicate the class of station and nature of service performed, using the symbols shown in Appendix 10.

Item 8 Class of emission, necessary bandwidth and description of transmission

a) Indicate the class of emission, necessary bandwidth and description of transmission, in accordance with Article 2 and Appendix 5.

b) In any case where there are one or more reference frequencies in a particular emission, indicate such frequencies.

Item 9 Power (kW)

The power supplied to the antenna shall be notified as follows, according to the class of emission :

- Mean power (Pm) for amplitude modulated emissions using unkeyed full carrier, and for all frequency modulated emissions (see No. 96);

Peak envelope power (Pp) for all classes of emission other than those referred to above.

Item 10 Transmitting antenna characteristics

a) Indicate the beamwidth, in degrees, between the half power points (describe in detail if not symmetrical).

a) Indicate the angle, in degrees, within which the power in any direction does not fall more than 6 db below the power in the direction of the main lobe (describe in detail if not symmetrical)

b) Indicate the gain (db) of the antenna in the direction of maximum radiation (see No. 100).

c) For stationary satellites employing directional antennas, indicate the point on the earth's surface towards which the antenna is directed and the accuracy of maintaining this direction.

Item 11 Maximum hours of operation

Indicate in G.M.T. the maximum hours of operation on the frequency shown in Item 1.

Item 12 Number of space stations

In the case of non-stationary satellites, indicate the number of space stations covered by the notice.

Section E - Basic characteristics to be furnished in Notices relating to Frequencies to be received by Space Stations

Item 1 Assigned frequency

Indicate the assigned frequency of the emission to be received, in kc/s up to 30 000 kc/s inclusive, and in Mc/s above 30 000 kc/s.

Item 2 Date of putting into use

a) In the case of a new assignment indicate the date (actual or foreseen, as appropriate) when reception of the assigned frequency begins.

b) Whenever the assignment is changed in any of its basic characteristics, as shown in this Section (except in the case of a change in Item 3), the date to be given shall be that of the latest change (actual or foreseen, as appropriate).

Item 3 Identity of the receiving space station

Indicate the identity of the receiving space station.

Item 4 Orbital information

Indicate, where applicable, the inclination of plane and the period of orbit and the apogee and perigee in kilometers, measured from the surface of the earth, of the space station. In the case of a space station on board a stationary satellite, indicate the geographical longitude of the projection of the satellite's position on the surface of the earth.

Item 5 Associated transmitting earth station(s)

Identify the associated transmitting earth station(s) by reference to the notification thereof or in any other appropriate manner.

Item 6 Class of station and nature of service

Indicate the class of station and nature of service performed, using the symbols shown in Appendix 10.

Item 7 Class of emission, necessary bandwidth and description of the transmission(s) to be received

a) Indicate the class of emission, necessary bandwidth and description of the transmission(s) to be received, in accordance with Article 2 and Appendix 5. In the case of a communication-satellite space station, designed to receive as a composite signal two or more emissions in contiguous channels and transmitted from one or more earth stations, the description should state the number of such emissions, the spacing between their assigned frequencies and the total bandwidth collectively encompassed by them.

b) In any case where there are one or more reference frequencies in a particular received emission, indicate such frequencies.

Item 8 Space station receiving antenna characteristics

a) Indicate the beamwidth in degrees, between the half power points (describe in detail if not symmetrical).

a) Indicate the angle, in degrees, within which the power in any direction does not fall more than 6 db below the power in the direction of the main lobe (describe in detail if not symmetrical).

b) Indicate the gain (db) of the antenna in the direction of the main lobe (see No. 100).

c) For stationary satellites employing directional antennas, indicate the point on the earth's surface toward which the antenna is directed and the accuracy of maintaining this direction.

Item 9 Maximum hours of reception

Indicate in G.M.T. the maximum hours of reception of the frequency shown in Item 1.

Item 10 Number of space stations

In the case of non-stationary satellites, indicate the number of space stations covered by the notice.

Item 11 Noise temperature

Indicate the overall receiving system operating noise temperature ($^{\circ}\text{K}$)

Section F - Basic Characteristics to be furnished in Notices relating to Frequencies to be received by Radio Astronomy Stations

Item 1 Observed frequency

Indicate the center of the frequency band observed, in kc/s up to 30 000 kc/s inclusive, and in Mc/s above 30 000 kc/s.

Item 2 Date of putting into use

- a) Indicate the date (actual or foreseen, as appropriate) when actual reception of the frequency band begins.
- b) Whenever there is a change in any of the basic characteristics, as shown in this Section (except in the case of a change in Item 3b), the date to be given shall be that of the latest change (actual or foreseen, as appropriate).

Item 3 Name and location of the station

- a) Indicate the letters "RA".
- b) Indicate the name by which the station is known or the name of the locality in which it is situated.
- c) Indicate the country in which the station is located. Symbols from the Preface to the International Frequency List should be used.
- d) Indicate the geographical co-ordinates (in degrees and minutes) of the station site.

Item 4 Bandwidth

Indicate the width of the frequency band observed by the station.

Item 5 Antenna characteristics

Indicate the antenna type, effective area and angular coverage in azimuth and elevation.

Item 6 Maximum hours of reception

Indicate in G.M.T. the maximum hours of reception of the frequency band shown in Item 1.

Item 7 Noise temperature

Indicate the overall receiving system noise temperature ($^{\circ}\text{K}$).

Item 8 Class of observations

Indicate the class of observations to be taken on the frequency band shown in Item 1. Class A observations are those in which the sensitivity of the equipment is not a primary factor. Class B observations are those of such a nature that they can be made only with advanced low-noise receivers using the best techniques.

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APPENDIX 1 MOD

Title not
modified (Section A)

MOD Column 5a Locality(ies) or area(s) with which communication is established.

This is not a basic characteristic for land, radionavigation land, radiolocation land or standard frequency stations, or for ground-based stations in the meteorological aids service.

MOD Column 5b Length of circuit (km)

This is a basic characteristic only for land, radionavigation land, radiolocation land and standard frequency stations.

MOD Supplementary information: reference frequency or frequencies, as any, and any co-ordination required by No. 492A.

Title not
modified (Section B)

MOD Column 4b Country in which the receiving land station is located.

MOD Column 4c Longitude and latitude of the site of the receiving land station.

MOD Column 5a Name of the receiving land station.

MOD Column 5b Maximum distance in km between mobile stations and the receiving land station.

MOD Column 6 Class of mobile station and nature of service.

MOD Column 7 Class of emission of mobile station and necessary bandwidth.



- MOD Column 3 Highest power used by the mobile station.
- MOD Column 10 Maximum hours of operation of the mobile station (G.M.T.)
- ADD Supplementary information: any co-ordination required by No. 492A.
- Title not modified (Section C)
- ADD Supplementary information: any co-ordination required by No. 492A.
- Title not modified (Section E.II)
- MOD Column 4b The country in which the receiving land station is located.
(reception)
- MOD Column 4c The geographical co-ordinates (in degrees and minutes) of the
(reception) site of the receiving land station.
- MOD Column 5a For land, radionavigation land, radiolocation land and standard
para. 3 frequency stations, and ground-based stations in the meteorological aids service, it is not necessary to indicate any information in this column.
- MOD Column 5a For reception in the circumstances described in No. 487, the
para. 5 name of the locality by which the receiving land station is known or in which it is situated should be indicated.
- MOD Column 5b For reception in the circumstances described in No. 487 the
para. 2 maximum distance between the mobile (or space) stations and the receiving land station should be indicated.
- MOD Column 5b This information is not a basic characteristic except in the
para. 3 case of paragraph 2 above, and in the case of land, radionavigation land, radiolocation land and standard frequency stations. In these latter cases, the distances shown shall represent the service ranges.
- MOD Column 6 When the frequency assignment is used for reception in the
para. 2 circumstances described in No. 487, the class of station and nature of service applicable to the mobile stations should be indicated.

- MOD Column 7 When the frequency assignment is used for reception in the
para. 2 circumstances described in No. 487, the particulars to be
indicated are those applicable to the mobile station.
- MOD Column 8 When the frequency assignment is used for reception in the
para. 5 circumstances described in No. 487 the power of the mobile
station should be indicated. If not all of the stations use
the same power, the highest power should be indicated.
- MOD Column 10 When the frequency assignment is used for reception in the
para. 1 circumstances described in No. 487 the maximum hours of
operation are those relating to the mobile stations.

Title not (Supplementary information)
modified

- MOD para. 5 Only the information specified in paragraph 3 above is a basic
characteristic; it is recommended, however, that the information
under paragraphs 1 and 2 above be supplied. However, in the case
of terrestrial stations referred to in No. 492A, the name of
any administration with which co-ordination of the use of the
frequency has been sought and the name of any administration
with which such co-ordination has been effected are basic
characteristics.

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ARTICLE 9

Title MOD NOTIFICATION AND RECORDING IN THE MASTER INTERNATIONAL FREQUENCY REGISTER OF FREQUENCY ASSIGNMENTS TO STATIONS IN TERRESTRIAL SERVICES.⁰⁾

Title MOD Section I. Notification of Frequency Assignments and co-ordination procedure to be applied in appropriate cases

486 MOD §1. (1) Any frequency assignment^{1), 2)} to a fixed, land, broadcasting³⁾, radionavigation land, radiolocation land or standard frequency station, or to a ground-based station in the meteorological aids service, shall be notified to the International Frequency Registration Board,
a) if the use of the frequency concerned is capable of causing harmful interference to any service of another administration⁴⁾;
or

486.0 ADD 0) For the notification and recording in the Master International Frequency Register of frequency assignments to stations in the space and radio astronomy services, see Article 9A.

486.4 ADD 4) The attention of administrations is specifically drawn to the application of the provisions of Nos. 486 a) MOD and 486 c) MOD in those cases where they make a frequency assignment to a station in a terrestrial service, located within co-ordination distance of an earth station (see No.), in a band which this service shares [with equal rights] with the space service.



- b) if the frequency is to be used for international radiocommunication, or
- c) if it is desired to obtain international recognition of the use of the frequency. ⁴⁾

487 MOD

(2) Similar notice shall be given for any frequency to be used for the reception of mobile stations by a particular land station in each case where one or more of the conditions specified in No. 486 MOD are applicable.

491 MOD

§3. (1) Whenever practicable each notice should reach the Board before the date on which the assignment is brought into use. It must reach the Board not earlier than ninety days before the date on which it is to be brought into use, but in any case not later than thirty days after the date it is actually brought into use. However, for a frequency assignment to a station in a terrestrial service mentioned in No. 492A, the notice must reach the Board not earlier than two years before the date on which the assignment is to be brought into use, but in any case not later than one hundred and eighty days before this date.

492 MOD

(2) Any frequency assignment, the notice of which reaches the Board after the period specified in No. 491 MOD shall, where it is to be recorded, bear a remark in the Master Register to indicate that it is not in conformity with No. 491 MOD.

4) (See first page of this document)

492A ADD

Before an administration notifies to the Board or brings into use any frequency assignment to a station in a terrestrial service, whether for transmitting or receiving, in a particular band allocated [with equal rights] to the space service and a terrestrial service, it shall effect co-ordination of the assignment with any other administration which has previously effected coordination [within the same band] under the provisions of No. 639E, for the establishment of an earth station, if the proposed terrestrial station is to be located within the co-ordination distance¹⁾ of the earth station, [and the necessary bandwidths of the earth and terrestrial stations are separated by less than one quarter of the necessary bandwidth of the earth station.] For this purpose it shall send to any other such administration a copy of a diagram drawn to an appropriate scale indicating the location of the terrestrial station and all other pertinent details of the proposed frequency assignment, and the approximate date on which it is planned to begin operations.

492B ADD

An administration with which co-ordination is sought under No. 492A shall acknowledge receipt of the co-ordination data within thirty days and shall promptly examine the matter to establish :

492A.1 ADD ¹⁾ For the purposes of this Article the expression "co-ordination distance" means the distance calculated along the lines of procedures shown in [.....] within which there is a possibility of the use of a given transmitting frequency at an earth station causing harmful interference to stations in a terrestrial service sharing the same frequency band, or as the case may be, of the use of a given frequency for reception at an earth station receiving harmful interference caused by such terrestrial stations.

- a) in the case of a frequency assignment to be used for transmitting by the terrestrial station, whether the use would cause harmful interference to the service rendered by its earth stations operating in accordance with the Convention and these Regulations, or to be so operated within the next two years with the proviso that in this latter case co-ordination specified in No. 639E has been effected or the co-ordination procedure has already begun;
- b) in the case of a frequency assignment to be used for reception by the terrestrial station, whether harmful interference would be caused to reception at the terrestrial station by the service rendered by its earth stations operating in accordance with the Convention and these Regulations, or to be so operated within the next two years, with the proviso that in this latter case co-ordination specified in No. 639E has been effected or the co-ordination procedure has already begun;

and shall, within a further period of thirty days either notify the administration requesting co-ordination of its agreement to the proposals or, if this is not possible, indicate the reasons therefor and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem.

492C ADD (Cancelled)

492D ADD No co-ordination under No. 492A is required when an administration proposes :

- a) to bring into use a station in a terrestrial service which is not located, in relation to an earth station, within the co-ordination distance defined in [.....]; or

- b) to change characteristics of an existing assignment in such a way as not to increase the probability of harmful interference to the earth stations of other administrations.

492E ADD

An administration seeking co-ordination may request the Board to endeavour to effect coordination, in those cases where :

- a) an administration with which co-ordination is sought under No. 492A fails to reply within a period of ninety days;
- b) there is a disagreement between the administration seeking co-ordination and an administration with which co-ordination is sought as to the probability of harmful interference; or
- c) co-ordination between administrations is not possible for any other reason.

In so doing, it shall furnish the Board with the necessary information to enable it to effect such co-ordination.

492F ADD

Either the administration seeking co-ordination or an administration with which co-ordination is sought, or the Board, may request any additional information which they may require to assess the probability of harmful interference to the services concerned.

492G

Where the Board receives a request under number 492E a), or where the Board receives no reply within ninety days to its request for coordination in the case foreseen in number 492E c), it shall immediately send a telegram to the administration with which co-ordination is sought. If no reply has been received from that administration within a period of sixty days from the date of despatch of the telegram it shall be deemed that the

administration with which co-ordination was sought shall have undertaken that no complaint will be made in respect of any harmful interference which may be caused by the terrestrial station to the services rendered by its earth station.

492H ADD Where necessary, as part of the procedure under No. 492A the Board shall assess the probability of harmful interference. In any case, the Board shall inform the administrations concerned of the results obtained.

499A ADD Sub-Section IIA - Procedure to be followed in the case where the provisions of No. 492A are not applicable

535 MOD §17 In applying the provisions of the whole of this Sub-Section, any resubmitted notice which is received by the Board more than one hundred and eighty days after the date of its return by the Board shall be considered as a new notice.

570AA ADD Sub-Section IIB - Procedure to be followed in the case where the provisions of No. 492A are applicable

570AB ADD The Board shall examine each notice:

570AC ADD a) with respect to its conformity with the Convention, the Table of Frequency Allocations and the other provisions of the Radio Regulations (with the exception of those relating to the co-ordination procedure and the probability of harmful interference);

570AD ADD b) with respect to its conformity with the provisions of No. 492A relating to the co-ordination of the use of the frequency assignment with the other administrations concerned.

570AE ADD c) where appropriate, with respect to the probability of harmful interference to the service rendered by an earth station for which a frequency assignment already recorded in the Master Register is in conformity with the provisions of No. 639BF, as appropriate, if this frequency assignment has not, in fact, caused harmful interference to any frequency assignment in conformity with Nos. 501, or 570AC, as appropriate, previously recorded in the Master Register.

570 AF ADD Depending upon the findings of the Board subsequent to the examination prescribed in Nos. 570AC, 570AD and 570AE, further action shall be as follows:

570AG ADD Finding unfavourable with respect to No. 570AC.

570AH ADD Where the notice includes a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.

570AI ADD Where the notice does not include a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115, it shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding and with such suggestions as the Board may be able to offer with a view to the satisfactory solution of the problem.

570AJ ADD If the notifying administration resubmits the notice unchanged, it shall be treated in accordance with the provisions of No. 570AI.

57OAK ADD If it is resubmitted with a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the resubmitted notice shall be entered in Column 2d.

57OAL ADD If the notifying administration resubmits the notice with modifications which, after re-examination, result in a favourable finding by the Board with respect to No. 57OAC, the notice shall be treated under the provisions of Nos. 57OAA to 57OAZ.

57OAM ADD Finding Favourable with respect to No. 57OAC.

57OAN ADD Where the Board finds that the co-ordination procedure mentioned in No. 57OAD has been successfully completed with all administrations whose earth stations may be affected, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.

57OAO ADD Where the Board finds that the co-ordination procedure mentioned in No. 57OAD has not been applied, and the notifying administration requests the Board to effect the required co-ordination, the Board shall take the appropriate action necessary and shall inform the administrations concerned of the results obtained. If the Board's efforts are successful, the notice shall be treated in accordance with No. 57OAN. If the Board's efforts are unsuccessful, the notice shall be examined by the Board with respect to the provisions of No. 57OAE.

57OAP ADD Where the Board finds that the co-ordination procedure mentioned in No. 57OAD has not been applied, and the notifying administration does not request the Board to effect the required co-ordination, the notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this action and with such suggestions as the Board may be able to offer with a view to the satisfactory solution of the problem.

57OAQ ADD Where the notifying administration resubmits the notice and the Board finds that the co-ordination procedure mentioned in No. 57OAD has been successfully completed with all administrations whose terrestrial services may be affected, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the resubmitted notice shall be entered in the Remarks Column.

57OAR ADD Where the notifying administration resubmits the notice with a request that the Board effect the required co-ordination, it shall be treated in accordance with the provisions of No. 57OAO. However, in any subsequent recording of the assignment, the date of receipt by the Board of the re-submitted notice shall be entered in the Remarks Column.

57OAS ADD Where the notifying administration resubmits the notice and states it has been unsuccessful in effecting the co-ordination, it shall be examined by the Board with respect to the provisions of No. 57OAE.

However, in any subsequent recording of the assignment, the date of receipt by the Board of the resubmitted notice shall be entered in the Remarks Column.

57OAT ADD Finding favourable with respect to Nos. 57OAC and 57OAE.

57OAU ADD The assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.

57OAV ADD Finding favourable with respect to No. 57OAC but unfavourable with respect to No. 57OAE.

57OAW ADD The notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding and with such suggestions as the Board may be able to offer with a view to the satisfactory solution of the problem.

57OAX ADD Should the notifying administration resubmit the notice with modifications which result, after re-examination, in a favourable finding by the Board with respect to No. 57OAE, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the re-submitted notice shall be indicated in the Remarks Column.

57OAY ADD Should the notifying administration re-submit the notice, either unchanged, or with modifications which decrease the probability of harmful interference, but not sufficiently to permit the provisions of No. 57OAX

to be applied, and should that administration insist upon reconsideration of the notice, but should the Board's finding remain unchanged, the assignment shall be recorded in the Master Register. However, this entry shall be made only if the notifying administration informs the Board that the assignment has been in use for at least one hundred and twenty days without any complaint of harmful interference having been received. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the advice that no complaint of harmful interference has been received shall be indicated in the Remarks Column.

570AZ ADD

The period of one hundred and twenty days mentioned in No. 570AY shall count from :

- the date when the assignment to the terrestrial station which received an unfavourable finding is brought into use, if the assignment to the earth station is then in use;
- otherwise, from the date when the assignment to the earth station is brought into use.

But if the assignment to the earth station has not been brought into use by the notified date, the period of one hundred and twenty days shall be counted from this date. Allowance may be made for the additional period mentioned in No. 570BG.

570BA ADD Change in the Basic Characteristics of Assignments already recorded in the Master Register.

570BB ADD A notice of a change in the basic characteristics of an assignment already recorded, as specified in Appendix 1 (except those entered in Columns 3 and 4a) of the Master Register), shall be examined by the Board according to Nos. 570AC and, where appropriate 570AD or 570AE, and the provisions of Nos. 570AM to 570AZ inclusive applied. Where the change should be recorded, the assignment shall be amended according to the notice.

570BC ADD However, in the case of a change in the basic characteristics of an assignment which is in conformity with No. 570AC, should the Board reach a favourable finding with respect to No. 570AE, where its provisions are applicable, or find that the change does not increase the probability of harmful interference to assignments already recorded, the amended assignment shall retain the original date in Column 2d. In addition, the date of receipt by the Board of the notice relating to the change shall be entered in the Remarks Column.

570BD ADD In applying provisions of the whole of this sub-Section, any resubmitted notice which is received by the Board more than two years after the date of its return by the Board, shall be considered as a new notice.

- 570BE ADD (1) Recording of Frequency Assignments notified before being brought into use.
- 570BF ADD (2) If a frequency assignment notified in advance of bringing into use has received a favourable finding by the Board with respect to Nos. 570AC and, where appropriate, 570AD or 570AE, it shall be entered provisionally in the Master Register with a special symbol in the Remarks Column indicating the provisional nature of that entry.
- 570BG ADD (3) If, within the period of thirty days after the projected date of bringing into use, the Board receives confirmation from the notifying administration of the date of putting into use, the special symbol shall be deleted from the Remarks Column. In the case where the Board, in the light of a request from the notifying administration received before the end of the thirty-day period, finds that exceptional circumstances warrant an extension of this period, the extension shall in no case exceed one hundred and fifty days.
- 570BH ADD (4) In the circumstances described in No. 570AY, and as long as an assignment which received an unfavourable finding cannot be resubmitted as a consequence of the provisions of No. 570AZ, the notifying administration may ask the Board to enter the assignment provisionally in the Master Register, in which event a special symbol to denote the provisional nature of the entry shall be entered in the Remarks Column. The Board shall delete this symbol when it receives from the notifying administration, at the end of the period specified in No. 570AY, the information provided for in No. 540AM relating to the absence of complaint of harmful interference.

570BI ADD (5) If the Board does not receive this confirmation within the period referred to in Nos. 570BG or at the end of the period referred to in No. 570BH as appropriate, the entry concerned shall be cancelled.

Title not (Section IV)

modified

611A ADD

If harmful interference to the reception of any station whose assignment is in accordance with No. 639BF is actually caused by the use of a frequency assignment which is not in conformity with Nos. 501 or 570AC, the station using the latter frequency assignment must, upon receipt of advice thereof, immediately eliminate this harmful interference.

Title not (Section V)

modified

613 MOD

The Board, in the light of all the data at its disposal, shall review the matter, taking into account Nos. 501 or 570AC and Nos. 502, 503, 570AD or 570AE, as appropriate, and shall render an appropriate finding, informing the notifying administration prior either to the promulgation of its finding or to any recording action.

615 MOD §38

After actual use for a reasonable period of an assignment which has been entered in the Master Register on the insistance of the notifying administration, following an unfavourable finding with respect to Nos. 502, 503 or 570AE, as appropriate, this administration may request the Board to review the finding. Thereupon the Board shall review the matter, first having consulted the administrations concerned.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/97-E
29 October, 1963
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WORKING GROUP 6A

DRAFT

ARTICLE 9A

NOTIFICATION AND RECORDING IN THE MASTER INTERNATIONAL
FREQUENCY REGISTER OF FREQUENCY ASSIGNMENTS TO STATIONS
IN THE SPACE AND RADIO ASTRONOMY SERVICES

Section I. Notification of Frequency Assignments and
co-ordination procedure to be applied in appropriate
cases

639A ADD §1 (1) Any frequency assignment¹⁾ to an earth or space station shall be notified to the International Frequency Registration Board :

- a) if the use of the frequency concerned is capable of causing harmful interference to any service of another administration;
or
- b) if the frequency is to be used for international radiocommunication; or
- c) if it is desired to obtain international recognition of the use of the frequency.

639A.1 ADD¹⁾ The expression frequency assignment, wherever it appears in this Article, shall be understood to refer either to a new frequency assignment or to a change in an assignment already recorded in the Master International Frequency Register (hereinafter called Master Register).



639B ADD (2) Similar notice shall be given for any frequency to be used for the reception of transmissions from earth or space stations by a particular space or earth station in each case where one or more of the conditions specified in No. 639A are applicable.

639C ADD Similar notice may be given for any frequency or frequency band to be used for reception by a particular radio astronomy station, if it is desired that such data should be included in the Master Register.

639D ADD (Cancelled)

639E ADD Before an administration notifies to the Board or brings into use any frequency assignment to an earth station, whether for transmitting or receiving, in a particular band allocated [with equal rights] to the space service and a terrestrial service, it shall effect co-ordination of the assignment with any other administration whose territory lies wholly or partly within co-ordination distance¹⁾. For this purpose it shall send to any other such administration a copy of a diagram drawn to an appropriate scale indicating the location of the earth station and showing the

639E.1 ADD 1) For the purposes of this Article the expression "co-ordination distance" means the distance calculated along the lines of procedures shown in [.....] within which there is a possibility of the use of a given transmitting frequency at an earth station causing harmful interference to stations in a terrestrial service sharing the same frequency band, or as the case may be, of the use of a given frequency for reception at an earth station receiving harmful interference caused by such terrestrial stations.

co-ordination distance from the earth station, for the cases of transmission and reception by the earth station, as a function of azimuth and the data on which it is based, including all pertinent details of the proposed frequency assignment, as listed in Appendix 1A, and an indication of the approximate date on which it is planned to begin operations.

639F ADD

An administration with which co-ordination is sought under No. 639E shall acknowledge receipt of the co-ordination data within thirty days and shall promptly examine the matter to establish :

- a) in the case of a frequency assignment to be used for transmitting by the earth station, whether the use would cause harmful interference to the service rendered by its stations in a terrestrial service operating in accordance with the Convention and these Regulations, or to be so operated within the next two years;
- b) in the case of a frequency assignment to be used for reception by the earth station, whether harmful interference would be caused to reception at the earth station by the service rendered by its stations in a terrestrial service operating in accordance with the Convention and these Regulations, or to be so operated within the next two years;

and shall within a further period of thirty days, notify the administration requesting co-ordination of its agreement. If the administration with which co-ordination is sought does not agree it shall, within

the same period, send to the administration seeking co-ordination a copy of a diagram drawn to an appropriate scale showing the location of its terrestrial stations which are within the co-ordination distance of the earth transmitting and receiving station, as appropriate, together with all other relevant basic characteristics, and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem. A copy of these data shall be sent to the Board, as notification within the period specified for such a case in No. 491 MOD.

639G ADD (Cancelled)

639H ADD No co-ordination under No. 639E is required when an administration proposes :

- a) to bring into use an earth station which is located in relation to the territory of any other country, outside the co-ordination distance defined in [.....]; or
- b) to change characteristics of an existing assignment in such a way as not to increase the probability of harmful interference to the terrestrial stations of other administrations.

639I ADD An administration seeking co-ordination may request the Board to endeavour to effect co-ordination in those cases where :

- a) an administration with which co-ordination is sought under No. 639E fails to reply within a period of ninety days;

- b) there is a disagreement between the administration seeking co-ordination and an administration with which co-ordination is sought as to the probability of harmful interference; or
- c) co-ordination between administrations is not possible for any other reason.

In so doing, it shall furnish the Board with the necessary information to enable it to effect such co-ordination.

639J ADD Either the administration seeking co-ordination or an administration with which co-ordination is sought, or the Board, may request additional information which they may require to assess the probability of harmful interference to the services concerned.

639K ADD Where the Board receives a request under No. 639I a), or where the Board receives no reply within ninety days to its request for co-ordination in the case foreseen in No. 639I c), it shall immediately send a telegram to the administration with which co-ordination is sought. If no reply has been received from that administration within a period of sixty days from the date of despatch of the telegram it shall be deemed that the administration with which co-ordination was sought shall have undertaken that no complaint will be made in respect of any harmful interference which may be caused by the earth station to the services rendered by its stations in a terrestrial service.

639KA ADD Where necessary, as part of the procedure under No. 639I the Board shall assess the probability of harmful interference. In any case, the Board shall inform the administrations concerned of the results obtained.

639L ADD

For any notification under Nos. 639A, 639B or 639C an individual notice for each frequency assignment shall be drawn up as prescribed in Appendix 1A, which specifies in Sections B, C, D, E or F the basic characteristics to be furnished, according to the case. It is recommended that the notifying administration should also supply the additional data called for in Section A of that Appendix, together with such further data as it may consider appropriate.

639M ADD

For a frequency assignment to an earth or space station, each notice must reach the Board not earlier than two years before the date on which the assignment is to be brought into use. It must reach the Board in any case not later than one hundred and eighty days before this date, except in the case of assignments in the space research service in bands allocated exclusively to this service or in shared bands in which this service is the sole primary service⁷. In the case of such an assignment in the space research service the notice should, whenever practicable, reach the Board before the date on which the assignment is brought into use, but in any case must reach the Board not later than thirty days after the date it is actually brought into use.

639N ADD

Any frequency assignment to an earth or space station, the notice of which reaches the Board after the periods specified in No. 639M shall, where it is to be recorded, bear a remark in the Master Register to indicate that it is not in conformity with No. 639M.

Section II. Procedure for the Examination of Notices and the
Recording of Frequency Assignments in the Master Register

- 639BA ADD Any notice which does not contain at least those characteristics specified in Appendix 1A (Sections B, C, D, E, or F, as appropriate) shall be returned by the Board immediately, by airmail, to the notifying administration with the reasons therefor.
- 639BB ADD Upon receipt of a complete notice, the Board shall include the particulars thereof, with the date of receipt, in the weekly circular referred to in No 497, which shall contain the particulars of all such notices received since the publication of the previous circular.
- 639BC ADD The circular shall constitute the acknowledgment to the notifying administration of the receipt of a complete notice.
- 639BD ADD Complete notices shall be considered by the Board in the order of their receipt. The Board shall not postpone the formulation of a finding unless it lacks sufficient data to render a decision in connection therewith; moreover, the Board shall not act upon any notice which has a technical bearing on an earlier notice still under consideration by the Board, until it has reached a finding with respect to such earlier notice.
- 639BE ADD The Board shall examine each notice
- 639BF ADD a) with respect to its conformity with the Convention, the Table of Frequency Allocations and the other provisions of the Radio Regulations

(with the exception of those relating to the co-ordination procedure and the probability of harmful interference);

639BG ADD b) where appropriate, with respect to its conformity with the provisions of No. 639E relating to the co-ordination of the use of the frequency assignment with the other administrations concerned.

639BH ADD c) where appropriate, with respect to the probability of harmful interference to the service rendered by a terrestrial station for which a frequency assignment already recorded in the Master Register is in conformity with the provisions of Nos. 501 or 570AC as appropriate, if this frequency assignment has not, in fact, caused harmful interference to any frequency assignment in conformity with No. 639BF previously recorded in the Master Register.

639BI ADD Depending upon the findings of the Board subsequent to the examination prescribed in Nos. 639BF, 639BG and 639BH, further action shall be as follows:

639BJ ADD Finding favourable with respect to No. 639BF in cases where the provisions of No. 639BG are not applicable.

639BK ADD The assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.

639BL ADD Finding unfavourable with respect to No. 639BF.

639BM ADD Where the notice includes a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.

639BN ADD Where the notice does not include a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115, it shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding and with such suggestions as the Board may be able to offer with a view to the satisfactory solution of the problem.

639BO ADD If the notifying administration resubmits the notice unchanged, it shall be treated in accordance with the provisions of No. 639BN. If it is resubmitted with a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115, or with modifications which, after re-examination, result in a favourable finding by the Board with respect to No. 639BF, and the provisions of No. 639BG are not applicable, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the resubmitted notice shall be entered in Column 2d.

639BP ADD Finding favourable with respect to No. 639BF in cases where the provisions of No. 639BG are applicable.

639BQ ADD Where the Board finds that the co-ordination procedure mentioned in No. 639BG has been successfully completed with all administrations whose terrestrial services may be affected, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.

639BR ADD

Where the Board finds that the co-ordination procedure mentioned in No. 639BG has not been applied, and the notifying administration requests the Board to effect the required co-ordination, the Board shall take the appropriate action necessary and shall inform the administrations concerned of the results obtained. If the Board's efforts are successful, the notice shall be treated in accordance with No. 639BQ. If the Board's efforts are unsuccessful, the notice shall be examined by the Board with respect to the provisions of No. 639BH.

639BS ADD

Where the Board finds that the co-ordination procedure mentioned in No. 639BG has not been applied, and the notifying administration does not request the Board to effect the required co-ordination, the notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this action and with such suggestions as the Board may be able to offer with a view to the satisfactory solution of the problem.

639BT ADD

Where the notifying administration resubmits the notice and the Board finds that the co-ordination procedure mentioned in No. 639BG has been successfully completed with all administrations whose terrestrial services may be affected, the assignment shall be recorded in the Master Register.

The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the resubmitted notice shall be entered in the Remarks Column.

639BU ADD Where the notifying administration resubmits the notice with a request that the Board effect the required co-ordination, it shall be treated in accordance with the provisions of No. 639BR. However, in any subsequent recording of the assignment, the date of receipt by the Board of the resubmitted notice shall be entered in the Remarks Column.

639BV ADD Where the notifying administration resubmits the notice and states it has been unsuccessful in effecting the co-ordination, it shall be examined by the Board with respect to the provisions of No. 639BH. However, in any subsequent recording of the assignment, the date of receipt by the Board of the resubmitted notice shall be entered in the Remarks Column.

639BW ADD Finding favourable with respect to Nos. 639BF and 639BH.

- 639BX ADD The assignment shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d.
- 639BY ADD Finding favourable with respect to No. 639BF but unfavourable with respect to No. 639BH.
- 639BYA ADD The notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding and with such suggestions as the Board may be able to offer with a view to the satisfactory solution of the problem.
- 639BZ ADD Should the notifying administration resubmit the notice with modifications which result, after re-examination, in a favourable finding by the Board with respect to No. 639BH, the assignment shall be recorded in the Master Register. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the resubmitted notice shall be indicated in the Remarks Column.
- 639CA ADD Should the notifying administration resubmit the notice, either unchanged, or with modifications which decrease the probability of harmful interference, but not sufficiently to permit the provisions of No. 639BZ to be applied, and should that administration insist upon reconsideration of the notice, but should the Board's finding remain unchanged, the assignment shall be recorded in the Master Register. However, this entry shall be made only

if the notifying administration informs the Board that the assignment has been in use for at least one hundred and twenty days without any complaint of harmful interference having been received. The date of receipt by the Board of the original notice shall be entered in Column 2d. The date of receipt by the Board of the advice that no complaint of harmful interference has been received shall be indicated in the Remarks Column.

639CB ADD The period of one hundred and twenty days mentioned in 639CA shall count from:

- the date when the assignment to the earth station which received an unfavourable finding is brought into use, if the assignment to the terrestrial station is then in use;
- otherwise, from the date when the assignment to the terrestrial station is brought into use.

But if the assignment to the terrestrial station has not been brought into use by the notified date, the period of one hundred and twenty days shall be counted from this date. Allowance may be made for the additional period mentioned in No. 639CI.

639CBA ADD Notices relating to radio astronomy stations

639CBB ADD A notice relating to a radio astronomy station shall not be examined by the Board with respect to Nos. 639BG or 639BH. Whatever the finding, the assignment shall be recorded in the Master Register entering a date in Column 2c. The date of receipt by the Board of the notice shall be recorded in the Remarks Column.

639CC ADD Change in the basic characteristics of assignments already recorded in the Master Register.

639CD ADD A notice of a change in the basic characteristics of an assignment already recorded, as specified in Appendix 1A (except the call sign, the name of the station or the name of the locality in which it is situated) shall be examined by the Board according to No. 639BF, and, where appropriate, Nos. 639BG or 639BH, and the provisions of Nos. 639BJ to 639CBB inclusive applied. Where the change should be recorded, the assignment shall be amended according to the notice.

639CE ADD However, in the case of a change in the characteristics of an assignment which is in conformity with No. 639BF, should the Board reach a favourable finding with respect to Nos. 639BG or 639BH, where these provisions apply, or find that the change does not increase the probability of harmful interference to assignments already recorded, the amended assignment shall retain the original date in Column 2d. In addition, the date of receipt by the Board of the notice relating to the change shall be entered in the Remarks Column.

639CF ADD In applying the provisions of the whole of this Section, any resubmitted notice which is received by the Board more than two years after the date of its return by the Board, shall be considered as a new notice.

- 639CG ADD (1) Recording of Frequency Assignments notified before being brought into use.
- 639CH ADD (2) If a frequency assignment notified in advance of bringing into use has received a favourable finding by the Board with respect to Nos. 639BF and, where appropriate, 639BG or 639BH, it shall be entered provisionally in the Master Register with a special symbol in the Remarks Column indicating the provisional nature of that entry.
- 639CI ADD (3) If, within the period of thirty days after the projected date of bringing into use, the Board receives confirmation from the notifying administration of the date of putting into use, the special symbol shall be deleted from the Remarks Column. In the case where the Board, in the light of a request from the notifying administration received before the end of the thirty-day period, finds that exceptional circumstances warrant an extension of this period, the extension shall in no case exceed one hundred and fifty days.
- 639CJ ADD (4) In the circumstances described in 639CA, and as long as an assignment which received an unfavourable finding cannot be resubmitted as a consequence of the provisions of 639CB, the notifying administration may ask the Board to enter the assignment provisionally in the Master Register, in which event a special symbol to denote the provisional nature of the entry shall be entered in the Remarks Column. The Board shall delete this symbol when it receives from the notifying administration, at the end of the period specified in 639CA, the information provided for in No. 639CA relating to the absence of complaint of harmful interference.

639CK ADD (5) If the Board does not receive this confirmation within the period referred to in No. 639CI or at the end of the period referred to in No. 639CJ, as appropriate, the entry concerned shall be cancelled.

Section III. Recording of Findings in the Master Register

639CL ADD In any case where a frequency assignment is recorded in the Master Register, the finding reached by the Board shall be indicated by a symbol in Column 13a. In addition, a remark indicating the reasons for any finding shall be inserted in the Remarks Column.

Section IV. Categories of Frequency Assignments

639CM ADD The date in Column 2c shall be the date of putting into use notified by the administration concerned. It is given for information only.

639CN ADD If harmful interference to the reception of any station whose assignment is in accordance with Nos. 501, 570AC or 639BF as appropriate, is actually caused by the use of a frequency assignment which is not in conformity with No. 639BF, the station using the latter frequency assignment must, upon receipt of advice thereof, immediately eliminate this harmful interference.

Section V. Reviews of Findings

639CO ADD (1) The review of a finding by the Board may be undertaken:

- at the request of the notifying administration,
- at the request of any other administration interested in the question, but only on the grounds of actual harmful interference,

- on the initiative of the Board itself when it considers this is justified.

639CP ADD (2) The Board, in the light of all the data at its disposal, shall review the matter, taking into account No. 639BF and Nos. 639BG or 639BH, where these latter provisions apply, and shall render an appropriate finding, informing the notifying administration prior either to the promulgation of its finding or to any recording action.

639CQ ADD (1) After actual use for a reasonable period of an assignment which has been entered in the Master Register on the insistence of the notifying administration, following an unfavourable finding with respect to No. 639BH this administration may request the Board to review the finding. Thereupon the Board shall review the matter, having first consulted the administrations concerned.

639CR ADD (2) If the finding of the Board is then favourable, it shall enter in the Master Register the changes that are required so that the entry shall appear in the future as if the original finding had been favourable.

639CS ADD (3) If the finding with regard to the probability of harmful interference remains unfavourable, no change shall be made in the original entry.

Section VI. Modification, Cancellation and Review
of Entries in the Master Register

639CT ADD In case of permanent discontinuance of the use of any recorded frequency assignment, the notifying administration shall inform the Board within three months of such discontinuance, whereupon the entry shall be removed from the Master Register.

639CU ADD Whenever it appears to the Board from the information available that a recorded assignment has not been brought into regular operation in accordance with the notified basic characteristics, or is not being used in accordance with those basic characteristics, the Board shall consult the notifying administration and, subject to its agreement, shall either cancel or suitably modify the entry.

639CV ADD If, in connection with an enquiry by the Board under No. 639CU, the notifying administration has failed to supply the Board within ninety days with the necessary or pertinent information, the Board shall make suitable entries in the Remarks Column of the Master Register to indicate the situation.

Section VII. Studies and Recommendations

639CW ADD (1) If it is requested by any administration, and if the circumstances appear to warrant, the Board, using such means at its disposal as are appropriate in the circumstances, shall conduct a study of cases of alleged contravention or non-observance of these Regulations, or of harmful interference.

639CX ADD (2) The Board shall thereupon prepare and forward to the administration concerned a report containing its finding and recommendations for the solution of the problem.

639CY ADD

In a case where, as a result of a study, the Board submits to one or more administrations suggestions or recommendations for the solution of a problem, and where no answer has been received from one or more of these administrations within a period of thirty days, the Board shall consider that the suggestions or recommendations concerned are unacceptable to the administrations which did not answer. If it was the requesting administration which failed to answer within this period, the Board shall close the study.

Section VIII. Miscellaneous Provisions

639CZ ADD

The technical standards of the Board shall be based upon the relevant provisions of these Regulations and the Appendices thereto, the decisions of Administrative Conferences of the Union as appropriate, and the Recommendations of the C.C.I.R..

639DA ADD

The Board shall promulgate to administrations its findings and reasons therefor, together with all changes made to the Master Register, through the weekly circular referred to in No. 497.

639DB ADD

In case a Member or Associate Member of the Union avails itself of the provisions of Article 27 of the Convention, the Board shall, upon request, make its records available for such proceedings as are prescribed in the Convention for the settlement of international disputes.

SPACE
RADIOCOMMUNICATION
CONFERENCE

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WORKING GROUP 4C-1

DRAFT

ADDENDUM TO THE SECOND REPORT OF WORKING GROUP 4C

SHARING CRITERIA

On page 3 of Document No. 126-E, after paragraph 14, add the following new paragraph :

15. The Working Group has discussed the question of the application of limitations to the powers of terrestrial transmitters, operating in bands shared on an equal basis with earth station receivers, as a possible aid to equitable sharing between these services. Insufficient data precluded a definite decision being taken, either as to the necessity of such limitations, or to the actual values to be adopted, were such limitations decided upon, and it is felt that the question should be considered in greater detail by the C.C.I.R.

J.R. MARCHAND

Chairman



SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

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WORKING GROUP 6A

DRAFT

114 MOD §2. Any new assignment or any change of frequency or other basic characteristic of an existing assignment (see Appendix I MOD or Appendix 1A), shall be made in such a way as to avoid causing harmful interference to services rendered by stations using frequencies assigned in accordance with the Table of frequency allocations in this Chapter and the other provisions of these Regulations, the characteristics of which assignments are recorded in the Master International Frequency Register.



SPACE
RADIOCOMMUNICATION
CONFERENCE

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Canada

DRAFT RECOMMENDATION

RELATING TO THE NOTIFICATION OF FREQUENCY ASSIGNMENTS
FOR JOINT SPACE TELECOMMUNICATION SYSTEMS

The Extraordinary Administrative Radio Conference, Geneva, 1963,
referring to

- Article 9A of the Radio Regulations (Notification and Recording in the Master International Frequency Register of Frequency Assignments to Stations in the Space and Radio Astronomy Services)
- Appendix 1A of the Radio Regulations (Notices Relating to Stations in the Space and Radio Astronomy Services)

considering

that the Radio Regulations provide for the notification of frequency assignments to stations in the Space Service to the International Frequency Registration Board, for recording in the Master International Frequency Register;

recognizing

that, in the establishment of space telecommunication systems involving more than one Member or Associate Member of the Union, it appears necessary to state which of the participating Administrations will notify the frequency assignments to the space stations concerned;

recommends

that Administrations establishing a joint space telecommunication system should designate one of their number to be responsible for submission of all notices of frequency assignments to space stations of the system, and to advise the Board accordingly.

Signed : W. A. CATON



SPACE
RADIOCOMMUNICATION
CONFERENCE

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30 October, 1963
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WORKING GROUP 6A

DRAFT
RESOLUTION NO. ...

RELATING TO THE PROVISION OF INFORMATION REGARDING
INTERNATIONAL SATELLITE SYSTEMS

The Extraordinary Administrative Radio Conference, Geneva 1963,
considering

the interest of all administrations concerning the effective use
of the radio frequency spectrum by the Space Services,

believing

- a) that international satellite systems should provide for the interests and requirements of all countries;
- b) that, in accordance with Article 4 of the International Telecommunication Convention, Geneva 1959, the International Telecommunication Union should closely observe the development of the telecommunications aspects of international satellite systems;
- c) that the permanent organs of the International Telecommunication Union should assist in that development as far as may be practicable;
- d) that the development of space telecommunications ought not to be delayed, but that a suitable period of time will be needed for the acquisition of the additional data which will result from further experiment and operational experience;
- e) that the interest mentioned above will best be served by the provision to administrations, as early as practicable, of information regarding the development of international satellite systems.



f) that this information, by reason of its early provision, must be regarded as of a preliminary nature.

observing

that the data mentioned in d) above will need to be collated and evaluated by the International Telecommunication Union for use by such future conferences as may be called to consider the international regulation of space communications systems;

resolves

1. that, as a measure which will enable administrations to make early comment upon satellite system projects, any administration (or group of administrations) which intends to establish an international satellite system shall provide the Board, as early as practicable during the co-ordination process (Radio Regulation No. ...) with information similar to the data mentioned in Appendix IA/ such as will provide a general description of the satellite system, e.g.

a) the sites and functions of the earth stations in the system, and the co-ordination distances, as a function of azimuth, which are applicable thereto, as defined in Radio Regulation No. ... ;

b) the over-all frequencies and bandwidths of the satellite system (required to facilitate the final development of the system, in order to meet the needs of other administrations wishing to participate in the system);

c) the frequencies and bandwidths to be used in the initial operation of the system.

2. that the Board shall put these data in a special section of its weekly circular, for the information of all administrations, and,

3. that, if after studying the information given under 1) above, an administration believes that it has reason to expect that harmful interference may be caused to its space services (either those existing, or those concerning which information has already been circulated under the provisions of this Resolution), it shall address its comments, within ... days of receipt of the relevant circular, to the administration concerned. A copy of those comments shall be sent to the Board.

4. that, if comments, as allowed for in 3) above, are received, then the administration concerned shall endeavour to find a solution satisfactory to the administration which has made the comments;

5. that, if an agreement is not reached the Board may be asked for such suggestions as it may be able to offer in the circumstances;

6. that, if within the time referred to in paragraph 3), no comments concerning the data mentioned in paragraph 2) are received, the administration concerned is entitled to assume that there are no comments on the action proposed;

7. that, in order to keep up-to-date the information relating to space systems, the Board shall collate this information and publish it periodically.

SPACE
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CONFERENCE

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WORKING GROUP 6A

A G E N D A

SECOND MEETING OF WORKING GROUP 6A

Thursday, 31 October, 1963, at 0930 and 1430 hours.

ROOM C

Consideration of the following draft documents from Group 6A1.

1. Document No. DT/96 - Article 9
2. Document No. DT/97 - Article 9A
3. Document No. DT/95 - Appendix 1 (MOD)
4. Document No. DT/94 - Appendix 1A
5. Document No. DT/99 - RR.114 (MOD)
6. Document No. DT/100 - Draft Recommendation
7. Document No. DT/101 - Draft Resolution
8. Any other business.

J.M. POWER
Chairman
Working Group 6A



CONFERENCE DES
RADIOCOMMUNICATIONS
SPATIALES

Genève, 1963

Corrigendum N° 1 au
Document N° DT/103-F/E/S
31 octobre 1963

COMMISSION 2

Ne concerne pas le texte français.

COMMITTEE 2

Page 4, opposite Philippines (Republic of the) read, in column 5 "1)".

COMISIÓN 2

Página 2, frente a Cuba, léase, en la columna 2 "x"; suprimase la cruz en la columna 3.



SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/103-E
30 October 1963
Original : French

Geneva, 1963

COMMITTEE 2

DRAFT REPORT
BY COMMITTEE 2 (CREDENTIALS)

1. Committee 2 met on 11 October and 1 November 1963. At its first meeting it set up a working group to ascertain whether the delegations were accredited to vote and to sign the Final Acts of the Conference.
2. Committee 2 decided to accept the credentials signed by the competent authorities in the following form :
 - a) credentials conferring full power;
 - b) credentials indicating that the delegation is entitled to participate, vote and sign the Final Acts;
 - c) credentials indicating that the delegation represents its country;
 - d) credentials indicating the composition of the delegation.
3. In the light of this decision, Committee 2 reached the conclusions set out in the annex to this report.
4. During the examination of the credentials of the Delegation of China, the representative of the U.S.S.R. Delegation drew the Committee's attention to the statements of the U.S.S.R., the Bielorussian S.S.R. and the Ukrainian S.S.R. set out in Conference Document No. 72. Following this statement, the representative of the Delegation of the Republic of Korea brought to the notice of the Committee the statement by the Delegation of China contained in Conference Document No. 90. Committee 2 considers that the credentials of China are in order.
5. Committee 2 recommends that any credentials deposited after the last meeting should be examined by its Chairman, who will report to the Plenary Assembly.

Rapporteur :
P. CHASPOUL

Chairman of Committee 2 :
F. NICOTERA



A N N E X

POSITION ON 1 NOVEMBER, 1963, OF THE CREDENTIALS
OF THE COUNTRIES REPRESENTED AT THE
SPACE CONFERENCE

Country	Credentials			Comments
	in order	not in order	not received	
1	2	3	4	5
<u>A. Members</u>				
Algeria (Democratic Popular Republic of)	x			
Argentine Republic	x			
Australia (Commonwealth of)	x			
Austria	x			
Belgium	x			
Bielorussian Soviet Socialist Republic	x			
Brazil				1) Observer
Bulgaria (People's Republic of)	x			
Cambodia (Kingdom of)	x			2)
Canada	x			
China	x			
Cyprus (Republic of)	x			
Vatican City State	x			
Colombia (Republic of)	x			
Congo (Republic of the) (Léopoldville)	x			
Korea (Republic of)	x			
Costa Rica		x		1)
Cuba	x			

	2	3	4	5
Denmark	x			
Group of Territories represented by the French Overseas Post and Tele- communication Agency	x			
Spain	x			
United States of America	x			
Ethiopia	x			
Finland	x			
France	x			
Ghana	x			
Greece	x			1)
Guatemala	x			
Hungarian People's Republic	x			
India (Republic of)	x			
Indonesia (Republic of)	x			
Iran			x	1)
Ireland	x			
Iceland	x			
Israel (State of)	x			
Italy	x			
Jamaica	x			
Japan	x			
Kuwait	x			
Lebanon	x			
Liberia (Republic of)	x			
Liechtenstein (Principality of)	x			
Luxembourg	x			
Malaysia	x			
Morocco (Kingdom of)	x			
Mexico	x			
Monaco			x	
Norway	x			
New Zealand	x			

1	2	3	4	5
Uganda	x			
Pakistan	x			
Netherlands (Kingdom of the)	x			
Philippines (Republic of the)	x			
Poland (People's Republic of)	x			
Portugal	x			
Spanish Provinces in Africa	x			
United Arab Republic	x			
Federal Republic of Germany	x			
Federal Socialist Republic of Yugoslavia	x			
Ukrainian Soviet Socialist Republic	x			
Roumanian People's Republic	x			
United Kingdom of Great Britian and Northern Ireland	x			
South Africa (Republic of) and Territory of South-West Africa	x			
Sweden	x			
Switzerland (Confederation)	x			
Tanganyika	x			
Czechoslovak Socialist Republic	x			
Territories of the United States of America	x			
Overseas Territories for the international relations of which the Government of the United Kingdom of Great Britain and Northern Ireland are responsible	x			
Union of Soviet Socialist Republics	x			
<u>B. Associate Member</u>				
Kenya	x			

- 1) Has not ratified the International Telecommunication Convention (Geneva, 1959)
- 2) Has not acceded to the International Telecommunication Convention (Geneva, 1959)

SPACE
RADIOCOMMUNICATION
CONFERENCE

Document No. DT/104-E
30 October, 1963
Original: English

Geneva, 1963

WORKING GROUP 5A

DRAFT

FOURTH REPORT BY WORKING GROUP 5A
TO COMMITTEE 5 (Allocations)

COMMUNICATION-SATELLITE

1. Following the publication of Document No. 127, further consideration has been given by Working Group 5A to the proposals for frequency allocations for the Communication-Satellite Service. All proposals in this respect have been considered and in an attempt to reach the largest measure of agreement, proposals for certain bands have been withdrawn, and those for other bands have been modified.
2. In its consideration the Working Group recognized that it clearly would be desirable to locate the Communication-Satellite Service entirely within bands allocated to the fixed and mobile services; nevertheless, development of fixed and mobile services has not been carried out on a world-wide basis entirely in the same bands. Thus, some accommodation of the Communication-Satellite Service is required in bands other than those allocated to fixed and mobile services, if the needs of all administrations are to be met.
3. Provided there is sufficient geographical separation between administrations operating in the Communication-Satellite Service on the one hand and high-powered stations of terrestrial services on the other, the Working Group took the view that the two services would be compatible. This may call for certain measures to be taken in the design of communication-satellite systems and in the siting of the earth stations.
4. Furthermore, in the view of the Working Group, it would be essential to recognize that for certain bands the co-ordination procedure under Article 9 and power limitation in Article 7, would have to be waived if the



Communication-Satellite Service and other services in these bands are to co-exist. Accordingly, certain proposals have been forwarded to Committees 4 and 6 for amendment of the Articles concerned. For information these proposals are given in Appendix 7 attached hereto.

5. Band 1750 - 2250 Mc/s

The proposals for this band have been withdrawn.

6. Band 3400 - 4200 Mc/s

The largest measure of agreement is represented by the draft new Table, with one new foot-note, given in Appendix 1 attached hereto.

7. Band 4400 - 4700 Mc/s

The largest measure of agreement is represented by the draft new Table, with a new foot-note, given in Appendix 2 attached hereto.

8. Band 5725 - 6425 Mc/s

The largest measure of agreement is represented by the draft new Table, with one new foot-note, given in Appendix 3 attached hereto.

9. Band 6425 - 7150 Mc/s

The proposals for allocation of this band for the Communication-Satellite Service have been withdrawn. The present Table will therefore remain unchanged for the band 6425 - 7150 Mc/s. However, a new foot-note associated with this band (proposed by the United Kingdom and the U.S.A.) was considered acceptable by a majority of the Working Group. The text of this new foot-note (No. 392B) is given in Appendix 4.

10. Band 7150 - 7250 Mc/s

A new foot-note which will provide for the operation of Meteorological-Satellite Space Stations in this area of the spectrum, was agreed by a majority of the Working Group. This foot-note is partly associated with the band 7150 - 7250 Mc/s and is reproduced in Appendix 5 as No. 392F.

11. Band 7250 - 7750 Mc/s

All proposals for this band have been considered. There was general agreement that this band should be allocated for the Communication-Satellite Service. However, several Delegations have proposed the first 50 Mc/s,

namely the band 7250 - 7300 Mc/s, for allocation to the Communication-Satellite Service on an exclusive basis. Therefore, this band is presented as a separate block in the draft new Table for the band 7250 - 7750 Mc/s given in Appendix 5. The Appendix represents the largest measure of agreement in the Group.

A different point of view was expressed by the Delegations of
.....
who favoured

(the alternative presentation)

12. Band 7900 - 8400 Mc/s

All proposals for this band have been considered. There was general agreement that this band should be allocated for the Communication-Satellite Service. However, several Delegations have proposed a certain band of 50 Mc/s width within these limits, namely the band 7975 - 8025 Mc/s, for allocation to the Communication-Satellite Service on an exclusive basis. Therefore, this particular band is presented as a separate block in the draft new Table for the band 7900 - 8400 Mc/s given in Appendix 6 attached hereto.

The Appendix represents the largest measure of agreement in the Group. A different point of view was expressed by the Delegations of
.....
who favoured

(the alternative presentation)

P. MORTENSEN
Chairman
Working Group 5A

Appendices: 7

APPENDIX 1

Mc/s

Allocation to Services			
Region 1		Region 2	Region 3
ADD	3400 - 3600 COMMUNICATION-SATELLITE (Satellite-to-earth) FIXED MOBILE Radiolocation 372 373 374 375 374A	3400 - 3500 COMMUNICATION-SATELLITE (Satellite-to-earth) RADIOLOCATION Amateur 376 374A	
	3600 - 4200 COMMUNICATION-SATELLITE (Satellite-to-earth) FIXED Mobile 374 374A	3500 - 3700 COMMUNICATION-SATELLITE (Satellite-to-earth) FIXED MOBILE RADIOLOCATION 374A	3500 - 3700 COMMUNICATION-SATELLITE (Satellite-to-earth) RADIOLOCATION Fixed Mobile 377 378 374A
		3700 - 4200 COMMUNICATION-SATELLITE (Satellite-to-earth) FIXED MOBILE 379 374A	

NOC 372 373 374 375 376 377 378 379

ADD 374A This band may also be used for the transmission of tracking and telemetering signals associated with communication-satellite space stations operating in the same band.

A P P E N D I X 2

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
4400 - 4700	COMMUNICATION-SATELLITE (Earth-to-satellite) FIXED MOBILE	392A

ADD

ADD

392A This band may also be used for the transmission of telecommand signals associated with communication-satellite earth stations operating in the same band.

A P P E N D I X 3

Mc/s

Allocation to Services				
Region 1		Region 2		Region 3
ADD	5725 - 5850 COMMUNICATION-SATELLITE (Earth-to-satellite) 392A RADIOLOCATION Amateur 354 388 390 391	5650 - 5850 RADIOLOCATION Amateur 389 391		
	5850 - 5925 COMMUNICATION-SATELLITE (Earth-to-satellite) 392A FIXED MOBILE 391	5850 - 5925 RADIOLOCATION Amateur 391	5850 - 5925 COMMUNICATION-SATELLITE (Earth-to-satellite) 392A FIXED MOBILE Radiolocation 391	
ADD	5925 - 6425 COMMUNICATION-SATELLITE 392A (Earth-to-satellite) FIXED MOBILE			
NOC	354 388 389 390 391			

ADD 392A This band may also be used for the transmission of telecommand signals associated with communication-satellite earth stations operating in the same band.

A P P E N D I X 4

ADD 392A The frequency band 7120 - 7130 Mc/s may be used for general telecommand purposes in conjunction with space radiocommunication, subject to agreement between administrations concerned and those whose services, operating in accordance with the Table, may be affected.

A P P E N D I X 5

Mc/s

(Alternative A)

Allocation to Services		
Region 1	Region 2	Region 3
ADD 7250 - 7300	COMMUNICATION-SATELLITE (Satellite-to-earth) 374A 392C [392D] 392Y	
ADD 7300 - 7750	COMMUNICATION-SATELLITE 374A [392D] (Satellite-to-earth) FIXED MOBILE 392F	

ADD 374A This band may also be used for the transmission of tracking and telemetering signals associated with communication-satellite space stations operating in the same band.

ADD 392C Except for those services provided for in 392Y and 392YY, stations of the fixed and mobile services, previously authorized, shall vacate the band prior to 1 January 1969.

ADD 392Y In ..., ..., ... and ..., the band 7250 - 7300 Mc/s is also allocated to the fixed and mobile services.

ADD [392D] As an exception, earth stations of passive systems in the communications-satellite service also may be accommodated, subject to agreement between administrations concerned and those whose services, operating in accordance with the Table, may be affected.

ADD 392F In the bands 7200 - 7250 Mc/s and 7300 - 7750 Mc/s, the meteorological-satellite service may use a band up to 100 Mc/s in width on a primary basis. These bands may also be used for the transmission of tracking and telemetering signals associated with meteorological-satellite space stations operating in the same band.

A P P E N D I X 5

Mc/s

(Alternative B)

Allocation to Services			
Region 1	Region 2	Region 3	
ADD 7250 - 7300	COMMUNICATION-SATELLITE (Satellite-to-earth) FIXED MOBILE	374A 392Z	[392D]
ADD 7300 - 7750	COMMUNICATION-SATELLITE (Satellite-to-earth) FIXED MOBILE	374A 392F	[392D]

ADD 374A This band may also be used for the transmission of tracking and telemetering signals associated with communication-satellite space stations operating in the same band.

ADD 392Z In ..., ..., ... and ..., the band 7250 - 7300 Mc/s is allocated to the communication-satellite service; the fixed and mobile services in these countries may continue to operate in this band until January 1, 1969.

ADD 392F In the bands 7200 - 7250 Mc/s and 7300 - 7750 Mc/s, the meteorological-satellite service may use a band up to 100 Mc/s in width on a primary basis. These bands may also be used for the transmission of tracking and telemetering signals associated with meteorological-satellite space stations operating in the same band.

ADD [392D] As an exception, earth stations of passive systems in the communication-satellite service also may be accommodated, subject to agreement between administrations concerned and those whose services, operating in accordance with the Table, may be affected.

A P P E N D I X 6

Mc/s

(Alternative A)

Allocation to Services				
Region 1		Region 2		Region 3
ADD	7900 - 7975			
	COMMUNICATION-SATELLITE		392A	
	(Earth-to-satellite)			
	FIXED			
	MOBILE			
MOD	7975 - 8025			
	COMMUNICATION-SATELLITE		392A	392C 392YY
	(Earth-to-satellite)			
ADD	8025 - 8400			
	COMMUNICATION-SATELLITE		392A	
	(Earth-to-satellite)			
	FIXED			
	MOBILE			
MOD	394			

- ADD 392A This band may also be used for the transmission of telecommand signals associated with communication-satellite earth stations operating in the same band.
- ADD 392C Except for those services provided for in 392Y and 392YY, stations of the fixed and mobile services, previously authorized, shall vacate the band prior to 1 January 1969.
- ADD 392YY In ..., ..., ... and ..., the band 7975 - 8025 Mc/s is also allocated to the fixed and mobile services.
- MOD 394 In Australia and in the United Kingdom, the band 8250 - 8400 Mc/s is allocated to the radiolocation and communication-satellite services.

A P P E N D I X 6

Mc/s

(Alternative B)

Allocation to Services			
	Region 1	Region 2	Region 3
ADD	7900 - 7975	COMMUNICATION-SATELLITE (Earth-to-satellite) FIXED MOBILE	392A
ADD	7975 - 8025	COMMUNICATION-SATELLITE (Earth-to-satellite) FIXED MOBILE	392A 392ZZ
ADD	8025 - 8400	COMMUNICATION-SATELLITE (Earth-to-satellite) FIXED MOBILE	392A
MOD		394	

ADD 392A This band may also be used for the transmission of telecommand signals associated with communication-satellite earth stations operating in the same band.

ADD 392ZZ In ..., ..., ... and ..., the band 7975 - 8025 Mc/s is allocated to the communication-satellite service; the fixed and mobile services in these countries may continue to operate in this band until 1 January 1969.

MOD 394 In Australia and the United Kingdom, the band 8250 - 8400 Mc/s is allocated to the radiolocation and communication-satellite services.

A P P E N D I X 7

1. Amend the text of No. 470D, as shown in Document No. 126, 28 October 1963, to read as follows (pertains to Article 7):

470D 3) The limitations given in 470B and 470C apply in those frequency bands allocated to reception by space stations in the communication-satellite service, shared on an equal basis with fixed and mobile services, except in the case of the bands 4400 - 4700 Mc/s and 8100 - 8400 Mc/s.

2. Substitute the following for the initial portion of the text of No. 492A now under consideration in Working Group 6A-1 for Article 9:

492A Before an Administration notifies to the Board or brings into use any frequency assignment to a station in a fixed or mobile service for transmitting, it shall effect co-ordination of the assignment with any other Administration which has previously effected co-ordination under the provisions of 639E in respect of an earth station if the proposed fixed or mobile station is to be located within the co-ordination distance of the earth station concerned and if the occupied bandwidth of the frequencies in use in any way overlap.

3. Substitute the following for the initial portion of the text of No. 639E now under consideration in Working Group 6A-1 for proposed Article 9A:

639E Before an Administration notifies to the Board or brings into use any frequency assigned to an earth station whether for transmitting or receiving, it shall effect co-ordination of the assignment with any other administration whose territory lies wholly or partly within the co-ordination distance, but only in respect of fixed or mobile services enjoying equal sharing rights with space services. This procedure does not apply to the bands 4400 - 4700 Mc/s and 8100 - 8400 Mc/s.

SPACE
RADIOCOMMUNICATION
CONFERENCE

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30 October 1963
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Geneva, 1963

WORKING GROUP 4C

COORDINATION DISTANCE PROCEDURE FOR SHARING BETWEEN
SPACE RESEARCH AND TERRESTRIAL SERVICES

Adequate data is available for the computation of coordination distance criteria in the frequency range greater than 1 Gc/s for space research services sharing on an equal basis with terrestrial services. In the frequency region below 1 Gc/s complete data is not available and it is recommended that this aspect of the coordination distance problem be referred to the C.C.I.R. for further study.

Transmissions in the space research service requiring coordination distance criteria are limited to a) the effects of satellite transmissions on the terrestrial receiving stations and b) the effects of terrestrial transmissions on the earth receiving stations.

Interference to Earth Station

The first case to be treated will be that of the interference from the terrestrial transmissions to earth station reception. In C.C.I.R. Recommendations 364, 365 and 366, criteria are given for the maximum permissible interference at the receiver input of the space research stations for the cases of near earth, deep space and manned space research. Comparison of these three services indicates that the permissible interference criteria are substantially the same; so that the same curves and procedures may be used for all three types of space research service. The common permissible interference criterion to be used is - 220 dBW per cycle per second of bandwidth, not to be exceeded for 0.1% of the time.

Measurements on terrestrial station emissions indicate that the minimum occupied bandwidth under no load conditions is of the order of at least 10 Kc/s due to inherent noise modulation in the microwave oscillator. For coordination distance calculations it is therefore assumed that the bandwidth of the interfering terrestrial transmissions is 10 Kc/s.



In order to meet the 0.1% time criteria for which the - 220 dBW per cps is permitted, the combination of the effective earth station antenna gain in the pertinent direction, G_{earth} , exceeded for 10% of the time and the basic transmission loss, L_b , exceeded for all but 1% of the time appears to be an appropriate combination.

Combining the above factors the general transmission loss formula for the coordination distance becomes :

$$\begin{aligned} (1) \quad L_b(1.0\%) &= P_{\text{terr}} + G_{\text{terr}} + G_{\text{earth}}(10\%) - F_s + (220 - 40) \\ &= P_{\text{terr}} + G_{\text{terr}} + G_{\text{earth}}(10\%) - F_s + 180 \text{ dB} \end{aligned}$$

In the above, P_{terr} is the terrestrial station power output, G_{terr} is the effective terrestrial station antenna gain in the pertinent direction, $G_{\text{earth}}(10\%)$ is the earth station antenna gain in the pertinent direction exceeded for 10% of the time and F_s is the site shielding factor*). Comparing the above transmission loss formula with that used for the protection of communication satellite earth stations from terrestrial station transmissions, which is :

$$(2) \quad L_b(0.1\%) = P_{\text{terr}} + G_{\text{terr}} - F_s + 165 \text{ dB},$$

it is noted from the propagation curves that the ratio, in decibels,

$$L_b(1\%) - L_b(0.1\%)$$

is about 10 dB over land and about 15dB over water. If these ratios are used to convert the transmission loss formula of (1) for space research reception from the 1% to the 0.1% levels used for communication satellite (comsat) earth station protection, it is noted that the formulae become substantially the same with the exception of the $G_{\text{earth}}(10\%)$ term of (1).

It is therefore proposed to use the same coordination distance formula and propagation curves for the space research earth station reception as for the protection of comsat earth station reception (with the exception of the G_{earth} term). The minimum permissible basic transmission loss for the protection of the space research reception then becomes :

$$(3) \quad L_b(0.1\%) = P_{\text{terr}} + G_{\text{terr}} + G_{\text{earth}}(10\%) - F_s + 165 \text{ dB}$$

Further, since the level of G_{earth} exceeds for 10% of the time in the pertinent direction may vary widely from one installation to another, it appears desirable that the earth station should compute a series of coordination distance contours for several discrete levels of radiated power from the terrestrial stations.

*) Refer to Document No. 122 for more complete details on F_s .

Limitations on Satellite Transmissions

It appears desirable to allow somewhat greater maximum power flux densities for the satellite transmissions in the case of the space research service than is allowed for communication satellites for the following reasons:

1. Transmissions are only in the down direction, so that there can be no interference contributions from the earth stations to the terrestrial system.
2. The number of satellites in simultaneous operation on the same frequency bands can be expected to be considerably fewer in number.
3. The frequencies being shared with fixed and mobile services are on the edges of the bands occupied by terrestrial services which might be subject to interference.

Taking into consideration that the power flux limitation at the earth for communication satellites, recommended by C.C.I.R., is -152 dBW/m^2 per 4 kc/s and recognizing that the foregoing factors are likely to represent at least a ten-fold reduction in interference to the terrestrial stations, it is proposed to use a power flux density limitation of -140 dBW/m^2 per 4 kc/s at the surface of the earth for space research satellites, other than space probes.

For space probes no power flux density limitations are proposed at this stage because :

- a) the number of space probes operated at the same time in the same region is necessarily very limited,
- b) the probability as well as time duration for which the probe can be in the main beam of a terrestrial station receiving antenna is very small,
- c) the total percentage of time during which the probe is near enough to the earth's surface for its transmissions to result in a power flux density great enough to cause interference is extremely small.

However, it is proposed that the attention of those planning space probe transmissions be drawn to the fact that many of the world's fixed and mobile services operate on a primary basis in accordance with agreed C.C.I.R. frequency plans and that to the maximum extent possible, frequency assignments for telemetry transmissions from space research probes should be selected taking due note of these frequency plans in order to minimize the probability of interference.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/106-E
31 October 1963
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COMMITTEE 5

SECOND REPORT FROM WORKING GROUP

5 AD HOC TO COMMITTEE 5

The ad hoc group was set up again by Committee 5 on October 30 in order to complete, in the light of the discussion and general agreement in Committee 5 the presentation of allocations in the band 136-137 Mc/s.

Annex 1 contains the proposed allocation table with the associated footnotes. The delegate of the U.S.S.R. found it necessary to include a revised version of footnote 281 as shown in [-], but he was prepared to reconsider this.

Annex 2 contains a Draft Resolution

Annexes : 2

B. NIELSEN



A N N E X 1

Mc/s

Region 1	Region 2	Region 3
136 - 137	136 - 137	136 - 137
SPACE RESEARCH	SPACE RESEARCH	SPACE RESEARCH
FIXED		FIXED
MOBILE		MOBILE
275 <u>[281]</u> 281A	281A 281B	279 281A

NOC 275

NOC 279

/MOD 281 In and the U.S.S.R. the band 136-137 Mc/s is also allocated to the aeronautical mobile service.]

ADD 281A For the use of the band 136-137 Mc/s see Resolution No.

ADD 281B In Region 2 the band 136-137 Mc/s is also allocated to the fixed and mobile services until 1 January 1969. However, in Cuba the band will continue to be allocated to the fixed and mobile services.

A N N E X 2

DRAFT RESOLUTION No.

RELATING TO THE USE OF THE
BAND 136 - 137 Mc/s BY THE
FIXED AND MOBILE SERVICES

The Extraordinary Administrative Radio Conference, Geneva, 1963,
considering

- a) that the Table of Frequency Allocations, Geneva, 1959, made provisions for the Fixed and Mobile Services together with Space Services in the band 136 - 137 Mc/s;
- b) that a number of Administrations have Fixed and Mobile Services operating in accordance with these provisions;
- c) that the Extraordinary Administrative Radio Conference, Geneva, 1963, has agreed that the Space Research Service shall be allocated on a primary basis in the band 136 - 137 Mc/s in Regions 1 and 3, and that Fixed and Mobile Services in these Regions should continue to operate on a primary basis in this band;
- d) the great importance of affording the Space Research Service protection against interference from stations in the Fixed and Mobile Services, taking into account the very weak signals which may be used by the Space Research Service;

resolves

- 1. that those Administrations operating stations in the Fixed and Mobile Services in the band 136 - 137 Mc/s are urged to cease the operation of these stations as soon as possible;
- 2. that Administrations should notify the I.F.R.B., preferably in advance, of the date when these stations will have ceased operations, and that specific reference should be made to this Resolution;

requests

the I.F.R.B. to publish this information on a half-yearly basis.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/107-E
31 October 1963
Original: English

WORKING GROUP 5C

DRAFT

FOURTH REPORT BY WORKING GROUP 5C

TO COMMITTEE 5

METEOROLOGICAL-SATELLITE SERVICE

The attached draft report shows the proposed amendments to the Table of Frequency Allocations so far discussed and now set out in the final form for submission to Committee 5.

J. PENWARDEN

Chairman

Working Group 5C.

Appendices: 3



A P P E N D I X 1

Mc/s

144 - 174

Allocation to Services		
Region 1	Region 2	Region 3
146 - 149.9 FIXED MOBILE except aeronautical mobile (R) 274 285	146 - 148 AMATEUR 289 148 - 149.9 FIXED MOBILE 279 290	
149.9 - 150.05 RADIONAVIGATION SATELLITE 285A		
150.05 - 151 FIXED MOBILE except aeronautical mobile (R) 274 285 286	150.05 - 174 FIXED MOBILE 287	150.05 - 170 FIXED MOBILE 287 290

For the band 149.9 - 150.05 Mc/s:

SUP 274

MOD 279, 285, 286, 290 to delete reference to this band.

ADD 285A Stations operating in the fixed and mobile services may continue to use this band until 1 January 1969. This cessation date shall not apply in
,, and where the fixed, mobile and radionavigation-satellite services shall all have primary status. See Recommendation No.

A P P E N D I X 2

Mc/s

335.4 - 401

Allocation to Services		
Region 1	Region 2	Region 3
335.4 - 399.9 FIXED MOBILE		
399.9 - 400.05 RADIONAVIGATION-SATELLITE 285A		
400.05 - 401 METEOROLOGICAL AIDS METEOROLOGICAL SATELLITES SPACE RESEARCH (Telemetering) (See Document No. DT/92)		

In the band 399.9 - 400.05 Mc/s

SUP 280

MOD 312, 313, 314 to delete reference to the band.
(for full text see Document No. DT/92, page 3)

ADD 285A with reference to Recommendation No.

A P P E N D I X 3

DRAFT RECOMMENDATION

RELATING TO THE DELETION OF FIXED AND MOBILE STATION OPERATIONS
IN BANDS ALLOCATED TO THE RADIONAVIGATION-SATELLITE SERVICE

The Extraordinary Administrative Radio Conference, Geneva, 1963,

considering

- a) that the frequency bands 149.9 - 150.05 and 399.9 - 400.05 Mc/s have been allocated to the radionavigation-satellite service on an exclusive world-wide basis;
- b) that many administrations require an extended period of time to re-accomodate existing fixed and mobile operations in other appropriately allocated bands;
- c) that early implementation of the radionavigation-satellite service will be of benefit to all administrations, and particularly in its application to the maritime mobile service;
- d) that interference to users of the radionavigation-satellite service could constitute a hazard to the safety of life and property; and
- e) that the C.C.I.R. is studying the feasibility of sharing between the radionavigation-satellite service and terrestrial services but has not yet been able to reach a conclusion in this regard;

recommends

- 1) that, pending an affirmative determination by the C.C.I.R. that sharing is possible and practicable between stations of the radio-navigation-satellite service and the fixed and mobile services, administrations take all possible steps to protect from harmful interference the operations of mobile stations using the radionavigation-satellite service;
- 2) that, in the light of 1) above, administrations cease operation of their fixed and mobile stations in the bands 149.9 - 150.05 and 399.9 - 400 Mc/s as soon as practicable, with particular emphasis on those stations located in coastal areas.

SPACE
RADIOCOMMUNICATION
CONFERENCE

Geneva, 1963

Document No. DT/108-E
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WORKING GROUP 5C

DRAFT

FIFTH AND LAST REPORT BY WORKING GROUP 5C

TO COMMITTEE 5

RADIONAVIGATION-SATELLITE SERVICE

The attached draft report shows the proposed amendments to the Table of Frequency Allocations so far discussed and now set out in the final form for submission to Committee 5.

J. PENWARDEN
Chairman
Working Group 5C

Appendices : 5



A P P E N D I X 1

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
137 - 138 METEOROLOGICAL- SATELLITE ***** *****	137 - 138 METEOROLOGICAL-SATELLITE ***** ***** *****	

NOTE: Details of other services sharing this band and of relevant foot-
notes may be found in the appropriate report of Committee 5.

400.05 - 401 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (Maintenance Telemetry) SPACE RESEARCH (Telemetry and Tracking) 312A 313 314

SUP 280

SUP 312

ADD 312A In Sweden, until 1 January, 1966 the band 400.05 - 401 Mc/s
is also allocated to the fixed and mobile services.

MOD 313 In Albania, Bulgaria, Greece, Hungary, Poland, Yugoslavia,
Roumania, Czechoslovakia and the U.S.S.R., the band 400.05 - 401 Mc/s
is also allocated to the fixed and mobile services.

MOD 314 In the United Kingdom, the band 400.05 - 420 Mc/s is also allocated
to the radiolocation service, however, between 400.05 and 410 Mc/s the
allocation to the radiolocation service is on a secondary basis.

A P P E N D I X 2

Mc/s

Allocation to Services			
Region 1	Region 2		Region 3
MOD	450 - 460	FIXED	
		MOBILE	
		318	
	460 - 470	FIXED	
		METEOROLOGICAL-SATELLITE	324A 324B
		MOBILE	

NOC 318

ADD 324A It is intended that meteorological-satellite space stations operating in this band shall transmit to selected earth stations. The location of such earth stations is subject to agreement among administrations concerned and those whose services, operating in accordance with the Table, may be affected. See Article 7, Section for further conditions governing the use of this band by the meteorological-satellite service.

ADD 324B In Japan, the band 460 - 470 Mc/s is allocated, on a secondary basis, to the meteorological-satellite service.

A P P E N D I X 3

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
1660 - 1670 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE 324A Fixed Mobile except aeronautical mobile 353 353A 354	1660 - 1670 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE 324A 353A 353B	

ADD 324A See Appendix 2

NOC 353

ADD 353A In Cuba, Spain, Poland, the U.A.R. and Yugoslavia, the band 1660 - 1670 Mc/s is also allocated, on a primary basis, to the fixed and mobile services.

ADD 353B In Australia and Indonesia, the band 1660 - 1670 Mc/s is also allocated, on a secondary basis, to the fixed service and the mobile, except aeronautical mobile, service.

NOC 354

A P P E N D I X 4

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
1690 - 1700 METEOROLOGICAL AIDS METEOROLOGICAL - SATELLITE 324A Fixed Mobile except aeronautical mobile 353 354 354A	1690 - 1700 METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE 324A 354A 354B	

ADD 324A [See Appendix 2]

NOC. 353 354

ADD 354A In Cuba and Poland, the band 1690 - 1700 Mc/s is also allocated, on a primary basis, to the fixed and mobile services.

ADD 354B In Australia and Indonesia, the band 1690 - 1700 Mc/s is also allocated, on a secondary basis, to the fixed and mobile services.

A P P E N D I X 5

Mc/s

Allocation to Services		
Region 1	Region 2	Region 3
1770 - 1790 FIXED METEOROLOGICAL- SATELLITE 324A Mobile 356	1770 - 1790 FIXED METEOROLOGICAL-SATELLITE 324A MOBILE 356A	

NOC 356

ADD 324A See Appendix 2

ADD 356A In Japan, the band 1770 - 1790 Mc/s is allocated, on a secondary basis, to the meteorological-satellite service.

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WORKING GROUP 5C

AGENDA

ELEVENTH MEETING OF WORKING GROUP 5C

Friday 1 November, 1963, following Committee 5
(or at 1615 hours (whichever is the earlier))

ROOM 4

1. Radionavigation Satellites (Document No. DT/108)
2. Meteorological Satellites (Document No. DT/107)
3. Any other business.

J. PENWARDEN

Chairman

Working Group 5C

