Documents of the World Administrative Radio Conference for the Planning of the Broadcasting-Satellite Service in Frequency Bands 11.7-12.2 GHz (Regions 2 and 3) and 11.7-12.5 GHz (Region 1) (WARC SAT-77)

(Geneva, 1977)

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 101-E
19 January 1977
Original: English

PLENARY MEETING

FIRST REPORT OF COMMITTEE 6

RELATING TO THE FORM OF THE FINAL ACTS OF THE CONFERENCE

As a result of the question being raised as to the competency of the Conference to amend the Radio Regulations, Committee 6 studied the preferred form of the Final Acts of the Conference. It was agreed to recommend to the Plenary a preferred form of presentation of the Final Acts comprising, inter alia:

1) a Plan (or Plans) allowing for the requirements of all countries whether represented at the Conference or not;

2) procedures governing the implementation of, and modifications to, the Plan (or Plans);

3) the date of entry into force of the decisions of the Conference; this date should be as close as possible to the conclusion of the proceedings of the Conference;

4) the Plan (or Plans) and the relevant procedures should be established in keeping with the existing provisions of the Convention and the Radio Regulations;

5) a resolution or recommendation:

   a) addressed to WARC 1979 requesting the annexing to the Radio Regulations, by that Conference, of the Final Acts of WARC/SB 1977 in the form and to the extent it deems most appropriate without thereby affecting their content or integrity;

   b) addressed to the Administrative Council of the International Telecommunication Union requesting the inclusion in the agenda of WARC 1979 of the question referred to under point a) above;

6) a resolution (or recommendation) requesting that the aforesaid Final Acts, after being annexed to the Radio Regulations, should be revised only by a competent Administrative Radio Conference convened in accordance with Article 54 of the Convention.

R.J. BUNDLE
Chairman of Committee 6

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 102-E
18 January 1977
Original : English

COMMITTEE 4

Working Group 4B

THE USE OF ENERGY DISPERSAL IN PLANNING FOR THE BROADCASTING-SATELLITE SERVICE

1. Artificial energy dispersal is useful in promoting the sharing between the Broadcast-Satellite Service and other services with which it shares the band.

2. Energy dispersal as discussed here is achieved by the addition at baseband of a triangular waveform with the video signal to form a composite baseband which, in turn, is caused to frequency modulate the up-link carrier. The rate of the triangular waveform is usually synchronized at some sub-multiple of the TV field rate. Typical rates range from 12.5 Hz to 30 Hz.

3. Table 1 illustrates the relative reduction in spectral power flux-density in a 4 kHz bandwidth as a function of the peak-to-peak deviation due to the energy dispersal waveform. This table is based on the following equation :

$$\left.\begin{array}{l}\text{Relative reduction in dB}\\ \text{relative to 4 kHz}\end{array}\right) = 10 \log \frac{\Delta F_{pp} + \delta f_{rms}}{4 \text{ kHz}}$$

where ΔF_{pp} = peak-to-peak deviation due to the energy dispersal waveform (kHz)

δf_{rms} = rms deviation caused by "natural" energy dispersal (kHz)

In constructing Table 1, a value of 40 kHz was assumed for δf_{rms}, based on the value of 10 dB for "natural" dispersion given in Table 4 of draft Report 631(Rev.76).

TABLE 1

Reduction of Spectral Power Flux-Density relative to a 4 kHz band

Peak-to-peak deviation (kHz)	Relative reduction (dB)
0	10
100	15.44
200	17.78
300	19.29
400	20.41
500	21.30
600	22.04
700	22.67
800	23.22
900	23.71
1 000	24.15

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4. The relative effectiveness of energy dispersal to reduce the effects of interference from a TV/FM carrier into several illustrative systems is shown in Figure 1.

5. Experimental measurements on the effects of energy dispersal on the performance of conventional TV sets preceded by adaptors likely to be used in 12 GHz broadcast-satellite systems show that up to 500 kHz of energy dispersal may be tolerable for the case of system M (Japan) and 600 kHz in the case of system L (France) for the conditions described in the Annex.

An example of a simple double diode clamping circuit capable of satisfactory removal of a baseband energy dispersal waveform up to 600 kHz deviation is shown in Figure 2. The estimated cost for the components is US $ 0.40.

6. During the discussion of the amount of energy dispersal to be used for planning purposes, a number of delegates from the developing nations expressed a concern about the implications of adopting energy dispersal on the cost of the ground receiving equipments.

7. For purposes of planning the Broadcasting-Satellite Services in Regions 1 and 3, the Committee recommends that a value of energy dispersal should be used which reduces the spectral power flux-density by 22 dB as measured in a 4 kHz bandwidth in comparison to the total transmittal power flux-density.

8. For more detailed information, see Document No. 90.

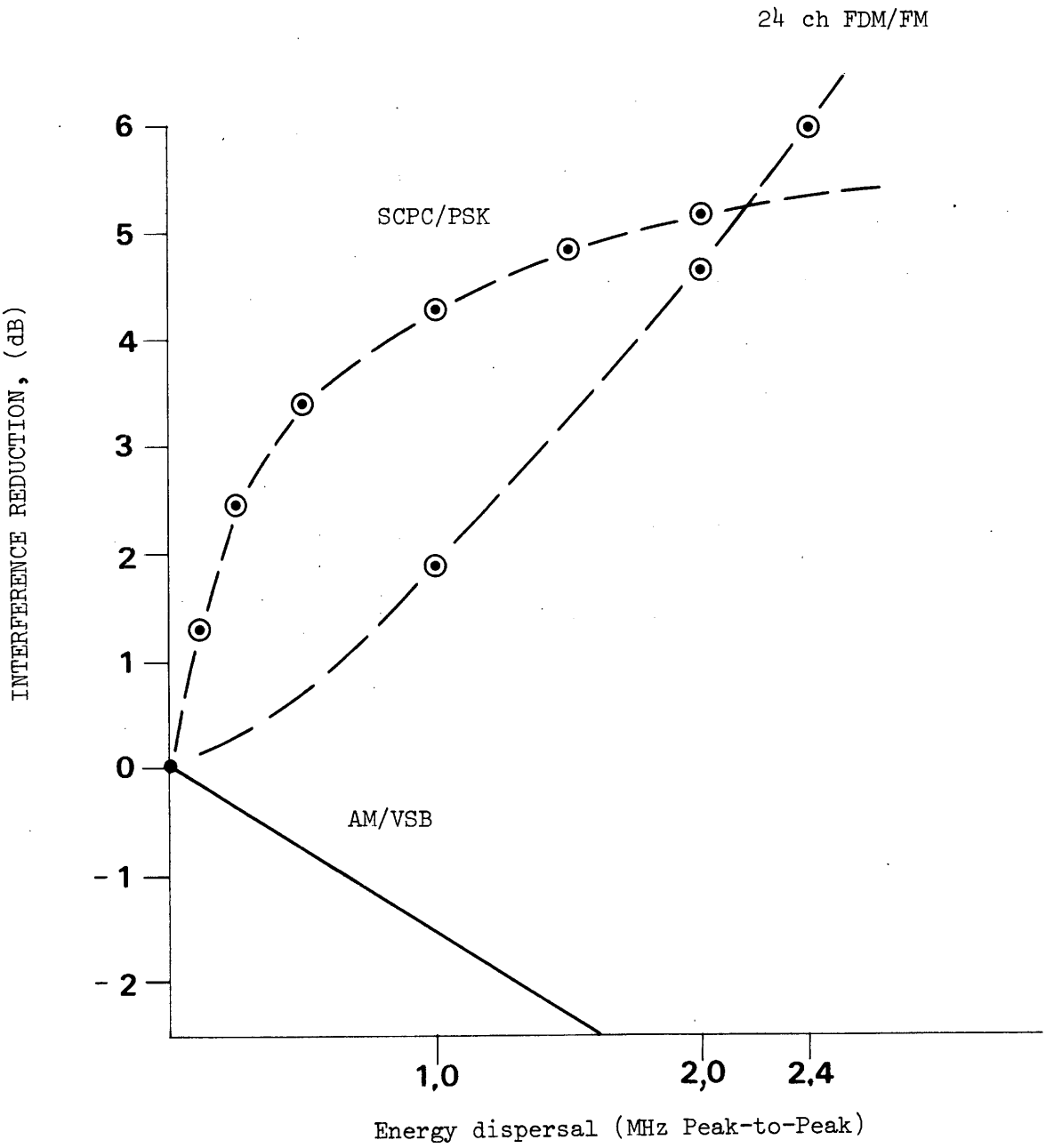

Figure 1 - Effect of energy dispersal of an interfering carrier on the interference susceptibility of various signals.

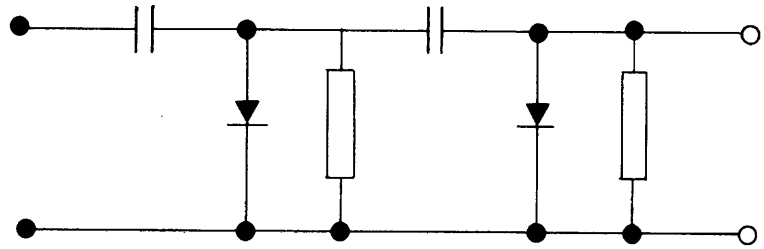

Figure 2 - Example of double diode clamping circuit providing satisfactory removal of an energy-dispersal signal with up to 600 kHz peak-to-peak frequency deviation.

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Corrigendum N° 2 au
Document N° 103(Rev.2)-F/E/S
3 février 1977

COMMISSION 5
COMMITTEE 5
COMISIÓN 5

Note du Président de la Commission 5 (Planification)

LISTE DES DEMANDES

Note by the Chairman of Committee 5 (Planning)

LIST OF REQUIREMENTS

Nota del Presidente de la Comisión 5 (Planificación)

LISTA DE SOLICITUDES

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01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0004	AUS	AUS	6	B G	22-16	105.0E	121E48 24S54		3.40	1.90	056	095E 105E	1 AUS-1	A205 B002
0005	AUS	AUS	6	B G	20-16	105.0E	133E30 18S48		2.50	1.30	080	095E 105E	1 AUS-1	A205 B002
0006	AUS	AUS	6	B G	20-16	105.0E	135E24 30S18		1.80	1.40	045	095E 105E	1 AUS-1	A205 B002
0007	AUS	AUS	6	B G	20-14	130.0E	145E00 38S06	01.3				120E 135E	1 AUS-1	A205 B002
0008	AUS	AUS	6	B G	20-14	130.0E	145E54 21S30		2.70	1.80	120	120E 135E	1 AUS-1	A205 B002
0009	AUS	AUS	6	B G	20-14	130.0E	147E12 32S00		1.90	1.20	015	120E 135E	1 AUS-1	A205 B002
0315	AUS	AUS	3	B G	22-16	130.0E	122E12 24S48		3.06	2.26	075	130E 130E	1 AUS-3	
0316	AUS	AUS	3	B G	20-16	130.0E	133E42 18S42		2.55	1.60	095	130E 130E	1 AUS-3	
0317	AUS	AUS	3	B G	20-16	130.0E	135E48 30S12		2.00	1.65	160	130E 130E	1 AUS-3	
N 0338	USA	CAR	5	M NTSC	00-24	120.0E	149E00 07N30		3.00	1.50	178	110E 125E	0	
0154-0188 incl.	CHN	CHN											ajouter/add/añada:	A067
0085	CVA	CVA	1	G PAL	00-24	28.0W	10E30 42N00		2.08	0.66	152	016W 031W	1 CVA-3	A211
0089	DNK	DNK	3	G PAL	00-24	0.0E	12E18 57N12		1.20	0.60	177	000E 004E	2 DNK	A010 A108
0090	DNK	DNK	2	G PAL	00-24	0.0E	17E00 61N30		2.00	1.00	010	000E 004E	2 DNK	A011 A108 A192
0091	DNK	DNK	5	G PAL	00-24	0.0E	19W30 61N00		2.20	0.80	004	000E 004E	2 DNK	A012 A109 A194
0103	FNL	FNL	3	G PAL	00-24	0.0E	23E30 63N30		1.40	0.70	165	000E 004E	2 FNL	A005 A104 A193
0104	FNL	FNL	2	G PAL	00-24	0.0E	17E00 61N30		2.00	1.00	010	000E 004E	2 FNL	A006 A104 A192
N 0331	USA	GUM	5	M NTSC	16-11	125.0E	144E30 13N12	00.6				110E 125E	0	
0213	HOL	HOL	5	G	00-24	15.0W	05E06 51N36		0.70	0.60	165	018W 010W	2 HOL	A105 A213

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
N 0332	USA	MRA	5	M NTSC	16-11	125.0E	146E30	16N00				110E 125E 0		
N 0333	USA	MRL	5	M NTSC	17-12	145.0E	169E00	08N00	01.5	1.20	0.60	085 125E 150E 0		
0119	NIG	NIG	5	B G	05-24	22.0W	07E59	10N00		2.04	1.65	079 022W 030W	2 NIG	A171
N 0336	USA	PHX	5	M NTSC	18-13	170.0E	171W30	04S00	00.6			175E 150E 0		
N 0337	USA	PLM	5	M NTSC	19-14	170.0E	161W00	07N00	00.6			175E 150E 0		
N 0335	USA	SMA	5	M NTSC	19-14	170.0E	170W44	14S21	00.6			175E 150E 0		
0140	SUI	SUI	5	G PAL	00-24	16.0W	08E17	46N40		0.98	0.70	171 005W 015W 0		A038 A039
N 0334	USA	WAK	5	M NTSC	17-12	140.0E	166E35	19N18	00.6			125E 145E 0		

A108 DNK Ajouter :

Afin de faciliter la planification, il convient d'utiliser les données modifiées relatives aux faisceaux et non les données calculées à partir des points qui déterminent le polygone car il en résulterait un faisceau plus large.

En outre, l'Administration du Denmark est prête à accepter que l'un des canaux du faisceau nordique (N° de série 0090 de l'IFRB) soit transféré à un faisceau national, dont les données sont contenues dans le N° de série 0089 de l'IFRB, s'il est nécessaire pour obtenir un plan approuvé.

Les données relatives à l'ellipse indiquées dans les colonnes 10-12 sont conçues de manière à faciliter la planification, car elles réduisent autant que possible la densité surfacique de puissance dans des pays situés au sud du Danemark.

Nous demandons donc que le Plan continue à être fondé sur ces données et non sur les données calculées à partir des points qui déterminent le polygone, car les résultats seraient alors moins bons en direction du sud.

Il convient d'utiliser les données modifiées, qui comprennent une erreur de pointage de ± 0,1°, et non les faisceaux calculés d'après les points qui déterminent le polygone. Réf. A012.

A108 DNK Add:

In order to facilitate planning the amended beam data should be used instead of data derived from the polygon points since these points will result in a wider beam.

In addition, the Danish Administration is prepared to accept that one channel in the Nordic beam (IFRB Serial No. 0090) be transferred to a national beam with data as contained in IFRB Serial No. 0089 , if this proves necessary in order to obtain an agreed plan.

The elliptical data given in columns 10-12 are devised so that the planning is facilitated, because it reduces the power-flux density as much as possible in countries south of Denmark.

It is therefore requested that these data continue to be taken as a basis for the Plan instead of data derived from the polygon points, which would give more unfavourable results in southward direction.

The amended data include pointing error (± 0.1°). These should be used instead of beams derived from polygon points. Ref. A012.

A108 DNK Añádase:

Con el fin de facilitar la planificación debieran utilizarse los datos del haz modificados, en lugar de los derivados de los puntos del polígono, puesto que éstos darán lugar a un haz más amplio.

Además, la Administración danesa está dispuesta a aceptar que uno de sus canales en el haz nórdico (N.° de orden 0090 de la IFRB) se transfiera a un haz nacional, con datos como los contenidos en el N.° de orden 0089 de la IFRB, si ello fuera necesario para obtener un plan convenido.

Los datos relativos a los haces de sección elíptica, que figuran en las columnas 10 - 12, se han concebido para facilitar la planificación, por reducirse lo más posible la densidad de flujo de potencia en países situados al sur de Dinamarca.

Por tanto, se solicita que tales datos sigan tomándose como base para el Plan, en lugar de datos derivados de los puntos del polígono, que darían resultados menos favorables en dirección sur.

Los datos modificados comprenden un error de puntería (± 0,1°), y deben utilizarse en lugar de los haces derivados de los puntos del polígono. Ref. A012.

A192 FNL Ajouter :

Comprend une erreur de pointage de ± 0,1°.

Afin de faciliter la planification, il convient d'utiliser les données modifiées relatives aux faisceaux et non les données calculées à partir des points qui déterminent le polygone car il en résulterait un faisceau plus large.

En outre, l'Administration de la Finlande est prête à accepter que l'un des canaux du faisceau nordique (N° de série 0104 de l'IFRB) soit transféré à un faisceau national, dont les données sont contenues dans le N° de série 0103 de l'IFRB, s'il est nécessaire pour obtenir un plan approuvé.

A193 FNL Corriger et lire :

Comprend une erreur de pointage de ± 0,1°.

A213 HOL A remettre note A105 comme suit :

Souhaite utiliser la même longitude nominale (case 07) que AUT, BEL, D, F, I, LUX et SUI. Ce souhait a priorité sur la valeur inscrite dans la case 07.

A013 S Ajouter :

Afin de faciliter la planification, il convient d'utiliser les données modifiées relatives aux faisceaux et non les données calculées à partir des points qui déterminent le polygone car il en résulterait un faisceau plus large.

En outre, l'Administration de la Suède est prête à accepter que l'un des canaux du faisceau nordique (N° de série 0139 de l'IFRB) soit transféré à un faisceau national, dont les données sont contenues dans le N° de série 0138 de l'IFRB, s'il est nécessaire pour obtenir un plan approuvé.

A192 FNL Add:

Includes pointing error of ± 0.1°.

In order to facilitate planning the amended beam data should be used instead of data derived from the polygon points since these points will result in a wider beam.

In addition, the Finnish Administration is prepared to accept that one channel in the Nordic beam (IFRB Serial No. 0104) be transferred to a national beam with data as contained in IFRB Serial No. 0103, if this proves necessary in order to obtain an agreed plan.

A193 FNL Amend to read:

Includes pointing error of ± 0.1°.

A213 HOL Reinstate note A105 as follows:

Wishes to use the same nominal longitude (box 07) as AUT, BEL, D, F, I, LUX and SUI. This wish prevails over the value indicated in box 07.

A013 S Add:

In order to facilitate planning the amended beam data should be used instead of data derived from the polygon points since these points will result in a wider beam.

In addition, the Swedish Administration is prepared to accept that one channel in the Nordic beam (IFRB Serial No. 0139) be transferred to a national beam with data as contained in IFRB Serial No. 0138, if this proves necessary in order to obtain an agreed plan.

A192 FNL Añádase:

Comprende un error de puntería de ± 0,1°.

Con el fin de facilitar la planificación debieran utilizarse los datos del haz modificados, en lugar de los derivados de los puntos del polígono, puesto que éstos darán lugar a un haz más amplio.

Además, la Administración finlandesa dispuesta a aceptar que uno de sus canales en el haz nórdico (N.° de orden 0104 de la IFRB) se transfiera a un haz nacional, con datos como los contenidos en el N.° de orden 0103 de la IFRB, si ello fuera necesario para obtener un plan convenido.

A193 FNL Corríjase y léase:

Comprende un error de puntería de ± 0,1°.

A213 HOL Reintégrese la nota A105 como sigue:

Desea utilizar la misma longitud nominal (casilla 07) que AUT, BEL, D, F, I, LUX y SUI. Este deseo prevalece sobre el valor indicado en la casilla 07.

A013 S Añádase:

Con el fin de facilitar la planificación debieran utilizarse los datos del haz modificados, en lugar de los derivados de los puntos del polígono, puesto que éstos darán lugar a un haz más amplio.

Además, la Administración sueca está dispuesta a aceptar que uno de sus canales en el haz nórdico (N.° de orden 0139 de la IFRB) se transfiera a un haz nacional, con datos como los contenidos en el N.° de orden 0138 de la IFRB, si ello fuera necesario para obtener un plan convenido.

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Corrigendum N° 1 au
Document N° 103(Rev.2)-F/E/S
2 février 1977

COMMISSION 5
COMMITTEE 5
COMISIÓN 5

Note du Président de la Commission 5 (Planification)

LISTE DES DEMANDES

(à la date du mardi, 1er février 1977)

Note by the Chairman of Committee 5 (Planning)

LIST OF REQUIREMENTS

(as of Tuesday, 1 February 1977)

Nota del Presidente de la Comisión 5 (Planificación)

LISTA DE SOLICITUDES

(hasta el martes, el 1.° de febrero de 1977)

	Col. 8		Col. 10	Col. 11	Col. 12
0085 CVA					
lire/read/léase :	10E30	42N00	2.08	0.66	152

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UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Document N° 103(Rev.2)-F/E/S
2 février 1977

COMMISSION 5

Note du Président de la Commission 5 (Planification)

LISTE DES DEMANDES
(à la date du mardi, 1er février 1977)

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Partie B - Région 2	-

COMMITTEE 5

Note by the Chairman of Committee 5 (Planning)

LIST OF REQUIREMENTS
(as of Tuesday, 1 February 1977)

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Annex 2 - List of Requirements	9
Part A - Regions 1 and 3	-
Part B - Region 2	-

COMISIÓN 5

Nota del Presidente de la Comisión 5 (Planificación)

LISTA DE SOLICITUDES
(hasta el martes, el 1.° de febrero de 1977)

	Páginas
Nota	4
Anexo 1 - Explicación de los títulos de las columnas	5 - 8
Anexo 2 - Lista de solicitudes	9
Parte A - Regiones 1 y 3	-
Parte B - Región 2	-

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ARCHIVES U.I.T. GENÈVE

Note du Président de la Commission 5 (planification)

LISTE DES BESOINS

(à la date du mardi, 1er février 1977)

Nous reproduisons dans l'Annexe 2 au présent document la liste imprimée mise à jour.

Explication des titres des colonnes de la Liste

2. Pour faciliter la référence aux titres des colonnes, ceux-ci sont reproduits dans l'Annexe 1 au présent document.

Besoins

3. Les besoins pour les Régions 1 et 3 sont groupés et ils figurent dans l'ordre alphabétique des symboles de pays indiqués dans la colonne 3; ils constituent la Partie A de l'Annexe 2.

4. Les besoins pour la Région 2 sont groupés et ils figurent dans l'ordre alphabétique des symboles de pays indiqués dans la colonne 3; ils constituent la Partie B de l'Annexe 2.

Observations

5. Pour les explications des numéros d'observation, voir le Document N° 172 et ses Addenda.

A. PETTI
Président
Commission 5 (planification)

Note by the Chairman of Committee 5 (Planning)

LIST OF REQUIREMENTS

(as of Tuesday, 1 February 1977)

The printout of the updated List is reproduced in Annex 2 to the present document.

Explanation of the Column Headings of the List

2. For ease of reference, these are reproduced in Annex 1 to the present document.

Requirements

3. The Requirements for countries in Regions 1 and 3 are grouped together and arranged in alphabetical order of the country symbol appearing in Column 3 and form Part A of Annex 2.

4. The Requirements for Region 2 are grouped together and arranged in alphabetical order of the country symbol appearing in Column 3 and form Part B of Annex 2.

Remarks

5. For the explanation of the Remarks numbers, see Document No. 172 and its Addenda.

A. PETTI
Chairman
Committee 5 (Planning)

Nota del Presidente de la Comisión 5 (Planificación)

LISTA DE SOLICITUDES

(hasta el martes, el 1.° de febrero de 1977)

Se reproduce en el Anexo 2 al presente documento la Lista actualizada.

Explicación de los títulos de las columnas de la Lista

2. Para facilitar la referencia, estos se reproducen en el Anexo 1 al presente documento.

Solicitudes

3. Las solicitudes de los países de las Regiones 1 y 3 están agrupadas y dispuestas por orden alfabético del símbolo de país que figura en la columna 3 y constituyen la Parte A del Anexo 2.

4. Las solicitudes para la Región 2 están agrupadas y dispuestas por orden alfabético del símbolo de país que figura en la columna 3, y constituyen la Parte B del Anexo 2.

Observaciones

5. Para las explicaciones de los números de las Observaciones, véase el Documento N.° 172 y sus Addenda.

El Presidente,
A. PETTI
Comisión 5 (Planificación)

ANNEXE 1

Explication des colonnes de la liste des demandes

Colonne 1 - Numéro de série de l'I.F.R.B. Cette colonne contient un numéro d'identification attribué aux renseignements fournis dans un formulaire de demande au sujet d'un faisceau d'antenne donné.

Colonne 2 - Administration notificatrice. Dans cette colonne est indiquée la source dont émanent les renseignements.

Colonne 3 - Symbole désignant le pays. Le pays ou la zone géographique sont représentés dans la colonne 3 par un symbole tiré du Tableau N° 1 de la Préface à la Liste internationale des fréquences.

Colonne 4 - Nombre de canaux. Dans la colonne 4 est inscrit le nombre de canaux indiqués pour le faisceau d'antenne spécifié sur la même ligne.

Colonne 5 - Norme de télévision. Dans cette colonne figure le symbole désignant la norme de télévision à utiliser; ce symbole est tiré du Tableau I du Rapport 624 du C.C.I.R., tel que ce Tableau a été amendé en mai 1976 (voir les pages 7 et 8 de la lettre-circulaire N° 358 de l'I.F.R.B., datée du 16 juillet 1976).

Colonne 6 - Horaire d'exploitation (TMG) Les heures, exprimées en T.M.G., auxquelles commence et finit l'émission sont indiquées dans la colonne 6 (en arrondissant à l'heure la plus proche). Ce renseignement est utilisé pour déterminer la limite orientale de l'arc de service pendant l'éclipse du satellite en période d'équinoxe.

ANNEX 1

Explanation of the Column Headings of the List of Requirements

Column 1 - I.F.R.B. Serial Number, contains an identification number for the information concerning a given antenna beam received on one Requirements form.

Column 2 - Notifying Administration, contains an indication of the source from which the information was received.

Column 3 - Country symbol, contains the symbol designating the country or the geographical area taken from Table No. 1 of the Preface to the International Frequency List.

Column 4 - Number of channels, contains the number of channels indicated for the antenna beam covered by the present line entry.

Column 5 - Television standard, contains the symbol designating the television standard to be used taken from Table I in C.C.I.R. Report 624 as amended in May 1976 (reproduced on pages 7 and 8 of I.F.R.B. Circular-letter No. 358 dated 16 July 1976).

Column 6 - Hours of operation (GMT), contains the time in GMT of the beginning and the end of emission to the nearest hour. This information is included for the purpose of determining the Eastern limit of the service arc during the eclipse of the satellite at the equinoxes.

ANEXO 1

Explicación de los títulos de las columnas de la Lista de solicitudes

Columna 1 - I.F.R.B. - N.°, contiene un número para identificar la información relativa a un haz de antena dado y recibida en un formulario de solicitud.

Columna 2 - Administración notificante, contiene una indicación de la fuente que ha comunicado la información.

Columna 3 - Símbolo de país, contiene el símbolo de país o zona geográfica que figura en el Cuadro N.° 1 del Prefacio a la Lista Internacional de Frecuencias.

Columna 4 - Número de canales, contiene el número de canales indicado para el haz de la antena especificado en la misma línea.

Columna 5 - Norma de televisión, contiene el símbolo que designa la norma de televisión que ha de usarse, según el Cuadro 1 del Informe 624 del C.C.I.R., modificado en mayo de 1976 (reproducido en las páginas 7 y 8 de la carta circular de la I.F.R.B. N.° 358, de fecha 16 de julio de 1976).

Columna 6 - Horas de funcionamiento(TMG) contiene la hora, en TMG, en que comienza y termina la transmisión, redondeada a la hora más próxima. Esta información se incluye con la finalidad de determinar el límite oriental del arco de servicio durante el eclipse del satélite en los equinoccios.

Colonne 7 - Longitude nominale. Dans la colonne 7 est indiquée, en degrés et dixième de degré, la longitude nominale préférée par rapport au méridien de Greenwich.

Colonne 8 - Coordonnées géographiques de l'intersection de l'axe du faisceau d'antenne avec la Terre. Dans la colonne 8 sont inscrites les coordonnées de ladite intersection, exprimées en degrés et minutes, en commençant par la longitude. Exemple : "118E34 50N32".

Colonne 9 - Faisceau d'antenne à section circulaire. La colonne 9 contient l'indication de la largeur du faisceau de l'antenne entre les points à demi-puissance; cette largeur est exprimée en degrés et dixièmes de degré.

Colonnes 10, 11 et 12 - Faisceau d'antenne à section elliptique. Dans la colonne 10 est indiquée la largeur à demi-puissance du faisceau correspondant au grand axe de l'ellipse; cette largeur est exprimée en degrés et dixièmes de degré.

Dans la colonne 11 figure le renseignement analogue, exprimé de la même façon mais pour le petit axe de l'ellipse.

Dans la colonne 12 est indiquée l'orientation de l'ellipse, déterminée comme suit : dans un plan perpendiculaire à l'axe du faisceau, la direction du grand axe de l'ellipse est définie par l'angle, mesuré dans le sens inverse des aiguilles d'une montre, à partir d'une ligne parallèle au plan équatorial jusqu'au grand axe de l'ellipse, au degré près le plus proche.

Colonne 13 - Arc orbital de service. Dans la colonne 13 est indiqué l'arc de service de l'orbite du satellite géostationnaire, en degrés de longitude à partir du méridien de Greenwich.

Column 7 - Nominal longitude, contains the preferred nominal longitude, in degrees and tenths of a degree, of the satellite in relation to the Greenwich meridian.

Column 8 - Geographical co-ordinates of the intersection of the antenna beam axis with the Earth, contains the geographical co-ordinates of the said intersection in degrees and minutes with the longitude shown first, viz. "118E34 50N32".

Column 9 - Circular cross-section antenna beam, contains the half-power beam width of the antenna in degrees and tenths of a degree.

Columns 10, 11 and 12 - Elliptical cross-section antenna beam.
Column 10 contains the half-power beam width corresponding to the major axis of the ellipse, in degrees and hundredths of a degree.

Column 11 contains the half-power beam width corresponding to the minor axis of the ellipse, in degrees and hundredths of a degree.

Column 12 contains the orientation of the ellipse determined as follows: in a plane normal to the beam axis, the direction of the major axis of the ellipse is specified as the angle measured anti-clockwise from a line parallel to the equatorial plane to the major axis of the ellipse, to the nearest degree.

Column 13 - Orbital service arc, contains the service arc on the geostationary satellite orbit in degrees of longitude from Greenwich.

Columna 7 - Longitud nominal, contiene la longitud nominal preferida, en grados y décimas de grado, del satélite con relación al meridiano de Greenwich.

Columna 8 - Coordenadas geográficas de la intersección del eje del haz de la antena con la Tierra, contiene las coordenadas geográficas de dicha intersección, en grados y minutos; figura en primer lugar, por ejemplo: "118E34 50N32".

Columna 9 - Haz de la antena de sección transversal circular, contiene la abertura angular del haz de la antena en los puntos de semipotencia, en grados y décimas de grado.

Columnas 10, 11 y 12 - Haz de la antena de sección transversal elíptica:
La columna 10 contiene la abertura angular en los puntos de semipotencia, correspondiente al eje mayor de la elipse, en grados y centésimas de grado;

La Columna 11 contiene la abertura angular en los puntos de semipotencia, correspondiente al eje menor de la elipse, en grados y centésimas de grado;

La Columna 12 contiene la orientación de la elipse determinada como sigue: en un plano perpendicular al eje del haz, la dirección del eje mayor de la elipse se define como el ángulo medido en sentido contrario al de las agujas de un reloj, desde una línea paralela al plano ecuatorial hasta el eje mayor de la elipse, redondeado al grado más próximo.

Columna 13 Arco orbital de servicio, contiene el arco de servicio en la órbita del satélite geoestacionario, en grados de longitud con relación al meridiano de Greenwich.

Colonne 14 - Territoire à desservir.
En règle générale, les administrations ont indiqué le territoire à desservir soit au moyen d'une carte accompagnée d'un diagramme pour représenter la zone à desservir ou d'une carte non accompagnée d'un diagramme, soit en inscrivant le nom du pays ou les renseignements pertinents dans les colonnes 7 à 13. Les symboles numériques 0, 1 ou 2 qui figurent dans la première position de la colonne 14 indiquent respectivement ces différents cas. La signification de ces symboles numériques est la suivante :

- un zéro "0" signifie qu'au formulaire de demande n'était pas jointe une carte accompagnée d'un diagramme pour représenter la zone à desservir;

- le chiffre "1" signifie qu'au formulaire de demande était jointe une carte accompagnée d'un diagramme pour représenter la zone à desservir; ces documents sont reproduits dans l'annexe 4 à la présente lettre-circulaire. Dans ladite annexe, les cartes se présentent par ordre alphabétique des symboles désignant les pays; lorsqu'il existe plusieurs cartes pour l'un de ces sysmboles, ces cartes sont classées par ordre numérique croissant des numéros de série de l'I.F.R.B.;

- le chiffre "2" signifie qu'au formulaire de demande était jointe une carte non accompagnée d'un diagramme pour représenter la zone à desservir. Les cartes ne sont dans ce cas pas reproduites dans l'annexe 4 à la présente lettre-circulaire; on pourra les consulter en s'adressant au Secrétariat spécialisé de l'I.F.R.B.

Column 14 - Territory to be provided with service.
In general, Administrations have indicated the territory to be provided with service either by means of a map with a diagram indicating the area to be served or by a map without a diagram or by indicating the name of the country or by providing information in Columns 7 to 13 inclusive; in order to differentiate between these cases, the first position in Column 14 contains the symbol 0, 1 or 2 of which the meaning is as follows:

- a zero "0", the Requirements form was not accompanied by a map with a diagram indicating the area to be provided with service;

- the number "1", the Requirements form was accompanied by a map with a diagram indicating the area to be provided with service, which is reproduced in Annex 4 to the present Circular-letter; in that Annex, the maps are arranged in alphabetical order of the country symbol; where there are two or more maps for a given country symbol, these are arranged in ascending order of the I.F.R.B. serial number;

- the number "2", the Requirements form was accompanied by a map without a diagram indicating the area to be provided with service; this map is not reproduced in Annex 4 to the present Circular-letter; these maps will be available for consultation in the I.F.R.B. Specialized Secretariat.

Columna 14 - Territorio a que se desea dar servicio.
En general, las Administraciones han indicado el territorio a que se desea dar servicio, bien por medio de un mapa con un diagrama para representar la zona de servicio o de un mapa sin diagrama, o bien indicando el nombre del país o facilitando información en las columnas 7 a 13 inclusive; con el fin de diferenciar estos casos, en la primera posición de la columna 14 figuran los símbolos, 0, 1 ó 2, cuyo significado es el siguiente:

- un cero "0" significa que el formulario de solicitud no iba acompañado de un mapa con un diagrama indicando la zona a que se desea dar servicio;

- la cifra "1" significa que el formulario de solicitud iba acompañado de un mapa indicando la zona a que se desea dar servicio, que se reproduce en el Anexo 4 a la presente carta circular. En el Anexo, los mapas se disponen por orden alfabético de los símbolos de país. Cuando hay dos o más mapas para un símbolo de país dado, se disponen por orden creciente del número de la I.F.R.B.;

- la cifra "2" significa que el formulario de solicitud iba acompañado de un mapa sin diagrama que indicara la zona a que se desea dar servicio; este mapa no se reproduce en el Anexo 4 a la presente carta circular. Los mapas podrán consultarse en la Secretaría especializada de la I.F.R.B.

Colonne 15 - Observations. La colonne 15 contient les autres données techniques communiquée avec le forumulaire de demande; ces données sont codées par ordre numérique croissant; elles sont précédées de la lettre A (administration) lorsqu'elles émanent d'une administration (les données sont alors comprises dans la série "A001 - A999"); elles sont précédées de la lettre B (Board) lorsqu'elles ont été introduites par l'I.F.R.B. (les données sont alors comprises dans la série "B001 - B999"). Le sens des numéros d'observation est donné dans l'annexe 3 à la présente lettre-circulaire.

Le symbole ♦ qui suit un symbole désignant un pays signifie que les renseignements émanent d'une source extérieure à l'Union; leur publication n'implique aucune reconnaissance par l'Union du statut de l'expéditeur.

Column 15 - Remarks,
contains any other technical information received with the Requirements form and coded consecutively with the prefix "A" (Administration) viz. "A001-A999"; the prefix "B" (Board) viz. "B001-B999", indicates that the information has been introduced by the I.F.R.B.; the explanation of these Remarks numbers is given in Annex 3 to the present Circular-letter.

The symbol ♦ following a country symbol denotes that the relevant information was received from a source outside the Union and that publication of this information implies no recognition by the Union of the status of the sender in relation thereto.

Columna 15 - Observaciones,
contiene las demás informaciones técnicas recibidas con el formulario de solicitud y codificadas posteriormente con el prefijo "A" (administración), es decir, "A001-A999"; el prefijo, "B" (Junta), es decir, "B001-B999", indica que la información ha sido introducida por la I.F.R.B.; la explicación de estos números de las observaciones figura en el Anexo 3 a la presente carta circular.

El símbolo ♦ , detrás de un símbolo de país, indica que la información proviene de fuente ajena a la Unión, y que su publicación no entraña el reconocimiento por la Unión del estatuto del remitente en relación con la misma.

ANNEXE 2

Liste des demandes

Les caractéristiques additionnelles ou modifiées concernant une inscription dans la liste sont soulignées. Si toute l'inscription a trait à des renseignements additionnels, la lettre "N" est placée à gauche de l'inscription.

Les inscriptions se présentent dans l'ordre alphabétique des symboles désignant les pays ou les zones géographiques; ces symboles figurent dans la case 03 du formulaire de demande et dans la colonne 3 de la liste.

ANNEX 2

List of Requirements

Additional or changed characteristics concerning an entry in the List are underlined. Where the whole entry is additional information, the letter "N" appears in the left-hand margin against the entry.

Entries are arranged in the alphabetical order of the symbol designating the country or geographical area appearing in Box 03 of the Requirements Form and in Column 3 of the List.

ANEXO 2

Lista de solicitudes

Las caractéristicas adicionales o modificaciones relativas a una inscripción en la Lista están subrayadas. Cuando en la inscripción se trata de información adicional, la letra "N" aparece en el margen izquierdo de la inscripción.

Las inscripciones figuran por orden alfabético de los símbolos designativos del país o la zona geográfica que aparecen en la Casilla 03 del formulario de solicitud y en la columna 3 de la Lista.

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0245	AFG	AFG	4	B	01-20	55.0E	70E46 35N15		1.00	0.90	027	050E 055E	0	
0246	AFG	AFG	4	B	01-20	55.0E	064E17 33N22		1.30	1.20	064	050E 055E	0	
0099	F	AFI	5	K1 SECAM	00-24	15.0E	42E30 11N27	00.6				015E 030E	1	A061 B017
0021	AFS	AFS	5	I PAL	04-22	6.0E	24E15 28S15		2.91	1.43	030	005W 012E	1 AFS-1	A054 B017
0022	AFS	AFS	2	I PAL	04-22	6.0E	28E30 31S12		0.86	0.36	036		1 AFS-2	B017
0023	AFS	AFS	2	I PAL	04-22	6.0E	31E00 27S45		1.16	0.39	046		1 AFS-3	B017
0024	AFS	AFS	4	I PAL	04-22	6.0E	27E00 26S00		1.83	0.78	033		1 AFS-4	B017
0295	IFB	AGL	5			15.0W	16E30 12S30		2.53	1.95	071			
0296	ALB	ALB	5	B G		7.5W	19E50 41N18	00.6					0	
0251	ALG	ALG	5	B G PAL	00-24	20.0W	04E12 33N12		2.45	1.25	172		0 ALG-2	A125 A127 A187
0252	ALG	ALG	5	B G PAL	00-24	20.0W	01E36 25N30		3.45	2.07	156		0 ALG-3	A126 A127 A187

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0238	F	AND	5		00-24	24.0W	01E36 42N30	00.6				024W 015W	1 AND-1	
0262	E	AND	5 G		00-24	24.0W	01E36 42N30	00.6				024W 015W	1 AND-1	A184
0261	**E**	**AND**		**SUP**										
0003	ARS	ARS	5 B	SECAM	00-24	20.0E	42E00 23N00		3.10	1.30	132	015E 025E	2 ARS	
0275	ARS	ARS	5 B	SECAM	00-24	20.0E	46E30 25N48		3.60	1.20	145	015E 025E	0	
0004	AUS	AUS	6 B	G	22-16	105.0E	121E48 24S54		3.40	1.90	056	095E 105E	1 AUS-1	A052 B002
0005	AUS	AUS	6 B	G	20-16	105.0E	133E30 18S48		2.50	1.30	080	095E 105E	1 AUS-1	A052 B002
0006	AUS	AUS	6 B	G	20-16	105.0E	135E24 30S18		1.80	1.40	045	095E 105E	1 AUS-1	A052 B002
0007	AUS	AUS	6 B	G	20-14	130.0E	145E00 38S06	01.3				120E 135E	1 AUS-1	A052 B002
0008	AUS	AUS	6 B	G	20-14	130.0E	145E54 21S30		2.70	1.80	120	120E 135E	1 AUS-1	A052 B002
0009	AUS	AUS	6 B	G	20-14	130.0E	147E12 32S00		1.90	1.20	015	120E 135E	1 AUS-1	A052 B002
0315	AUS	AUS	3 B	G	22-16	130.0E	122E12 24S48		3.06	2.26	075	130E 130E	1 AUS-3	A205
0316	AUS	AUS	3 B	G	20-16	130.0E	133E42 18S42		2.55	1.60	095	130E 130E	1 AUS-3	A205
0317	AUS	AUS	3 B	G	20-16	130.0E	135E48 30S12		2.00	1.65	160	130E 130E	1 AUS-3	A205
0016	AUT	AUT	5 B	G PAL	00-24	16.0W	12E12 47N30		1.14	0.63	167	005W 015W	0	A047 A048 A217
0017	**AUT**	**AUT**		**SUP**										
0134	POR	AZR	5 G		00-24	26.0W	23W21 36N10		2.51	0.69	15?	026W 033W	2 AZR	A020

01	02	03	04	05	06	07	08	09	10	11	12	13		14		15
0270	BDI	BDI	5		01-24	5.0E	29E25 03S23	00.6				000E	005E	0		A177
0018	BEL	BEL	5	G	00-24	16.0W	04E38 50N37		0.70	0.60	160	020W	011W	1		A030 A214
0220	BGD	BGD	5	B PAL	00-17	73.0E	90E00 23N30		1.18	0.71	138			0		A111
0255	BHR	BHR	4	G I PAL	03-21	20.0E	50E35 26N14	00.6						0		A173
0062	URS	BLR	2	D K	06-22	20.0E	27E50 52N56		1.00	0.60	003	010E	020E	1	BLR	A095
0297	IFB	BOT	5			7.5W	23E24 22S15		1.88	1.19	042					

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
	0298	IFB	BRM	4			67.5E	96E34 19N28		3.50	1.18	110			
N	0330	G	BRU	2	B G PAL	00-24	75.0E	114E40 04N35	00.6				065E 085E		A212
	0020	BUL	BUL	5	D K SECAM	00-24	10.0W	24E59 42N55		0.90	0.60	163	020W 005E	1	
	0258	CAF	CAF	5	K1	00-24	5.0W	20E00 06N20		2.00	1.20	014	010W 010E	0	
N	0338	USA	CAR	5	M NTSC	00-24	170.0E	163W00 05S00		4.50	1.00	135	160E 180E	0	
	0299	IFB	CBG	4			75.0E	104E45 12N30		0.84	0.67	042			

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0154	CHN	CHN	4	K	00-19	64.0E	84E25 40N18		2.48	1.60	003	055E 065E	1 CHN-1	A066 A129 A206
0155	CHN	CHN	4	K	00-19	64.0E	88E36 31N49		3.20	1.21	164	055E 065E	1 CHN-2	A066 A130 A206
0156	CHN	CHN	3	K	00-19	64.0E	98E33 36N24		2.23	1.49	150	055E 065E	1 CHN-3	A066 A131 A206
0157	CHN	CHN	3	K	00-19	64.0E	102E37 28N19		2.43	1.28	120	055E 065E	1 CHN-4	A066 A132 A206
0158	CHN	CHN	3	K	22-17	79.0E	111E58 37N45		2.56	1.47	126	075E 085E	1 CHN-5	A066 A133 A206
0159	CHN	CHN	3	K	22-17	79.0E	109E30 27N08		1.83	1.44	101	075E 085E	1 CHN-6	A066 A134 A206
0160	CHN	CHN	3	K	22-17	94.0E	123E37 46N03		2.01	1.42	145	090E 095E	1 CHN-7	A066 A135 A206
0161	CHN	CHN	3	K	22-17	94.0E	118E10 31N26		1.99	1.51	096	085E 095E	1 CHN-8	A066 A136 A206
0162	CHN	CHN	3	K	22-17	94.0E	115E25 21N31		2.70	1.69	045	085E 095E	1 CHN-9	A066 A137 A206
0163	CHN	CHN	1	K	22-17	79.0E	116E10 39N52		0.94	0.63	120	075E 085E	1 CHN-10	A066 A138 A206
0164	CHN	CHN	1	K	22-17	79.0E	112E13 37N31		0.76	0.60	091	075E 085E	1 CHN-11	A066 A139 A206
0165	CHN	CHN	1	K	22-17	79.0E	111E42 41N59		1.40	0.88	016	075E 085E	1 CHN-12	A066 A140 A206
0166	CHN	CHN	1	K	22-17	94.0E	121E02 41N52		1.37	0.60	150	090E 095E	1 CHN-13	A066 A141 A206
0167	CHN	CHN	1	K	22-17	94.0E	125E00 43N40		1.77	0.60	151	090E 095E	1 CHN-14	A066 A142 A206
0168	CHN	CHN	1	K	22-17	94.0E	125E07 47N34		2.30	0.80	158	090E 095E	1 CHN-15	A066 A143 A206
0169	CHN	CHN	1	K	22-17	94.0E	118E48 36N47		0.96	0.60	017	085E 095E	1 CHN-16	A066 A144 A206
0170	CHN	CHN	1	K	22-17	94.0E	120E06 32N42		1.26	0.60	150	085E 095E	1 CHN-17	A066 A145 A206
0171	CHN	CHN	1	K	22-17	94.0E	116E58 32N02		0.93	0.60	136	085E 095E	1 CHN-18	A066 A146 A206
0172	CHN	CHN	1	K	22-17	94.0E	120E46 29N11		0.73	0.61	150	085E 095E	1 CHN-19	A066 A147 A206
0173	CHN	CHN	1	K	22-17	94.0E	116E02 27N16		1.18	0.66	105	085E 095E	1 CHN-20	A066 A148 A206
0174	CHN	CHN	1	K	22-17	94.0E	118E35 25N52		0.84	0.70	084	085E 095E	1 CHN-21	A066 A149 A206
0175	CHN	CHN	1	K	22-17	94.0E	120E23 22N34		1.37	0.82	058	085E 095E	1 CHN-22	A066 A150 A206
0176	CHN	CHN	1	K	22-17	79.0E	114E16 33N53		1.05	0.60	149	075E 085E	1 CHN-23	A066 A151 A206
0177	CHN	CHN	1	K	22-17	79.0E	112E23 30N43		1.04	0.65	155	075E 085E	1 CHN-24	A066 A152 A206
0178	CHN	CHN	1	K	22-17	79.0E	111E52 27N43		1.05	0.61	121	075E 085E	1 CHN-25	A066 A153 A206
0179	CHN	CHN	1	K	22-17	94.0E	112E25 22N05		1.87	0.87	035	085E 095E	1 CHN-26	A066 A154 A206
0180	CHN	CHN	1	K	22-17	94.0E	113E23 13N23		3.45	1.86	086	085E 095E	1 CHN-27	A066 A155 A206
0181	CHN	CHN	1	K	22-17	79.0E	108E21 24N07		1.09	0.82	145	075E 085E	1 CHN-28	A066 A156 A206
0182	CHN	CHN	1	K	22-17	79.0E	108E43 35N10		1.15	0.67	112	075E 085E	1 CHN-29	A066 A157 A206
0183	CHN	CHN	1	K	00-19	64.0E	104E54 38N59		1.22	0.60	134	055E 065E	1 CHN-30	A066 A158 A206
0184	CHN	CHN	1	K	00-19	64.0E	100E55 37N56		2.42	0.72	149	055E 065E	1 CHN-31	A066 A159 A206
0185	CHN	CHN	1	K	00-19	64.0E	95E50 35N31		1.83	0.93	161	055E 065E	1 CHN-32	A066 A160 A206
0186	CHN	CHN	1	K	00-19	64.0E	103E04 30N12		1.76	0.95	146	055E 065E	1 CHN-33	A066 A161 A206
0187	CHN	CHN	1	K	22-17	79.0E	106E35 26N40		0.86	0.66	004	075E 085E	1 CHN-34	A066 A162 A206
0188	CHN	CHN	1	K	00-19	64.0E	101E50 25N55		1.59	0.93	120	055E 065E	1 CHN-35	A066 A163 A206

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0052	NZL	CKH	4	B	21-13	155.0E	160W15	19S36	0.90	0.60	155		1 CKH	A068 A112 B017
0053	NZL	CKN	4	B	21-13	155.0E	162W34	11S00	1.30	0.60	030		1 CKN	A068 A112 B017
0219	CLN	CLN	4	B	23-19	47.5E	80E38	07N41	00.6			035E 079E	0	
0300	IFB	CME	5			22.5W	12E48	05N48	2.49	1.18	093			
0130	E	CNR	5	G	00-24	25.0W	15W44	28N24	1.06	0.60	002	026W 011W	1	A002 A190 B017
0235	COG	COG	5	K1	00-24	10.0W	14E48	00S48	1.89	1.00	067		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0207	COM	COM	4	K	04-21	25.0E	44E09	12S04	00.6			010E 030E	0	
0301	IFB	CPV	5			52.5W	24W00	15N40	00.6					
0237	CTI	CTI	5	K1 SECAM	00-24	28.0W	05W30	07N30		1.60	1.22	102 040W 015W	2 CTI	
0083	CVA	CVA	3	G PAL	00-24	28.0W	12E26	41N54	00.6			016W 031W	1 CVA-1	A211
0084	CVA	CVA	1	G PAL	00-24	28.0W	12E26	41N54	00.6			016W 031W	1 CVA-2	A211
0085	CVA	CVA	1	G PAL	00-24	28.0W	03E18	42N30		2.20	0.90	165 016W 031W	1 CVA-3	A211
0086	CYP	CYP	5	B G	02-24	16.0W	33E24	35N08	00.6			016W 011W	2 CYP	A178 A223
0087	D	D	4	G PAL	00-24	15.0W	09E34	50N35		1.42	0.68	149 005W 015W	0	A042 A043 A044
0088	D	D	1	G PAL	00-24	15.0W	10E07	49N09		1.86	0.94	153 005W 015W	0	A042 A045 A046

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0233	DAH	DAH	5	K1 SECAM	00-24	22.0W	02E11 09N17		1.14	0.65	087	020W 007W		
0216	DDR	DDR	5	B G SECAM	05-24	10.0W	12E22 52N07		0.83	0.60	154	010W 020W	1	
0089	DNK	DNK	3	G PAL	00-24	0.0E	12E18 57N12		1.20	0.60	177	000E 004E	2 DNK	A010 A108
0090	DNK	DNK	2	G PAL	00-24	0.0E	17E00 61N30		2.00	1.00	010	000E 004E	2 DNK	A011 A108 A192
0091	DNK	DNK	5	G PAL	00-24	0.0E	19W30 61N00		2.20	0.80	004	000E 004E	2 DNK	A012 A109 A194
0129	E	E	5	G	00-24	25.0W	03W00 39N45		1.93	0.99	164	026W 011W	1	A001 B017
0026	EGY	EGY	5	B G SECAM	00-24	4.0W	29E00 26N21		2.23	1.34	134	000E 010W	1	B017
0092	ETH	ETH	5	B G	00-24	14.0E	39E00 10N00		2.60	1.60	130		2 ETH	B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0093	F	F	5	L SECAM	00-24	15.0W	03E15 45N55		2.32	0.90	150	024W 015W	2 F	A056 A221
0094	F	F		SUP										
0193	FJI	FJI	3	B G	18-13	150.0E	179E30 17S48		0.78	0.76	133		1	B017
0103	FNL	FNL	3	G PAL	00-24	0.0E	23E30 63N30		1.40	0.70	165	000E 004E	2 FNL	A005 A104 A193
0104	FNL	FNL	2	G PAL	00-24	0.0E	17E00 61N30		2.00	1.00	010	000E 004E	2 FNL	A006 A104 A192
0027	G	G	5	I PAL	00-24	26.0W	03W37 53N58		1.64	0.83	149	030W 015W	1	A035 A036 A215
0260	GAB	GAB	5	K1	00-24	15.0W	11E50 00S42		1.40	1.12	080	008W 030W	0	
0108	GHA	GHA	5	B G PAL	05-24	28.0W	01W30 07N50		1.50	0.96	101	022W 042W	2 GHA	A195

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0302	IFB	GMB	5			50.0W	15W12	13N25 00.6						
0303	IFB	GNE	5			15.0W	10E30	01N40 00.6						
0304	IFB	GNP	5			50.0W	14W23	12N05 00.6						
0105	GRC	GRC	5	B G	02-24	16.0W	24E53	38N12	1.60	0.92	159	018W 011W	2 GRC	A003 A004 A178
0192	GUI	GUI	5	K1	00-24	34.0W	11W11	10N16	1.37	1.02	141		0	
N 0331	USA	GUM	5	M NTSC	00-24	125.0E	145E00	16N00	1.20	0.60	085	110E 125E	0 GUM-1	
N 0332	USA	GUM	5	M NTSC	00-24	120.0E	150E00	05N50	5.20	1.50	178	110E 125E	0 GUM-2	
N 0333	USA	GUM	5	M NTSC	00-24	145.0E	167E00	08N00 01.5				125E 150E	0 GUM-3	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0106	HNG	HNG	5	K SECAM	07-24	10.0W	19E30 47N00		0.80	0.50	152	010W 020W	2 HNG	
0213	HOL	HOL	5	G	00-24	15.0W	05E06 51N36		0.70	0.60	165	018W 010W	2 HOL	A105
0107	HVO	HVO	5	K1	00-24	28.0W	01W50 12N00		1.50	1.20	015	035W 010W	0	A034 A200 B017
0082	I	I	5	G PAL	00-24	16.0W	12E27 40N46		2.34	1.00	142	011W 018W	1	A033 A222
0037	IND	IND	4	B PAL	22-19	70.0E	93E00 26N00		1.40	0.90	040	062E 077E	1 IND-1	A027
0038	IND	IND	4	B PAL	22-19	62.5E	75E54 33N24		1.30	0.90	033	055E 070E	1 IND-2	A027
0039	IND	IND	4	B PAL	22-19	62.5E	72E48 11N12		0.90	0.80	105	055E 070E	1 IND-3	A027
0040	IND	IND	4	B PAL	22-19	62.5E	73E06 24N48		1.80	1.30	044	055E 070E	1 IND-4	A027
0041	IND	IND	4	B PAL	22-19	65.0E	77E36 15N42		1.80	1.10	041	057E 072E	1 IND-5	A027
0042	IND	IND	4	B PAL	22-19	65.0E	79E06 27N18		1.70	0.80	143	057E 072E	1 IND-6	A027
0043	IND	IND	4	B PAL	22-19	65.0E	77E48 10N54		1.40	1.00	040	057E 072E	1 IND-7	A027
0044	IND	IND	4	B PAL	22-19	65.0E	80E00 23N24		2.00	1.30	150	057E 072E	1 IND-8	A027
0045	IND	IND	4	B PAL	22-19	62.5E	76E36 19N42		1.60	1.00	043	055E 070E	1 IND-9	A027
0046	IND	IND	4	B PAL	22-19	70.0E	84E30 20N48		1.30	0.80	043	062E 077E	1 IND-10	A027
0047	IND	IND	4	B PAL	22-19	70.0E	93E06 10N48		1.50	0.80	095	062E 077E	1 IND-11	A027
0048	IND	IND	4	B PAL	22-19	70.0E	86E06 25N06		1.50	0.90	164	062E 077E	1 IND-12	A027

01	02	03	04	05	06	07	08	09	10	11	12	13		14		15
0028	INS	INS	4	B PAL	23-18	83.0E	101E14	00N05	2.60	1.20	133			1	INS-1	B017
0030	INS	INS	4	B PAL	23-18	83.0E	113E18	07S55	2.40	0.70	167			1	INS-3	B017
0032	INS	INS	4	B PAL	22-17	83.0E	113E20	00N15	1.80	1.80	075			1	INS-5	B017
0035	INS	INS	4	B PAL	21-16	110.0E	124E10	03S06	2.40	1.70	082			1	INS-8	B017
0036	INS	INS	4	B PAL	21-16	110.0E	135E43	04S30	2.20	1.70	127			1	INS-9	B017
0211	IRL	IRL	5	I	00-24	26.0W	08W15	53N15	0.72	0.60	171	030W	015W	1		A103 A167
0109	IRN	IRN	5	B G	04-22	35.0E	54E30	33N00	3.54	1.58	150	030E	045E	1		
0256	IRQ	IRQ	4			22.5E	43E40	33N00	1.82	0.91	154			0		
0049	ISL	ISL	5	G PAL	00-24	25.0W	19W20	64N58	1.00	0.60	004	020W	030W	1	ISL-1	A073
0050	ISL	ISL	5	G PAL	00-24	0.0E	19W30	61N00	2.00	0.60	004	000E	004E	1	ISL-2	A028 A029 A213
0110	ISR	ISR	4	B G	04-23	7.5E	34E45	31N30	00.6			004E	025W	0		

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0111	J	J	8	M	21-16	110.0E	134E41 31N59		3.40	2.90	046		1 J RYU	
0224	JOR	JOR	5	B PAL	00-24	7.5E	36E15 31N45		0.86	0.60	130		0	A113
0249	KEN	KEN	5	B G PAL	05-22	15.0E	37E55 00N42		2.15	1.43	095	010E 020E	2 KEN	A123 A207 A220
0112	KOR	KOR	6	M	00-24	104.0E	128E10 35N41		1.30	1.20	008	098E 110E	1	A018 A203
0286	KRE	KRE	5	D PAL	00-24	104.0E	127E02 39N47		1.00	0.82	056	085E 110E		A197
0113	KWT	KWT	6	B G PAL	04-22	20.0E	47E42 29N22	00.0				019E 010W	2 KWT	
0326	KWT	KWT	1	B G PAL	04-22	20.0E	50E30 24N54		4.48	0.99	139		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0284	LAO	LAO	5	D K	19-16	75.0E	103E50	18N00	1.80	0.60	130	065E 090E	0	
0279	LBN	LBN	5	G PAL	00-24	15.0E	36E00	34N00	00.6				0	
0244	LBR	LBR	4	B G	00-24	45.0W	09W24	00N24	0.91	0.41	123		0	A121
0280	LBY	LBY	5	B G	00-24	20.0W	18E54	25N42	2.62	1.66	140		0	A186
0321	LBY	LBY	5	B G	00-24	20.0W	13E00	27N12	2.20	1.23	139		0	
0253	LIE	LIE	5	G PAL	00-24	15.0W	09E34	47N08	00.6			002E 022W	0	A128
0305	IFB	LSO	5			7.5E	28E07	29S34	00.6					

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0114	LUX	LUX	5	B G L	00-24	16.0W	06E04	49N47	00.6			024W 010W	0	A019 A218
0242	MAU	MAU	5	B SECAM	00-21	35.0E	60E00	19S00	01.3			030E 050E	1 MAU-1	A119 A120 A224
0243	MAU	MAU	4	B SECAM	00-21	35.0E	57E00	14S00	01.3			030E 050E	1 MAU-2	A119 A120 A224
0116	MCO	MCO	3	L SECAM	00-24	28.0W	07E25	43N43	00.6	___	___	___ 031W 016W	1 MCO-1	A008 A216
0117	MCO	MCO	2	L SECAM	00-24	28.0W	07E25	43N45		1.30	0.60	150 031W 016W	1 MCO-2	A007 A216
0236	MDG	MDG	5	K1	00-24	26.0E	46E33	18S50		2.74	1.06	064 010E 030E	0	
0227	MLA	MLA	4	B G	22-18	80.0E	102E11	04N02		1.40	0.60	115 075E 085E	1 MLA-W	A114
0228	MLA	MLA	4	B G	22-18	80.0E	114E31	03N49		2.00	0.90	045 075E 085E	1 MLA-E	
0306	MLD	MLD	2			45.0E	73E10	03N15		2.26	0.42	092		

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0327	MLI	MLI	5	K1	00-24	34.0W	02W15 19N20		2.53	1.11	142	034W 016W	2 MLI	
0328	MLI	MLI	5	K1	00-24	34.0W	06W36 13N21		1.79	1.08	161	034W 016W	0	
0147	MLT	MLT	4	H	08-22	15.0W	14E25 35N55	00.6					0	
0248	MNG	MNG	5	D K	01-17	80.0E	102E44 46N56		3.10	1.20	173	070E 080E	2 MNG	
0307	MOZ	MOZ	5			0.0E	34E30 17N30		3.22	1.22	058			
0209	MRC	MRC	5	B SECAM	00-24	22.0W	09W08 29N24		2.72	1.47	047	030W 020W	1	A189 B017
0292	MRC	MRC	5	B SECAM	00-24	30.0W	09W08 29N24		2.72	1.47	047	035W 025W	0	
0223	MTN	MTN	5	K1	06-02	34.0W	12W16 19N00		2.50	1.30	152	020W 035W	2 MTN	A116 A188
0288	MTN	MTN	5	K1	06-02	34.0W	07W20 23N55		1.70	0.82	152	020W 035W		A188
0293	MTN	MTN		SUP										
0294	MTN	MTN		SUP										

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0308	IFB	MWI	5			7.5E	33E55 13S02		1.41	0.45	089			
0098	F	MYT	5	K1 SECAM	00-24	30.0E	45E06 12S50	00.6				025E 040E	1	A060
0100	F	NCL	4	K1 SECAM	00-24	140.0E	166E00 21S00		1.14	0.72	146	140E 155E	1	A062
0115	NGR	NGR	5	K	00-24	28.0W	08E12 16N48		2.44	2.00	056	030W 000W	0	B006 B017
0128	G	NHB	4			140.0E	168E03 16S57		1.03	0.60	095	140E 155E	0	A037 B017
0119	NIG	NIG	5	B G	05-24	22.0W	07E48 10N00		1.78	1.27	085	022W 030W	2 NIG	A171

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0054	NZL	NIU	2	B	21-13	155.0E	169W54	19S00	00.6				1 NIU	A068 A112
0025	AFS	NMB	4	I PAL	04-22	15.0W	17E45	21S03	2.24	1.63	054		1	B017
0120	NOR	NOR	3	G PAL	00-24	0.0E	14E09	64N37	1.53	0.93	018	000E 004E	1 NOR-1	A009
0121	NOR	NOR	2	G PAL	00-24	0.0E	17E00	61N30	2.00	1.00	010	000E 004E	2 NOR-2	A009 A192 A219
0122	NPL	NPL	3		23-19	52.5E	84E00	28N03	1.17	0.60	154		2 NPL	B004 B017
0309	IFB	NRU	4			135.0E	166E33	00S18	00.6					
0055	NZL	NZL	4	B	20-12	155.0E	173E00	40S00	2.40	0.90	040		1 NZL-1	A068 A112 B017
0287	NZL	NZL	3	B	20-12	130.0E	173E30	41S30	2.50	1.00	038		0	A199

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0101	F	OCE	4	K1 SECAM	00-24	160.0W	144W30 16S00		3.85	3.27	176	165W 155W	1	A063 B017
0123	OMA	OMA	5	B G	05-22	20.0E	55E00 21N00		1.49	1.12	098		0	B007
0127	PAK	PAK	3	B PAL	00-21	40.0E	69E42 29N51		2.19	1.88	014	035E 045E	2 PAK-5	
0210	PAK	PAK	2	B PAL	00-21	40.0E	71E51 30N45		0.93	0.64	102	035E 045E	2 PAK-3	B009
0281	PAK	PAK	2	B PAL	00-21	40.0E	65E06 28N15		1.32	1.20	076	035E 045E	2 PAK-1	
0282	PAK	PAK	2	B PAL	00-21	40.0E	67E57 26N30		1.23	0.48	143	035E 045E	2 PAK-2	
0283	PAK	PAK	2	B PAL	00-21	40.0E	74E42 33N54		1.14	0.93	160	035E 045E	2 PAK-4	
0285	PHL	PHL	5	M NTSC	21-17	98.0E	122E00 12N30		2.87	1.63	102		2 PHL	
N 0336	USA	PHX	5	M NTSC	00-24	170.0E	172W05 04S00	00.6				175E 150E	0	
N 0337	USA	PLM	5	M NTSC	00-24	170.0E	162W01 06S00	00.6				175E 150E	0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0131	PNG	PNG	4	B G	19-15	110.0E	147E30	06S30	2.31	2.03	139		1	B016 B017
0271	PNG	PNG	3	B G	19-15	128.0E	148E00	06S42	2.80	2.05	155		0	A196
0132	POL	POL	5	D K	04-24	10.0W	19E20	52N00	1.40	0.60	158	005W 010W	2 POL	
0133	POR	POR	5	G	00-24	26.0W	08W01	39N36	0.98	0.58	101	026W 033W	2 POR	A020
0247	QAT	QAT	4	B PAL	06-21	20.0E	51E12	25N12	00.6				0	
0097	F	REU	5	K1 SECAM	00-24	30.0E	55E15	19S30	1.30	0.80	110	030E 045E	1	A064 B017
0135	RHS	RHS	5	B	16-22	0.0E	29E00	18S30	1.29	0.85	087		2 RHS	B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0136	ROU	ROU	5	D K	04-24	10.0W	24E33	45N25	1.30	0.80	171	005E 015W	1 ROU-1	A022
0310	IFB	RRW	5			0.0E	30E02	01S21 00.6						
0138	S	S	3	B G PAL	00-24	0.0E	16E08	61N01	1.12	0.90	144	000E 004E	1 S-1	A013 A014 A195
0139	S	S	2	B G PAL	00-24	0.0E	17E00	61N30	2.00	1.00	010	000E 004E	1 S-2	A013 A015 A192
0230	SDN	SDN	5	B G PAL	04-24	4.0W	29E00	07N45	2.17	1.00	141	000W 016W	2 SDN-1	A115 A179 A210
0231	SDN	SDN	5	B G PAL	04-24	4.0W	30E00	12N45	2.40	1.50	164	000W 016W	2 SDN-2	A115 A179 A210
0232	SDN	SDN	5	B G PAL	04-24	4.0W	30E03	18N42	2.06	1.55	159	000W 016W	2 SDN-3	A115 A179 A210
0222	SEN	SEN	5	K1	08-24	34.0W	14W42	13N48	1.20	0.88	139	025W 045W	2 SEN	
N 0335	USA	SMA	5	M NTSC	00-24	170.0E	170W00	14S14 00.6				175E 150E	0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0057	NZL	SMO	4	B	21-13	155.0E	172W06	13S45	00.6				1 SMO	A068 B017
0311	SMR	SMR	5			7.5W	12E18	43N33	00.6					
0151	SNG	SNG	4	B G PAL	21-19	74.0E	103E49	01N22	00.6			065E 085E	2 SNG	A168
0312	IFB	SOM	5			15.0E	44E45	06N30		3.42	1.07 081			
0259	SRL	SRL	5	B G	16-01	45.0W	11W50	08N30	00.6				0	
0241	STP	STP	5		17-01	22.5W	06E48	00N51	00.6				0	A118

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0140	SUI	SUI	5	G PAL	00-24	16.0W	08E17	46N40	0.98	0.70	099	005W 015W	0	A038 A039
0141	SUI	SUI			SUP									
0313	IFB	SWZ	5			0.0E	30E50	26S20	00.6					
0229	SYR	SYR	5	B PALSECAM	06-24	15.0E	38E00	34N50	0.98	0.60	019		0	
0143	TCD	TCD	5	K	00-24	10.0W	18E06	15N00	3.36	1.70	101	025W 010E	0	A023 B017
0144	TCH	TCH	5	K SECAM	05-24	10.0W	17E18	49N18	1.30	0.60	167	010W 021W	1	A024
0225	TGK	TGK	4	G PAL	02-22	10.0E	34E30	05S55	2.18	1.62	121	010W 018E	0	A207

01	02	03	04	05	06	07	08	09	10	11	12	13		14		15
0226	TGO	TGO	5	K1 SECAM	00-24	28.0W	00E54	08N42	1.20	0.60	104	030W	008W	0		
0142	THA	THA	4	B G PAL	22-19	67.5E	100E52	13N08	2.50	1.18	104	065E	080E	2	THA	B017
0058	NZL	TKL	2	B	21-13	155.0E	172W22	09S15	00.6					1	TKL	A068 B017
0215	TON	TON	4	B	22-14	170.0E	175W00	19S00	1.36	0.60	070			1		B017
0150	TUN	TUN	5	B G	00-24	22.0W	09E27	34N01	1.34	0.60	115	023W	015W	1		A107 A208
0272	TUN	TUN	2	B G	00-24	22.0W	05E30	32N00	3.32	1.42	167			2	TUN	A170 A209
0145	TUR	TUR	5	B G PAL	00-24	4.0W	034E16	38N58	2.42	0.94	165	004W	006E	1	TUR	A072

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0274	UAE	UAE	4	B G PAL	03-21	20.0E	53E30 24N06		0.78	0.70	168			A183
0051	UGA	UGA	5	G PAL	05-22	0.0E	32E15 01N45		1.50	0.95	065		1	A207 B017
0063	URS	UKR	3	D K	06-22	20.0E	31E10 48N34		2.10	0.80	171	010E 020E	1 UKR	A096
0059	URS	URS	4	D K	06-22	20.0E	36E04 47N05		3.70	1.50	153	010E 020E	1 URS-1	A074 A075
0060	URS	URS	4	D K	06-22	20.0E	44E01 61N19		2.30	1.30	156	010E 020E	1 URS-2	A078 A100
0061	URS	URS	6	D K	06-22	20.0E	24E47 56N55		0.80	0.60	005	010E 020E	1 URS-9	A076
0064	URS	URS	6	D K	05-21	20.0E	45E04 41N14		1.50	0.60	156	010E 020E	1 URS-10	A079
0065	URS	URS	1	D K	06-22	20.0E	33E26 63N63		1.05	0.60	160	010E 020E	1 URS-11	A077
0066	URS	URS	6	D K	04-20	50.0E	65E23 45N50		3.70	2.00	174	040E 050E	1 URS-3	A082
0067	URS	URS	4	D K	04-20	50.0E	65E15 61N46		2.70	1.30	179	040E 050E	1 URS-4	A075 A081
0068	URS	URS	2	D K	04-20	50.0E	58E45 39N04		2.20	0.90	164	040E 050E	1 URS-13	A101
0069	URS	URS	2	D K	03-19	50.0E	70E59 38N35		1.10	0.60	163	040E 050E	1 URS-16	A085
0070	URS	URS	2	D K	03-19	50.0E	74E29 41N02		1.10	0.60	179	040E 050E	1 URS-17	A086
0071	URS	URS	2	D K	04-20	50.0E	64E08 41N32		2.30	0.90	165	040E 050E	1 URS-14	A083
0072	URS	URS	1	D K	03-19	50.0E	73E02 62N34		1.80	0.70	172	040E 050E	1 URS-15	A084
0073	URS	URS	1	D K	04-20	50.0E	55E20 64N13		1.40	0.60	006	040E 050E	1 URS-12	A080
0074	URS	URS	4	D K	02-18	80.0E	92E06 60N21		2.10	1.50	005	070E 080E	1 URS-5	A087 A100
0075	URS	URS	1	D K	02-18	80.0E	93E32 51N16		1.40	0.60	179	070E 080E	1 URS-18	A088
0076	URS	URS	1	D K	02-18	80.0E	99E29 64N15		1.40	0.60	165	070E 080E	1 URS-19	A089
0077	URS	URS	6	D K	01-17	110.0E	113E43 59N18		2.10	1.80	031	100E 110E	1 URS-6	A091 A100
0078	URS	URS	1	D K	01-17	110.0E	107E23 53N45		1.70	0.70	011	100E 110E	1 URS-20	A090
0079	URS	URS	6	D K	23-15	140.0E	138E27 58N49		2.60	1.50	062	130E 140E	1 URS-7	A092 A100
0080	URS	URS	4	D K	22-14	140.0E	156E55 56N30		2.40	2.00	018	130E 140E	1 URS-8	A093 A102
0081	URS	URS	1	D K	20-12	140.0E	169E04 65N02		1.50	0.60	168	130E 140E	1 URS-21	A094

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0325	IFB	VTN	4			75.0E	105E11	15N32		2.81	1.26	116	0	
N0334	USA	WAK	5	M	NTSC	00-24	140.0E	167E00	19N00	00.6			125E 145E	0	
0102	F	WAL	4	K1	SECAM	00-24	140.0E	177W27	13S21		0.79	0.60	066	140E 155E	1	A065
0266	YEM	YEM	5	B	SECAM	00-24	15.0E	47E18	15N30		1.98	1.24	002		0	
0267	YMS	YMS	5	B		03-21	15.0E	47E18	15N48		1.60	0.96	025		0	
0329	YMS	YMS	5	B		03-21	15.0E	51E33	15N45		1.93	0.51	120		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0148	YUG	YUG	5	B G PAL	00-24	10.5W	18E32 43N55		1.64	0.60	153	010W 014W	1	A026
0149	YUG	YUG	5	B G PAL	00-24	10.5W	18E32 43N55		1.64	0.60	153	010W 014W	1	A026
0322	ZAI	ZAI	5	K1 SECAM	00-24	15.0W	23E50 00S30		2.25	2.00	045		0	
0323	ZAI	ZAI	5	K1 SECAM	00-24	15.0W	21E48 07S06		2.81	2.03	144		0	
0314	ZMB	ZMB	5	B PAL	06-22	10.0W	27E48 13S13		2.22	1.38	044	015E 005W	0	

PARTIE B - PART B - PARTE B

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0001	ARG	ARG	5	N	00-24	105.0W	66W00	43S15	3.11	1.00	031		1 ARG-1	A055 B017
0002	ARG	ARG	5	N	00-24	105.0W	64W45	30S45	3.94	1.12	043		1 ARG-2	A055 B017
0234	HOL	ATN	5	M	07-05	97.5W	69W03	12N19 00.6					1	A117 A175
0268	HOL	ATN	5	M	07-05	97.5W	63W04	18N01 00.6					1	A117 A176
0194	B	B	5	M PAL	13-06	100.0W	70W30	07S40	1.30	1.10	110	119W 098W	1 B-1	A169 B011 B012
0195	B	B	5	M PAL	12-05	100.0W	67W50	03S10	2.30	0.80	094	117W 094W	1 B-2	A169 B011 B012
0196	B	B	5	M PAL	12-05	100.0W	62W30	01S30	2.30	0.80	086	112W 089W	1 B-3	A169 B011 B012
0197	B	B	5	M PAL	12-05	100.0W	57W30	03S10	2.30	0.80	086	107W 084W	1 B-4	A169 B011 B012
0198	B	B	5	M PAL	12-05	90.0W	52W20	02S20	2.30	0.80	086	102W 079W	1 B-5	A169 B011 B013
0199	B	B	5	M PAL	12-05	100.0W	58W45	11S45	1.50	1.20	157	102W 091W	1 B-6	A169 B011 B012
0200	B	B	5	M PAL	12-05	90.0W	55W45	19S00	1.50	1.20	086	100W 085W	1 B-7	A169 B011 B013
0201	B	B	5	M PAL	11-04	90.0W	47W20	04S30	1.60	1.10	081	095W 075W	1 B-8	A169 B011 B013
0202	B	B	5	M PAL	11-04	90.0W	49W15	13S00	2.30	0.80	070	098W 077W	1 B-9	A169 B011 B013
0203	B	B	5	M PAL	11-04	80.0W	40W40	07S00 01.3				087W 070W	1 B-10	A169 B014
0204	B	B	5	M PAL	11-04	80.0W	41W30	12S30	1.50	1.20	068	088W 071W	1 B-11	A169 B011 B014
0205	B	B	5	M PAL	11-04	80.0W	45W20	20S00	1.80	1.00	049	089W 077W	1 B-12	A169 B011 B014
0206	B	B	5	M PAL	11-04	90.0W	52W50	27S50	2.30	0.80	057	096W 082W	1 B-13	A169 B011 B013
0019	BOL	BOL	2	B PAL	00-24	85.0W	64W30	14S30	2.28	1.41	130		0	B010 B017
0273	BOL	BOL	2	B PAL	00-24	85.0W	66W00	18S15	2.28	1.41	130		0	

01	02	03	04	05	06	07	08	09	10	11	12	13		14	15
0189	CAN	CAN		M NTSC										1	A032
0208	CHL	CHL	4	M	12-06	110.0W	70W30	25S50	5.77	0.64	082	110W	120W	2 CHL	A097 B017
0263	CHL	CHL	4	M	12-06	115.0W	71W30	41S50	3.47	0.60	035	110W	120W		
0264	CHL	CHL	4	M	12-06	115.0W	68W90	56S00	0.75	0.60	029	110W	120W		
0265	CHL	CHL	4	M	12-06	115.0W	109W50	27S10 00.6				110W	120W		
0289	CLM	CLM	5		00-24	100.0W	74W00	05N00	3.20	1.80	107				A191
0324	CLM	CLM	5		00-24	100.0W	81W00	12N00 00.6							
0218	CUB	CUB	5	M NTSC	11-06	110.0W	79W15	21N15	1.50	0.60	161	115W	105W	1 CUB	B015 B017
0276	EQA	EQA	5	M	00-24	95.0W	84W00	02S00	3.20	1.20	180			0	A181
0277	EQA	EQA	5	M	00-24	95.0W	78W00	02S00 01.1						0	A182
0278	EQA	EQA	5	M	00-24	95.0W	91W00	01S00 00.6						0	A182

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0095	F	GDL	4	K1 SECAM	00-24	75.0W	61W45 16N12		1.08	0.42	123	085W 070W	1 GDL	A058
0152	DNK	GRL	5	G PAL	00-24	60.0W	53W18 65N36		1.80	0.60	159	055W 060W	1	A016 A110
0153	DNK	GRL	5	G PAL	00-24	60.0W	31W00 68N00	00.6				055W 060W	1	A017 A110
0290	GTM	GTM	5	M	00-24	105.0W	90W00 16N00	00.8					0	
0291	GTM	GTM	5	M	00-24	105.0W	87W00 14N00		2.20	1.00	136		0	
0096	F	GUF	4	K1 SECAM	00-24	75.0W	53W25 03N50		1.04	0.80	085	080W 060W	2 GUF	A059
0190	MEX	MEX	8	M NTSC	11-07	140.0W	107W15 26N45		3.35	1.31	141		1 MEX-1	B017
0191	MEX	MEX	8	M NTSC	11-07	125.0W	97W21 19N00		2.64	1.81	160		1 MEX-2	B017
0257	PRG	PRG	5	N	00-24	83.0W	59W00 22S50		1.63	0.91	106		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0221	SLV	SLV	1	M	12-06	88.9W	88W54	13N42	00.6		147		0	B017
0254	F	SPM	4	K1 SECAM	00-24	75.0W	56W20	46N54	00.6			086W 075W	2 SPM	
0214	SUR	SUR	5	M	06-04	90.0W	55W99	03N65		1.06	0.68 088		2 SUR	B017
0217	VEN	VEN	4	M	09-06	105.0W	66W00	07N00		2.55	1.60 124	060W 073W	0	

Annexe N° 3 au
Document N° 103(Rev.2)-F/E/S
1 février 1977

COMMISSION 5
COMMITTEE 5
COMISIÓN 5

Note du Président de la Commission 5 (Planification)
Note by the Chairman of Committee 5 (Planning)
Nota del Presidente de la Comisión 5 (Planificación)

LISTE DES POINTS DE MESURE
(en degrés et centièmes de degrés)

LIST OF TEST POINTS
(in degrees and hundredths)

LISTA DE PUNTOS DE PRUEBA
(en grados y centésimas de grado)

-07310	-4860	=	07310W	4860S
03750	3200	=	03750E	3200N
12450	-1550	=	12450E	1550S
-00205	4917	=	00205W	4917N

Au 1 février 1977
As at 1 February 1977
Al 1.° de febrero de 1977

ARCHIVES U.I.T. GENÈVE

ARG	0001	1	-07310	-4860
ARG	0001	2	-07200	-4150
ARG	0001	3	-06000	-5280
ARG	0001	4	-06900	-5300
ARG	0001	5	-06500	-5500
ARG	0001	6	-06630	-3750
ARG	0002	1	-06600	-2220
ARG	0002	2	-05760	-2520
ARG	0002	3	-07100	-3208
ARG	0002	4	-07250	-3900
ARG	0002	5	-05400	-2590
ARG	0002	6	-05650	-3700
ARS	0003	1	04000	3200
ARS	0003	2	03700	3000
ARS	0003	3	05550	2400
ARS	0003	4	05000	1850
ARS	0003	5	05650	2000
ARS	0003	6	05000	2850
AUS	0004	1	12450	-1550
AUS	0004	2	11670	-2070
AUS	0004	3	11460	-2880
AUS	0004	4	11590	-3200
AUS	0004	5	12660	-3100
AUS	0004	6	12830	-1780
AUS	0005	1	13080	-1250
AUS	0005	2	13170	-2530
AUS	0005	3	13790	-1720
AUS	0005	4	12900	-1650
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AUS	0006	1	14100	-3210
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AUS	0008	6	15340	-2800
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AUS	0009	5	14470	-3610
AUS	0009	6	14100	-3400
AUT	0016	1	01716	4800
AUT	0016	2	01500	4906
AUT	0016	3	01305	4825
AUT	0016	4	00949	4728
AUT	0016	5	01092	4678
AUT	0016	6	01460	4640
AUT	0017	1	01650	4700
AUT	0017	2	01717	4800
AUT	0017	3	01120	5450
AUT	0017	4	00600	4600
AUT	0017	5	00590	5075
AUT	0017	6	00900	4570
BEL	0018	1	00250	5100
BEL	0018	2	00340	5140
BEL	0018	3	00480	5150
BEL	0018	4	00580	5120
BEL	0018	5	00640	5030
BEL	0018	6	00560	4950
BEL	0018	7	00560	4950
BEL	0018	8	00420	5000
BOL	0019	1	-06500	-1220
BOL	0019	2	-06550	-0980
BOL	0019	3	-06900	-1120
BOL	0019	4	-06000	-1610
BOL	0019	5	-05750	-1800
BOL	0019	6	-06780	-2280
BUL	0020	1	02260	4430
BUL	0020	2	02870	4380
BUL	0020	3	02240	4230
BUL	0020	4	02810	4200
BUL	0020	5	02300	4130
BUL	0020	6	02530	4120
AFS	0021	1	03000	-2210
AFS	0021	2	03250	-2700
AFS	0021	3	02400	-2300
AFS	0021	4	02000	-2500
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AFS	0021	6	01820	-3420
AFS	0022	1	03060	-3040
AFS	0022	2	02900	-3000
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AFS	0022	4	02710	-3050
AFS	0022	5	02710	-3350
AFS	0022	6	02680	-3250
AFS	0023	1	03200	-2560
AFS	0023	2	03150	-2450
AFS	0023	3	02890	-2870
AFS	0023	4	02930	-2960
AFS	0023	5	03020	-3120
AFS	0023	6	03300	-2800
AFS	0024	1	03100	-2240
AFS	0024	2	02900	-2250
AFS	0024	3	02950	-2450
AFS	0024	4	02270	-2640
AFS	0024	5	02700	-2910
AFS	0024	6	02900	-2850
NMB	0025	1	01200	-1700
NMB	0025	2	02100	-1800
NMB	0025	3	02500	-1760
NMB	0025	4	02100	-2200
NMB	0025	5	02000	-2840
EGY	0026	1	02480	3180
EGY	0026	2	02480	2180
EGY	0026	3	03370	2160
EGY	0026	4	03600	2330
EGY	0026	5	03500	2940
EGY	0026	6	03450	3170
G	0027	1	00138	5115
G	0027	2	-00205	4917
G	0027	3	00173	5248
G	0027	4	-00633	4990
G	0027	5	-00818	5447
G	0027	6	-00088	6085
INS	0028	1	09533	0550
INS	0028	2	10447	0093
INS	0028	3	10675	-0383
INS	0028	4	10675	-0592
INS	0028	5	10000	-0400
INS	0028	6	09650	-0000
INS	0030	1	10530	-0650
INS	0030	2	11400	-0583
INS	0030	3	12000	-0800
INS	0030	4	12000	-1050
INS	0030	5	11318	-1000
INS	0032	1	10818	-0292
INS	0032	2	10792	0375
INS	0032	3	11883	0375
INS	0032	4	11987	-0090
INS	0032	5	11990	-0300
INS	0032	6	11492	-0517
INS	0035	1	12817	-0368
INS	0035	2	12868	0080
INS	0035	3	12363	-1022
INS	0035	4	11947	-0515
INS	0035	5	11987	-0090
INS	0035	6	12550	0400
INS	0036	1	14065	-0262
INS	0036	2	14037	-0850
INS	0036	3	12800	-1000
INS	0036	4	13183	-0733
INS	0036	5	12817	-0368
INS	0036	6	13100	-0000
IND	0037	1	09300	2200
IND	0037	2	09160	2300
IND	0037	3	08980	2600
IND	0037	4	09150	2780
IND	0037	5	09600	2950
IND	0037	6	09710	2710
IND	0038	1	07390	3000
IND	0038	2	07360	3310
IND	0038	3	07250	3590
IND	0038	4	07460	3700
IND	0038	5	08030	3570
IND	0038	6	07900	3120
IND	0039	1	07190	1230
IND	0039	2	07370	1090
IND	0039	3	07300	0830
IND	0040	1	06780	2400
IND	0040	2	06950	2700
IND	0040	3	07350	3000
IND	0040	4	07620	2700
IND	0040	5	07680	2420
IND	0040	6	07310	2010
IND	0041	1	07360	1570
IND	0041	2	07830	1980
IND	0041	3	08490	1900
IND	0041	4	08020	1350
IND	0041	5	07680	1180
IND	0042	1	07870	2420
IND	0042	2	07450	2990
IND	0042	3	08100	3020
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HVO	0107	4	00000	1100
HVO	0107	6	-00550	1200
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IRL	0211	5	-00620	5220
IRL	0211	6	-00550	5430
HOL	0213	1	00310	5120
HOL	0213	2	00620	5060
HOL	0213	3	00720	5220
HOL	0213	4	00730	5330
HOL	0213	5	00660	5370
HOL	0213	6	00510	5340
SUR	0214	1	-05390	0590
SUR	0214	2	-05400	0220
SUR	0214	3	-05810	0170
SUR	0214	4	-05810	0420
SUR	0214	5	-05790	0500
SUR	0214	6	-05710	0610
TON	0215	1	-17563	-1566
TON	0215	2	-17376	-1597
TON	0215	3	-17403	-1862
TON	0215	4	-17472	-1995
TON	0215	5	-17520	-2113
DDR	0216	1	01250	5450
DDR	0216	2	01450	5340
DDR	0216	3	01500	5100
DDR	0216	4	01300	5050
DDR	0216	5	00990	5149
DDR	0216	6	01100	5400
VEN	0217	1	-06640	0100
VEN	0217	2	-06070	0450
VEN	0217	3	-06000	0850
VEN	0217	4	-06180	1070
VEN	0217	5	-07150	1170
VEN	0217	6	-07250	0730
CUB	0218	1	-08510	2159
CUB	0218	2	-08332	2341
CUB	0218	3	-07400	2000
CUB	0218	4	-08130	2336
CUB	0218	5	-07800	1932
CUB	0218	6	-07600	1926
CUB	0218	7	-08220	2300
CLN	0219	1	08000	1000
CLN	0219	2	07980	0750
CLN	0219	3	08100	0600
CLN	0219	4	08200	0740
BGD	0220	1	08980	2600
BGD	0220	2	08800	2700
BGD	0220	3	08800	2400
BGD	0220	4	08900	2200
BGD	0220	5	09250	2150
BGD	0220	6	09250	2500
SLV	0221	1	-09010	1330

SLV	0221	2	-08925	1430
SLV	0221	3	-08940	1400
SLV	0221	4	-08760	1380
SLV	0221	5	-08750	1300
SLV	0221	o	-08880	1315
SEN	0222	1	-01470	1770
SEN	0222	2	-01675	1610
SEN	0222	3	-01675	1420
SEN	0222	4	-01526	1240
SEN	0222	5	-01225	1110
SEN	0222	6	-01225	1675
MTN	0223	1	-01575	2400
MTN	0223	2	-01223	4500
MTN	0223	3	-00560	2000
MTN	0223	4	-00520	1530
MTN	0223	5	-01205	1445
MTN	0223	6	-01632	1602
JOR	0224	01	03450	2910
JOR	0224	02	03610	2900
JOR	0224	03	03810	3030
JOR	0224	04	03830	3330
JOR	0224	05	03500	3400
JOR	0224	06	03330	3110
TGK	0225	1	03050	-0100
TGK	0225	2	03400	-0100
TGK	0225	3	04000	-0500
TGK	0225	4	04000	-1050
TGK	0225	5	03500	-1150
TGK	0225	6	03000	-0600
TGO	0226	1	00120	0610
TGO	0226	2	00050	0690
TGO	0226	3	-00020	1110
TGO	0226	4	00070	1100
TGO	0226	5	00170	0920
TGO	0226	06	00190	0630
MLA	0227	1	10260	0620
MLA	0227	2	10540	0220
MLA	0227	3	10380	0120
MLA	0227	4	10130	0260
MLA	0227	5	09880	0620
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MLA	0228	1	10900	0240
MLA	0228	2	11700	0700
MLA	0228	3	11950	0520
MLA	0228	4	11360	0100
MLA	0228	05	11020	0060
SYR	0229	1	04220	3720
SYR	0229	2	04105	3430
SYR	0229	3	03690	3240
SYR	0229	4	03560	3300
SYR	0229	5	03590	3570
SYR	0229	6	03830	3700
SDN	0230	1	03600	0460
SDN	0230	2	03400	0850
SDN	0230	3	03000	1000
SDN	0230	4	02300	1100
SDN	0230	5	02350	0870
SDN	0230	6	03000	0400
SDN	0231	1	03400	0850
SDN	0231	2	03680	1600
SDN	0231	3	03200	1600
SDN	0231	4	02300	1560
SDN	0231	5	02200	1300
SDN	0231	6	02300	1070
SDN	0232	1	03680	1600
SDN	0232	2	03850	1800
SDN	0232	3	03550	2300
SDN	0232	4	02500	2200
SDN	0232	5	02400	1580
SDN	0232	6	03200	1600
DAH	0233	1	00220	0620
DAH	0233	2	00200	0710
DAH	0233	3	00230	0920
DAH	0233	4	00340	1050
DAH	0233	5	00100	1040
DAH	0233	6	00320	1150
ATN	0234	1	-07020	1280
ATN	0234	2	-07020	1240
ATN	0234	3	-06880	1200
ATN	0234	4	-06820	1200
ATN	0234	5	-06820	1230
COG	0235	1	01858	0437
COG	0235	2	01268	0245
COG	0235	3	01358	-0163
COG	0235	4	01065	-0342
COG	0235	5	01530	-0430
COG	0235	6	01898	0205
MDG	0236	1	04908	-1236
MDG	0236	2	04925	-1809
MDG	0236	3	04633	-2120
MDG	0236	4	04346	-2328
MDG	0236	5	04400	-1800
MDG	0236	6	04620	-1542
CTI	0237	1	-00772	0442
CTI	0237	2	-00875	0642
CTI	0237	3	-00800	1017
CTI	0237	4	-00630	1075
CTI	0237	5	-00350	0980
CTI	0237	6	-00250	0817
AND	0238	01	00160	4320
AND	0238	2	-00000	4370
AND	0238	03	00130	4360
AND	0238	04	00430	4330
STP	0241	1	00740	0170
STP	0241	2	00680	0040
STP	0241	3	00500	0000
STP	0241	4	00500	0200
MAU	0242	1	06000	-1500
MAU	0242	2	06400	-2020
MAU	0242	3	05680	-2120
MAU	0242	4	05600	-1800
MAU	0242	5	06320	-1680
MAU	0242	6	06000	-2300
MAU	0243	1	05700	-1000
MAU	0243	2	06000	-1660
MAU	0243	3	05380	-1620
MAU	0243	4	05300	-1280
MAU	0243	5	06080	-1280
MAU	0243	6	05700	-1800
LBR	0244	1	-01020	0850
LBR	0244	2	-00860	0760
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LBR	0244	4	-00745	0450
LBR	0244	5	-00980	0510
LBR	0244	6	-01150	0690
AFG	0245	01	06725	3400
AFG	0245	02	06800	3160
AFG	0245	03	06880	3160
AFG	0245	04	07100	3400
AFG	0245	05	07470	3700
AFG	0246	01	06775	3730
AFG	0246	02	06560	3750
AFG	0246	03	06125	3545
AFG	0246	04	06050	3400
AFG	0246	05	06100	2990
AFG	0246	06	06250	2930
AFG	0246	07	06400	2930
AFG	0246	08	06625	3000
AFG	0246	09	06800	3160
AFG	0246	10	06900	3400
QAT	0247	1	05110	2620
QAT	0247	2	05230	2480
QAT	0247	3	05080	2470
QAT	0247	4	05070	2530
MNG	0248	1	09880	5190
MNG	0248	2	11890	4740
MNG	0248	3	11000	4320
MNG	0248	4	10340	4230
MNG	0248	5	09500	4320
MNG	0248	6	08790	4890
KEN	0249	1	04192	0392
KEN	0249	2	04167	-0167
KEN	0249	3	03925	-0475
KEN	0249	4	03392	-0100
KEN	0249	5	03400	0425
KEN	0249	06	03648	0467
ALG	0251	1	-00220	3500
ALG	0251	2	-00100	3600
ALG	0251	3	00300	3600
ALG	0251	4	00900	3700
ALG	0251	5	00900	3550
ALG	0251	6	00950	3000
ALG	0252	1	00950	3000
ALG	0252	2	01200	2300
ALG	0252	3	00500	1900
ALG	0252	4	00000	2200
ALG	0252	5	-00500	2500
ALG	0252	6	-00900	2750
LIE	0253	01	00950	4720
LIE	0253	02	00950	4700
LIE	0253	03	00960	4700
LIE	0253	04	00960	4710
SPM	0254	1	-05650	4690
BHR	0255	1	04800	3000
BHR	0255	2	04300	2700
BHR	0255	3	05230	1700
BHR	0255	4	05800	1800
BHR	0255	5	05930	2230
BHR	0255	6	05630	2630
IRQ	0256	1	03750	3330
IRQ	0256	2	04120	3500
IRQ	0256	3	04400	3730
IRQ	0256	4	04580	3420
IRQ	0256	5	04800	3000
IRQ	0256	6	04350	3000
PRG	0257	1	-06200	-2300
PRG	0257	2	-06300	-2100
PRG	0257	3	-05800	-2000
PRG	0257	4	-05600	-2200
PRG	0257	5	-05500	-2700
PRG	0257	6	-05800	-2700
CAF	0258	1	01550	0750

CAF	0258	2	01460	0610
CAF	0258	3	01650	0210
CAF	0258	4	02750	0500
CAF	0258	5	02320	1100
CAF	0258	6	02200	1070
SRL	0259	1	-01320	0850
SRL	0259	2	-01170	0700
SRL	0259	3	-01170	1000
SRL	0259	4	-01050	0850
GAB	0260	01	00900	-0100
GAB	0260	02	01150	0100
GAB	0260	03	01250	0200
GAB	0260	04	01400	0000
GAB	0260	05	01300	-0200
GAB	0260	06	01100	-0400
AND	0261	1	00130	4200
AND	0261	2	00100	4250
AND	0261	3	00175	4270
AND	0261	4	00180	4230
AND	0262	01	00153	4243
AND	0262	02	00142	4254
AND	0262	03	00155	4266
AND	0262	04	00178	4258
AND	0262	05	00145	4244
AND	0262	06	00173	4250
YEM	0266	1	01570	4200
YEM	0266	2	01750	4200
YEM	0266	3	01900	5250
YEM	0266	4	01500	5400
YEM	0266	5	01200	4350
YMS	0267	1	04325	1240
YMS	0267	2	04550	1500
YMS	0267	3	05250	1875
YMS	0267	4	05260	1660
YMS	0267	5	04907	1430
YMS	0267	6	04802	1250
ATN	0268	1	-06280	1730
ATN	0268	2	-06340	1760
ATN	0268	3	-06320	1810
ATN	0268	4	-06300	1820
BDI	0270	1	02920	-0280
BDI	0270	2	02910	-0270
BDI	0270	3	02950	-0420
BDI	0270	4	03030	-0270
PNG	0271	1	15000	-0100
PNG	0271	2	15700	-0700
PNG	0271	3	15400	-1200
PNG	0271	4	14100	-0920
PNG	0271	5	14100	-0260
TUN	0272	01	-01000	3000
TUN	0272	02	-00500	3600
TUN	0272	03	01000	3800
TUN	0272	04	01500	3300
TUN	0272	05	01000	2800
TUN	0272	06	-00500	2950
BOL	0273	1	-06500	-1220
BOL	0273	2	-06550	-0980
BOL	0273	3	-06900	-1120
BOL	0273	4	-06000	-1610
BOL	0273	5	-05750	-1800
BOL	0273	6	-06780	-2280
UAE	0274	1	05080	2460
UAE	0274	2	05190	2300
UAE	0274	3	05490	2240
UAE	0274	4	05580	2400
UAE	0274	5	05630	2540
UAE	0274	6	05600	2600
ARS	0275	1	03550	3000
ARS	0275	2	03670	2350
ARS	0275	3	03800	2000
ARS	0275	04	04250	1650
ARS	0275	05	04750	1600
ARS	0275	6	03800	3200
EQA	0276	1	-07880	0150
EQA	0276	2	-07550	-0020
EQA	0276	3	-07900	-0500
EQA	0276	4	-08080	-0480
EQA	0276	5	-08058	-0202
EQA	0277	1	-07880	0150
EQA	0277	2	-07550	-0020
EQA	0277	3	-07900	-0500
EQA	0277	4	-08080	-0480
EQA	0277	5	-08058	-0202
EQA	0278	1	-07880	0150
EQA	0278	2	-07550	-0020
EQA	0278	3	-07900	-0500
EQA	0278	4	-08080	-0480
EQA	0278	5	-08058	-0202
LBN	0279	1	03540	3370
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LBY	0280	1	01800	2250
LBY	0280	2	02400	1950
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LBY	0280	5	02200	3300
LBY	0280	6	02000	3250
LBY	0280	7	01800	3100
PAK	0281	1	06950	3220
PAK	0281	2	06180	2524
PAK	0281	3	06130	2950
PAK	0281	4	06680	2500
PAK	0281	5	06930	2860
PAK	0281	6	06648	3050
PAK	0282	1	06680	2520
PAK	0282	2	07100	2425
PAK	0282	3	06830	2872
PAK	0282	4	06815	2410
PAK	0282	5	06722	2726
PAK	0283	1	07030	3128
PAK	0283	2	07985	3560
PAK	0283	3	07910	3274
PAK	0283	4	07510	3726
PAK	0283	5	07280	3675
PAK	0283	6	07000	3400
LAO	0284	1	10000	2050
LAO	0284	2	10200	2250
LAO	0284	3	10450	2000
LAO	0284	4	10100	1760
LAO	0284	5	10550	1400
LAO	0284	6	10750	1450
PHL	0285	1	12200	2100
PHL	0285	02	11700	0750
PHL	0285	3	12000	0500
PHL	0285	4	12600	0600
PHL	0285	5	12600	1100
PHL	0285	06	12500	1500
KRE	0286	01	12650	3770
KRE	0286	02	12840	3860
KRE	0286	03	13070	4230
KRE	0286	04	13000	4300
KRE	0286	05	12400	3990
KRE	0286	06	12470	3810
NZL	0287	1	17180	-3410
NZL	0287	2	17590	-4430
NZL	0287	3	16630	-4550
NZL	0287	4	18000	-4000
NZL	0287	5	17500	-4700
MTN	0288	1	-00560	2000
MTN	0288	2	-01223	4500
MTN	0288	3	-00840	2720
MTN	0288	4	-00451	2500
CLM	0289	1	-07000	-0400
CLM	0289	2	-07500	-0005
CLM	0289	3	-07850	0200
CLM	0289	4	-07150	1250
CLM	0289	5	-06750	0650
CLM	0289	6	-06700	0159
MRC	0292	1	-01300	2300
MRC	0292	2	-00600	2800
MRC	0292	3	-00125	3228
MRC	0292	4	-00100	3500
MRC	0292	5	-00600	3600
MRC	0292	6	-01500	2600
MTN	0293	1	-00560	2000
MTN	0293	2	-01200	2345
MTN	0293	3	-00840	2720
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MTN	0294	1	-01575	2400
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MTN	0294	4	-00520	1530
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MTN	0294	6	-01632	1602
AGL	0295	1	01200	-1750
AGL	0295	2	01250	-0650
AGL	0295	3	02000	-0600
AGL	0295	4	02400	-1100
AGL	0295	5	02300	-1750
ALB	0296	1	01980	4260
ALB	0296	2	01930	4180
ALB	0296	3	01940	4040
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ALB	0296	5	02100	4090
ALB	0296	6	02070	4200
BOT	0297	1	02100	-1840
BOT	0297	2	02530	-1780
BOT	0297	3	02930	-2210
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BOT	0297	5	02060	-2700
BOT	0297	6	02000	-2330
BRM	0298	1	10100	2170
BRM	0298	2	09890	1640
BRM	0298	3	09960	1180
BRM	0298	4	09800	0950
BRM	0298	5	09750	2830
BRM	0298	6	09240	2140
CBG	0299	1	10350	1050
CBG	0299	2	10250	1300
CBG	0299	3	10400	1410
CBG	0299	4	10650	1400

CBG	0299	5	10750	1250
CBG	0299	6	10600	1100
CME	0300	1	01420	1320
CME	0300	2	01560	1000
CME	0300	3	01560	0770
CME	0300	4	01620	0140
CME	0300	5	00880	0220
CME	0300	6	00850	0480
CPV	0301	1	-02290	1680
CPV	0301	2	-02430	1440
CPV	0301	3	-02490	1690
CPV	0301	4	-02510	1720
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CPV	0301	6	-02320	1510
GMB	0302	1	-01420	1330
GMB	0302	2	-01650	1330
GMB	0302	3	-01670	1340
GMB	0302	4	-01430	1350
GMB	0302	5	-01610	1350
GMB	0302	6	-01560	1360
GNE	0303	1	00960	0120
GNE	0303	2	01130	0120
GNE	0303	3	01130	0240
GNE	0303	4	00980	0240
GNE	0303	5	01130	0180
GNP	0304	1	-01630	1180
GNP	0304	2	-01520	1150
GNP	0304	3	-01420	1230
GNP	0304	4	-01420	1230
GNP	0304	5	-01570	1120
LSO	0305	1	02700	-2980
LSO	0305	2	02850	-2850
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LSO	0305	5	02930	-3000
MLD	0306	1	07250	0700
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MLD	0306	3	07400	0250
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MLD	0306	5	07250	-0200
MLD	0306	6	07150	0250
MOZ	0307	1	04030	-1030
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MOZ	0307	3	03250	-2680
MOZ	0307	4	03030	-1500
MOZ	0307	5	03500	-1180
MWI	0308	1	03280	-0930
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MWI	0308	4	03580	-1480
MWI	0308	5	03520	-1720
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NRU	0309	1	16200	0000
NRU	0309	2	16800	0000
NRU	0309	3	16200	-0300
NRU	0309	4	16800	-0300
NRU	0309	5	16690	-0050
RRW	0310	1	03030	-0100
RRW	0310	2	02900	-0220
RRW	0310	3	02980	-0450
RRW	0310	4	03100	-0300
RRW	0310	5	03050	-0250
SMR	0311	1	01230	4350
SMR	0311	2	01200	4300
SOM	0312	1	04328	1122
SOM	0312	2	05046	1158
SOM	0312	3	04520	0202
SOM	0312	4	04200	-0300
SOM	0312	5	04444	0955
SWZ	0313	1	03197	-2670
SWZ	0313	2	03110	-2590
SWZ	0313	3	03130	-2650
SWZ	0313	4	03080	-2660
SWZ	0313	5	03190	-2650
ZMB	0314	1	02850	-0800
ZMB	0314	2	03300	-0900
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ZMB	0314	4	02551	-1750
ZMB	0314	5	02620	-1500
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AUS	0315	01	12450	-1550
AUS	0315	2	11670	-2070
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AUS	0317	1	14100	-3210
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LBY	0321	1	01800	2250
LBY	0321	2	01400	2250
LBY	0321	3	01000	2450
LBY	0321	4	00920	2650
LBY	0321	5	00920	3000
LBY	0321	6	01140	3350
LBY	0321	7	01520	3250
LBY	0321	8	01800	3100
ZAI	0322	1	02750	0500
ZAI	0322	2	03150	0225
ZAI	0322	3	02150	-0350
ZAI	0322	4	02400	-0400
ZAI	0322	5	01600	-0200
ZAI	0322	6	01950	0500
ZAI	0323	01	03000	-0420
ZAI	0323	02	01630	-0100
ZAI	0323	03	01200	-0560
ZAI	0323	04	02216	-1113
ZAI	0323	05	02980	-1350
ZAI	0323	06	03070	-0820
VTN	0325	1	10200	2280
VTN	0325	2	10800	2160
VTN	0325	3	10900	1600
VTN	0325	4	10950	1200
VTN	0325	5	10450	0850
VTN	0325	6	10380	1020
KWT	0326	1	04100	3500
KWT	0326	2	04530	3420
KWT	0326	3	05600	2545
KWT	0326	4	05900	2115
KWT	0326	5	05400	1700
KWT	0326	6	04730	2320
MLI	0327	01	-00000	1500
MLI	0327	02	00280	2000
MLI	0327	03	-00250	2330
MLI	0327	04	-00540	2160
MLI	0327	05	-00540	1760
MLI	0328	01	-01200	1380
MLI	0328	02	-00830	1100
MLI	0328	03	-00400	1340
MLI	0328	04	-00510	1360
MLI	0328	05	-01000	1550
MLI	0328	6	-01200	1500
YMS	0329	1	05150	1200
YMS	0329	2	04900	1800
YMS	0329	3	05250	1870
YMS	0329	4	05480	1200
BRU	0330	01	11460	0400
BRU	0330	02	11420	0460
BRU	0330	03	11500	0493
GUM	0331	01	14500	1000
GUM	0331	02	14200	1300
GUM	0331	03	14700	1800
GUM	0331	04	14900	1200
GUM	0332	01	17000	1000
GUM	0332	02	17400	0000
GUM	0332	03	15000	0000
GUM	0332	04	14500	1000
GUM	0333	01	17000	1300
GUM	0333	02	17400	0000
GUM	0333	03	16800	0300
GUM	0333	04	16300	1000
WAK	0334	01	17000	2100
WAK	0334	02	17000	1750
WAK	0334	03	16700	1750
WAK	0334	04	16700	2000
SMA	0335	01	-17000	-1100
SMA	0335	02	-16800	-1300
SMA	0335	03	-17000	-1500
SMA	0335	04	-17200	-1400
PHX	0336	01	-17200	-0100
PHX	0336	02	-17000	-0300
PHX	0336	03	-17200	-0600
PHX	0336	04	-17400	-0300
PLM	0337	01	-16200	-0400
PLM	0337	02	-16000	-0600
PLM	0337	03	-16200	-0800
PLM	0337	04	-16400	-0600
CAR	0338	01	-16000	-0100
CAR	0338	02	-15000	-1500
CAR	0338	03	-16000	-1200
CAR	0338	04	-16800	-0600
CAR	0338	05	-17300	0600

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Addendum N° 2 au
Document N° 103(Rev.1)-F/E/S
31 janvier 1977

COMMISSION 5

Note du Président de la Commission 5 (Planification)

ADDENDUM N° 2 A LA LISTE DES DEMANDES
DANS LE DOCUMENT N° 103(Rév.1)
(Voir également le Document N° 189)

COMMITTEE 5

Note by the Chairman of Committee 5 (Planning)

ADDENDUM No. 2 TO THE LIST OF REQUIREMENTS
IN DOCUMENT No. 103(Rev.1)
(See also Document No. 189)

COMISIÓN 5

Nota del Presidente de la Comisión 5 (Planificación)

ADDENDUM N.° 2 A LA LISTA DE SOLICITUDES
EN EL DOCUMENTO N.° 103(Rev.1)
(Véase también el Documento N.° 103(Rev.1)

Pour des raisons d'économie, ce document n'a été tiré qu'en nombre restreint. Les participants sont donc priés de bien vouloir apporter à la conférence leurs documents avec eux, car il n'y aura que fort peu d'exemplaires supplémentaires disponibles.

ARCHIVES U.I.T. GENÈVE

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0250	ALG	SUP												
0251	ALG	ALG	5	B G PAL	00-24	20.0W	04E12 33N12		2.45	1.25	172		0 ALG-2	A125 A127 A187
0252	ALG	ALG	5	B G PAL	00-24	20.0W	01E36 25N30		3.45	2.07	156		0 ALG-3	A126 A127 A187
0010	AUS	SUP												
0011	AUS	SUP												
0012	AUS	SUP												
0013	AUS	SUP												
0014	AUS	SUP												
0015	AUS	SUP												
0315	AUS	AUS	3	B G	22-16	130.0E	122E12 24S48		3.06	2.26	075	130E 130E	1 AUS-3	A205
0316	AUS	AUS	3	B G	20-16	130.0E	133E42 18S42		2.55	1.60	095	130E 130E	1 AUS-3	A205
0317	AUS	AUS	3	B G	20-16	130.0E	135E48 30S12		2.00	1.65	160	130E 130E	1 AUS-3	A205
0318	AUS	SUP												
0319	AUS	SUP												
0320	AUS	SUP												
0258	CAF	CAF	5	K1	00-24	5.0W	20E24 06N20		2.00	1.20	014	010W 010E	0	
0154	CHN	CHN	4	K	00-19	64.0E	84E25 40N18		2.48	1.60	003	055E 065E	1 CHN-1	A066 A129 A206
0155	CHN	CHN	4	K	00-19	64.0E	88E36 31N49		3.20	1.21	164	055E 065E	1 CHN-2	A066 A129 A206
0156	CHN	CHN	3	K	00-19	64.0E	98E33 36N24		2.23	1.49	150	055E 065E	1 CHN-3	A066 A131 A206
0157	CHN	CHN	3	K	00-19	64.0E	102E37 28N19		2.43	1.28	120	055E 065E	1 CHN-4	A066 A132 A206
0158	CHN	CHN	3	K	22-17	79.0E	111E58 37N45		2.56	1.47	126	075E 085E	1 CHN-5	A066 A133 A206
0159	CHN	CHN	3	K	22-17	79.0E	109E30 27N08		1.83	1.44	101	075E 085E	1 CHN-6	A066 A134 A206
0160	CHN	CHN	3	K	22-17	94.0E	123E37 46N03		2.01	1.42	145	090E 095E	1 CHN-7	A066 A135 A206
0161	CHN	CHN	3	K	22-17	94.0E	118E10 31N26		1.99	1.51	096	085E 095E	1 CHN-8	A066 A136 A206
0162	CHN	CHN	3	K	22-17	94.0E	115E25 21N31		2.70	1.69	045	085E 095E	1 CHN-9	A066 A137 A206
0163	CHN	CHN	1	K	22-17	79.0E	116E10 39N52		0.94	0.63	120	075E 085E	1 CHN-10	A066 A138 A206
0164	CHN	CHN	1	K	22-17	79.0E	112E13 37N31		0.76	0.60	091	075E 085E	1 CHN-11	A066 A139 A206
0165	CHN	CHN	1	K	22-17	79.0E	111E42 41N59		1.40	0.88	016	075E 085E	1 CHN-12	A066 A140 A206
0166	CHN	CHN	1	K	22-17	94.0E	121E02 41N52		1.37	0.60	150	090E 095E	1 CHN-13	A066 A141 A206
0167	CHN	CHN	1	K	22-17	94.0E	125E00 43N40		1.77	0.60	151	090E 095E	1 CHN-14	A066 A142 A206
0168	CHN	CHN	1	K	22-17	94.0E	125E07 47N34		2.30	0.80	158	090E 095E	1 CHN-15	A066 A143 A206
0169	CHN	CHN	1	K	22-17	94.0E	118E48 36N47		0.96	0.60	017	085E 095E	1 CHN-16	A066 A144 A206
0170	CHN	CHN	1	K	22-17	94.0E	120E06 32N42		1.26	0.60	150	085E 095E	1 CHN-17	A066 A145 A206
0171	CHN	CHN	1	K	22-17	94.0E	116E58 32N02		0.93	0.60	136	085E 095E	1 CHN-18	A066 A146 A206

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0172	CHN	CHN	1	K	22-17	94.0E	120E46 29N11		0.73	0.61	150	085E	095E	1 CHN-19	A066 A147 A206
0173	CHN	CHN	1	K	22-17	94.0E	116E02 27N16		1.18	0.66	105	085E	095E	1 CHN-20	A066 A148 A206
0174	CHN	CHN	1	K	22-17	94.0E	118E35 25N52		0.84	0.70	084	085E	095E	1 CHN-21	A066 A149 A206
0175	CHN	CHN	1	K	22-17	94.0E	120E23 22N34		1.37	0.82	058	085E	095E	1 CHN-22	A066 A150 A206
0176	CHN	CHN	1	K	22-17	79.0E	114E16 33N53		1.05	0.60	149	075E	085E	1 CHN-23	A066 A151 A206
0177	CHN	CHN	1	K	22-17	79.0E	112E23 30N43		1.04	0.65	155	075E	085E	1 CHN-24	A066 A152 A206
0178	CHN	CHN	1	K	22-17	79.0E	111E52 27N43		1.05	0.61	121	075E	085E	1 CHN-25	A066 A153 A206
0179	CHN	CHN	1	K	22-17	94.0E	112E25 22N05		1.87	0.87	035	085E	095E	1 CHN-26	A066 A154 A206
0180	CHN	CHN	1	K	22-17	94.0E	113E23 13N23		3.45	1.86	086	085E	095E	1 CHN-27	A066 A155 A206
0181	CHN	CHN	1	K	22-17	79.0E	108E21 24N07		1.09	0.82	145	075E	085E	1 CHN-28	A066 A156 A206
0182	CHN	CHN	1	K	22-17	79.0E	108E43 35N10		1.15	0.67	112	075E	085E	1 CHN-29	A066 A157 A206
0183	CHN	CHN	1	K	00-19	64.0E	104E54 38N59		1.22	0.60	134	055E	065E	1 CHN-30	A066 A158 A206
0184	CHN	CHN	1	K	00-19	64.0E	100E55 37N56		2.42	0.72	149	055E	065E	1 CHN-31	A066 A159 A206
0185	CHN	CHN	1	K	00-19	64.0E	95E50 35N31		1.83	0.93	161	055E	065E	1 CHN-32	A066 A160 A206
0186	CHN	CHN	1	K	00-19	64.0E	103E04 30N12		1.76	0.95	146	055E	065E	1 CHN-33	A066 A161 A206
0187	CHN	CHN	1	K	22-17	79.0E	106E35 26N40		0.86	0.66	004	075E	085E	1 CHN-34	A066 A162 A206
0188	CHN	CHN	1	K	00-19	64.0E	101E50 25N55		1.59	0.93	120	055E	065E	1 CHN-35	A066 A163 A206
0085	CVA	CVA	1	G PAL	00-24	34.0W	03E18 42N30		2.20	0.90	165	000W	035W	1 CVA-3	
0233	DAH	DAH	5	K1 SECAM	00-24	22.0W	02E11 09N17		1.14	0.65	087	020W	007W		
0026	EGY	EGY	5	B G SECAM	00-24	0.0E	29E00 26N21		2.23	1.34	134	000E	010W	1	B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0260	GAB	GAB	5	K1	00-24	15.0W	11E50 00S42		1.40	1.12	080	008W 030W	0	
0029	INS	SUP												
0031	INS	SUP												
0028	INS	INS	4	B PAL	23-18	83.0E	101E14 00N05		2.60	1.20	133		1	INS-1 B017
0030	INS	INS	4	B PAL	23-18	83.0E	113E18 07S55		2.40	0.70	167		1	INS-3 B017
0032	INS	INS	4	B PAL	22-17	83.0E	113E20 00N15		1.80	1.80	075		1	INS-5 B017
0035	INS	INS	4	B PAL	21-16	110.0E	124E10 03S06		2.40	1.70	082		1	INS-8 B017
0036	INS	INS	4	B PAL	21-16	110.0E	135E43 04S30		2.20	1.70	127		1	INS-9 B017
0033	INS	SUP												
0034	INS	SUP												
0211	IRL	IRL	5	I	00-24	26.0W	08W26 53N25		0.72	0.60	171	030W 015W	1	A103 A167
0224	JOR	JOR	5	B PAL	00-24	7.5E	36E15 31N45		0.86	0.60	130		0	A113
0249	KEN	KEN	5	G PAL	05-22	15.0E	37E55 00N42		2.15	1.43	095	012E 018E	2	KEN A123 A207

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0112	KOR	KOR	6	M	00-24	103.0E	126E48 33N51		1.45	1.11	161	098E 113E	1	A018 A203
0286	KRE	KRE	5	D PAL	00-24	104.0E	127E02 39N47		1.00	0.82	056	085E 110E		A197
0114	LUX	LUX	5	B G L	00-24	15.0W	06E04 49N47	00.6				024W 010W	1	A019
0306	MLD	MLD	2			45.0E	73E10 03N15		2.26	0.42	092			
0118	MLI			SUP										
0269	MLI			SUP										
0327	MLI	MLI	5	K1	00-24	34.0W	02W15 19N20		2.53	1.11	142	034W 016W	2 MLI	
0328	MLI	MLI	5	K1	00-24	34.0W	06W36 13N21		1.79	1.08	161	034W 016W	0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0307	MOZ	MOZ	5			0.0E	34E30 17N30		3.22	1.22	058			
0223	MTN	MTN	5	K1	06-02	34.0W	12W16 19N00		2.50	1.30	152	020W 035W	2 MTN	A116 A188
0288	MTN	MTN	5	K1	06-02	34.0W	07W20 23N55		1.70	0.82	152	020W 035W		A188
0119	NIG	NIG	5	B G	05-24	22.0W	07E48 10N00		1.78	1.27	085	022W 030W	2 NIG	A171
0127	PAK	PAK	3	B PAL	00-21	40.0E	69E42 29N51		2.19	1.88	014	035E 045E	2 PAK-5	
0210	PAK	PAK	2	B PAL	00-21	40.0E	71E51 30N45		0.93	0.64	102	035E 045E	2 PAK-3	B009
0281	PAK	PAK	2	B PAL	00-21	40.0E	65E06 28N15		1.32	1.20	076	035E 045E	2 PAK-1	
0282	PAK	PAK	2	B PAL	00-21	40.0E	67E57 26N30		1.23	0.48	143	035E 045E	2 PAK-2	
0283	PAK	PAK	2	B PAL	00-21	40.0E	74E42 33N54		1.14	0.93	160	035E 045E	2 PAK-4	
0225	TGK	TGK	4	G PAL	02-22	10.0E	34E30 05S55		2.18	1.62	121	010W 018E	0	A207

01	02	03	04	05	06	07	08	09	10	11	12	13		14		15
0226	TGO	TGO	5	K1 SECAM	00-24	28.0W	00E54 08N42		1.20	0.60	104	030W	008W	0		
0150	TUN	TUN	5	B G	00-24	22.0W	09E27 34N01		1.34	0.60	115	023W	015W	1		A107 A208
0272	TUN	TUN	2	B G	00-24	22.0W	05E30 32N00		3.32	1.42	167			2	TUN	A170 A209
0051	UGA	UGA	5	G PAL	05-22	0.0E	32E15 01N45		1.50	0.95	065			1		A207 B017
0266	YEM	YEM	5	B SECAM	00-24	15.0E	47E18 15N30		1.98	1.24	002			0		
0146	ZAI	SUP														
0322	ZAI	ZAI	5	K1 SECAM	00-24	15.0W	23E50 00S30		2.25	2.00	045			0		
0323	ZAI	ZAI	5	K1 SECAM	00-24	15.0W	23E50 00S30		2.25	2.00	164			0		
0314	ZMB	ZMB	5	B PAL	06-22	10.0W	27E48 13S13		2.22	1.38	044	015E	005W	0		

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Addendum N° 1 au
Document N° 103(Rev.1)-F/E/S
28 janvier 1977

COMMISSION 5

Note du Président de la Commission 5 (Planification)

ADDENDUM N° 1 A LA LISTE DES DEMANDES
DANS LE DOCUMENT N° 103(Rév.1)

COMMITTEE 5

Note by the Chairman of Committee 5 (Planning)

ADDENDUM No. 1 TO THE LIST OF REQUIREMENTS
IN DOCUMENT No. 103(Rev.1)

COMISIÓN 5

Nota del Presidente de la Comisión 5 (Planificación)

ADDENDUM N.° 1 A LA LISTA DE SOLICITUDES
EN EL DOCUMENTO N.° 103(Rev.1)

ARCHIVES U.I.T. GENÈVE

Pour des raisons d'économie, ce document n'a été tiré qu'en nombre restreint. Les participants sont donc priés de bien vouloir apporter à la conférence leurs documents avec eux, car il n'y aura que fort peu d'exemplaires supplémentaires disponibles.

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0245	AFG	AFG	4	B	01-20	55.0E	70E46 35N15		1.00	0.90	027	050E 055E	0	
0296	ALB	ALB	5	B G		7.5W	19E50 41N18	00.6					0	
0238	F	AND	5		00-24	24.0W	01E36 42N30	00.6				024W 015W	1	AND-1
0262	E	AND	5	G	00-24	24.0W	01E36 42N30	00.6				024W 015W	1	AND-1 A184
0208	CHL	CHL	4	M	12-06	115.0W	70W18 24S36		2.40	0.60	056	110W 120W	2	CHL A097 B017
0263	CHL	CHL	4	M	12-06	115.0W	73W48 43S30		2.80	0.60	034	110W 120W		
0264	CHL	CHL	4	M	12-06	115.0W	71W00 56S00		1.95	0.60	027	110W 120W		
0233	DAH	DAH	5	K1 SECAM	00-24	15.0W	02E11 09N17		1.14	0.65	087	020W 007W		

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0026	EGY	EGY	5	B G SECAM	00-24	0.0E	30E30 27N51		2.55	1.60	135	000E 010W	1	B017
0192	GUI	GUI	5	K1	00-24	34.0W	11W11 10N16		1.37	1.02	141		0	
0107	HVO	HVO	5	K1	00-24	30.0W	01W54 12N07		1.46	1.20	015	035W 010W	0	A034 A200 B017
0109	IRN	IRN	4	B G	04-22	35.0E	54E30 33N00		3.54	1.58	150	030E 045E	1	
0286	KRE	KRE	5	D PAL	00-24	100.0E	127E30 42N30		1.34	0.65	134			A197
N 0326	KWT	KWT	1	B G PAL	04-22	20.0E	50E30 24N54		4.48	0.99	139		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0114	LUX	LUX	5	B G L	00-24	15.0W	05E48 49N54	00.6				024W 010W	1	A019
0117	MCO	MCO	2	L SECAM	00-24	28.0W	07E25 43N45		1.30	0.60	150	028W 016W	1 MCO-2	A007
0118	MLI	MLI	5	K1	00-24	28.0W	06W51 13N21		1.92	1.10	170	030W 010W	2 MLI	
0269	MLI	MLI	5	K1	00-24	28.0W	02W15 19N20		2.65	1.18	146	030W 010W	0	
N 0327	MLI	MLI	5	K1	00-24	34.0W	02W15 19N20		2.53	1.11	142			
N 0328	MLI	MLI	5	K1	00-24	34.0W	06W36 13N21		1.79	1.08	161			
0288	MTN	MTN	5	B SECAM	06-02	20.0W	08W00 24N00		1.60	0.80	152	020W 035W		A188
0119	NIG	NIG	5	B G	05-24	34.0W	07E18 09N30		1.78	1.27	085	030W 045W	2 NIG	A171
0287	NZL	NZL	3	B	20-12	130.0E	173E30 41S30		2.50	1.00	038		0	A199

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0123	OMA	OMA	5	B G	05-22	30.0E	55E00 21N30		1.49	1.12	098		0	B007
SUP 0124	OMA													
SUP 0125	OMA													
SUP 0126	OMA													
0136	ROU	ROU	5	D K	04-24	10.0W	24E33 45N25		1.30	0.80	171	005E 015W	1 ROU-1	A022
0225	TGK	TGK	4	G PAL	02-22	10.0E	34E30 05S55		2.18	1.62	121	010W 018E	0	
0226	TGO	TGO	5	K1 SECAM	00-24	20.0W	00E54 08N42		1.20	0.60	104	030W 008W	0	
N 0325	IFB	VTN	1			75.0E	105E11 15N32		2.81	1.26	116		0	
0266	YEM	YEM	5	B SECAM	00-24	15.0E	46E30 17N30		2.95	2.12	084		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
N 0329	YMS	YMS	5	B	03-21	15.0E	51E33 15N45		1.93	0.51	120		0	
0322	ZAI	ZAI	5	K1 SECAM	00-24	15.0W	22E48 00N59		2.10	1.77	175		0	
0323	ZAI	ZAI	5	K1 SECAM	00-24	15.0W	21E15 07S15		2.59	1.49	150		0	
0314	ZMB	ZMB	5	B PAL	06-22	10.0W	28W24 12S33		2.20	1.35	050	015E 005W	0	

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Document N° 103(Rev.1)-F/E/S
25 janvier 1977

COMMISSION 5

Note du Président de la Commission 5 (Planification)

LISTE DES DEMANDES
(à la date du mardi, le 25 janvier 1977)

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Note	2
Annexe 1 – Explication des colonnes	5 – 8
Annexe 2 – Liste des demandes	9
Partie A – Régions 1 et 3	–
Partie B – Région 2	–

COMMITTEE 5

Note by the Chairman of Committee 5 (Planning)

LIST OF REQUIREMENTS
(as of Tuesday, 25 January 1977)

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Annex 2 – List of Requirements	9
Part A – Regions 1 and 3	–
Part B – Region 2	–

COMISIÓN 5

Nota del Presidente de la Comisión 5 (Planificación)

LISTA DE SOLICITUDES
(hasta el martes, el 25 de enero de 1977)

	Páginas
Nota	4
Anexo 1 – Explicación de los títulos de las columnas	5 – 8
Anexo 2 – Lista de solicitudes	9
Parte A – Regiones 1 y 3	–
Parte B – Región 2	–

Pour des raisons d'économie, ce document n'a été tiré qu'en nombre restreint. Les participants sont donc priés de bien vouloir apporter à la conférence leurs documents avec eux, car il n'y aura que fort peu d'exemplaires supplémentaires disponibles.

ARCHIVES U.I.T. GENÈVE

Note du Président de la Commission 5 (planification)

LISTE DES BESOINS

Dans le cadre des travaux préparatoires de planification et suite au Document N° 59 (Confirmation des besoins), nous reproduisons dans l'Annexe 2 au présent document la liste imprimée mise à jour.

Explication des titres des colonnes de la liste

2. Pour faciliter la référence aux titres des colonnes, ceux-ci sont reproduits dans l'Annexe 1 au présent document.

Besoins

3. Les besoins pour les Régions 1 et 3 sont groupés et ils figurent dans l'ordre alphabétique des symboles de pays indiqués dans la colonne 3; ils constituent la Partie A de l'Annexe 2. Ces besoins comprennent ceux qui ont déjà fait l'objet d'une confirmation conformément au Document N° 59. Pour chaque pays non représenté à la Conférence, on a prévu une inscription correspondant à un faisceau. Ces inscriptions peuvent être désignées par un numéro de la série 0600 et par le symbole IFB figurant dans la colonne 2. Le symbole désignant le pays ou la zone géographique concernée figure dans la colonne 3. De tels faisceaux sont également appelés "faisceaux de réserve".

4. Les besoins pour la Région 2 sont groupés et ils figurent dans l'ordre alphabétique des symboles de pays indiqués dans la colonne 3; ils constituent la Partie B de l'Annexe 2.

A. PETTI
Président
Commission 5 (planification)

Note by the Chairman of Committee 5 (Planning)

LIST OF REQUIREMENTS

In further preparation for planning and in pursuance of Document No. 59 (Confirmation of Requirements), the printout of the updated List is reproduced in Annex 2 to the present document.

Explanation of the Column Headings of the List

2. For ease of reference, these are reproduced in Annex 1 to the present document.

Requirements

3. The Requirements for countries in Regions 1 and 3 are grouped together and arranged in alphabetical order of the country symbol appearing in Column 3 and form Part A of Annex 2. These Requirements include those confirmed in accordance with Document No. 59. For each country which is not represented at the Conference, an entry has been made for one beam. Such entries may be identified by a Serial No. in the 0600 series and by the symbol "IFB" in Column 2. The symbol designating the country or geographical area concerned is contained in Column 3. Such beams are also referred to as "spare beams".

4. The Requirements for Region 2 are grouped together and arranged in alphabetical order of the country symbol appearing in Column 3 and form Part B of Annex 2.

A. PETTI
Chairman
Committee 5 (Planning)

Nota del Presidente de la Comisión 5 (Planificación)

LISTA DE SOLICITUDES

Para seguir preparando la planificación, y conforme al Documento N.° 59 (Confirmación de las Solicitudes), se reproduce en el Anexo 2 al presente documento la Lista actualizada.

Explicación de los títulos de las columnas de la Lista

2. Para facilitar la referencia, estos se reproducen en el Anexo 1 al presente documento.

Solicitudes

3. Las solicitudes de los países de las Regiones 1 y 3 están agrupadas y dispuestas por orden alfabético del símbolo de país que figura en la columna 3 y constituyen la Parte A del Anexo 2. Estas solicitudes incluyen las confirmadas de acuerdo con el Documento N.° 59. Para cada país que no está representado en la Conferencia, se ha inscrito un haz. Estas inscripciones pueden identificarse por un número de orden de la serie 0600 y por el símbolo "IFB" en la columna 2. En la columna 3 figura el símbolo designativo del país o la zona geográfica interesada. Se hace referencia a estos haces como "haces de reserva".

4. Las solicitudes para la Región 2 están agrupadas y dispuestas por orden alfabético del símbolo de país que figura en la columna 3, y constituyen la Parte B del Anexo 2.

El Presidente,
A. PETTI
Comisión 5 (Planificación)

ANNEXE 1

Explication des colonnes de la liste des demandes

Colonne 1 - Numéro de série de l'I.F.R.B. Cette colonne contient un numéro d'identification attribué aux renseignements fournis dans un formulaire de demande au sujet d'un faisceau d'antenne donné.

Colonne 2 - Administration notificatrice. Dans cette colonne est indiquée la source dont émanent les renseignements.

Colonne 3 - Symbole désignant le pays. Le pays ou la zone géographique sont représentés dans la colonne 3 par un symbole tiré du Tableau N° 1 de la Préface à la Liste internationale des fréquences.

Colonne 4 - Nombre de canaux. Dans la colonne 4 est inscrit le nombre de canaux indiqués pour le faisceau d'antenne spécifié sur la même ligne.

Colonne 5 - Norme de télévision. Dans cette colonne figure le symbole désignant la norme de télévision à utiliser; ce symbole est tiré du Tableau I du Rapport 624 du C.C.I.R., tel que ce Tableau a été amendé en mai 1976 (voir les pages 7 et 8 de la lettre-circulaire N° 358 de l'I.F.R.B., datée du 16 juillet 1976).

Colonne 6 - Horaire d'exploitation (TMG) Les heures, exprimées en T.M.G., auxquelles commence et finit l'émission sont indiquées dans la colonne 6 (en arrondissant à l'heure la plus proche). Ce renseignement est utilisé pour déterminer la limite orientale de l'arc de service pendant l'éclipse du satellite en période d'équinoxe.

ANNEX 1

Explanation of the Column Headings of the List of Requirements

Column 1 - I.F.R.B. Serial Number, contains an identification number for the information concerning a given antenna beam received on one Requirements form.

Column 2 - Notifying Administration, contains an indication of the source from which the information was received.

Column 3 - Country symbol, contains the symbol designating the country or the geographical area taken from Table No. 1 of the Preface to the International Frequency List.

Column 4 - Number of channels, contains the number of channels indicated for the antenna beam covered by the present line entry.

Column 5 - Television standard, contains the symbol designating the television standard to be used taken from Table I in C.C.I.R. Report 624 as amended in May 1976 (reproduced on pages 7 and 8 of I.F.R.B. Circular-letter No. 358 dated 16 July 1976).

Column 6 - Hours of operation (GMT), contains the time in GMT of the beginning and the end of emission to the nearest hour. This information is included for the purpose of determining the Eastern limit of the service arc during the eclipse of the satellite at the equinoxes.

ANEXO 1

Explicación de los títulos de las columnas de la Lista de solicitudes

Columna 1 - I.F.R.B. - N.°, contiene un número para identificar la información relativa a un haz de antena dado y recibida en un formulario de solicitud.

Columna 2 - Administración notificante, contiene una indicación de la fuente que ha comunicado la información.

Columna 3 - Símbolo de país, contiene el símbolo de país o zona geográfica que figura en el Cuadro N.° 1 del Prefacio a la Lista Internacional de Frecuencias.

Columna 4 - Número de canales, contiene el número de canales indicado para el haz de la antena especificado en la misma línea.

Columna 5 - Norma de televisión, contiene el símbolo que designa la norma de televisión que ha de usarse, según el Cuadro 1 del Informe 624 del C.C.I.R., modificado en mayo de 1976 (reproducido en las páginas 7 y 8 de la carta circular de la I.F.R.B. N.° 358, de fecha 16 de julio de 1976).

Columna 6 - Horas de funcionamiento(TMG) contiene la hora, en TMG, en que comienza y termina la transmisión, redondeada a la hora más próxima. Esta información se incluye con la finalidad de determinar el límite oriental del arco de servicio durante el eclipse del satélite en los equinoccios.

Colonne 7 - Longitude nominale. Dans la colonne 7 est indiquée, en degrés et dixième de degré, la longitude nominale préférée par rapport au méridien de Greenwich.

Colonne 8 - Coordonnées géographiques de l'intersection de l'axe du faisceau d'antenne avec la Terre. Dans la colonne 8 sont inscrites les coordonnées de ladite intersection, exprimées en degrés et minutes, en commençant par la longitude. Exemple : "118E34 50N32".

Colonne 9 - Faisceau d'antenne à section circulaire. La colonne 9 contient l'indication de la largeur du faisceau de l'antenne entre les points à demi-puissance; cette largeur est exprimée en degrés et dixièmes de degré.

Colonnes 10, 11 et 12 - Faisceau d'antenne à section elliptique. Dans la colonne 10 est indiquée la largeur à demi-puissance du faisceau correspondant au grand axe de l'ellipse; cette largeur est exprimée en degrés et dixièmes de degré.

Dans la colonne 11 figure le renseignement analogue, exprimé de la même façon mais pour le petit axe de l'ellipse.

Dans la colonne 12 est indiquée l'orientation de l'ellipse, déterminée comme suit : dans un plan perpendiculaire à l'axe du faisceau, la direction du grand axe de l'ellipse est définie par l'angle, mesuré dans le sens inverse des aiguilles d'une montre, à partir d'une ligne parallèle au plan équatorial jusqu'au grand axe de l'ellipse, au degré près le plus proche.

Colonne 13 - Arc orbital de service. Dans la colonne 13 est indiqué l'arc de service de l'orbite du satellite géostationnaire, en degrés de longitude à partir du méridien de Greenwich.

Column 7 - Nominal longitude, contains the preferred nominal longitude, in degrees and tenths of a degree, of the satellite in relation to the Greenwich meridian.

Column 8 - Geographical co-ordinates of the intersection of the antenna beam axis with the Earth, contains the geographical co-ordinates of the said intersection in degrees and minutes with the longitude shown first, viz. "118E34 50N32".

Column 9 - Circular cross-section antenna beam, contains the half-power beam width of the antenna in degrees and tenths of a degree.

Columns 10, 11 and 12 - Elliptical cross-section antenna beam.
Column 10 contains the half-power beam width corresponding to the major axis of the ellipse, in degrees and hundredths of a degree.

Column 11 contains the half-power beam width corresponding to the minor axis of the ellipse, in degrees and hundredths of a degree.

Column 12 contains the orientation of the ellipse determined as follows: in a plane normal to the beam axis, the direction of the major axis of the ellipse is specified as the angle measured anti-clockwise from a line parallel to the equatorial plane to the major axis of the ellipse, to the nearest degree.

Column 13 - Orbital service arc, contains the service arc on the geostationary satellite orbit in degrees of longitude from Greenwich.

Columna 7 - Longitud nominal, contiene la longitud nominal preferida, en grados y décimas de grado, del satélite con relación al meridiano de Greenwich.

Columna 8 - Coordenadas geográficas de la intersección del eje del haz de la antena con la Tierra, contiene las coordenadas geográficas de dicha intersección, en grados y minutos; figura en primer lugar, por ejemplo: "118E34 50N32".

Columna 9 - Haz de la antena de sección transversal circular, contiene la abertura angular del haz de la antena en los puntos de semipotencia, en grados y décimas de grado.

Columnas 10, 11 y 12 - Haz de la antena de sección transversal elíptica:
La columna 10 contiene la abertura angular en los puntos de semipotencia, correspondiente al eje mayor de la elipse, en grados y centésimas de grado;

La Columna 11 contiene la abertura angular en los puntos de semipotencia, correspondiente al eje menor de la elipse, en grados y centésimas de grado;

La Columna 12 contiene la orientación de la elipse determinada como sigue: en un plano perpendicular al eje del haz, la dirección del eje mayor de la elipse se define como el ángulo medido en sentido contrario al de las agujas de un reloj, desde una línea paralela al plano ecuatorial hasta el eje mayor de la elipse, redondeado al grado más próximo.

Columna 13 Arco orbital de servicio, contiene el arco de servicio en la órbita del satélite geoestacionario, en grados de longitud con relación al meridiano de Greenwich.

Colonne 14 - Territoire à desservir.
En règle générale, les administrations ont indiqué le territoire à desservir soit au moyen d'une carte accompagnée d'un diagramme pour représenter la zone à desservir ou d'une carte non accompagnée d'un diagramme, soit en inscrivant le nom du pays ou les renseignements pertinents dans les colonnes 7 à 13. Les symboles numériques 0, 1 ou 2 qui figurent dans la première position de la colonne 14 indiquent respectivement ces différents cas. La signification de ces symboles numériques est la suivante :

- un zéro "0" signifie qu'au formulaire de demande n'était pas jointe une carte accompagnée d'un diagramme pour représenter la zone à desservir;

- le chiffre "1" signifie qu'au formulaire de demande était jointe une carte accompagnée d'un diagramme pour représenter la zone à desservir; ces documents sont reproduits dans l'annexe 4 à la présente lettre-circulaire. Dans ladite annexe, les cartes se présentent par ordre alphabétique des symboles désignant les pays; lorsqu'il existe plusieurs cartes pour l'un de ces sysmboles, ces cartes sont classées par ordre numérique croissant des numéros de série de l'I.F.R.B.;

- le chiffre "2" signifie qu'au formulaire de demande était jointe une carte non accompagnée d'un diagramme pour représenter la zone à desservir. Les cartes ne sont dans ce cas pas reproduites dans l'annexe 4 à la présente lettre-circulaire; on pourra les consulter en s'adressant au Secrétariat spécialisé de l'I.F.R.B.

Column 14 - Territory to be provided with service.
In general, Administrations have indicated the territory to be provided with service either by means of a map with a diagram indicating the area to be served or by a map without a diagram or by indicating the name of the country or by providing information in Columns 7 to 13 inclusive; in order to differentiate between these cases, the first position in Column 14 contains the symbol 0, 1 or 2 of which the meaning is as follows:

- a zero "0", the Requirements form was not accompanied by a map with a diagram indicating the area to be provided with service;

- the number "1", the Requirements form was accompanied by a map with a diagram indicating the area to be provided with service, which is reproduced in Annex 4 to the present Circular-letter; in that Annex, the maps are arranged in alphabetical order of the country symbol; where there are two or more maps for a given country symbol, these are arranged in ascending order of the I.F.R.B. serial number;

- the number "2", the Requirements form was accompanied by a map without a diagram indicating the area to be provided with service; this map is not reproduced in Annex 4 to the present Circular-letter; these maps will be available for consultation in the I.F.R.B. Specialized Secretariat.

Columna 14 - Territorio a que se desea dar servicio.
En general, las Administraciones han indicado el territorio a que se desea dar servicio, bien por medio de un mapa con un diagrama para representar la zona de servicio o de un mapa sin diagrama, o bien indicando el nombre del país o facilitando información en las columnas 7 a 13 inclusive; con el fin de diferenciar estos casos, en la primera posición de la columna 14 figuran los símbolos, 0, 1 ó 2, cuyo significado es el siguiente:

- un cero "0" significa que el formulario de solicitud no iba acompañado de un mapa con un diagrama indicando la zona a que se desea dar servicio;

- la cifra "1" significa que el formulario de solicitud iba acompañado de un mapa indicando la zona a que se desea dar servicio, que se reproduce en el Anexo 4 a la presente carta circular. En el Anexo, los mapas se disponen por orden alfabético de los símbolos de país. Cuando hay dos o más mapas para un símbolo de país dado, se disponen por orden creciente del número de la I.F.R.B.;

- la cifra "2" significa que el formulario de solicitud iba acompañado de un mapa sin diagrama que indicara la zona a que se desea dar servicio; este mapa no se reproduce en el Anexo 4 a la presente carta circular. Los mapas podrán consultarse en la Secretaría especializada de la I.F.R.B.

Colonne 15 - Observations. La colonne 15 contient les autres données techniques communiquée avec le forumulaire de demande; ces données sont codées par ordre numérique croissant; elles sont précédées de la lettre A (administration) lorsqu'elles émanent d'une administration (les données sont alors comprises dans la série "A001 - A999"); elles sont précédées de la lettre B (Board) lorsqu'elles ont été introduites par l'I.F.R.B. (les données sont alors comprises dans la série "B001 - B999"). Le sens des numéros d'observation est donné dans l'annexe 3 à la présente lettre-circulaire.

Le symbole ♦ qui suit un symbole désignant un pays signifie que les renseignements émanent d'une source extérieure à l'Union; leur publication n'implique aucune reconnaissance par l'Union du statut de l'expéditeur.

Column 15 - Remarks,
contains any other technical information received with the Requirements form and coded consecutively with the prefix "A" (Administration) viz. "A001-A999"; the prefix "B" (Board) viz. "B001-B999", indicates that the information has been introduced by the I.F.R.B.; the explanation of these Remarks numbers is given in Annex 3 to the present Circular-letter.

The symbol ♦ following a country symbol denotes that the relevant information was received from a source outside the Union and that publication of this information implies no recognition by the Union of the status of the sender in relation thereto.

Columna 15 - Observaciones,
contiene las demás informaciones técnicas recibidas con el formulario de solicitud y codificadas posteriormente con el prefijo "A" (administración), es decir, "A001-A999"; el prefijo, "B" (Junta), es decir, "B001-B999", indica que la información ha sido introducida por la I.F.R.B.; la explicación de estos números de las observaciones figura en el Anexo 3 a la presente carta circular.

El símbolo ♦ , detrás de un símbolo de país, indica que la información proviene de fuente ajena a la Unión, y que su publicación no entraña el reconocimiento por la Unión del estatuto del remitente en relación con la misma.

ANNEXE 2

Liste des demandes

Les caractéristiques additionnelles ou modifiées concernant une inscription dans la liste sont soulignées. Si toute l'inscription a trait à des renseignements additionnels, la lettre "N" est placée à gauche de l'inscription.

Les inscriptions se présentent dans l'ordre alphabétique des symboles désignant les pays ou les zones géographiques; ces symboles figurent dans la case 03 du formulaire de demande et dans la colonne 3 de la liste.

ANNEX 2

List of Requirements

Additional or changed characteristics concerning an entry in the List are underlined. Where the whole entry is additional information, the letter "N" appears in the left-hand margin against the entry.

Entries are arranged in the alphabetical order of the symbol designating the country or geographical area appearing in Box 03 of the Requirements Form and in Column 3 of the List.

ANEXO 2

Lista de solicitudes

Las caractéristicas adicionales o modificaciones relativas a una inscripción en la Lista están subrayadas. Cuando en la inscripción se trata de información adicional, la letra "N" aparece en el margen izquierdo de la inscripción.

Las inscripciones figuran por orden alfabético de los símbolos designativos del país o la zona geográfica que aparecen en la Casilla 03 del formulario de solicitud y en la columna 3 de la Lista.

PARTIE A - PART A - PARTE A

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0245	AFG	AFG	4	B	01-20	55.0E	069E59 35N15		1.00	0.90	027	050E 055E	0	
0246	AFG	AFG	4	B	01-20	55.0E	064E17 33N22		1.30	1.20	064	050E 055E	0	
0099	F	AFI	5	K1 SECAM	00-24	15.0E	42E30 11N27	00.6				015E 030E	1	A061 B017
0021	AFS	AFS	5	I PAL	04-22	6.0E	24E15 28S15		2.91	1.43	030	005W 012E	1 AFS-1	A054 B017
0022	AFS	AFS	2	I PAL	04-22	6.0E	28E30 31S12		0.86	0.36	036		1 AFS-2	B017
0023	AFS	AFS	2	I PAL	04-22	6.0E	31E00 27S45		1.16	0.39	046		1 AFS-3	B017
0024	AFS	AFS	4	I PAL	04-22	6.0E	27E00 26S00		1.83	0.78	033		1 AFS-4	B017
0295	IFB	AGL	1			15.0W	16E30 12S30		2.53	1.95	071			
0296	IFB	ALB	1			7.5W	19E30 41N12	00.6						
0250	ALG	ALG	5	B G PAL	00-24	20.0W	02E00 27N50		3.58	2.84	154		0 ALG-1	A124 A127 A187
0251	ALG	ALG	5	B G PAL	00-24	20.0W	00E60 31N50		3.22	1.53	006		0 ALG-2	A125 A127 A187
0252	ALG	ALG	5	B G PAL	00-24	20.0W	01E50 25N00		3.49	2.07	162		0 ALG-3	A126 A127 A187

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0238	F	AND	5		00-24	24.0W	01W36 42N30	00.6				024W 015W	1 AND-1	
0261	E	AND	2	G	00-24	37.5W	03W00 39N36		1.85	0.89	154	024W 015W	1 AND-2	A185
0262	E	AND	5	G	00-24	24.0W	01W36 42N30	00.6				024W 015W	1 AND-1	A184
0003	ARS	ARS	5	B SECAM	00-24	20.0E	42E00 23N00		3.10	1.30	132	015E 025E	2 ARS	
0275	ARS	ARS	5	B SECAM	00-24	20.0E	46E30 25N48		3.60	1.20	145	015E 025E	0	
0004	AUS	AUS	6	B G	22-16	105.0E	121E48 24S54		3.40	1.90	056	095E 105E	1 AUS-1	A052 B002
0005	AUS	AUS	6	B G	20-16	105.0E	133E30 18S48		2.50	1.30	080	095E 105E	1 AUS-1	A052 B002
0006	AUS	AUS	6	B G	20-16	105.0E	135E24 30S18		1.80	1.40	045	095E 105E	1 AUS-1	A052 B002
0007	AUS	AUS	6	B G	20-14	130.0E	145E00 38S06	01.3				120E 135E	1 AUS-1	A052 B002
0008	AUS	AUS	6	B G	20-14	130.0E	145E54 21S30		2.70	1.80	120	120E 135E	1 AUS-1	A052 B002
0009	AUS	AUS	6	B G	20-14	130.0E	147E12 32S00		1.90	1.20	015	120E 135E	1 AUS-1	A052 B002
0010	AUS	AUS	4	B G	22-16	105.0E	121E48 24S54		3.40	1.90	056	105E 105E	1 AUS-2	A052 B003
0011	AUS	AUS	4	B G	20-16	105.0E	133E30 18S48		2.50	1.30	080	105E 105E	1 AUS-2	A052 B003
0012	AUS	AUS	4	B G	20-16	105.0E	135E24 30S18		1.80	1.40	045	105E 105E	1 AUS-2	A052 B003
0013	AUS	AUS	4	B G	20-16	105.0E	144E24 38S30		1.50	0.80	045	105E 105E	1 AUS-2	A052 B003
0014	AUS	AUS	4	B G	20-16	105.0E	145E12 21S48		2.30	1.50	085	105E 105E	1 AUS-2	A052 B003
0015	AUS	AUS	4	B G	20-16	105.0E	146E54 31S36		1.60	1.00	045	105E 105E	1 AUS-2	A052 B003
N 0315	AUS	AUS	3	B G	22-16	130.0E	122E12 24S48		3.06	2.26	075	130E 130E	1 AUS-3	A172
N 0316	AUS	AUS	3	B G	20-16	130.0E	133E42 18S42		2.55	1.60	095	130E 130E	1 AUS-3	A172
N 0317	AUS	AUS	3	B G	20-16	130.0E	135E48 30S12		2.00	1.65	160	130E 130E	1 AUS-3	A172
N 0318	AUS	AUS	3	B G	20-16	130.0E	145E00 38S06	01.3				130E 130E	1 AUS-3	A172
N 0319	AUS	AUS	3	B G	20-16	130.0E	145E54 21S30		2.70	1.80	120	130E 130E	1 AUS-3	A172
N 0320	AUS	AUS	3	B G	20-16	130.0E	147E12 32S00		1.90	1.20	015	130E 130E	1 AUS-3	A172

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0016	AUT	AUT	4	B G PAL	00-24	15.0W	12E12 47N30		1.14	0.66	167	005W 015W	0	A047 A048 ___
0017	AUT	AUT	1	B G PAL	00-24	15.0W	10E07 49N09		1.86	0.94	153	005W 015W	0	A049 A050 A166
0134	POR	AZR	5	G	00-24	26.0W	23W21 36N10		2.51	0.69	158	026W 033W	2 AZR	A020
0270	BDI	BDI	5		01-24	5.0E	29E25 03S23	00.6				000E 005E	0	A177
0018	BEL	BEL	5	G	00-24	15.0W	04E38 50N37		0.70	0.60	160	020W 011W	1	A030
0220	BGD	BGD	5	B PAL	00-17	73.0E	90E00 24N00		1.18	0.71	138		0	A111
0255	BHR	BHR	4	B G PAL	03-21	22.5E	50E35 26N14	00.6					0	A173

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0062	URS	BLR	2	D K	06-22	20.0E	27E50 52N56		1.00	0.60	003	010E	020E 1 BLR	A095
0297	IFB	BOT	1			7.5W	23E24 22S15		1.88	1.19	042			
0298	IFB	BRM	1			67.5E	96E34 19N28		3.50	1.18	110			
0020	BUL	BUL	5	D K SECAM	00-24	10.0W	24E59 42N55		0.90	0.60	163	020W	005E 1	
0258	CAF	CAF	5	K1	00-24	5.0W	20W24 06N20		2.60	1.54	014	010W	010E 0	
0299	IFB	CBG	1			75.0E	104E45 12N30		0.84	0.67	042			

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0154	CHN	CHN	4	K	00-19	64.0E	84E25 40N18		2.48	1.60	003	055E 065E	1 CHN-1	A066 A129
0155	CHN	CHN	4	K	00-19	64.0E	88E36 31N49		3.20	1.21	164	055E 065E	1 CHN-2	A066 A130
0156	CHN	CHN	3	K	00-19	64.0E	98E33 36N24		2.23	1.49	150	055E 065E	1 CHN-3	A066 A067 A131
0157	CHN	CHN	3	K	00-19	64.0E	102E37 28N19		2.43	1.28	120	055E 065E	1 CHN-4	A066 A067 A132
0158	CHN	CHN	3	K	22-17	79.0E	111E58 37N45		2.56	1.47	126	075E 085E	1 CHN-5	A066 A067 A133
0159	CHN	CHN	3	K	22-17	79.0E	109E30 27N08		1.83	1.44	101	075E 085E	1 CHN-6	A066 A067 A134
0160	CHN	CHN	3	K	22-17	94.0E	123E37 46N03		2.01	1.42	145	090E 095E	1 CHN-7	A066 A067 A135
0161	CHN	CHN	3	K	22-17	94.0E	118E10 31N26		1.99	1.51	096	085E 095E	1 CHN-8	A066 A067 A136
0162	CHN	CHN	3	K	22-17	94.0E	115E25 21N31		2.70	1.69	045	085E 095E	1 CHN-9	A066 A067 A137
0163	CHN	CHN	1	K	22-17	79.0E	116E10 39N52		0.94	0.63	120	075E 085E	1 CHN-10	A066 A067 A138
0164	CHN	CHN	1	K	22-17	79.0E	112E13 37N31		0.76	0.60	091	075E 085E	1 CHN-11	A066 A067 A139
0165	CHN	CHN	1	K	22-17	79.0E	111E42 41N59		1.40	0.88	016	075E 085E	1 CHN-12	A066 A067 A140
0166	CHN	CHN	1	K	22-17	94.0E	121E02 41N52		1.37	0.60	150	090E 095E	1 CHN-13	A066 A067 A141
0167	CHN	CHN	1	K	22-17	94.0E	125E00 43N40		1.77	0.60	151	090E 095E	1 CHN-14	A066 A067 A142
0168	CHN	CHN	1	K	22-17	94.0E	125E07 47N34		2.30	0.80	158	090E 095E	1 CHN-15	A066 A067 A143
0169	CHN	CHN	1	K	22-17	94.0E	118E48 36N47		0.96	0.60	017	085E 095E	1 CHN-16	A066 A067 A144
0170	CHN	CHN	1	K	22-17	94.0E	120E06 32N42		1.26	0.60	150	085E 095E	1 CHN-17	A066 A067 A145
0171	CHN	CHN	1	K	22-17	94.0E	116E58 32N02		0.93	0.60	136	085E 095E	1 CHN-18	A066 A067 A146
0172	CHN	CHN	1	K	22-17	94.0E	120E46 29N11		0.73	0.61	150	085E 095E	1 CHN-19	A066 A067 A147
0173	CHN	CHN	1	K	22-17	94.0E	116E02 27N16		1.18	0.66	105	085E 095E	1 CHN-20	A066 A067 A148
0174	CHN	CHN	1	K	22-17	94.0E	118E35 25N52		0.84	0.70	084	085E 095E	1 CHN-21	A066 A067 A149
0175	CHN	CHN	1	K	22-17	94.0E	120E23 22N34		1.37	0.82	058	085E 095E	1 CHN-22	A066 A067 A150
0176	CHN	CHN	1	K	22-17	79.0E	114E16 33N53		1.05	0.60	149	075E 085E	1 CHN-23	A066 A067 A151
0177	CHN	CHN	1	K	22-17	79.0E	112E23 30N43		1.04	0.65	155	075E 085E	1 CHN-24	A066 A067 A152
0178	CHN	CHN	1	K	22-17	79.0E	111E52 27N43		1.05	0.61	121	075E 085E	1 CHN-25	A066 A067 A153
0179	CHN	CHN	1	K	22-17	94.0E	112E25 22N05		1.87	0.87	035	085E 095E	1 CHN-26	A066 A067 A154
0180	CHN	CHN	1	K	22-17	94.0E	113E23 13N23		3.45	1.86	086	085E 095E	1 CHN-27	A066 A067 A155
0181	CHN	CHN	1	K	22-17	79.0E	108E21 24N07		1.09	0.82	145	075E 085E	1 CHN-28	A066 A067 A156
0182	CHN	CHN	1	K	22-17	79.0E	108E43 35N10		1.15	0.67	112	075E 085E	1 CHN-29	A066 A067 A157
0183	CHN	CHN	1	K	00-19	64.0E	104E54 38N59		1.22	0.60	134	055E 065E	1 CHN-30	A066 A067 A158
0184	CHN	CHN	1	K	00-19	64.0E	100E55 37N56		2.42	0.72	149	055E 065E	1 CHN-31	A066 A067 A159
0185	CHN	CHN	1	K	00-19	64.0E	95E50 35N31		1.83	0.93	161	055E 065E	1 CHN-32	A066 A067 A160
0186	CHN	CHN	1	K	00-19	64.0E	103E04 30N12		1.76	0.95	146	055E 065E	1 CHN-33	A066 A067 A161
0187	CHN	CHN	1	K	22-17	79.0E	106E35 26N40		0.86	0.66	004	075E 085E	1 CHN-34	A066 A067 A162
0188	CHN	CHN	1	K	00-19	64.0E	101E50 25N55		1.59	0.93	120	055E 065E	1 CHN-35	A066 A067 A163

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0052	NZL	CKH	4	B	21-13	155.0E	160W15	19S36	0.90	0.60	155		1 CKH	A068 A112 B017
0053	NZL	CKN	4	B	21-13	155.0E	162W34	11S00	1.30	0.60	030		1 CKN	A068 A112 B017
0219	CLN	CLN	4	B	23-19	47.5E	80E38	07N41	00.6			035E 079E	0	
0300	IFB	CME	1			22.5W	12E48	05N48	2.49	1.18	093			
0130	E	CNR	5	G	00-24	25.0W	15W44	28N24	1.06	0.60	002	026W 011W	1	A002 A190 B017
0235	COG	COG	5	K1	00-24	10.0W	14E48	00S48	1.89	1.00	067		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0207	COM	COM	4	K	04-21	25.0E	44E09	12S04	00.6			010E	030E	0
0301	IFB	CPV	1			52.5W	24W00	15N40	00.6					
0237	CTI	CTI	5	K1 SECAM	00-24	30.0W	05W30	07N30		1.60	1.22	102	040W	015W 2 CTI
0083	CVA	CVA	3	G PAL	00-24	15.0W	12E26	41N54	00.6				010W	018W 1 CVA-1
0084	CVA	CVA	1	G PAL	00-24	15.0W	12E26	41N54		1.90	0.80	145	010W	018W 1 CVA-2
0085	CVA	CVA	1	G PAL	00-24	15.0W	04E00	43N43		4.00	1.30	155	000W	035W 1 CVA-3
0086	CYP	CYP	5	B G	02-24	15.0W	33E24	35N08	00.6				015W	011W 2 CYP A178
0087	D	D	4	G PAL	00-24	15.0W	09E34	50N35		1.42	0.68	149	005W	015W 0 A042 A043 A044
0088	D	D	1	G PAL	00-24	15.0W	10E07	49N09		1.86	0.94	153	005W	015W 0 A042 A045 A046

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0233	DAH	DAH	5	K1 SECAM	00-24	15.0W	02E18 09N28		1.42	0.72	093	020W 075W		
0216	DDR	DDR	5	B G SECAM	05-24	10.0W	12E21 52N09		0.90	0.60	154	011W 021W	1	
0089	DNK	DNK	3	G PAL	00-24	0.0E	12E18 57N12		1.20	0.60	177	000E 004E	2 DNK	A010 A108
0090	DNK	DNK	2	G PAL	00-24	0.0E	16E40 61N00		2.20	1.20	000	000E 004E	2 DNK	A011 A108 A192
0091	DNK	DNK	5	G PAL	00-24	0.0E	19W30 61N00		2.00	0.60	004	000E 004E	2 DNK	A012 A109 A194
0129	E	E	5	G	00-24	25.0W	03W00 39N45		1.93	0.99	164	026W 011W	1	A001 B017
0026	EGY	EGY	5	B G SECAM	00-24	0.0E	30E30 27N51		2.61	1.17	135	000E 010W	1	B017
0092	ETH	ETH	5	B G	00-24	15.0E	40E00 10N00		2.52	1.52	108		2 ETH	B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0093	F	F	5	L SECAM	00-24	15.0W	03E15 45N55		2.32	0.90	150	024W 015W	2 F	A056
0094	F	F	1	L SECAM	00-24	24.0W	03E15 45N55		2.32	0.90	150	024W 040E	2 F	
0193	FJI	FJI	3	B G	18-13	150.0E	179E30 17S48		0.78	0.76	133		1	B017
0103	FNL	FNL	3	G PAL	00-24	0.0E	23E30 63N30		1.40	0.80	165	000E 004E	2 FNL	A005 A104 A193
0104	FNL	FNL	2	G PAL	00-24	0.0E	16E40 61N00		2.20	1.20	000	000E 004E	2 FNL	A006 A104 A192
0027	G	G	5	I PAL	00-24	26.0W	03W37 53N58		1.64	0.83	149	030W 015W	1	A035 A036
0260	GAB	GAB	4	K1	04-24	15.0W	11E50 00S42		1.40	1.12	080	008W 030W	0	
0108	GHA	GHA	5	B G	05-24	30.0W	01W30 07N50		1.50	0.96	101	022W 042W	2 GHA	A195

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0302	IFB	GMB	1			50.0W	15W12	13N25	00.6					
0303	IFB	GNE	1			15.0W	10E30	01N40	00.6					
0304	IFB	GNP	1			50.0W	14W23	12N05	00.6					
0105	GRC	GRC	5	B G	02-24	15.0W	24E53	38N12	1.60	0.92	159	015W 011W	2 GRC	A003 A004 A178
0192	GUI	GUI	5	K1	08-24	45.0W	11W19	10N27	1.27	0.90	129		0	
0106	HNG	HNG	5	K SECAM	07-24	10.0W	19E30	47N00	0.80	0.50	152	010W 020W	2 HNG	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0213	HOL	HOL	5	G	00-24	15.0W	05E06 51N36		0.70	0.60	165	018W 010W	2 HOL	A105
0107	HVO	HVO	5	K1	00-24	30.0W	01W54 12N07		1.46	1.20	015	035W 010W	0	A034 B017
0082	I	I	7	G PAL	00-24	15.0W	12E27 40N46		2.34	1.00	142	011W 018W	1	A033
0037	IND	IND	4	B PAL	22-19	70.0E	93E00 26N00		1.40	0.90	040	062E 077E	1 IND-1	A027
0038	IND	IND	4	B PAL	22-19	62.5E	75E54 33N24		1.30	0.90	033	055E 070E	1 IND-2	A027
0039	IND	IND	4	B PAL	22-19	62.5E	72E48 11N12		0.90	0.80	105	055E 070E	1 IND-3	A027
0040	IND	IND	4	B PAL	22-19	62.5E	73E06 24N48		1.80	1.30	044	055E 070E	1 IND-4	A027
0041	IND	IND	4	B PAL	22-19	65.0E	77E36 15N42		1.80	1.10	041	057E 072E	1 IND-5	A027
0042	IND	IND	4	B PAL	22-19	65.0E	79E06 27N18		1.70	0.80	143	057E 072E	1 IND-6	A027
0043	IND	IND	4	B PAL	22-19	65.0E	77E48 10N54		1.40	1.00	040	057E 072E	1 IND-7	A027
0044	IND	IND	4	B PAL	22-19	65.0E	80E00 23N24		2.00	1.30	150	057E 072E	1 IND-8	A027
0045	IND	IND	4	B PAL	22-19	62.5E	76E36 19N42		1.60	1.00	043	055E 070E	1 IND-9	A027
0046	IND	IND	4	B PAL	22-19	70.0E	84E05 20N08		1.30	0.80	043	062E 077E	1 IND-10	A027
0047	IND	IND	4	B PAL	22-19	70.0E	93E06 10N48		1.50	0.80	095	062E 077E	1 IND-11	A027
0048	IND	IND	4	B PAL	22-19	70.0E	86E01 25N01		1.50	0.90	164	062E 077E	1 IND-12	A027
0028	INS	INS	4	B PAL	23-18	77.0E	99E00 01N27		1.90	0.80	130		1 INS-1	B017
0029	INS	INS	4	B PAL	23-18	77.0E	104E00 02S48		1.40	1.25	083		1 INS-2	B017
0030	INS	INS	4	B PAL	23-18	77.0E	110E36 07S51		1.26	0.70	163		1 INS-3	B017
0031	INS	INS	4	B PAL	22-17	83.0E	110E57 01S21		1.27	0.99	159		1 INS-4	B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0032	INS	INS	4	B PAL	22-17	83.0E	115E51	00S24	1.72	0.89	078		1 INS-5	B017
0033	INS	INS	4	B PAL	22-17	83.0E	122E15	01S42	1.83	0.92	077		1 INS-6	B017
0034	INS	INS	4	B PAL	22-17	83.0E	121E45	08S57	1.48	0.86	003		1 INS-7	B017
0035	INS	INS	4	B PAL	21-16	97.5E	128E18	01S54	1.75	1.13	077		1 INS-8	B017
0036	INS	INS	4	B PAL	21-16	97.5E	135E09	05S12	2.00	1.41	085		1 INS-9	B017
0211	IRL	IRL	5	I	00-24	26.0W	07W50	53N24	0.82	0.60	062	030W 015W	1	A103 A167
0109	IRN	IRN	4	B G	04-22	35.0E	52E00	33N00	3.30	1.40	143	030E 045E	1	
0256	IRQ	IRQ	4			22.5E	43E40	33N00	1.82	0.91	154		0	
0049	ISL	ISL	5	G PAL	00-24	25.0W	19W20	64N58	1.00	0.60	004	020W 030W	1 ISL-1	A073
0050	ISL	ISL	5	G PAL	00-24	0.0W	19W30	61N00	2.00	0.60	004	000E 004E	1 ISL-2	A028 A029
0110	ISR	ISR	4	B G	04-23	7.5E	34E45	31N30	00.6			004E 025W	0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0111	J	J	8	M	21-16	110.0E	134E41	31N59	3.40	2.90	046		1 J RYU	
0224	JOR	JOR	5	B PAL	00-24	7.5E	36E15	31N45	0.86	0.58	130		0	A113
0249	KEN	KEN	5	G PAL	05-22	15.0E	37E55	00N42	2.15	1.43	095	012E 018E	2 KEN	A123
0112	KOR	KOR	6	M	00-24	103.2E	128E10	35N41	1.30	0.90	008	098E 113E	1	A018
0286	KRE	KRE	5	D PAL	00-24	100.0E	127E00	40N20	00.6					A197
0113	KWT	KWT	6	B G PAL	04-22	19.0E	47E42	29N20	00.6			019E 010W	2 KWT	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0284	LAO	LAO	5	D K	19-16	75.0E	103E50	18N00	1.80	0.60	130	065E 090E	0	
0279	LBN	LBN	5	G PAL	00-24	15.0E	36E00	34N00 00.6					0	
0244	LBR	LBR	4	B G	00-24	45.0W	09W24	00N24	0.91	0.41	123		0	A121
0280	LBY	LBY	5	B G	00-24	20.0W	18E54	25N42	2.62	1.66	140		0	A186
N 0321	LBY	LBY	5	B G	00-24	20.0W	13E00	27N12	2.20	1.23	139		0	
0253	LIE	LIE	5	G PAL	00-24	15.0W	09E34	47N08 00.8				005W 015W	0	A128
0305	IFB	LSO	1			7.5E	28E07	29S34 00.6						

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0114	LUX	LUX	5	B G L	00-24	15.0W	06E04	49N47	00.6			024W 010W	1	A019
0242	MAU	MAU	5	B SECAM	00-21	35.0E	60E00	19S00	01.3			030E 050E	1 MAU-1	A119 A120
0243	MAU	MAU	4	B SECAM	00-21	35.0E	57E00	14S00	01.3			030E 050E	1 MAU-2	A119 A120
0116	MCO	MCO	3	L SECAM	00-24	15.0W	07E25	43N43	1.32	0.60	010	025W 010W	1 MCO-1	A008
0117	MCO	MCO	2	L SECAM	00-24	15.0W	06E55	44N15	1.85	0.58	169	025W 010W	1 MCO-2	A007
0236	MDG	MDG	5	K1	00-24	25.0E	46E33	18S50	2.74	1.06	064	010E 030E	0	
0227	MLA	MLA	4	B G	22-18	80.0E	102E11	04N02	1.40	0.60	115	075E 085E	1 MLA-W	A114
0228	MLA	MLA	4	B G	22-18	80.0E	114E31	03N49	2.00	0.90	045	075E 085E	1 MLA-E	
0306	IFB	MLD	1			45.0E	72E33	04N00	2.26	0.42	096			

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0118	MLI	MLI	5	K1	00-24	30.0W	07W06	13N36	1.34	0.87	020	030W 010W	2 MLI	
0269	MLI	MLI	5	K1	00-24	30.0W	01W42	19N12	1.66	1.03	130	030W 010W	0	
0147	MLT	MLT	4	H	08-22	15.0W	14E25	35N55 00.6					0	
0248	MNG	MNG	5	D K	01-17	80.0E	102E44	46N56	3.10	1.20	173	070E 080E	2 MNG	
0307	IFB	MOZ	1			0.0E	34E30	17N30	3.22	1.22	058			
0209	MRC	MRC	5	B SECAM	00-24	20.0W	08W45	29N45	2.42	1.27	043	030W 020W	1	A189 B017
N 0292	MRC	MRC	5	B SECAM	00-24	30.0W	08W45	29N45	2.50	1.40	043	035W 025W	0	
0223	MTN	MTN	5	B SECAM	06-02	20.0W	12W30	19N00	2.86	1.41	162	020W 035W	2 MTN	A116 A188
0288	MTN	MTN	5	B SECAM	06-02	20.0W	06W00	24N00	1.60	0.80	140	020W 035W		A188
N 0293	MTN	MTN	5	B SECAM	06-02	35.0W	05W50	24N00	1.60	0.80	140	030W 035W	0	
N 0294	MTN	MTN	5	B SECAM	06-02	35.0W	12W00	19N00	2.40	1.20	140	030W 035W	0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0308	IFB	MWI	1			7.5E	33E55 13S02		1.41	0.45	089			
0098	F	MYT	5	K1 SECAM	00-24	30.0E	45E06 12S50	00.6				025E 040E	1	A060
0100	F	NCL	4	K1 SECAM	00-24	140.0E	166E00 21S00		1.14	0.72	146	140E 155E	1	A062
0115	NGR	NGR	5	K	00-24	30.0W	08E12 16N48		2.44	2.00	056	030W 000W	0	B006 B017
0128	G	NHB	4			140.0E	168E03 16S57		1.03	0.60	095	140E 155E	0	A037 B017
0119	NIG	NIG	5	B G	05-24	45.0W	07E48 10N00		1.82	0.84	098	030W 045W	2 NIG	A171

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0054	NZL	NIU	2	B	21-13	155.0E	169W54	19S00	00.6				1 NIU	A068 A112
0025	AFS	NMB	4	I PAL	04-22	15.0W	17E45	21S03	2.24	1.63	054		1	B017
0120	NOR	NOR	3	G PAL	00-24	0.0E	14E09	64N37	1.53	0.93	018	000E 004E	1 NOR-1	A009
0121	NOR	NOR	2	G PAL	00-24	0.0E	16E40	61N00	2.20	1.20	000	000E 004E	2 NOR-2	A009 A192
0122	NPL	NPL	3		23-19	52.5E	84E00	28N03	1.17	0.60	154		2 NPL	B004 B017
0309	IFB	NRU	1			135.0E	166E33	00S18	00.6					
0055	NZL	NZL	4	B	20-12	155.0E	173E00	40S00	2.40	0.90	040		1 NZL-1	A068 A112 B017
0287	NZL	NZL	3	B	20-12	130.0E	173E30	41S30	2.50	1.00	038		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0101	F	OCE	4	K1 SECAM	00-24	160.0W	144W30 16S00		3.85	3.27	176	165W 155W	1	A063 B017
0123	OMA	OMA	5	B G	05-22	20.0E	55E50 21N00		1.49	1.12	098		0	B007
0124	OMA	OMA	5	B G	05-22	20.0E	54E00 22N50		2.23	1.42	128		0	B007
0125	OMA	OMA	5	B G	05-22	20.0E	50E00 18N50		2.66	1.72	046		0	B007
0126	OMA	OMA	5	B G	05-22	20.0E	45E00 23N50		5.14	3.01	142		0	B007
0127	PAK	PAK	3	B PAL	00-21	40.0E	69E42 29N51		2.19	1.88	014	035E 045E	2 PAK	
0210	PAK	PAK	2	B PAL	00-21	40.0E	71E51 30N45		0.93	0.64	102	035E 045E	0	B009
0281	PAK	PAK	2	B PAL	00-21	40.0E	65E06 28N15		1.32	1.20	076	035E 045E		
0282	PAK	PAK	2	B PAL	00-21	40.0E	67E57 26N30		1.23	0.48	143	035E 045E		
0283	PAK	PAK	2	B PAL	00-21	40.0E	74E42 33N54		1.14	0.93	160	035E 045E		
0285	PHL	PHL	5	M NTSC	21-17	90.0E	122E00 11N18		2.87	1.63	102			
0131	PNG	PNG	4	B G	19-15	110.0E	147E30 06S30		2.31	2.03	139		1	B016 B017
0271	PNG	PNG	3	B G	19-15	130.0E	148E00 06S42		2.80	2.05	155		0	A196

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0132	POL	POL	5	D K	04-24	10.0W	19E20	52N00	1.40	0.60	158	005W 010W	2 POL	
0133	POR	POR	5	G	00-24	26.0W	08W01	39N36	0.98	0.58	101	026W 033W	2 POR	A020
0247	QAT	QAT	4	B PAL	06-21	22.5E	51E12	25N12	00.6				0	
0097	F	REU	5	K1 SECAM	00-24	30.0E	55E15	19S30	1.30	0.80	110	030E 045E	1	A064 B017
0135	RHS	RHS	5	B	16-22	0.0E	29E00	18S30	1.29	0.85	087		2 RHS	B017
0136	ROU	ROU	5	D K	04-24	10.0W	24E33	45N25	1.30	1.10	171	005E 015W	1 ROU-1	A022
SUP0137	ROU													

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0310	IFB	RRW	1			0.0E	30E02	01S21	00.6					
0138	S	S	3	B G PAL	00-24	0.0E	16E08	61N01	1.12	0.90	144	000E 004E	1 S-1	A013 A014 A195
0139	S	S	2	B G PAL	00-24	0.0E	16E40	61N00	2.20	1.20	000	000E 004E	1 S-2	A013 A015 A192 A195
0230	SDN	SDN	5	B G PAL	04-24	15.0W	29E00	07N45	1.93	0.87	128	000W 020W	2 SDN-1	A115 A179
0231	SDN	SDN	5	B G PAL	04-24	15.0W	30E00	12N45	2.04	1.36	146	000W 020W	2 SDN-2	A115 A179
0232	SDN	SDN	5	B G PAL	04-24	15.0W	30E03	18N42	1.74	1.38	134	000W 020W	2 SDN-3	A115 A179
0222	SEN	SEN	5	K1	08-24	45.0W	14W42	13N48	1.20	0.88	139	025W 045W	2 SEN	
0057	NZL	SMO	4	B	21-13	155.0E	172W06	13S45	00.6				1 SMO	A068 B017
0311	IFB	SMR	1			7.5W	12E18	43N33	00.6					

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0151	SNG	SNG	4	B G PAL	21-19	75.0E	103E49 01N22	00.6				065E 085E	2 SNG	A168
0312	IFB	SOM	1			15.0E	44E45 06N30		3.42	1.07	081			
0259	SRL	SRL	5	B G	16-01	45.0W	11W50 08N30	00.6					0	
0241	STP	STP	5		17-01	22.5W	06E48 00N51	00.6					0	A118
0140	SUI	SUI	4	G PAL	00-24	15.0W	08E17 46N40		0.98	0.76	171	005W 015W	0	A038 A039
0141	SUI	SUI	1	G PAL	00-24	15.0W	10E07 49N09		1.86	0.94	153	005W 015W	0	A040 A041 A174
0313	IFB	SWZ	1			0.0E	30E50 26S20	00.6						

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0229	SYR	SYR	5	B PALSECAM	06-24	15.0E	38E00 34N50		0.98	0.60	019		0	
0143	TCD	TCD	5	K1	00-24	15.0W	18E06 15N00		3.36	1.70	101	025W 010E	0	A023 B017
0144	TCH	TCH	5	K SECAM	05-24	10.0W	17E18 49N18		1.30	0.60	167	010W 021W	1	A024
0225	TGK	TGK	4	G PAL	02-22	10.0E	34E00 05S40		2.11	1.33	135	010W 018E	0	
0226	TGO	TGO	5	K1 SECAM	00-24	20.0W	00E54 08N42		1.28	0.60	104	030W 008W	0	
0142	THA	THA	4	B G PAL	22-19	67.5E	100E86 13N13		2.50	1.18	104	065E 075E	2	THA B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0058	NZL	TKL	2	B	21-13	155.0E	172W22	09S15	00.6				1 TKL	A068 B017
0215	TON	TON	4	B	22-14	170.0E	175W00	19S00	1.36	0.60	070		1	B017
0150	TUN	TUN	5	B G	00-24	20.0W	09E27	34N01	1.34	0.60	115	023W 015W	1	A107
0272	TUN	TUN	3	B G	00-24	20.0W	00E30	23N30	6.78	3.92	179		2 TUN	A170
0145	TUR	TUR	5	B G PAL	00-24	3.0W	034E16	38N58	2.42	0.94	165	003W 006E	1 TUR	A072
0274	UAE	UAE	4	B G PAL	03-21	22.5E	53E30	24N06	0.78	0.70	168			A183
0051	UGA	UGA	5	G PAL	05-22	0.0E	32E15	01N45	1.50	0.95	065		1	B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0063	URS	UKR	3	D K	06-22	20.0E	31E10 48N34		2.10	0.80	171	010E 020E	1 UKR	A096
0059	URS	URS	4	D K	06-22	20.0E	36E04 47N05		3.70	1.50	153	010E 020E	1 URS-1	A074 A075
0060	URS	URS	4	D K	06-22	20.0E	44E01 61N19		2.30	1.30	156	010E 020E	1 URS-2	A078 A100
0061	URS	URS	6	D K	06-22	20.0E	24E47 56N55		0.80	0.60	005	010E 020E	1 URS-9	A076
0064	URS	URS	6	D K	05-21	20.0E	45E04 41N14		1.50	0.60	156	010E 020E	1 URS-10	A079
0065	URS	URS	1	D K	06-22	20.0E	33E26 63N63		1.05	0.60	160	010E 020E	1 URS-11	A077
0066	URS	URS	6	D K	04-20	50.0E	65E23 45N50		3.70	2.00	174	040E 050E	1 URS-3	A082
0067	URS	URS	4	D K	04-20	50.0E	65E15 61N46		2.70	1.30	179	040E 050E	1 URS-4	A075 A081
0068	URS	URS	2	D K	04-20	50.0E	58E45 39N04		2.20	0.90	164	040E 050E	1 URS-13	A101
0069	URS	URS	2	D K	03-19	50.0E	70E59 38N35		1.10	0.60	163	040E 050E	1 URS-16	A085
0070	URS	URS	2	D K	03-19	50.0E	74E29 41N02		1.10	0.60	179	040E 050E	1 URS-17	A086
0071	URS	URS	2	D K	04-20	50.0E	64E08 41N32		2.30	0.90	165	040E 050E	1 URS-14	A083
0072	URS	URS	2	D K	03-19	50.0E	73E02 62N34		1.80	0.70	172	040E 050E	1 URS-15	A084
0073	URS	URS	2	D K	04-20	50.0E	55E20 64N13		1.40	0.60	006	040E 050E	1 URS-12	A080
0074	URS	URS	4	D K	02-18	80.0E	92E06 60N21		2.10	1.50	005	070E 080E	1 URS-5	A087 A100
0075	URS	URS	2	D K	02-18	80.0E	93E32 51N16		1.40	0.60	179	070E 080E	1 URS-18	A088
0076	URS	URS	2	D K	02-18	80.0E	99E29 64N15		1.40	0.60	165	070E 080E	1 URS-19	A089
0077	URS	URS	6	D K	01-17	110.0E	113E43 59N18		2.10	1.80	031	100E 110E	1 URS-6	A091 A100
0078	URS	URS	2	D K	01-17	110.0E	107E23 53N45		1.70	0.70	011	100E 110E	1 URS-20	A090
0079	URS	URS	6	D K	23-15	140.0E	138E27 58N49		2.60	1.50	062	130E 140E	1 URS-7	A092 A100
0080	URS	URS	4	D K	22-14	140.0E	156E55 56N30		2.40	2.00	018	130E 140E	1 URS-8	A093 A102
0081	URS	URS	2	D K	20-12	140.0E	169E04 65N02		1.50	0.60	168	130E 140E	1 URS-21	A094
0102	F	WAL	4	K1 SECAM	00-24	140.0E	177W27 13S21		0.79	0.60	066	140E 155E	1	A065

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0266	YEM	YEM	5	B SECAM	00-24	15.0E	44E28 15N27		1.01	0.79	090		0	
0267	YMS	YMS	5	B	03-21	15.0E	47E18 15N48		1.60	0.96	025		0	
0148	YUG	YUG	5	B G PAL	00-24	10.5W	18E32 43N55		1.64	0.60	153	010W 014W	1	A026
0149	YUG	YUG	5	B G PAL	00-24	10.5W	18E32 43N55		1.64	0.60	153	010W 014W	1	A026
0146	ZAI	ZAI	6	K1 SECAM	12-23	15.0W	24E45 00S24		1.86	1.39	192		2	ZAI
N 0322	ZAI	ZAI	3	K1 SECAM	00-24	15.0W	22E48 00N59		2.10	1.77	175		0	
N 0323	ZAI	ZAI	4	K1 SECAM	00-24	15.0W	21E15 07S15		2.59	1.49	150		0	
0314	ZMB	ZMB	5	B	18-24	7.5W	28W24 12S33		2.10	0.11	050	015E 005W	0	

PARTIE B - PART B - PARTE B

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0001	ARG	ARG	5	N	00-24	105.0W	66W00 43S15		3.11	1.00	031		1 ARG-1	A055 B017
0002	ARG	ARG	5	N	00-24	105.0W	64W45 30S45		3.94	1.12	043		1 ARG-2	A055 B017
0234	HOL	ATN	5	M	07-05	97.5W	69W03 12N19	00.6					1	A117 A175
0268	HOL	ATN	5	M	07-05	97.5W	63W04 18N01	00.6					1	A117 A176
0194	B	B	5	M PAL	13-06	100.0W	70W30 07S40		1.30	1.10	110	119W 098W	1 B-1	A169 B011 B012
0195	B	B	5	M PAL	12-05	100.0W	67W50 03S10		2.30	0.80	094	117W 094W	1 B-2	A169 B011 B012
0196	B	B	5	M PAL	12-05	100.0W	62W30 01S30		2.30	0.80	086	112W 089W	1 B-3	A169 B011 B012
0197	B	B	5	M PAL	12-05	100.0W	57W30 03S10		2.30	0.80	086	107W 084W	1 B-4	A169 B011 B012
0198	B	B	5	M PAL	12-05	90.0W	52W20 02S20		2.30	0.80	086	102W 079W	1 B-5	A169 B011 B013
0199	B	B	5	M PAL	12-05	100.0W	58W45 11S45		1.50	1.20	157	102W 091W	1 B-6	A169 B011 B012
0200	B	B	5	M PAL	12-05	90.0W	55W45 19S00		1.50	1.20	086	100W 085W	1 B-7	A169 B011 B013
0201	B	B	5	M PAL	11-04	90.0W	47W20 04S30		1.60	1.10	081	095W 075W	1 B-8	A169 B011 B013
0202	B	B	5	M PAL	11-04	90.0W	49W15 13S00		2.30	0.80	070	098W 077W	1 B-9	A169 B011 B013
0203	B	B	5	M PAL	11-04	80.0W	40W40 07S00	01.3				087W 070W	1 B-10	A169 B014
0204	B	B	5	M PAL	11-04	80.0W	41W30 12S30		1.50	1.20	068	088W 071W	1 B-11	A169 B011 B014
0205	B	B	5	M PAL	11-04	80.0W	45W20 20S00		1.80	1.00	049	089W 077W	1 B-12	A169 B011 B014
0206	B	B	5	M PAL	11-04	90.0W	52W50 27S50		2.30	0.80	057	096W 082W	1 B-13	A169 B011 B013
0019	BOL	BOL	2	B PAL	00-24	85.0W	64W30 14S30		2.28	1.41	130		0	B010 B017
0273	BOL	BOL	2	B PAL	00-24	85.0W	66W00 18S15		2.28	1.41	130		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0189	CAN	CAN	M	NTSC									1	A032
0208	CHL	CHL	4	M	12-06	110.0W	70W30	25S50	5.77	0.64	082	110W 120W	2 CHL	A097 B017
0263	CHL	CHL	4	M	12-06	115.0W	71W30	41S50	3.47	0.60	035	110W 120W		
0264	CHL	CHL	4	M	12-06	115.0W	68W90	56S00	0.75	0.60	029	110W 120W		
0265	CHL	CHL	4	M	12-06	115.0W	109W50	27S10 00.6				110W 120W		
0289	CLM	CLM	5		00-24	100.0W	74W00	05N00	3.20	1.80	107			A191
0324	CLM	CLM	5		00-24	100.0W	81W00	12N00 00.6						
0218	CUB	CUB	5	M NTSC	11-06	110.0W	79W15	21N15	1.50	0.60	161	115W 105W	1 CUB	B015 B017
0276	EQA	EQA	5	M	00-24	95.0W	84W00	02S00	3.20	1.20	180		0	A181
0277	EQA	EQA	5	M	00-24	95.0W	78W00	02S00 01.1					0	A182
0278	EQA	EQA	5	M	00-24	95.0W	91W00	01S00 00.6					0	A182

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0095	F	GDL	4	K1 SECAM	00-24	75.0W	61W45 16N12		1.08	0.42	123	085W 070W	1 GDL	A058
0152	DNK	GRL	5	G PAL	00-24	60.0W	53W18 65N36		1.80	0.60	159	055W 060W	1	A016 A110
0153	DNK	GRL	5	G PAL	00-24	60.0W	31W00 68N00	00.6				055W 060W	1	A017 A110
0290	GTM	GTM	5	M	00-24	105.0W	90W00 16N00	00.8					0	
0291	GTM	GTM	5	M	00-24	105.0W	87W00 14N00		2.20	1.00	136		0	
0096	F	GUF	4	K1 SECAM	00-24	75.0W	53W25 03N50		1.04	0.80	085	080W 060W	2 GUF	A059
0190	MEX	MEX	8	M NTSC	11-07	140.0W	107W15 26N45		3.35	1.31	141		1 MEX-1	B017
0191	MEX	MEX	8	M NTSC	11-07	125.0W	97W21 19N00		2.64	1.81	160		1 MEX-2	B017
0257	PRG	PRG	5	N	00-24	83.0W	59W00 22S50		1.63	0.91	106		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0221	SLV	SLV	1	M	12-06	88.9W	88W54	13N42	00.6		147		0	B017
0254	F	SPM	4	K1 SECAM	00-24	75.0W	56W20	46N54	00.6			086W 075W	2 SPM	
0214	SUR	SUR	5	M	06-04	90.0W	55W99	03N65	1.06	0.68	088		2 SUR	B017
0217	VEN	VEN	4	M	09-06	105.0W	66W00	07N00	2.55	1.60	124	060W 073W	0	

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Document N° 103-F/E/S
19 janvier 1977

COMMISSION 5

Note du Président de la Commission 5 (Planification)

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COMISIÓN 5

Nota del Presidente de la Comisión 5 (Planificación)

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Pour des raisons d'économie, ce document n'a été tiré qu'en nombre restreint. Les participants sont donc priés de bien vouloir apporter à la conférence leurs documents avec eux, car il n'y aura que fort peu d'exemplaires supplémentaires disponibles.

ARCHIVES U.I.T. GENÈVE

Note du Président de la Commission 5 (planification)

LISTE DES BESOINS

Dans le cadre des travaux préparatoires de planification et suite au Document N° 59 (Confirmation des besoins), nous reproduisons dans l'Annexe 2 au présent document la liste imprimée mise à jour.

Explication des titres des colonnes de la liste

2. Pour faciliter la référence aux titres des colonnes, ceux-ci sont reproduits dans l'Annexe 1 au présent document.

Besoins

3. Les besoins pour les Régions 1 et 3 sont groupés et ils figurent dans l'ordre alphabétique des symboles de pays indiqués dans la colonne 3; ils constituent la Partie A de l'Annexe 2. Ces besoins comprennent ceux qui ont déjà fait l'objet d'une confirmation conformément au Document N° 59. Pour chaque pays non représenté à la Conférence, on a prévu une inscription correspondant à un faisceau. Ces inscriptions peuvent être désignées par un numéro de la série 0600 et par le symbole IFB figurant dans la colonne 2. Le symbole désignant le pays ou la zone géographique concernée figure dans la colonne 3. De tels faisceaux sont également appelés "faisceaux de réserve".

4. Les besoins pour la Région 2 sont groupés et ils figurent dans l'ordre alphabétique des symboles de pays indiqués dans la colonne 3; ils constituent la Partie B de l'Annexe 2.

A. PETTI
Président
Commission 5 (planification)

Note by the Chairman of Committee 5 (Planning)

LIST OF REQUIREMENTS

In further preparation for planning and in pursuance of Document No. 59 (Confirmation of Requirements), the printout of the updated List is reproduced in Annex 2 to the present document.

Explanation of the Column Headings of the List

2. For ease of reference, these are reproduced in Annex 1 to the present document.

Requirements

3. The Requirements for countries in Regions 1 and 3 are grouped together and arranged in alphabetical order of the country symbol appearing in Column 3 and form Part A of Annex 2. These Requirements include those confirmed in accordance with Document No. 59. For each country which is not represented at the Conference, an entry has been made for one beam. Such entries may be identified by a Serial No. in the 0600 series and by the symbol "IFB" in Column 2. The symbol designating the country or geographical area concerned is contained in Column 3. Such beams are also referred to as "spare beams".

4. The Requirements for Region 2 are grouped together and arranged in alphabetical order of the country symbol appearing in Column 3 and form Part B of Annex 2.

A. PETTI
Chairman
Committee 5 (Planning)

Nota del Presidente de la Comisión 5 (Planificación)

LISTA DE SOLICITUDES

Para seguir preparando la planificación, y conforme al Documento N.º 59 (Confirmación de las Solicitudes), se reproduce en el Anexo 2 al presente documento la Lista actualizada.

Explicación de los títulos de las columnas de la Lista

2. Para facilitar la referencia, estos se reproducen en el Anexo 1 al presente documento.

Solicitudes

3. Las solicitudes de los países de las Regiones 1 y 3 están agrupadas y dispuestas por orden alfabético del símbolo de país que figura en la columna 3 y constituyen la Parte A del Anexo 2. Estas solicitudes incluyen las confirmadas de acuerdo con el Documento N.º 59. Para cada país que no está representado en la Conferencia, se ha inscrito un haz. Estas inscripciones pueden identificarse por un número de orden de la serie 0600 y por el símbolo "IFB" en la columna 2. En la columna 3 figura el símbolo designativo del país o la zona geográfica interesada. Se hace referencia a estos haces como "haces de reserva".

4. Las solicitudes para la Región 2 están agrupadas y dispuestas por orden alfabético del símbolo de país que figura en la columna 3, y constituyen la Parte B del Anexo 2.

El Presidente,
A. PETTI
Comisión 5 (Planificación)

ANNEXE 1

Explication des colonnes de la liste des demandes

Colonne 1 - Numéro de série de l'I.F.R.B. Cette colonne contient un numéro d'identification attribué aux renseignements fournis dans un formulaire de demande au sujet d'un faisceau d'antenne donné.

Colonne 2 - Administration notificatrice. Dans cette colonne est indiquée la source dont émanent les renseignements.

Colonne 3 - Symbole désignant le pays. Le pays ou la zone géographique sont représentés dans la colonne 3 par un symbole tiré du Tableau N° 1 de la Préface à la Liste internationale des fréquences.

Colonne 4 - Nombre de canaux. Dans la colonne 4 est inscrit le nombre de canaux indiqués pour le faisceau d'antenne spécifié sur la même ligne.

Colonne 5 - Norme de télévision. Dans cette colonne figure le symbole désignant la norme de télévision à utiliser; ce symbole est tiré du Tableau I du Rapport 624 du C.C.I.R., tel que ce Tableau a été amendé en mai 1976 (voir les pages 7 et 8 de la lettre-circulaire N° 358 de l'I.F.R.B., datée du 16 juillet 1976).

Colpnne 6 - Horaire d'exploitation (TMG) Les heures, exprimées en T.M.G., auxquelles commence et finit l'émission sont indiquées dans la colonne 6 (en arrondissant à l'heure la plus proche). Ce renseignement est utilisé pour déterminer la limite orientale de l'arc de service pendant l'éclipse du satellite en période d'équinoxe.

ANNEX 1

Explanation of the Column Headings of the List of Requirements

Column 1 - I.F.R.B. Serial Number, contains an identification number for the information concerning a given antenna beam received on one Requirements form.

Column 2 - Notifying Administration, contains an indication of the source from which the information was received.

Column 3 - Country symbol, contains the symbol designating the country or the geographical area taken from Table No. 1 of the Preface to the International Frequency List.

Column 4 - Number of channels, contains the number of channels indicated for the antenna beam covered by the present line entry.

Column 5 - Television standard, contains the symbol designating the television standard to be used taken from Table I in C.C.I.R. Report 624 as amended in May 1976 (reproduced on pages 7 and 8 of I.F.R.B. Circular-letter No. 358 dated 16 July 1976).

Column 6 - Hours of operation (GMT), contains the time in GMT of the beginning and the end of emission to the nearest hour. This information is included for the purpose of determining the Eastern limit of the service arc during the eclipse of the satellite at the equinoxes.

ANEXO 1

Explicación de los títulos de las columnas de la Lista de solicitudes

Columna 1 - I.F.R.B. - N.°, contiene un número para identificar la información relativa a un haz de antena dado y recibida en un formulario de solicitud.

Columna 2 - Administración notificante, contiene una indicación de la fuente que ha comunicado la información.

Columna 3 - Símbolo de país, contiene el símbolo de país o zona geográfica que figura en el Cuadro N.° 1 del Prefacio a la Lista Internacional de Frecuencias.

Columna 4 - Número de canales, contiene el número de canales indicado para el haz de la antena especificado en la misma línea.

Columna 5 - Norma de televisión, contiene el símbolo que designa la norma de televisión que ha de usarse, según el Cuadro 1 del Informe 624 del C.C.I.R., modificado en mayo de 1976 (reproducido en las páginas 7 y 8 de la carta circular de la I.F.R.B. N.° 358, de fecha 16 de julio de 1976).

Columna 6 - Horas de funcionamiento(TMG) contiene la hora, en TMG, en que comienza y termina la transmisión, redondeada a la hora más próxima. Esta información se incluye con la finalidad de determinar el límite oriental del arco de servicio durante el eclipse del satélite en los equinoccios.

Colonne 7 - Longitude nominale. Dans la colonne 7 est indiquée, en degrés et dixième de degré, la longitude nominale préférée par rapport au méridien de Greenwich.

Colonne 8 - Coordonnées géographiques de l'intersection de l'axe du faisceau d'antenne avec la Terre. Dans la colonne 8 sont inscrites les coordonnées de ladite intersection, exprimées en degrés et minutes, en commençant par la longitude. Exemple : "118E34 50N32".

Colonne 9 - Faisceau d'antenne à section circulaire. La colonne 9 contient l'indication de la largeur du faisceau de l'antenne entre les points à demi-puissance; cette largeur est exprimée en degrés et dixièmes de degré.

Colonnes 10, 11 et 12 - Faisceau d'antenne à section elliptique. Dans la colonne 10 est indiquée la largeur à demi-puissance du faisceau correspondant au grand axe de l'ellipse; cette largeur est exprimée en degrés et dixièmes de degré.

Dans la colonne 11 figure le renseignement analogue, exprimé de la même façon mais pour le petit axe de l'ellipse.

Dans la colonne 12 est indiquée l'orientation de l'ellipse, déterminée comme suit : dans un plan perpendiculaire à l'axe du faisceau, la direction du grand axe de l'ellipse est définie par l'angle, mesuré dans le sens inverse des aiguilles d'une montre, à partir d'une ligne parallèle au plan équatorial jusqu'au grand axe de l'ellipse, au degré près le plus proche.

Colonne 13 - Arc orbital de service. Dans la colonne 13 est indiqué l'arc de service de l'orbite du satellite géostationnaire, en degrés de longitude à partir du méridien de Greenwich.

Column 7 - Nominal longitude, contains the preferred nominal longitude, in degrees and tenths of a degree, of the satellite in relation to the Greenwich meridian.

Column 8 - Geographical co-ordinates of the intersection of the antenna beam axis with the Earth, contains the geographical co-ordinates of the said intersection in degrees and minutes with the longitude shown first, viz. "118E34 50N32".

Column 9 - Circular cross-section antenna beam, contains the half-power beam width of the antenna in degrees and tenths of a degree.

Columns 10, 11 and 12 - Elliptical cross-section antenna beam.
Column 10 contains the half-power beam width corresponding to the major axis of the ellipse, in degrees and hundredths of a degree.

Column 11 contains the half-power beam width corresponding to the minor axis of the ellipse, in degrees and hundredths of a degree.

Column 12 contains the orientation of the ellipse determined as follows: in a plane normal to the beam axis, the direction of the major axis of the ellipse is specified as the angle measured anti-clockwise from a line parallel to the equatorial plane to the major axis of the ellipse, to the nearest degree.

Column 13 - Orbital service arc, contains the service arc on the geostationary satellite orbit in degrees of longitude from Greenwich.

Columna 7 - Longitud nominal, contiene la longitud nominal preferida, en grados y décimas de grado, del satélite con relación al meridiano de Greenwich.

Columna 8 - Coordenadas geográficas de la intersección del eje del haz de la antena con la Tierra, contiene las coordenadas geográficas de dicha intersección, en grados y minutos; figura en primer lugar, por ejemplo: "118E34 50N32".

Columna 9 - Haz de la antena de sección transversal circular, contiene la abertura angular del haz de la antena en los puntos de semipotencia, en grados y décimas de grado.

Columnas 10, 11 y 12 - Haz de la antena de sección transversal elíptica:
La columna 10 contiene la abertura angular en los puntos de semipotencia, correspondiente al eje mayor de la elipse, en grados y centésimas de grado;

La Columna 11 contiene la abertura angular en los puntos de semipotencia, correspondiente al eje menor de la elipse, en grados y centésimas de grado;

La Columna 12 contiene la orientación de la elipse determinada como sigue: en un plano perpendicular al eje del haz, la dirección del eje mayor de la elipse se define como el ángulo medido en sentido contrario al de las agujas de un reloj, desde una línea paralela al plano ecuatorial hasta el eje mayor de la elipse, redondeado al grado más próximo.

Columna 13 Arco orbital de servicio, contiene el arco de servicio en la órbita del satélite geoestacionario, en grados de longitud con relación al meridiano de Greenwich.

Colonne 14 - Territoire à desservir.
En règle générale, les administrations ont indiqué le territoire à desservir soit au moyen d'une carte accompagnée d'un diagramme pour représenter la zone à desservir ou d'une carte non accompagnée d'un diagramme, soit en inscrivant le nom du pays ou les renseignements pertinents dans les colonnes 7 à 13. Les symboles numériques 0, 1 ou 2 qui figurent dans la première position de la colonne 14 indiquent respectivement ces différents cas. La signification de ces symboles numériques est la suivante :

- un zéro "0" signifie qu'au formulaire de demande n'était pas jointe une carte accompagnée d'un diagramme pour représenter la zone à desservir;

- le chiffre "1" signifie qu'au formulaire de demande était jointe une carte accompagnée d'un diagramme pour représenter la zone à desservir; ces documents sont reproduits dans l'annexe 4 à la présente lettre-circulaire. Dans ladite annexe, les cartes se présentent par ordre alphabétique des symboles désignant les pays; lorsqu'il existe plusieurs cartes pour l'un de ces sysmboles, ces cartes sont classées par ordre numérique croissant des numéros de série de l'I.F.R.B.;

- le chiffre "2" signifie qu'au formulaire de demande était jointe une carte non accompagnée d'un diagramme pour représenter la zone à desservir. Les cartes ne sont dans ce cas pas reproduites dans l'annexe 4 à la présente lettre-circulaire; on pourra les consulter en s'adressant au Secrétariat spécialisé de l'I.F.R.B.

Column 14 - Territory to be provided with service.
In general, Administrations have indicated the territory to be provided with service either by means of a map with a diagram indicating the area to be served or by a map without a diagram or by indicating the name of the country or by providing information in Columns 7 to 13 inclusive; in order to differentiate between these cases, the first position in Column 14 contains the symbol 0, 1 or 2 of which the meaning is as follows:

- a zero "0", the Requirements form was not accompanied by a map with a diagram indicating the area to be provided with service;

- the number "1", the Requirements form was accompanied by a map with a diagram indicating the area to be provided with service, which is reproduced in Annex 4 to the present Circular-letter; in that Annex, the maps are arranged in alphabetical order of the country symbol; where there are two or more maps for a given country symbol, these are arranged in ascending order of the I.F.R.B. serial number;

- the number "2", the Requirements form was accompanied by a map without a diagram indicating the area to be provided with service; this map is not reproduced in Annex 4 to the present Circular-letter; these maps will be available for consultation in the I.F.R.B. Specialized Secretariat.

Columna 14 - Territorio a que se desea dar servicio.
En general, las Administraciones han indicado el territorio a que se desea dar servicio, bien por medio de un mapa con un diagrama para representar la zona de servicio o de un mapa sin diagrama, o bien indicando el nombre del país o facilitando información en las columnas 7 a 13 inclusive; con el fin de diferenciar estos casos, en la primera posición de la columna 14 figuran los símbolos, 0, 1 ó 2, cuyo significado es el siguiente:

- un cero "0" significa que el formulario de solicitud no iba acompañado de un mapa con un diagrama indicando la zona a que se desea dar servicio;

- la cifra "1" significa que el formulario de solicitud iba acompañado de un mapa indicando la zona a que se desea dar servicio, que se reproduce en el Anexo 4 a la presente carta circular. En el Anexo, los mapas se disponen por orden alfabético de los símbolos de país. Cuando hay dos o más mapas para un símbolo de país dado, se disponen por orden creciente del número de la I.F.R.B.;

- la cifra "2" significa que el formulario de solicitud iba acompañado de un mapa sin diagrama que indicara la zona a que se desea dar servicio; este mapa no se reproduce en el Anexo 4 a la presente carta circular. Los mapas podrán consultarse en la Secretaría especializada de la I.F.R.B.

Colonne 15 - Observations. La colonne 15 contient les autres données techniques communiquée avec le forumulaire de demande; ces données sont codées par ordre numérique croissant; elles sont précédées de la lettre A (administration) lorsqu'elles émanent d'une administration (les données sont alors comprises dans la série "A001 - A999"); elles sont précédées de la lettre B (Board) lorsqu'elles ont été introduites par l'I.F.R.B. (les données sont alors comprises dans la série "B001 - B999"). Le sens des numéros d'observation est donné dans l'annexe 3 à la présente lettre-circulaire.

Le symbole ♦ qui suit un symbole désignant un pays signifie que les renseignements émanent d'une source extérieure à l'Union; leur publication n'implique aucune reconnaissance par l'Union du statut de l'expéditeur.

Column 15 - Remarks,
contains any other technical information received with the Requirements form and coded consecutively with the prefix "A" (Administration) viz. "A001-A999"; the prefix "B" (Board) viz. "B001-B999", indicates that the information has been introduced by the I.F.R.B.; the explanation of these Remarks numbers is given in Annex 3 to the present Circular-letter.

The symbol ♦ following a country symbol denotes that the relevant information was received from a source outside the Union and that publication of this information implies no recognition by the Union of the status of the sender in relation thereto.

Columna 15 - Observaciones,
contiene las demás informaciones técnicas recibidas con el formulario de solicitud y codificadas posteriormente con el prefijo "A" (administración), es decir, "A001-A999"; el prefijo, "B" (Junta), es decir, "B001-B999", indica que la información ha sido introducida por la I.F.R.B.; la explicación de estos números de las observaciones figura en el Anexo 3 a la presente carta circular.

El símbolo ♦ , detrás de un símbolo de país, indica que la información proviene de fuente ajena a la Unión, y que su publicación no entraña el reconocimiento por la Unión del estatuto del remitente en relación con la misma.

ANNEXE 2--

Liste des demandes

ANNEX 2

List of Requirements

ANEXO 2

Lista de solicitudes

PARTIE A - PART A - PARTE A

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0245	AFG	AFG	4	B	01-20	55.0E	069E59 35N15		1.00	0.90	027	050E 055E	0	
0246	AFG	AFG	4	B	01-20	55.0E	064E17 33N22		1.30	1.20	064	050E 055E	0	
0099	F	AFI	5	K1 SECAM	00-24	15.0E	42E30 11N27	00.6				015E 030E	1	A061 B017
0021	AFS	AFS	5	I PAL	04-22	6.0E	24E15 28S15		2.91	1.43	030	005W 012E	1 AFS-1	A054 B017
0022	AFS	AFS	2	I PAL	04-22	6.0E	28E30 31S12		0.86	0.36	036		1 AFS-2	B017
0023	AFS	AFS	2	I PAL	04-22	6.0E	31E00 27S45		1.16	0.39	046		1 AFS-3	B017
0024	AFS	AFS	4	I PAL	04-22	6.0E	27E00 26S00		1.83	0.78	033		1 AFS-4	B017
0601	IFB	AGL	1			15.0W	16E30 12S30		2.53	1.95	071			
0602	IFB	ALB	1			7.5W	19E30 41N12	00.6						
0250	ALG	ALG	5	B G PAL	00-24	20.0W	02E00 27N50		3.58	2.84	154		0 ALG-1	A124 A127 A187
0251	ALG	ALG	5	B G PAL	00-24	20.0W	00E60 31N50		3.22	1.53	638		0 ALG-2	A125 A127 A187
0252	ALG	ALG	5	B G PAL	00-24	20.0W	01E50 25N00		3.49	2.07	162		0 ALG-3	A126 A127 A187

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0238	F	AND	5		00-24	24.0W	01W36 42N30	00.6				024W 015W	1 AND-1	
0261	E	AND	2	G	00-24	37.5W	03W00 39N36		1.85	0.89	154	024W 015W	1 AND-2	A185
0262	E	AND	1	G	00-24	24.0W	01W36 42N30	00.6				024W 015W	1 AND-1	A184
0003	ARS	ARS	5	B	00-24	20.0E	26E00 28N00		8.99	2.31	161	015E 025E	2 ARS	
0275	ARS	ARS	5	B	00-24	20.0E	46E18 25N00		3.92	0.98	142		0	
0004	AUS	AUS	6	B G	22-16	105.0E	121E48 24S54		3.40	1.90	056	095E 105E	1 AUS-1	A052 B002
0005	AUS	AUS	6	B G	20-16	105.0E	133E30 18S48		2.50	1.30	080	095E 105E	1 AUS-1	A052 B002
0006	AUS	AUS	6	B G	20-16	105.0E	135E24 30S18		1.80	1.40	045	095E 105E	1 AUS-1	A052 B002
0007	AUS	AUS	6	B G	20-14	130.0E	145E00 38S06	01.3				120E 135E	1 AUS-1	A052 B002
0008	AUS	AUS	6	B G	20-14	130.0E	145E54 21S30		2.70	1.80	120	120E 135E	1 AUS-1	A052 B002
0009	AUS	AUS	6	B G	20-14	130.0E	147E12 32S00		1.90	1.20	015	120E 135E	1 AUS-1	A052 B002
0010	AUS	AUS	3	B G	22-16	130.0E	122E12 24S48		3.06	2.26	075	130E 130E	1 AUS-3	A052 A172 B003
0011	AUS	AUS	3	B G	20-16	130.0E	133E42 18S42		2.55	1.60	095	130E 130E	1 AUS-3	A052 A172 B003
0012	AUS	AUS	3	B G	20-16	130.0E	135E48 30S12		2.00	1.65	160	130E 130E	1 AUS-3	A052 A172 B003
0013	AUS	AUS	3	B G	20-16	130.0E	145E00 38S06	01.3				130E 130E	1 AUS-3	A052 A172 B003
0014	AUS	AUS	3	B G	20-16	130.0E	145E54 21S30		2.70	1.80	120	130E 130E	1 AUS-3	A052 A172 B003
0015	AUS	AUS	3	B G	20-16	130.0E	147E12 32S00		1.90	1.20	015	130E 130E	1 AUS-3	A052 A172 B003
0016	AUT	AUT	4	B G PAL	00-24	15.0W	12E12 47N30		1.14	0.66	167	005W 015W	0	A047 A048 A166
0017	AUT	AUT	1	B G PAL	00-24	15.0W	10E07 49N09		1.86	0.94	153	005W 015W	0	A049 A050 A166

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0134	POR	AZR	5	G	00-24	26.0W	23W21	36N10	2.51	0.69	158	026W 033W	2 AZR	A020
0270	BDI	BDI	5		01-24	5.0E	29E25	03S23 00.6				000E 005E	0	A177
0018	BEL	BEL	5	G	00-24	15.0W	04E38	50N37	0.70	0.60	160	020W 011W	1	
0220	BGD	BGD	5	B PAL	00-17	73.0E	90E00	24N00	1.18	0.71	138		0	A111
0255	BHR	BHR	4	B G PAL	03-21	22.5E	50E35	26N14 00.6					0	A173
0062	URS	BLR	2	D K	06-22	20.0E	27E50	52N56	1.00	0.60	003	010E 020E	1 BLR	A095

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0603	IFB	BOT	1			7.5W	23E24 22S15		1.88	1.19	042			
0604	IFB	BRM	1			67.5E	96E34 19N28		3.50	1.18	110			
0020	BUL	BUL	5	D K SECAM	00-24	10.0W	24E59 42N55		0.90	0.60	163	020W 005E	1	
0258	CAF	CAF	5	K1	00-24	5.0W	20W24 06N20		2.60	1.54	014	010W 010E	0	
0605	IFB	CBG	1			75.0E	104E45 12N30		0.84	0.67	042			
0154	CHN	CHN	4	K	00-19	64.0E	84E25 40N18		2.48	1.60	003	055E 065E	1	CHN-1 A066 A129
0155	CHN	CHN	4	K	00-19	64.0E	88E36 31N49		3.20	1.21	164	055E 065E	1	CHN-2 A066 A130
0156	CHN	CHN	3	K	00-19	64.0E	98E33 36N24		2.23	1.49	150	055E 065E	1	CHN-3 A066 A067 A131
0157	CHN	CHN	3	K	00-19	64.0E	102E37 28N19		2.43	1.28	120	055E 065E	1	CHN-4 A066 A067 A132
0158	CHN	CHN	3	K	22-17	79.0E	111E58 37N45		2.56	1.47	126	075E 085E	1	CHN-5 A066 A067 A133
0159	CHN	CHN	3	K	22-17	79.0E	109E30 27N08		1.83	1.44	101	075E 085E	1	CHN-6 A066 A067 A134
0160	CHN	CHN	3	K	22-17	94.0E	123E37 46N03		2.01	1.42	145	090E 095E	1	CHN-7 A066 A067 A135
0161	CHN	CHN	3	K	22-17	94.0E	118E10 31N26		1.99	1.51	096	085E 095E	1	CHN-8 A066 A067 A136
0162	CHN	CHN	3	K	22-17	94.0E	115E25 21N31		2.70	1.69	045	085E 095E	1	CHN-9 A066 A067 A137

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0163	CHN	CHN	1	K	22-17	79.0E	116E10 39N52		0.94	0.63	120	075E 085E	1 CHN-10	A066 A067 A138
0164	CHN	CHN	1	K	22-17	79.0E	112E13 37N31		0.76	0.60	091	075E 085E	1 CHN-11	A066 A067 A139
0165	CHN	CHN	1	K	22-17	79.0E	111E42 41N59		1.40	0.88	016	075E 085E	1 CHN-12	A066 A067 A140
0166	CHN	CHN	1	K	22-17	94.0E	121E02 41N52		1.37	0.60	150	090E 095E	1 CHN-13	A066 A067 A141
0167	CHN	CHN	1	K	22-17	94.0E	125E00 43N40		1.77	0.60	151	090E 095E	1 CHN-14	A066 A067 A142
0168	CHN	CHN	1	K	22-17	94.0E	125E07 47N34		2.30	0.80	158	090E 095E	1 CHN-15	A066 A067 A143
0169	CHN	CHN	1	K	22-17	94.0E	118E48 36N47		0.96	0.60	017	085E 095E	1 CHN-16	A066 A067 A144
0170	CHN	CHN	1	K	22-17	94.0E	120E06 32N42		1.26	0.60	150	085E 095E	1 CHN-17	A066 A067 A145
0171	CHN	CHN	1	K	22-17	94.0E	116E58 32N02		0.93	0.60	136	085E 095E	1 CHN-18	A066 A067 A146
0172	CHN	CHN	1	K	22-17	94.0E	120E46 29N11		0.73	0.61	150	085E 095E	1 CHN-19	A066 A067 A147
0173	CHN	CHN	1	K	22-17	94.0E	116E02 27N16		1.18	0.66	105	085E 095E	1 CHN-20	A066 A067 A148
0174	CHN	CHN	1	K	22-17	94.0E	118E35 25N52		0.84	0.70	084	085E 095E	1 CHN-21	A066 A067 A149
0175	CHN	CHN	1	K	22-17	94.0E	120E23 22N34		1.37	0.82	058	085E 095E	1 CHN-22	A066 A067 A150
0176	CHN	CHN	1	K	22-17	79.0E	114E16 33N53		1.05	0.60	149	075E 085E	1 CHN-23	A066 A067 A151
0177	CHN	CHN	1	K	22-17	79.0E	112E23 30N43		1.04	0.65	155	075E 085E	1 CHN-24	A066 A067 A152
0178	CHN	CHN	1	K	22-17	79.0E	111E52 27N43		1.05	0.61	121	075E 085E	1 CHN-25	A066 A067 A153
0179	CHN	CHN	1	K	22-17	94.0E	112E25 22N05		1.87	0.87	035	085E 095E	1 CHN-26	A066 A067 A154
0180	CHN	CHN	1	K	22-17	94.0E	113E23 13N23		3.45	1.86	086	085E 095E	1 CHN-27	A066 A067 A155
0181	CHN	CHN	1	K	22-17	79.0E	108E21 24N07		1.09	0.82	145	075E 085E	1 CHN-28	A066 A067 A156
0182	CHN	CHN	1	K	22-17	79.0E	108E43 35N10		1.15	0.67	112	075E 085E	1 CHN-29	A066 A067 A157
0183	CHN	CHN	1	K	00-19	64.0E	104E54 38N59		1.22	0.60	134	055E 065E	1 CHN-30	A066 A067 A158
0184	CHN	CHN	1	K	00-19	64.0E	100E55 37N56		2.42	0.72	149	055E 065E	1 CHN-31	A066 A067 A159
0185	CHN	CHN	1	K	00-19	64.0E	95E50 35N31		1.83	0.93	161	055E 065E	1 CHN-32	A066 A067 A160
0186	CHN	CHN	1	K	00-19	64.0E	103E04 30N12		1.76	0.95	146	055E 065E	1 CHN-33	A066 A067 A161
0187	CHN	CHN	1	K	22-17	79.0E	106E35 26N40		0.86	0.66	004	075E 085E	1 CHN-34	A066 A067 A162
0188	CHN	CHN	1	K	00-19	64.0E	101E50 25N55		1.59	0.93	120	055E 065E	1 CHN-35	A066 A067 A163
0052	NZL	CKH	4	B	21-13	155.0E	160W15 19S36		0.90	0.60	155		1 CKH	A068 A112 B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0053	NZL	CKN	4	B	21-13	155.0E	162W34	11S00	1.30	0.60	030		1 CKN	A068 A112 B017
0219	CLN	CLN	4	B	23-19	47.5E	80E38	07N41	00.6			035E 079E	0	
0606	IFB	CME	1			22.5W	12E48	05N48	2.49	1.18	093			
0130	E	CNR	5	G	00-24	25.0W	15W44	28N24	1.06	0.60	002	026W 011W	1	A002 A190 B017
0235	COG	COG	5	K1	00-24	10.0W	14E48	00S48	1.89	1.00	067		0	
0207	COM	COM	4	K	04-21	25.0E	44E09	12S04	00.6			010E 030E	0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0607	IFB	CPV	1			52.5W	24W00	15N40	00.6					
0237	CTI	CTI	5	K1	SECAM	00-24	30.0W	05W30	07N30	1.60	1.22	102	040W 015W	2 CTI
0083	CVA	CVA	3	G	PAL	00-24	15.0W	12E26	41N54	00.6			010W 018W	1 CVA-1
0084	CVA	CVA	1	G	PAL	00-24	15.0W	12E26	41N54	1.90	0.80	145	010W 018W	1 CVA-2
0085	CVA	CVA	1	G	PAL	00-24	15.0W	04E00	43N43	4.00	1.30	155	000W 035W	1 CVA-3
0086	CYP	CYP	5	B	G	02-24	15.0W	33E24	35N08	00.6			015W 011W	2 CYP A178
0087	D	D	4	G	PAL	00-24	15.0W	09E34	50N35	1.42	0.68	149	005W 015W	0 A042 A043 A044
0088	D	D	1	G	PAL	00-24	15.0W	10E07	49N09	1.86	0.94	153	005W 015W	0 A042 A045 A046
0233	DAH	DAH	5	K1	SECAM	00-24	15.0W	02E18	09N28	1.42	0.72	093	020W 075W	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0216	DDR	DDR	5	B G SECAM	05-24	10.0W	12E21 52N09		0.90	0.60	154	011W 021W	1	
0089	DNK	DNK	3	G PAL	00-24	0.0E	12E18 57N12		1.20	0.60	177	000E 004E	2 DNK	A010 A108
0090	DNK	DNK	2	G PAL	00-24	0.0E	16E40 61N00		2.20	1.20	000	000E 004E	2 DNK	A011 A108 A192
0091	DNK	DNK	5	G PAL	00-24	0.0E	19W30 61N00		2.00	0.60	004	000E 004E	2 DNK	A012 A109 A194
0129	E	E	5	G	00-24	25.0W	03W00 39N45		1.93	0.99	164	026W 011W	1	A001 B017
0026	EGY	EGY	5	B G SECAM	00-24	0.0E	30E30 27N51		2.61	1.17	135	000E 010W	1	B017
0092	ETH	ETH	5	B G	00-24	15.0E	39E00 09N00		2.51	1.80	130		2 ETH	B017
0093	F	F	5	L SECAM	00-24	15.0W	03E15 45N55		2.32	0.90	150	024W 015W	2 F	A056
0094	F	F	1	L SECAM	00-24	24.0W	03E15 45N55		2.32	0.90	150	024W 040E	2 F	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0193	FJI	FJI	3	B G	18-13	150.0E	179E30	17S48	0.78	0.76	133		1	B017
0103	FNL	FNL	3	G PAL	00-24	0.0E	23E30	63N30	1.40	0.80	165	000E 004E	2 FNL	A005 A104 A193
0104	FNL	FNL	2	G PAL	00-24	0.0E	16E40	61N00	2.20	1.20	000	000E 004E	2 FNL	A006 A104 A192
0027	G	G	5	I PAL	00-24	26.0W	03W37	53N58	1.64	0.83	149	030W 015W	1	A035 A036
0260	GAB	GAB	4	K1	04-24	15.0W	11E50	00S42	1.40	1.12	080	008W 030W	0	
0108	GHA	GHA	5	B G	05-24	30.0W	01W30	08N00	1.17	0.97	104		2 GHA	B017
0608	IFB	GMB	1			50.0W	15W12	13N25	00.6					

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0609	IFB	GNE	1			15.0W	10E30	01N40	00.6					
0610	IFB	GNP	1			50.0W	14W23	12N05	00.6					
0105	GRC	GRC	5	B G	02-24	15.0W	24E53	38N12	1.60	0.92	159	015W 011W	0	A003 A004 A178
0192	GUI	GUI	5	K1	08-24	45.0W	11W19	10N27	1.27	0.90	129		0	
0106	HNG	HNG	5	K SECAM	07-24	10.0W	19E30	47N00	0.80	0.50	152	010W 020W	2 HNG	
0213	HOL	HOL	5	G	00-24	15.0W	05E06	51N36	0.70	0.60	165	018W 010W	2 HOL	A105

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0107	HVO	HVO	5	K1	00-24	30.0W	01W54	12N07	1.46	1.20	015	035W 010W	0	A034 B017
0082	I	I	7	G PAL	00-24	15.0W	12E27	40N46	2.34	1.00	142	011W 018W	1	A033
0037	IND	IND	4	B PAL	22-19	70.0E	93E00	26N00	1.40	0.90	040	062E 077E	1 IND-1	A027
0038	IND	IND	4	B PAL	22-19	62.5E	75E54	33N24	1.30	0.90	033	055E 070E	1 IND-2	A027
0039	IND	IND	4	B PAL	22-19	62.5E	72E48	11N12	0.90	0.80	105	055E 070E	1 IND-3	A027
0040	IND	IND	4	B PAL	22-19	62.5E	73E06	24N48	1.80	1.30	044	055E 070E	1 IND-4	A027
0041	IND	IND	4	B PAL	22-19	65.0E	77E36	15N42	1.80	1.10	041	057E 072E	1 IND-5	A027
0042	IND	IND	4	B PAL	22-19	65.0E	79E06	27N18	1.70	0.80	143	057E 072E	1 IND-6	A027
0043	IND	IND	4	B PAL	22-19	65.0E	77E48	10N54	1.40	1.00	040	057E 072E	1 IND-7	A027
0044	IND	IND	4	B PAL	22-19	65.0E	80E00	23N24	2.00	1.30	150	057E 072E	1 IND-8	A027
0045	IND	IND	4	B PAL	22-19	62.5E	76E36	19N42	1.60	1.00	043	055E 070E	1 IND-9	A027
0046	IND	IND	4	B PAL	22-19	70.0E	84E05	20N08	1.30	0.80	043	062E 077E	1 IND-10	A027
0047	IND	IND	4	B PAL	22-19	70.0E	93E06	10N48	1.50	0.80	095	062E 077E	1 IND-11	A027
0048	IND	IND	4	B PAL	22-19	70.0E	86E01	25N01	1.50	0.90	164	062E 077E	1 IND-12	A027
0028	INS	INS	4	B PAL	23-18	77.0E	99E00	01N27	1.90	0.80	130		1 INS-1	B017
0029	INS	INS	4	B PAL	23-18	77.0E	104E00	02S48	1.40	1.25	083		1 INS-2	B017
0030	INS	INS	4	B PAL	23-18	77.0E	110E36	07S51	1.26	0.70	163		1 INS-3	B017
0031	INS	INS	4	B PAL	22-17	83.0E	110E57	01S21	1.27	0.99	159		1 INS-4	B017
0032	INS	INS	4	B PAL	22-17	83.0E	115E51	00S24	1.72	0.89	078		1 INS-5	B017
0033	INS	INS	4	B PAL	22-17	83.0E	122E15	01S42	1.83	0.92	077		1 INS-6	B017
0034	INS	INS	4	B PAL	22-17	83.0E	121E45	08S57	1.48	0.86	003		1 INS-7	B017
0035	INS	INS	4	B PAL	21-16	97.5E	128E18	01S54	1.75	1.13	077		1 INS-8	B017
0036	INS	INS	4	B PAL	21-16	97.5E	135E09	05S12	2.00	1.41	085		1 INS-9	B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0211	IRL	IRL	5	I	00-24	26.0W	07W50	53N24	0.82	0.60	062	030W 015W	1	A103 A167
0109	IRN	IRN	4	B G	04-22	35.0E	52E00	33N00	3.30	1.40	143	030E 045E	1	
0256	IRQ	IRQ	4			22.5E	43E40	33N00	1.82	0.91	154		0	
0049	ISL	ISL	5	G PAL	00-24	25.0W	19W20	64N58	1.00	0.60	004	020W 030W	1	ISL-1 A073
0050	ISL	ISL	5	G PAL	00-24	0.0W	19W30	61N00	2.00	0.60	004	000E 004E	1	ISL-2 A028 A029
0110	ISR	ISR	4	B G	04-23	75.0E	34E45	31N30	00.6			004E 025W	0	
0111	J	J	8	M	21-16	110.0E	134E41	31N59	3.40	2.90	046		1	J RYU

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0224	JOR	JOR	5	B PAL	00-24	7.5E	36E15	31N45	0.86	0.58	130		0	A113
0249	KEN	KEN	5	G PAL	05-22	15.0E	37E92	01N71	2.15	1.43	095	012E 018E	2 KEN	A123
0112	KOR	KOR	6	M	00-24	103.2E	128E10	35N41	1.30	0.90	008	098E 113E	1	A018
0286	KRE	KRE	5	D PAL	00-24	100.0E	127E00	40N20	00.6					A197
0113	KWT	KWT	6	B G PAL	04-22	19.0E	47E42	29N20	00.6			019E 010W	2 KWT	
0284	LAO	LAO	5	D K	19-16	75.0E	103E50	18N00	1.80	0.60	130	065E 090E	0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0279	LBN	LBN	5	G PAL	00-24	15.0E	36E00	34N00	00.6				0	
0244	LBR	LBR	4	B G	00-24	45.0W	09W24	00N24		0.91	0.41	123	0	A121
0280	LBY	LBY	5	B G	00-24	20.0W	15E30	29N30		1.85	1.70	127	0	A186
0253	LIE	LIE	5	G PAL	00-24	15.0W	09E34	47N08	00.8			005W 015W	0	A128
0611	IFB	LSO	1			7.5E	28E07	29S34	00.6					
0114	LUX	LUX	5	B G L	00-24	15.0W	06E04	49N47	00.6			024W 010W	1	A019

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
0242	MAU	MAU	5	B SECAM	00-21	35.0E	60E00	19S00	01.3			030E 050E	1 MAU-1	A119 A120	.
0243	MAU	MAU	4	B SECAM	00-21	35.0E	57E00	14S00	01.3			030E 050E	1 MAU-2	A119 A120	.
0116	MCO	MCO	3	L SECAM	00-24	15.0W	07E25	43N43		1.32	0.60	010 025W 010W	1 MCO-1	A008	.
0117	MCO	MCO	2	L SECAM	00-24	15.0W	03E00	46N00		2.20	1.00	165 025W 010W	1 MCO-2	A007	.
0236	MDG	MDG	5	K1	00-24	25.0E	46E33	18S50		2.74	1.06	064 010E 030E	0		.
0227	MLA	MLA	4	B G	22-18	80.0E	102E11	04N02		1.40	0.60	115 075E 085E	1 MLA-W	A114	.
0228	MLA	MLA	4	B G	22-18	80.0E	114E31	03N49		2.00	0.90	045 075E 085E	1 MLA-E		.
0612	IFB	MLD	1			45.0E	72E33	04N00		2.26	0.42	096			.
0118	MLI	MLI	5	K1	00-24	30.0W	07W06	13N36		1.34	0.87	020 030W 010W	2 MLI		.
0269	MLI	MLI	5	K1	00-24	30.0W	01W42	19N12		1.66	1.03	130 030W 010W	0		

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0147	MLT	MLT	4	H	08-22	15.0W	14E25	35N55	00.6				0	
0248	MNG	MNG	5	D K	01-17	80.0E	102E44	46N56	3.10	1.20	173	070E 080E	2 MNG	
0613	IFB	MOZ	1			0.0E	34E30	17N30	3.22	1.22	058			
0209	MRC	MRC	5	B SECAM	00-24	20.0W	08W45	29N45	2.42	1.27	043	030W 020W	1	A189 B017
0223	MTN	MTN	5	B SECAM	06-02	20.0W	10W00	20N00	2.46	2.24	009	020W 035W	2 MTN	A116 A188
0288	MTN	MTN	5	B SECAM	06-02	20.0W	06W00	24N00	1.60	0.80	140	020W 035W		A188
0614	IFB	MWI	1			7.5E	33E55	13S02	1.41	0.45	089			

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0098	F	MYT	5	K1 SECAM	00-24	30.0E	45E06	12S50	00.6			025E	040E	1	A060
0100	F	NCL	4	K1 SECAM	00-24	140.0E	166E00	21S00		1.14	0.72	146	140E	155E	1	A062
0115	NGR	NGR	5	K	00-24	30.0W	08E12	16N48		2.44	2.00	056	030W	000W	0	B006 B017
0128	G	NHB	4			140.0E	168E03	16S57		1.03	0.60	095	140E	155E	0	A037 B017
0119	NIG	NIG	5	B G	05-24	45.0W	07E30	09N00	02.5				030W	045W	0	A171
0054	NZL	NIU	2	B	21-13	155.0E	169W54	19S00	00.6						1 NIU	A068 A112

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0025	AFS	NMB	4	I PAL	04-22	15.0W	17E45	21S03	2.24	1.63	054		1	B017
0120	NOR	NOR	3	G PAL	00-24	0.0E	14E09	64N37	1.53	0.93	018	000E 004E	1 NOR-1	A009
0121	NOR	NOR	2	G PAL	00-24	0.0E	16E40	61N00	2.20	1.20	000	000E 004E	2 NOR-2	A009 A192
0122	NPL	NPL	3		23-19	52.5E	84E00	28N03	1.17	0.60	154		2 NPL	B004 B017
0615	IFB	NRU	1			135.0E	166E33	00S18	00.6					
0055	NZL	NZL	4	B	20-12	155.0E	173E00	40S00	2.40	0.90	040		1 NZL-1	A068 A112 B01
0287	NZL	NZL	3	B	20-12	130.0E	173E30	41S30	2.50	1.00	052		0	
0101	F	OCE	4	K1 SECAM	00-24	160.0W	144W30	16S00	3.85	3.27	176	165W 155W	1	A063 B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0123	OMA	OMA	5	B G	05-22	20.0E	55E50 21N00		1.49	1.12	098		0	B007
0124	OMA	OMA	5	B G	05-22	20.0E	54E00 22N50		2.23	1.42	128		0	B007
0125	OMA	OMA	5	B G	05-22	20.0E	50E00 18N50		2.66	1.72	046		0	B007
0126	OMA	OMA	5	B G	05-22	20.0E	45E00 23N50		5.14	3.01	142		0	B007
0127	PAK	PAK	3	B PAL	00-21	40.0E	70E20 30N85		2.25	1.99	365	035E 045E	2 PAK	A106
0210	PAK	PAK	2	B PAL	00-21	40.0E	72E35 30N75		0.86	0.68	060	035E 045E	0	B009
0281	PAK	PAK	2	B PAL	00-21	40.0E	65E60 28N75		1.25	1.20	044	035E 045E		
0282	PAK	PAK	2	B PAL	00-21	40.0E	68E95 26N00		0.84	0.58	093	035E 045E		
0283	PAK	PAK	2	B PAL	00-21	40.0E	74E70 33N90		1.07	1.03	112	035E 045E		
0285	PHL	PHL	5	M NTSC	21-17	90.0E	122E00 11N18		2.87	1.63	102			
0131	PNG	PNG	4	B G	19-15	110.0E	147E30 06S30		2.31	2.03	139		1	B016 B017
0271	PNG	PNG	3	B G	19-15	130.0E	148E00 06S42		2.80	2.05	155		0	A196
0132	POL	POL	5	D K	04-24	10.0W	19E20 52N00		1.40	0.60	158	005W 010W	2 POL	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0133	POR	POR	5	G	00-24	26.0W	08W01	39N36	0.98	0.58	101	026W 033W	2 POR	A020
0247	QAT	QAT	4	B PAL	06-21	22.5E	51E12	25N12 00.6					0	
0097	F	REU	5	K1 SECAM	00-24	30.0E	55E15	19S30	1.30	0.80	110	030E 045E	1	A064 B017
0135	RHS	RHS	5	B	16-22	0.0E	29E00	18S30	1.29	0.85	087		2 RHS	B017
0136	ROU	ROU	5	D K	04-24	10.0W	24E33	45N25	1.30	1.10	171	005E 015W	1 ROU-1	A022
0137	ROU	ROU	5	D K	05-02	5.0W	24E43	45N25	1.30	1.10	172	000W 010W	1 ROU-2	A022
0616	IFB	RRW	1			0.0E	30E02	01S21 00.6						

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0138	S	S	3	B G PAL	00-24	0.0E	16E08 61N01		1.12	0.90	144	000E 004E	1 S-1	A013 A014 A195
0139	S	S	2	B G PAL	00-24	0.0E	16E40 61N00		2.20	1.20	000	000E 004E	1 S-2	A013 A015 A192 A195
0230	SDN	SDN	5	B G PAL	04-24	15.0W	26E15 17N00		2.27	0.93	104	000W 020W	0 SDN-1	A115 A179
0231	SDN	SDN	5	B G PAL	04-24	15.0W	29E00 08N00		1.97	0.84	125	000W 020W	0 SDN-2	A115 A179
0232	SDN	SDN	5	B G PAL	04-24	15.0W	33E00 16N15		2.07	0.78	108	000W 020W	0 SDN-3	A115 A179
0222	SEN	SEN	5	K1	08-24	45.0W	14W70 13N80		1.20	0.88	139		0	
0057	NZL	SMO	4	B	21-13	155.0E	172W06 13S45	00.6					1 SMO	A068 B017
0617	IFB	SMR	1			7.5W	12E18 43N33	00.6						
0151	SNG	SNG	4	B G PAL	21-19	75.0E	103E82 01N37	00.6				065E 085E	2 SNG	A168

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0618	IFB	SOM	1			15.0E	44E45	06N30	3.42	1.07	081			
0259	SRL	SRL	5	B G	16-01	45.0W	11W50	08N30	00.6				0	
0241	STP	STP	5		17-01	22.5W	06E48	00N51	00.6				0	A118
0140	SUI	SUI	4	G PAL	00-24	15.0W	08E17	46N40	0.98	0.76	171	005W 015W	0	A038 A039
0141	SUI	SUI	1	G PAL	00-24	15.0W	10E07	49N09	1.86	0.94	153	005W 015W	0	A040 A041 A174
0619	IFB	SWZ	1			0.0E	30E50	26S20	00.6					
0229	SYR	SYR	5	B PALSECAM	06-24	15.0E	38E00	34N50	0.98	0.60	019		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0143	TCD	TCD	5	K1	00-24	15.0W	18E06	15N00	3.36	1.70	101	025W 010E	0	A023 B017
0144	TCH	TCH	5	K SECAM	05-24	10.0W	17E18	49N18	1.30	0.60	167	010W 021W	1	A024
0225	TGK	TGK	4	G PAL	02-22	10.0E	34E00	05S40	2.11	1.33	135	010W 018E	0	
0226	TGO	TGO	5	K1 SECAM	00-24	20.0W	00E54	08N42	1.28	0.60	104	030W 008W	0	
0142	THA	THA	4	B G PAL	22-19	67.5E	100E86	13N13	2.50	1.18	104	065E 075E	2 THA	B017
0058	NZL	TKL	2	B	21-13	155.0E	172W22	09S15	00.6				1 TKL	A068 B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0215	TON	TON	4	B	22-14	170.0E	175W00 19S00		1.36	0.60	070		1	B017
0150	TUN	TUN	5	B G	00-24	20.0W	09E27 34N01		1.34	0.60	115	023W 015W	1	A107
0272	TUN	TUN	3	B G	00-24	20.0W	00E30 23N30		6.78	3.92	179		2 TUN	A170
0145	TUR	TUR	5	B G PAL	00-24	3.0W	034E16 38N58		2.42	0.94	165	003W 006E	1 TUR	A072
0274	UAE	UAE	4	B G PAL	03-21	22.5E	51E30 22N54		3.16	1.34	145			A183
0051	UGA	UGA	5	G PAL	05-22	0.0E	32E15 01N45		1.08	0.72	065		1	B017
0063	URS	UKR	3	D K	06-22	20.0E	31E10 48N34		2.10	0.80	171	010E 020E	1 UKR	A096

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0059	URS	URS	4 D K		06-22	20.0E	36E04 47N05		3.70	1.50	153	010E 020E	1 URS-1	A074 A075
0060	URS	URS	4 D K		06-22	20.0E	44E01 61N19		2.30	1.30	156	010E 020E	1 URS-2	A078 A100
0061	URS	URS	6 D K		06-22	20.0E	24E47 56N55		0.80	0.60	005	010E 020E	1 URS-9	A076
0064	URS	URS	6 D K		05-21	20.0E	45E04 41N14		1.50	0.60	156	010E 020E	1 URS-10	A079
0065	URS	URS	1 D K		06-22	20.0E	33E26 63N63		1.05	0.60	160	010E 020E	1 URS-11	A077
0066	URS	URS	6 D K		04-20	50.0E	65E23 45N50		3.70	2.00	174	040E 050E	1 URS-3	A082
0067	URS	URS	4 D K		04-20	50.0E	65E15 61N46		2.70	1.30	179	040E 050E	1 URS-4	A075 A081
0068	URS	URS	2 D K		04-20	50.0E	58E45 39N04		2.20	0.90	164	040E 050E	1 URS-13	A101
0069	URS	URS	2 D K		03-19	50.0E	70E59 38N35		1.10	0.60	163	040E 050E	1 URS-16	A085
0070	URS	URS	2 D K		03-19	50.0E	74E29 41N02		1.10	0.60	179	040E 050E	1 URS-17	A086
0071	URS	URS	2 D K		04-20	50.0E	64E08 41N32		2.30	0.90	165	040E 050E	1 URS-14	A083
0072	URS	URS	2 D K		03-19	50.0E	73E02 62N34		1.80	0.70	172	040E 050E	1 URS-15	A084
0073	URS	URS	2 D K		04-20	50.0E	55E20 64N13		1.40	0.60	006	040E 050E	1 URS-12	A080
0074	URS	URS	4 D K		02-18	80.0E	92E06 60N21		2.10	1.50	005	070E 080E	1 URS-5	A087 A100
0075	URS	URS	2 D K		02-18	80.0E	93E32 51N16		1.40	0.60	179	070E 080E	1 URS-18	A088
0076	URS	URS	2 D K		02-18	80.0E	99E29 64N15		1.40	0.60	165	070E 080E	1 URS-19	A089
0077	URS	URS	6 D K		01-17	110.0E	113E43 59N18		2.10	1.80	031	100E 110E	1 URS-6	A091 A100
0078	URS	URS	2 D K		01-17	110.0E	107E23 53N45		1.70	0.70	011	100E 110E	1 URS-20	A090
0079	URS	URS	6 D K		23-15	140.0E	138E27 58N49		2.60	1.50	062	130E 140E	1 URS-7	A092 A100
0080	URS	URS	4 D K		22-14	140.0E	156E55 56N30		2.40	2.00	018	130E 140E	1 URS-8	A093 A102
0081	URS	URS	2 D K		20-12	140.0E	169E04 65N02		1.50	0.60	168	130E 140E	1 URS-21	A094
0102	F	WAL	4 K1	SECAM	00-24	140.0E	177W27 13S21		0.79	0.60	066	140E 155E	1	A065
0266	YEM	YEM	5 B	SECAM	00-24	15.0E	44E28 15N27		1.01	0.79	090		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0267	YMS	YMS	5	B	03-21	15.0E	48E45 15N33		1.79	0.60	049		0	
0148	YUG	YUG	5	B G PAL	00-24	10.5W	18E32 43N55		1.64	0.60	153	010W 014W	1	A026
0149	YUG	YUG	5	B G PAL	00-24	10.5W	18E32 43N55		1.64	0.60	153	010W 014W	1	A026
0146	ZAI	ZAI	6	K1 SECAM	12-23	15.0W	24E45 00S24		1.86	1.39	192		2 ZAI	
0620	IFB	ZMB	1			7.5W	28E24 12S33		2.02	1.14	050			

PARTIE B - PART B - PARTE B

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0001	ARG	ARG	5	N	00-24	105.0W	66W00 43S15		3.11	1.00	031		1 ARG-1	A055 B017
0002	ARG	ARG	5	N	00-24	105.0W	64W45 30S45		3.94	1.12	043		1 ARG-2	A055 B017
0234	HOL	ATN	5	M	07-05	97.5W	69W03 12N19	00.6					1	A117 A175
0268	HOL	ATN	5	M	07-05	97.5W	63W04 18N01	00.6					1	A117 A176
0194	B	B	5	M PAL	13-06	100.0W	70W30 07S40		1.30	1.10	110	119W 098W	1 B-1	A169 B011 B012
0195	B	B	5	M PAL	12-05	100.0W	67W50 03S10		2.30	0.80	094	117W 094W	1 B-2	A169 B011 B012
0196	B	B	5	M PAL	12-05	100.0W	62W30 01S30		2.30	0.80	086	112W 089W	1 B-3	A169 B011 B012
0197	B	B	5	M PAL	12-05	100.0W	57W30 03S10		2.30	0.80	086	107W 084W	1 B-4	A169 B011 B012
0198	B	B	5	M PAL	12-05	90.0W	52W20 02S20		2.30	0.80	086	102W 079W	1 B-5	A169 B011 B013
0199	B	B	5	M PAL	12-05	100.0W	58W45 11S45		1.50	1.20	157	102W 091W	1 B-6	A169 B011 B012
0200	B	B	5	M PAL	12-05	90.0W	55W45 19S00		1.50	1.20	086	100W 085W	1 B-7	A169 B011 B013
0201	B	B	5	M PAL	11-04	90.0W	47W20 04S30		1.60	1.10	081	095W 075W	1 B-8	A169 B011 B013
0202	B	B	5	M PAL	11-04	90.0W	49W15 13S00		2.30	0.80	070	098W 077W	1 B-9	A169 B011 B013
0203	B	B	5	M PAL	11-04	80.0W	40W40 07S00	01.3				087W 070W	1 B-10	A169 B014
0204	B	B	5	M PAL	11-04	80.0W	41W30 12S30		1.50	1.20	068	088W 071W	1 B-11	A169 B011 B014
0205	B	B	5	M PAL	11-04	80.0W	45W20 20S00		1.80	1.00	049	089W 077W	1 B-12	A169 B011 B014
0206	B	B	5	M PAL	11-04	90.0W	52W50 27S50		2.30	0.80	057	096W 082W	1 B-13	A169 B011 B013
0019	BOL	BOL	2	B PAL	00-24	85.0W	64W30 14S30		2.28	1.41	130		0	B010 B017
0273	BOL	BOL	2	B PAL	00-24	85.0W	66W00 18S15		2.28	1.41	130		0	

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0189	CAN	CAN		M NTSC									1	A032
0208	CHL	CHL	4	M	12-06	110.0W	70W30	25S50	5.77	0.64	082	110W 120W	2 CHL	A097 B017
0263	CHL	CHL	4	M	12-06	115.0W	71W30	41S50	3.47	0.60	035	110W 120W		
0264	CHL	CHL	4	M	12-06	115.0W	68W90	56S00	0.75	0.60	029	110W 120W		
0265	CHL	CHL	4	M	12-06	115.0W	109W50	27S10 00.6				110W 120W		
0289	CLM	CLM	5		00-24	100.0W	74W00	05N00	1.80	1.20	040			A191
0218	CUB	CUB	5	M NTSC	11-06	110.0W	79W15	21N15	1.50	0.60	161	115W 105W	1 CUB	B015 B017
0276	EQA	EQA	5	M	00-24	95.0W	84W00	02S00	3.20	1.20	180		0	A181
0277	EQA	EQA	5	M	00-24	95.0W	78W00	02S00 01.1					0	A182
0278	EQA	EQA	5	M	00-24	95.0W	91W00	01S00 00.6					0	A182
0095	F	GDL	4	K1 SECAM	00-24	75.0W	61W45	16N12	1.08	0.42	123	085W 070W	1 GDL	A058

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0152	DNK	GRL	5	G PAL	00-24	60.0W	53W18	65N36	1.80	0.60	159	055W 060W	1	A016 A110
0153	DNK	GRL	5	G PAL	00-24	60.0W	31W00	68N00 00.6				055W 060W	1	A017 A110
0290	GTM	GTM	5	M	00-24	105.0W	90W00	16N00 00.8					0	
0291	GTM	GTM	5	M	00-24	105.0W	87W00	14N00	2.20	1.00	136		0	
0096	F	GUF	4	K1 SECAM	00-24	75.0W	53W25	03N50	1.04	0.80	085	080W 060W	2 GUF	A059
0190	MEX	MEX	8	M NTSC	11-07	140.0W	107W15	26N45	3.35	1.31	141		1 MEX-1	B017
0191	MEX	MEX	8	M NTSC	11-07	125.0W	97W21	19N00	2.64	1.81	160		1 MEX-2	B017
0257	PRG	PRG	5	N	00-24	82.0W	57W00	23S00	1.40	0.80	130		0	
0221	SLV	SLV	1	M	12-06	88.9W	88W54	13N42 00.6			147		0	B017

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
0254	F	SPM	4	K1 SECAM	00-24	75.0W	56W20	46N54	00.6			086W 075W	2 SPM	
0214	SUR	SUR	5	M	06-04	90.0W	55W99	03N65		1.06	0.68	088	2 SUR	B017
0217	VEN	VEN	4	M	09-06	105.0W	66W00	07N00		2.55	1.60	124 060W 073W	0	

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 104-E
19 January 1977
Original : English

WORKING GROUP 4A

Sub-Working Group 4A3

DEFINITIONS

1. Having considered the documents presented to Working Group 4A3 on this subject Working Group 4A3 reached the following conclusions which are submitted to Working Group 4A for consideration.

2. These definitions are proposals for the work of the Conference.

3. Definitions

3.1 Beam coverage area

The area delineated by a contour of a constant given value of power flux-density which assures the wanted quality of reception in the absence of interference*).

3.2 Service area

The area in which the administration responsible for the service is authorized to require that the agreed protection be provided.

3.3 Nominal orbit position

The longitude of the position in the geostationary orbit associated with an assignment to a space station in the space radiocommunication. The position is given in degrees from the Greenwich meridian.

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*) Note : In accordance with the provisions of the Radio Regulations, No. 428A, the beam coverage area must be the smallest area which embraces the service area.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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24 January 1977
Original : English

COMMITTEE 4

Working Group 4A

RADIO PROPAGATION FACTORS

1. Having considered the documents presented to it on this subject, Working Group 4A reached the following conclusions which are submitted to Committee 4 for consideration.

2. It is noted that extensive measurements of attenuation due to rain have not been carried out in the tropical countries, especially in the African region. Based on the meteorological data which the countries may provide they can be divided into rain climates as set out in CCIR Report 563.

3. For the purpose of planning the Broadcasting-Satellite Service during this Conference, it is recommended that planning should be based only on achieving a carrier-to-noise ratio of 14 dB for 99 % of the worst month. It is understood that the time percentage for the worst month is about 4 times greater than the yearly percentage. However, this procedure is a provisional one and it should be used with caution.

4. Appropriate curves relating to 1 % of the worst month for the five rain climatic regions are shown in the annexed figure.

5. In using these curves, Committee 4 recommends that the difference between clear weather attenuation and the attenuation for 99 % of the worst month be limited to a maximum of 2 dB by appropriate choice of angle of elevation.

6. The CCIR is requested urgently to verify the above-mentioned relationship between worst month and yearly percentages, and to pursue its studies especially concerning attenuation due to precipitation at low angles of elevation, so that appropriate data may be submitted to the WARC in 1979.

Annex : 1

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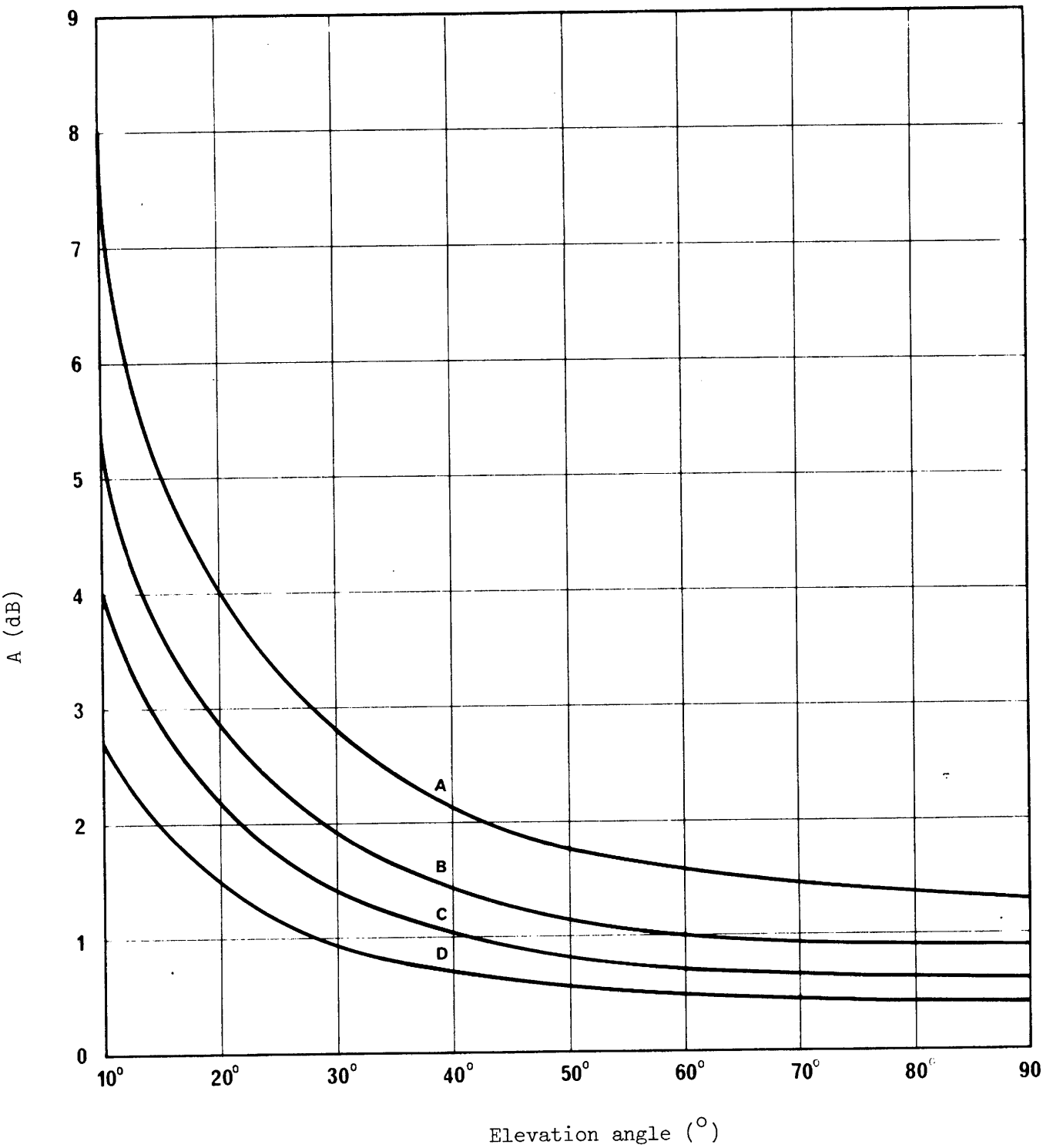
A N N E X



Predicted values of attenuation exceeded for not more than 1% of the worst month (0.25% of the time) on Earth-Space paths at 12 GHz in the rain climates indicated in Report 563 of the CCIR.

A : Climate 1

B : Climate 2

C : Climates 3 and 4

D : Climate 5

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

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COMMITTEE 4

Working Group 4A

RADIO PROPAGATION FACTORS

1. Having considered the documents presented to it on this subject, Working Group 4A reached the following conclusions which are submitted to Committee 4 for consideration.

2. It is noted that extensive measurements of attenuation due to rain have not been carried out in the tropical countries especially in the African region. Based on the meteorological data which the countries may provide they can be divided into rain climatic regions as defined in CCIR Report 563.

3. For the purpose of planning the Broadcasting-Satellite Service during this Conference this Working Group recommends the use of the Radio Propagation factors as defined in Document 2 with the modification that planning should be based only on achieving the carrier-to-noise ratio of 14 dB for 99 % of the worst month. In this respect the values of attenuation given in Section 3 of the CCIR Document 2 which relate to percentage of time with respect to the year may be used on the understanding that the time percentage for the worst month is about 4 times greater than the yearly percentage. However, this procedure is a provisional one and it should be used with caution. This ratio is subject to future CCIR verification.

4. Appropriate curves relating to 1 % of the worst month for the five climatic regions are shown in the annexed Figure.

Annex : 1

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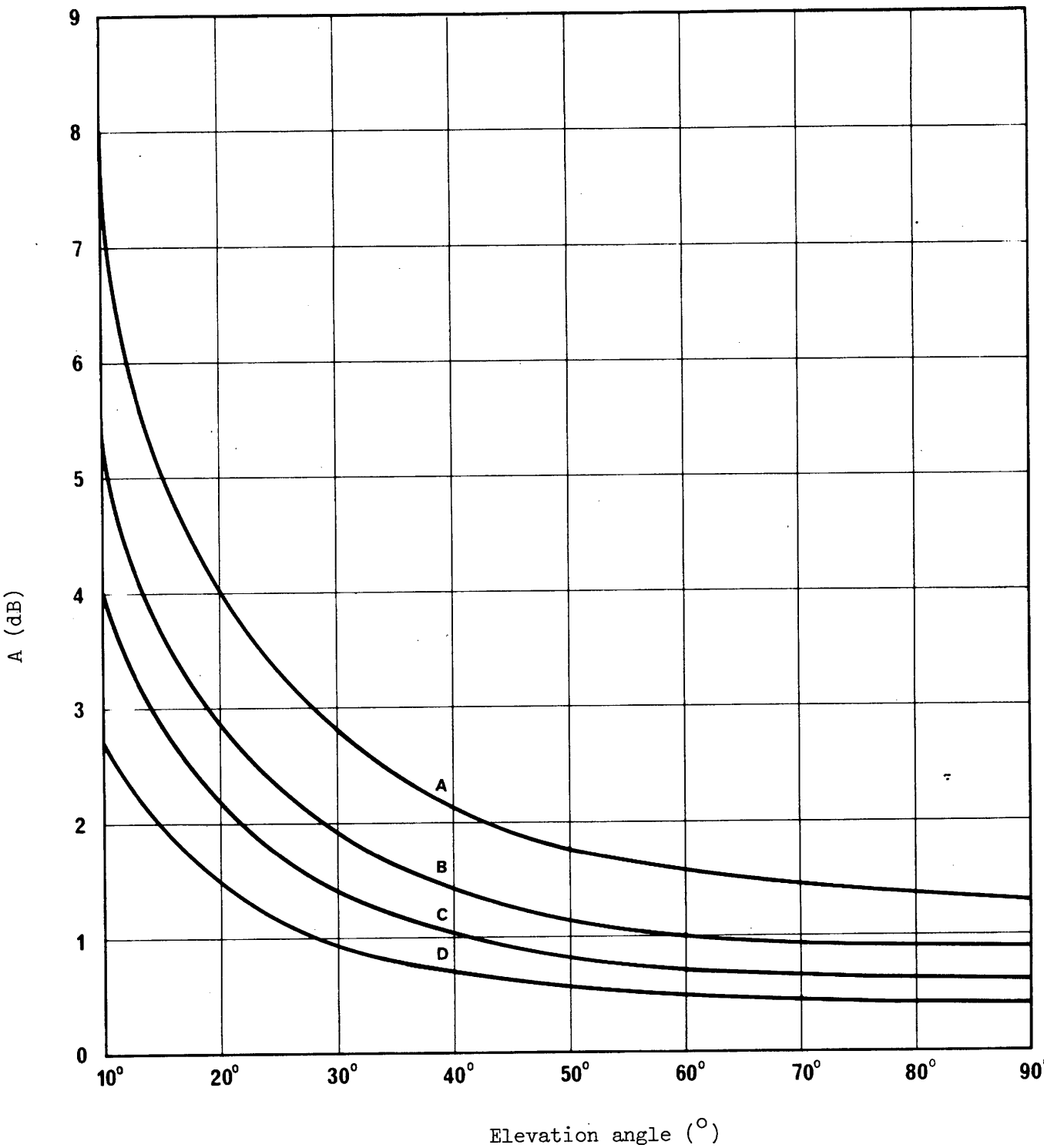
A N N E X



Predicted values of attenuation exceeded for not more than 1% of the worst month (0.25% of the time) on Earth-Space paths at 12 GHz in the rain climates indicated in Report 563 of the CCIR.

A : Climate 1

B : Climate 2

C : Climates 3 and 4

D : Climate 5

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

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COMMITTEE 4

Working Group 4B

CHARACTERISTICS OF BROADCASTING-SATELLITE
RECEIVING SYSTEMS FOR COMMUNITY RECEPTION

1. Having considered the documents presented to Sub-Working Group 4B4 and the discussions during the meeting, Sub-Working Group 4B4 reached the following conclusions which are submitted to Committee 4 for its consideration.

2. For the purposes of planning for the Broadcasting-Satellite Service for community reception, Committee 4 recommends that :

a) the minimum size of receiving antenna should be that having a half power beamwidth of 1^{o};

b) the G/T of the receiving station should be 14 dB/K. This value is calculated in accordance with the method used in Annex 1 of CCIR Report 473-1(Rev.76);

c) the power flux-density at the edge of the / service area / should be - 111 dBW/m^2 for 99 % of the worst month.

Note : By service area in this document we mean the area intended to be served by the broadcasting-satellite system.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

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COMMITTEE 4

Working Group 4B-3

OUT-OF-BAND SPURIOUS EMISSIONS

DRAFT RECOMMENDATION

Considering

a) that broadcasting satellites operating at high power levels are likely to cause interference to services in adjacent and in harmonically related frequency bands due to spurious emissions;

b) that the planning of the Broadcasting-Satellite Service must take account of the need to reduce interference to services operating in the adjacent bands to acceptable levels at the lower and upper edges of the bands 11.7 GHz to 12.2 GHz in Regions 2 and 3 and 11.7 GHz to 12.5 GHz in Region 1, and to the radio astronomy service which has an exclusive allocation at 23.6 to 24 GHz in all regions.

Recommends

that the CCIR be requested to continue as a matter of urgency its studies of the technical and operational aspects of spurious emissions from broadcasting satellites and complete a report at the special joint meeting of CCIR study groups to be held in preparation for the World Administrative Radio Conference 1979.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 2 to
Document No. 108(Rev.1)-E
26 January 1977
Original : English

COMMITTEE 4

Working Group 4A

TECHNICAL PARAMETERS REQUIRED FOR PLANNING

1. § 2.2. Replace the whole of page 3 by the following :

"2.2 As reference patterns for the co-polar and cross-polar components of receiving antennae, the following curves of Figure 2 should be used :

- curve A (individual reception, co-polar component) in Regions 1 and 3,
- curve A' (community reception, co-polar component) in all Regions,
- curve B (both types of reception, cross-polar component) in all Regions,
- curve C (minus the on-axis gain) in all Regions.

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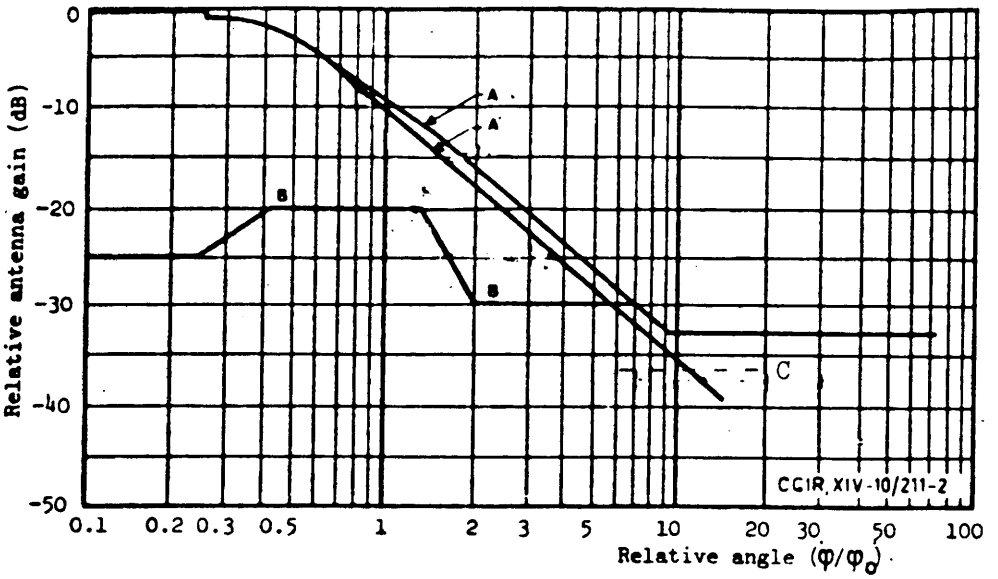


Relative antenna gain (dB)

Co-polar component

A : individual reception without sidelobe suppression

0 for $0 \leq \varphi \leq 0.25\varphi_0$

$-12\left(\frac{\varphi}{\varphi_0}\right)^2$ for $0.25\varphi_0 < \varphi \leq 0.707\varphi_0$

$-\left[9.0 + 20\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right]$ for $0.707\varphi_0 < \varphi \leq 1.26\varphi_0$

$-\left[8.5 + 25\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right]$ for $1.26\varphi_0 < \varphi \leq 9.55\varphi_0$

-33 dB for $9.55\ \phi_0 < \phi$

A' : community reception without sidelobe suppression

0 for $0 \leq \varphi/\varphi_0 \leq 0.25$

$-12(\varphi/\varphi_0)^2$ for $0.25 < \varphi/\varphi_0 \leq 0.86$

$-\left[10.5 + 25\log_{10}(\varphi/\varphi_0)\right]$ for $0.86 < \varphi/\varphi_0$

until intersection with curve C : then as curve C

B : Cross-polar component (both types of reception)

-25 for $0 \leq \varphi \leq 0.25\varphi_0$

$-\left(30 + 40\log_{10}\left|\frac{\varphi}{\varphi_0} - 1\right|\right)$ for $0.25\varphi_0 \leq \varphi \leq 0.44\varphi_0$

-20 for $0.44\varphi_0 \leq \varphi \leq 1.4\varphi_0$

$-\left(30 + 25\log_{10}\left|\frac{\varphi}{\varphi_0} - 1\right|\right)$ for $1.4\varphi_0 < \varphi \leq 2\varphi_0$

- 30 until intersection with co-polar component curve; then as for co-polar component

C : Minus the on-axis gain

Note : for values of ϕ_0 see Section 5.

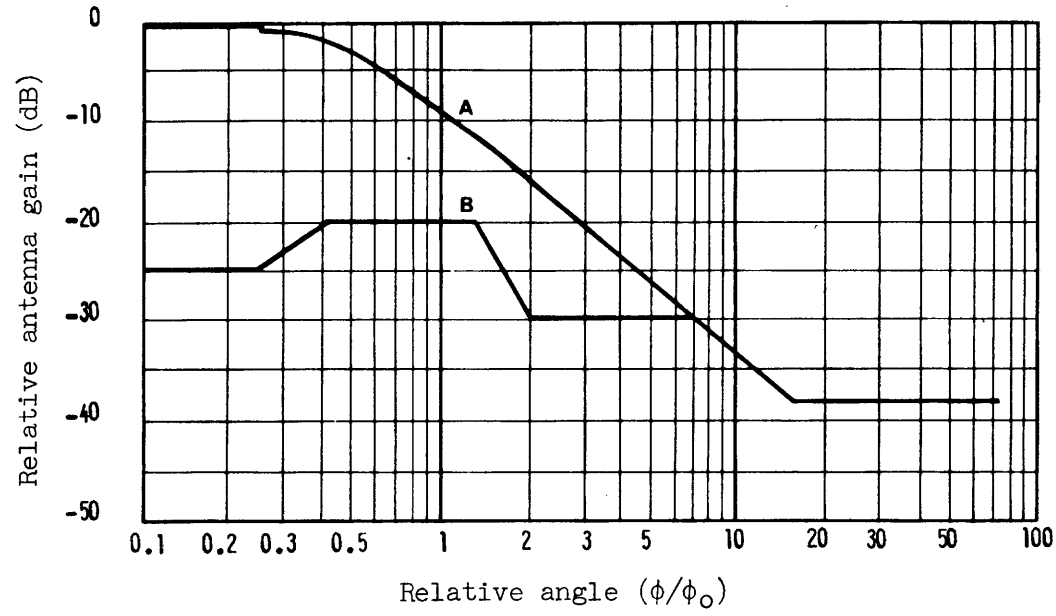
Figure 2 - Reference patterns for co-polar and cross-polar components for receiving antenna"

2. Add a new § 2.3, to read :

"2.3 As a reference pattern for the co-polar and cross-polar components antennae for individual reception in Region 2, the curves of Figure 3 should be used :

- curve A (co-polar component),
- curve B (cross-polar component)."

3. Add a new Figure 3 as attached :



Relative antenna gain (dB)

Co-polar component

A : individual reception without sidelobe suppression

0 for $0 \leq \varphi \leq 0.25\varphi_0$

$-12\left(\frac{\varphi}{\varphi_0}\right)^2$ for $0.25\varphi_0 < \varphi \leq 0.707\varphi_0$

$-\left[9.0 + 20\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right]$ for $0.707\varphi_0 < \varphi \leq 1.26\varphi_0$

$-\left[8.5 + 25\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right]$ for $1.26\varphi_0 < \varphi \leq 15.14\phi_0$

- 38 dB for $\phi > 15.14\phi_0$

B : Cross-polar component

- 25 for $0 \leq \varphi \leq 0.25\varphi_0$
- $(30 + 40\log_{10}\left|\frac{\varphi}{\varphi_0} - 1\right|)$ for $0.25\varphi_0 \leq \varphi \leq 0.44\varphi_0$
- 20 for $0.44\varphi_0 < \varphi \leq 1.4\varphi_0$
- $(30 + 25\log_{10}\left|\frac{\varphi}{\varphi_0} - 1\right|)$ for $1.4\varphi_0 < \varphi \leq 2\varphi_0$
- 30 until intersection with co-polar component curve; then as for co-polar component

Figure 3 - Reference patterns for co-polar and cross-polar components for receiving antennae for individual reception in Region 2

4. Renumber § 2.3 as § 2.4.

5. Page 4, § 8.1, line 3, replace "Figure 3" by "Figure 4".

6. Page 5, renumber Figure 3 as Figure 4.

7. Page 5, § 11, replace the text of § 11 by the following :

"11. Type of modulation

For the purpose of planning the Broadcasting-Satellite Service, the signal should be assumed to consist of a video signal with an associated frequency-modulation sound carrier, both modulating in frequency a carrier in the 12 GHz band, a pre-emphasis characteristic in accordance with CCIR Recommendation 405 being used.

This does not prohibit the use of other characteristics of the Broadcasting-Satellite Service (e.g. modulation with sound channels multiplexed within the bandwidth of a television channel, digital modulation of television signals, or other pre-emphasis characteristics) provided that the use of such characteristics does not cause greater interference than that caused by the system considered in the plan."

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 1 to
Document No. 108(Rev.1)-E
24 January 1977

COMMITTEE 5

TECHNICAL PARAMETERS REQUIRED FOR PLANNING

(This Corrigendum concerns the French version only.)

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 108(Rev.1)-E
21 January 1977
Original : French/English/Spanish

COMMITTEE 5
PLENARY MEETING

Committee 4

TECHNICAL PARAMETERS REQUIRED FOR PLANNING

(First Report)

Having considered the Report prepared by the CCIR Joint Working Party, as well as other documents presented to the Conference, Committee 4 has agreed to the values for the technical parameters required for planning as given below :

1. Minimum practicable beamwidth of a transmitting antenna in the Broadcasting-Satellite Service

1.1 For the purpose of planning the Broadcasting-Satellite Service during this Conference, Committee 4 recommends for technical reasons a value of 0.6° between the 3 dB values as the minimum beamwidth practicable.

1.2 For planning purposes subsequent to this Conference, the latest Recommendation of the CCIR should be used.

2. Antenna reference patterns

2.1 For the purpose of planning the Broadcasting-Satellite Service during this Conference, Committee 4 recommends the use of the reference patterns for the co-polar and cross-polar components of satellite transmitting antennae given in Figure 1.

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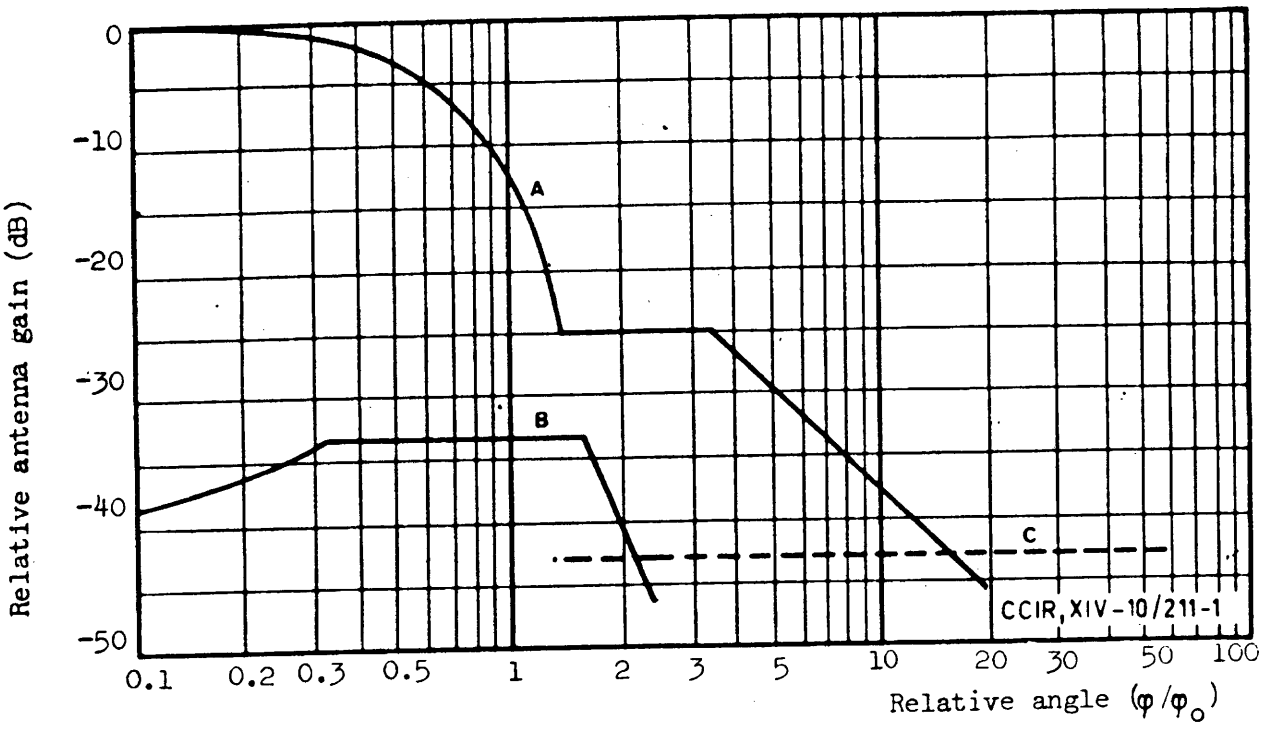
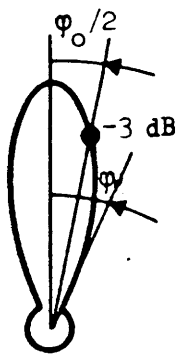




Relative antenna gain (dB)

A : Co-polar component

$-12(\frac{\varphi}{\varphi_o})^2$ for $0 \leq \varphi \leq 1.44\varphi_o$

-25 for $1.44\varphi_o < \varphi \leq 3.16\varphi_o$

$-\overline{/12.5+25 \log_{10}(\frac{\varphi}{\varphi_o})/}$ for $3.16\varphi_o < \varphi$

after intersection with curve C : as curve C

B : Cross-polar component

$-(40+40 \log_{10}|\frac{\varphi}{\varphi_o} - 1|)$ for $0 \leq \varphi \leq 0.33\varphi_o$

-33 for $0.33\varphi \leq \varphi \leq 1.67\varphi_o$

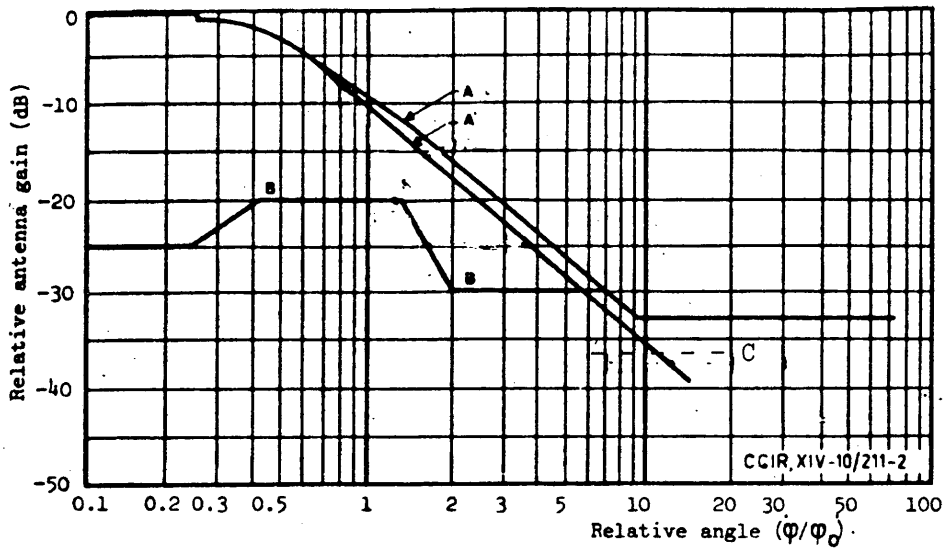
$-(40+40 \log_{10}|\frac{\varphi}{\varphi_o} - 1|)$ for $1.67\varphi_o < \varphi$

after intersection with curve C : as curve C

C : Minus the on-axis gain

Figure 1 - Reference patterns for co-polar and cross-polar components for satellite transmitting antenna

2.2 As reference patterns for the co-polar and cross-polar components of receiving antennae, curves A (individual reception, co-polar), A' (community reception, co-polar) B (cross-polar for both types of reception), and C given in Figure 2 should be used.



Relative antenna gain (dB)

Co-polar component

A : individual reception without sidelobe suppression

0 for $0 \leq \varphi \leq 0.25\varphi_0$

$-12\left(\frac{\varphi}{\varphi_0}\right)^2$ for $0.25\varphi_0 < \varphi \leq 0.707\varphi_0$

$-\left[9.0 + 20\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right]$ for $0.707\varphi_0 < \varphi \leq 1.26\varphi_0$

$-\left[8.5 + 25\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right]$ for $1.26\varphi_0 < \varphi \leq 9.55\varphi_0$

-33 dB for $9.55\,\phi_0 < \phi$

A' : community reception without sidelobe suppression

0 for $0 \leq \varphi/\varphi_0 \leq 0.25$

$-12(\varphi/\varphi_0)^2$ for $0.25 < \varphi/\varphi_0 \leq 0.86$

$-\left[10.5 + 25\log_{10}(\varphi/\varphi_0)\right]$ for $0.86 < \varphi/\varphi_0$

until intersection with curve C : then as curve C!

B : Cross-polar component (both types of reception)

-25 for $0 \leq \varphi \leq 0.25\varphi_0$

$-\left(30 + 40\log_{10}\left|\frac{\varphi}{\varphi_0} - 1\right|\right)$ for $0.25\varphi_0 \leq \varphi \leq 0.44\varphi_0$

-20 for $0.44\varphi_0 \leq \varphi \leq 1.4\varphi_0$

$-\left(30 + 25\log_{10}\left|\frac{\varphi}{\varphi_0} - 1\right|\right)$ for $1.4\varphi_0 < \varphi \leq 2\varphi_0$

-30 until intersection with co-polar component curve; then as for co-polar component

C : Minus the on-axis gain

Note : for values of ϕ_0 see Section 5.

Figure 2 - Reference patterns for co-polar and cross-polar components for receiving antenna

2.3 For planning purposes subsequent to this Conference, the latest Recommendation of the CCIR should be used. To this end, the CCIR is requested to continue studies on this subject.

3. Pointing accuracy of satellite antennae

(will be furnished in a later document)

4. Propagation

(will be furnished in a later document)

5. Minimum size of a receiving antenna for individual reception

5.1 For the purposes of planning the Broadcasting-Satellite Service for Region 2, Committee 4 recommends that the minimum size of the receiving antenna should be that having a half-power beamwidth of 1.8°.

5.2 For the purposes of planning the Broadcasting-Satellite Services for Regions 1 and 3, Committee 4 recommends that the minimum size of the receiving antenna should be that having a half-power beamwidth of 2°.

6. Difference between the edge of coverage area e.i.r.p. and that on the beam axis

(will be furnished in a later document)

7. Carrier-to-noise ratio

(will be furnished in a later document)

8. Protection ratio between two FM television signals

8.1 For the purpose of planning the Broadcasting-Satellite Service during this Conference, Committee 4 recommends the use of the protection-ratio curve represented in Figure 3.

It is recognized that protection ratio values are different for the different television standards, but a compromise value has been agreed upon for planning.

8.2 It should be noted that this curve applies only in the absence of an energy dispersal signal or with only a small amount of energy dispersal.

9. Bandwidth

The necessary bandwidth depends upon : the television standard used, the pre-emphasis characteristic, the frequency deviation and the degree of energy dispersal, if any.

For 625-line systems a value of 27 MHz is recommended for planning purposes.

For 525-line system M (Region 2), values of 18 and 23 MHz have been used for planning purposes.

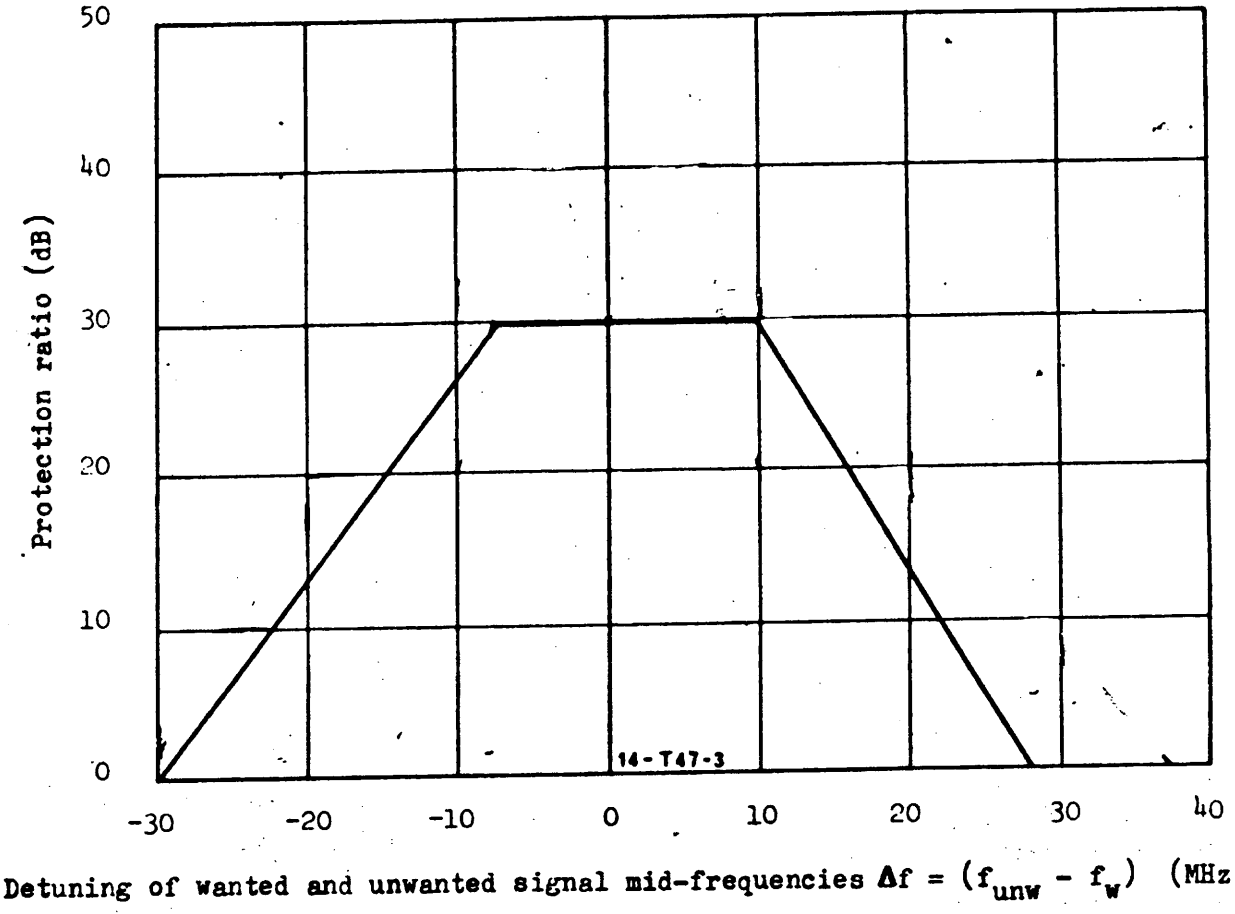


Figure 3 - Protection ratio between two frequency-modulation television signals

10. Channel spacing

Because of technical difficulties in the output circuit of a satellite in the broadcasting-satellite service the spacing between two channels fed to a common antenna must be greater than 40 MHz.

11. Type of modulation

In planning the broadcasting-satellite service, only signals consisting of a video signal associated with a sound channel on a subcarrier, both using frequency modulation on a carrier in the 12 GHz band should be considered.

12. Polarization of emissions

The polarization of different beams, deliberately intended to serve the same area, should be the same, if possible. However the specific requirements of any Administration should be satisfied.

13. Tuning range of television receivers

13.1 For any given country, all the channels radiated within a single antenna beam should, if at all possible, lie within a frequency band of 400 MHz.

13.2 In addition to the above constraint, for countries using more than one beam, it would be desirable that all the channels used in the various beams were accommodated in the same 400 MHz band. However, the total number of available channels may impose severe restrictions on this constraint.

13.3 This problem is considered to be of less importance in Regions 2 and 3, where the total available bandwidth is only 500 MHz.

14. Station keeping of satellite

An accuracy of better than $\pm$ 0.1° in both the N-S and E-W direction is considered feasible for satellites in the broadcasting-satellite service.

Note : Such an accuracy will lead to a maximum excursion of the satellite of $\pm$ 0.14° from its nominal position.

15. Angle of elevation of receiving antennae

15.1 A minimum angle of elevation of 20° would be desirable, to minimize the required e.i.r.p. of the satellite, and to reduce the effects of shadowing and the possibility of interference from terrestrial services.

15.2 For coverage zones in latitudes above about 60°, the angle of elevation will, of necessity, often be less than 20°.

15.3 For mountainous areas, even an angle of 20° may not suffice. As an example, an angle of at least 30° may be necessary to provide an acceptable service in alpine valleys. An angle of elevation of up to 40° or even higher may be required in the service areas subject to high precipitation (e.g. climatic Zone 1).

Note : 1. Some dry, non mountainous areas may be given an acceptable service at angles of elevation less than 20°.

2. In areas with small angles of elevation, the shadowing effect of tall buildings may have to be taken into account.

3. In choosing a satellite position designed to give the maximum angle of elevation at the ground, the effect on the eclipse period of such a position must be borne in mind.

16. Power flux-density for individual reception at edge of service area

16.1 For the purposes of planning for the broadcasting-satellite service in Regions 1 and 3 for individual reception, it is recommended that a power flux-density at the edge of the service area - 103 dBW/m^2 for 99 % of the worst month be used.

16.2 For the purpose of planning for the broadcasting-satellite service in Region 2, it is recommended that a power flux-density at the edge of the service area of - 105 dBW/m^2 for 99 % of the worst month be used.

Note : By service area here is meant the area intended to be served by the broadcasting-satellite system.

17. Figure of merit (G/T) of a broadcasting-satellite receiving station for individual reception

For purposes of planning for the broadcasting satellite service, it is recommended that a value of 6 dB/K should be used. This value is calculated in accordance with the method used in Annex 1 of CCIR Report 473-1(Rev.76) and is based on the contributions to this conference.

F. KRÁLÍK
Chairman, Committee 4

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 108-E
19 January 1977
Original : French/English

COMMITTEE 5
PLENARY MEETING

Committee 4

TECHNICAL PARAMETERS REQUIRED FOR PLANNING

(First Report)

Having considered the Report prepared by the CCIR Joint Working Party, as well as other documents presented to the Conference, Committee 4 has agreed to the values for the technical parameters required for planning as given below :

1. Minimum practicable beamwidth of a transmitting antenna in the Broadcasting-Satellite Service

1.1 For the purpose of planning the Broadcasting-Satellite Service during this Conference, Committee 4 recommends for technical reasons a value of 0.6^{o} between the 3 dB values as the minimum beamwidth practicable.

1.2 For planning purposes subsequent to this Conference, the latest Recommendation of the CCIR should be used.

2. Antenna reference patterns

2.1 For the purpose of planning the Broadcasting-Satellite Service during this Conference, Committee 4 recommends the use of the reference patterns for the co-polar and cross-polar components of satellite transmitting antennae given in Figure 1.

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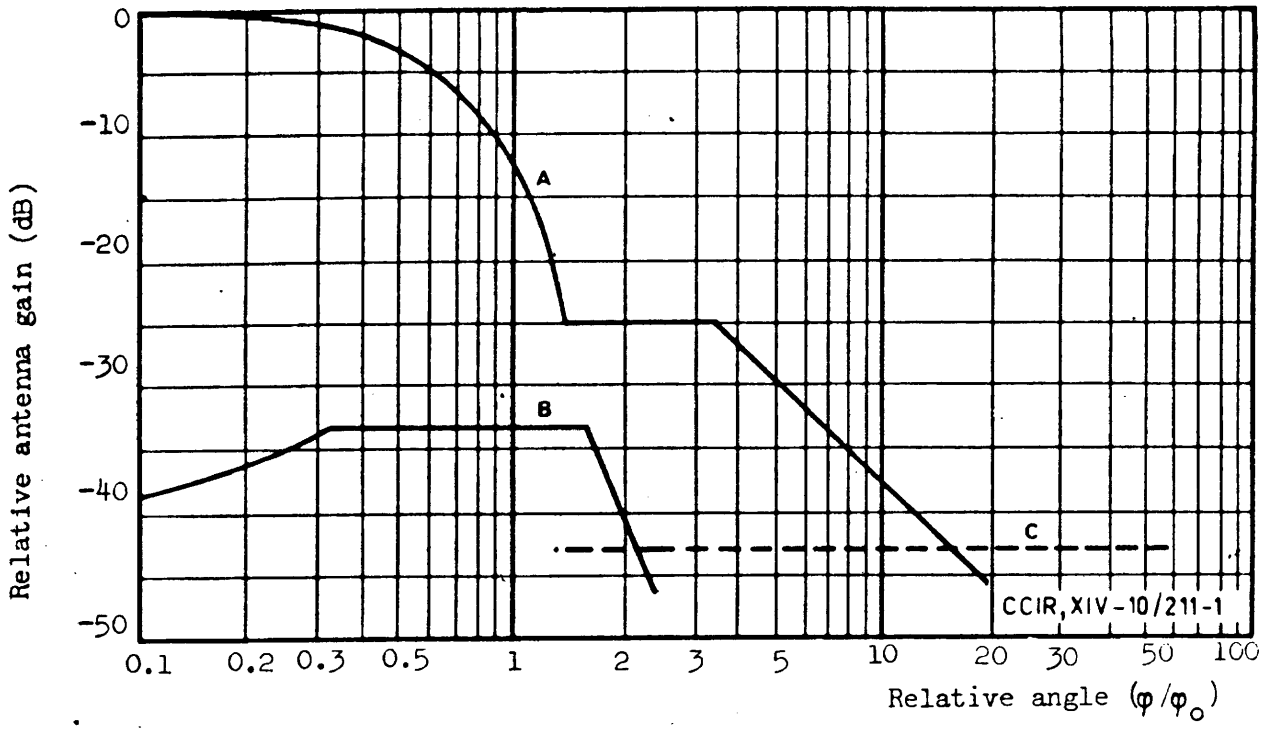
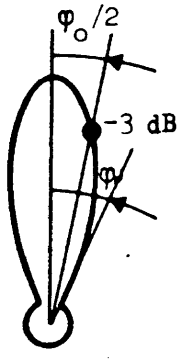




Relative antenna gain (dB)

A : Co-polar component

$-12\left(\frac{\varphi}{\varphi_o}\right)^2$ for $0 \leq \varphi \leq 1.44\varphi_o$

-25 for $1.44\varphi_o < \varphi \leq 3.16\varphi_o$

$-\left[12.5+25 \log_{10}\left(\frac{\varphi}{\varphi_o}\right)\right]$ for $3.16\varphi_o < \varphi$

B : Cross-polar component

$-\left(40+40 \log_{10}\left|\frac{\varphi}{\varphi_o}-1\right|\right)$ for $0 \leq \varphi \leq 0.33\varphi_o$

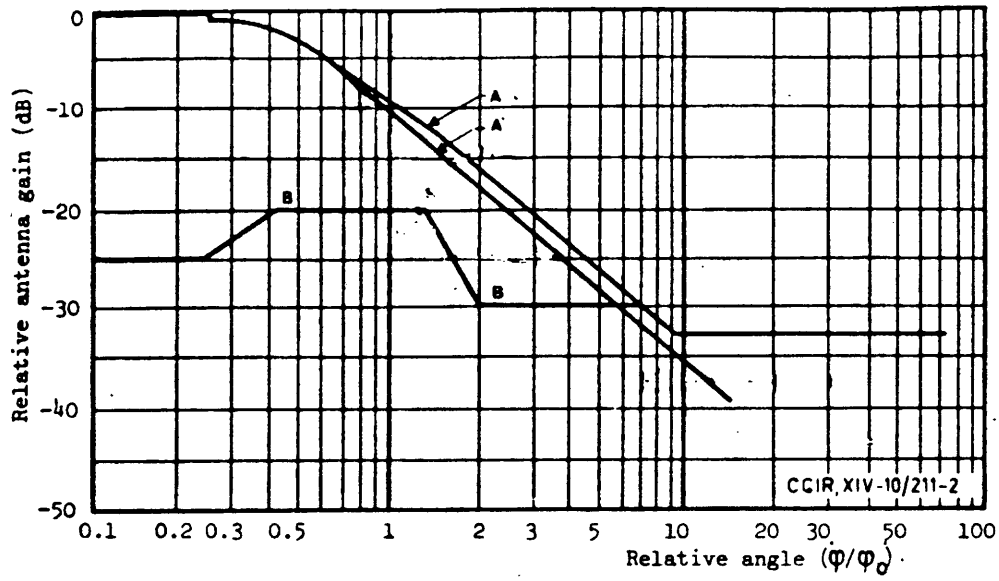
-33 for $0.33\varphi \leq \varphi \leq 1.67\varphi_o$

$-\left(40+40 \log_{10}\left|\frac{\varphi}{\varphi_o}-1\right|\right)$ for $1.67\varphi_o < \varphi$

C : Minus the on-axis gain

Figure 1 - Reference patterns for co-polar and cross-polar components for satellite transmitting antenna

2.2 As reference patterns for the co-polar and cross-polar components of receiving antennae, curves A (individual reception, co-polar), A' (community reception, co-polar) and B (cross-polar for both types of reception) given in Figure 2 should be used.



Relative antenna gain (dB)

Co-polar component

A : individual reception without sidelobe suppression

$$0 \quad \text{for} \quad 0 \leq \varphi \leq 0.25\varphi_0$$

$$-12\left(\frac{\varphi}{\varphi_0}\right)^2 \quad \text{for} \quad 0.25\varphi_0 < \varphi \leq 0.707\varphi_0$$

$$-\left[9.0 + 20\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right] \quad \text{for} \quad 0.707\varphi_0 < \varphi \leq 1.26\varphi_0$$

$$-\left[8.5 + 25\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right] \quad \text{for} \quad 1.26\varphi_0 < \varphi \leq 9.55\varphi_0$$

A' : community reception without sidelobe suppression

$$0 \quad \text{for} \quad 0 \leq \varphi/\varphi_0 < 0.25$$

$$-12(\varphi/\varphi_0)^2 \quad \text{for} \quad 0.25 < \varphi/\varphi_0 \leq 0.86$$

$$-\left[10.5 + 25\log_{10}(\varphi/\varphi_0)\right] \quad \text{for} \quad 0.86 < \varphi/\varphi_0$$

B : Cross-polar component (both types of reception)

$$-25 \quad \text{for} \quad 0 \leq \varphi \leq 0.25\varphi_0$$

$$-\left(30 + 40\log_{10}\left|\frac{\varphi}{\varphi} - 1\right|\right) \quad \text{for} \quad 0.25\varphi_0 < \varphi \leq 0.44\varphi_0$$

$$-20 \quad \text{for} \quad 0.44\varphi_0 < \varphi \leq 1.4\varphi_0$$

$$-\left(30 + 25\log_{10}\left|\frac{\varphi}{\varphi} - 1\right|\right) \quad \text{for} \quad 1.4\varphi_0 < \varphi \leq 2\varphi_0$$

- 30 until intersection with co-polar component curve; then as for co-polar component

Figure 2 - Reference patterns for co-polar and cross-polar components for receiving antenna

2.3 For planning purposes subsequent to this Conference, the latest Recommendation of the CCIR should be used. To this end, the CCIR is requested to continue studies on this subject.

3. Pointing accuracy of satellite antennae

(will be furnished in a later document)

4. Propagation

(will be furnished in a later document)

5. Minimum size of a receiving antenna

5.1 For the purposes of planning the Broadcasting-Satellite Service for Region 2, Committee 4 recommends that the minimum size of the receiving antenna should be that having a half-power beamwidth of 1.8°.

5.2 For the purposes of planning the Broadcasting-Satellite Services for Regions 1 and 3, Committee 4 recommends that the minimum size of the receiving antenna should be that having a half-power beamwidth of 2°.

6. Difference between the edge of coverage area e.i.r.p. and that on the beam axis

(will be furnished in a later document)

7. Carrier-to-noise ratio

(will be furnished in a later document)

8. Protection ratio between two FM television systems

8.1 For the purpose of planning the Broadcasting-Satellite Service during this Conference, Committee 4 recommends the use of the protection-ratio curve represented in Figure 3.

It is recognized that protection ratio values are different for the different television standards, but a compromise value has been agreed upon for planning.

8.2 It should be noted that this curve applies only in the absence of an energy dispersal signal or with only a small amount of energy dispersal.

9. Bandwidth

The necessary bandwidth depends upon : the television standard used, the pre-emphasis characteristic, the frequency deviation and the degree of energy dispersal, if any.

For 625-line systems a value of 27 MHz is recommended for planning purposes.

For 525-line system M (Region 2), values of 18 and 23 MHz have been used for planning purposes.

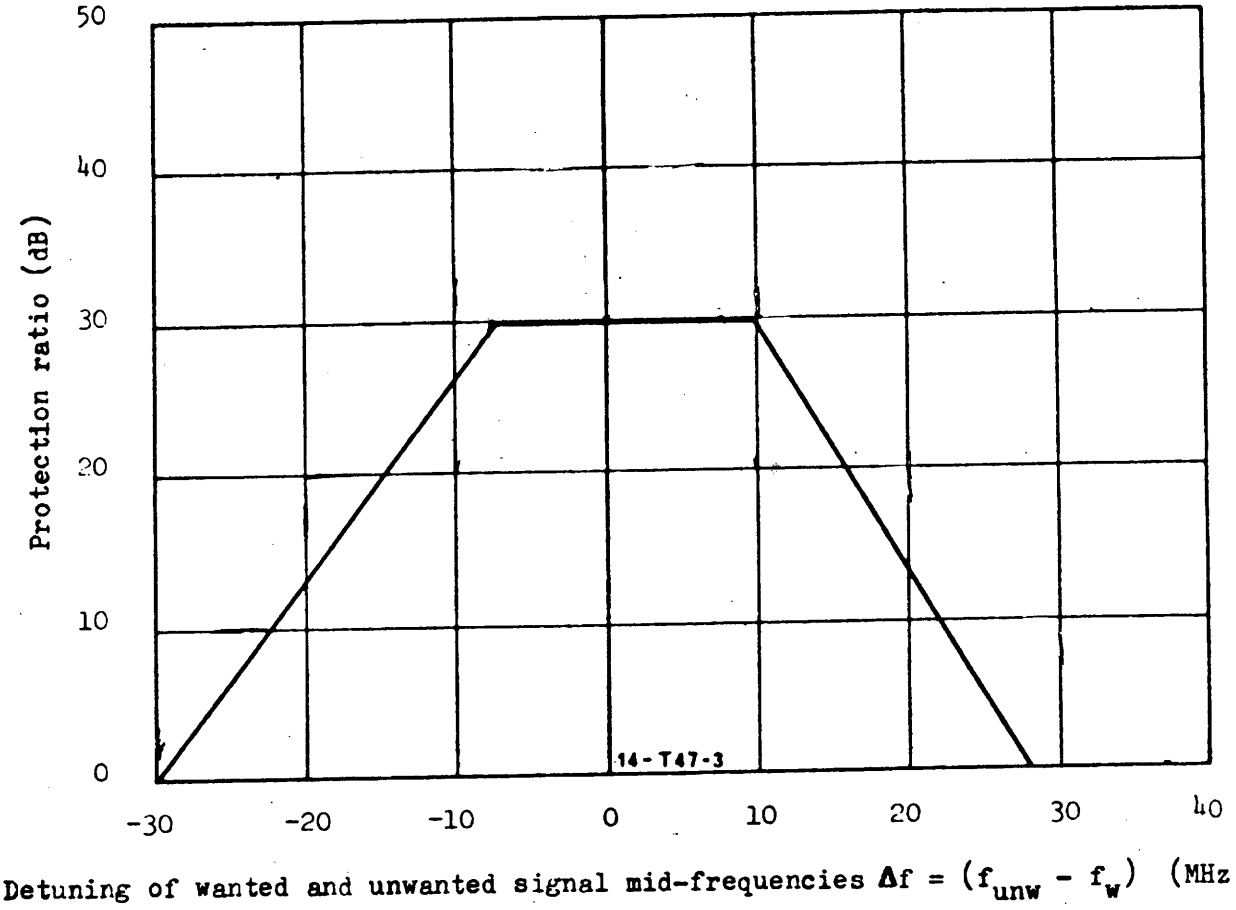


Figure 3 - Protection ratio between two frequency-modulation television signals

10. Channel spacing

Because of technical difficulties in the output circuit of a satellite in the broadcasting-satellite service the spacing between two channels fed to a common antenna must be greater than 40 MHz.

11. Type of modulation

In planning the broadcasting-satellite service, only signals consisting of a video signal associated with a sound channel on a subcarrier, both using frequency modulation on a carrier in the 12 GHz band should be considered.

12. Polarization of emissions

The polarization of different beams, deliberately intended to serve the same area, should be the same, if possible. However the specific requirements of any Administration should be satisfied.

13. Tuning range of television receivers

13.1 For any given country, all the channels radiated within a single antenna beam should, if at all possible, lie within a frequency band of 400 MHz.

13.2 In addition to the above constraint, for countries using more than one beam, it would be desirable that all the channels used in the various beams were accommodated in the same 400 MHz band. However, the total number of available channels may impose severe restrictions on this constraint.

13.3 This problem is considered to be of less importance in Regions 2 and 3, where the total available bandwidth is only 500 MHz.

14. Station keeping of satellite

An accuracy of better than $\pm$ 0.1° in both the N-S and E-W direction is considered feasible for satellites in the broadcasting-satellite service.

Note : Such an accuracy will lead to a maximum excursion of the satellite of $\pm$ 0.14° from its nominal position.

15. Angle of elevation of receiving antennae

15.1 A minimum angle of elevation of 20° would be desirable, to minimize the required e.i.r.p. of the satellite, and to reduce the effects of shadowing and the possibility of interference from terrestrial services.

15.2 For coverage zones in latitudes above about 60°, the angle of elevation will, of necessity, often be less than 20°.

15.3 For mountainous areas, even an angle of 20° may not suffice. As an example, an angle of at least 30° may be necessary to provide an acceptable service in alpine valleys. An angle of elevation of up to 40° or even higher may be required in the service areas subject to high precipitation (e.g. climatic Zone 1).

Note : 1. Some dry, non mountainous areas may be given an acceptable service at angles of elevation less than 20°.

2. In areas with small angles of elevation, the shadowing effect of tall buildings may have to be taken into account.

3. In choosing a satellite position designed to give the maximum angle of elevation at the ground, the effect on the eclipse period of such a position must be borne in mind.

16. Power flux-density at edge of service area

16.1 For the purposes of planning for the broadcasting-satellite service in Regions 1 and 3 for individual reception, it is recommended that a power flux-density at the edge of the service area - 103 dBW/m^2 for 99 % of the worst month be used.

16.2 For the purpose of planning for the broadcasting-satellite service in Region 2, it is recommended that a power flux-density at the edge of the service area of - 105 dBW/m^2 for 99 % of the worst month be used.

Note : By service area here is meant the area intended to be served by the broadcasting-satellite system.

17. Figure of merit (G/T) of a broadcasting-satellite receiving station

For purposes of planning for the broadcasting satellite service, it is recommended that a value of 6 dB/K should be used. This value is calculated in accordance with the method used in Annex 1 of CCIR Report 473-1(Rev.76) and is based on the contributions to this conference.

F. KRÁLÍK
Chairman, Committee 4

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 109-E
19 January 1977
Original : English

COMMITTEE 4

Working Group 4B3

UP-LINK CONSIDERATIONS FOR THE BROADCASTING-SATELLITE SERVICE

For the purposes of planning the Broadcasting-Satellite Service during this Conference, Committee 4 recommends that the effect of the up-path noise contributions on the quality of the down-path of this service for individual reception should be equivalent to a degradation in the down-path C/N ratio of not greater than 0.5 dB for 99 % of the time. This is in accordance with section 4.4 of Report 215 of the JWP Report.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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20 January 1977
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Spanish

COMMITTEE 5

Report of Working Group 5B to Committee 5

PLANNING PRINCIPLES

The following principles have been adopted by Working Group 5B for guidance in development of a plan of Region 2. This document is also referred to Working Group 5A for its information.

1. Equality for allocated services

The 11.7 to 12.2 GHz band is allocated by Article 5 of the Radio Regulations to Broadcasting-Satellite, Fixed-Satellite and Terrestrial Services on an equal, primary basis. Each Administration within Region 2 has the right to decide for itself which of these Services are to be implemented within its own territory.

2. Equal rights for Regions sharing the usable geostationary orbit

When any segment of the geostationary orbital arc is visible and therefore usable by more than one Region, in accordance with the Convention, Radio Regulations and the Resolutions in force, it shall be shared equitably between the Regions concerned so that the burden of sharing falls equally on those Regions. (This principle does not affect any sovereign rights which might exist.)

3. Recognition of national requirements

All Administrations of Region 2 shall take into consideration the national requirements which have been presented or shall be presented in the future.

4. Equitable rights of access to the geostationary orbit spectrum resource

Subject to the provisions of the Convention, Radio Regulations, and the Resolutions in force, it is recognized that all Administrations have a right to access the geostationary orbit spectrum resource in order to fulfill their requirements. (This principle does not affect any sovereign rights which might exist.)

5. Flexible planning approach*)

The Plan adopted must be sufficiently flexible to allow for : future technical developments, definition of future requirements, changes in existing or stated requirements, requirements by Administrations not represented at the

*) Paragraph 5 does not imply recognition of systems existing prior to the implementation of the Plan.

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Conference, further information on propagation data, and diverse system design approaches. The Plan can be modified only by a competent administrative radio conference.

6. Efficient geostationary orbit and spectrum utilization

The Plan shall use, to the maximum extent technically and economically practicable, available techniques in order to make most efficient use of the geostationary orbit and frequency spectrum to fulfill the Region's requirements, and the individual requirements of each Administration.

7. Consultations among Administrations

Administrations shall consult all other Administrations affected or concerned in planning for the implementation of systems in the 11.7 to 12.2 GHz band.

8. Reception

The plan shall have as a basis individual reception, although each Administration may choose the reception system that it finds most suitable according to its requirements, namely individual, community, or both.

B.C. BLEVIS
Chairman of Working Group 5B

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 1 to
Document No. 111(Rev.3)-E
31 January 1977
Original : English

COMMITTEE 4

Working Group 4B

PROTECTION REQUIREMENTS FOR SHARING BETWEEN SERVICES IN THE 12 GHz BAND

Replace present Figure 1 by Figure 1 below :

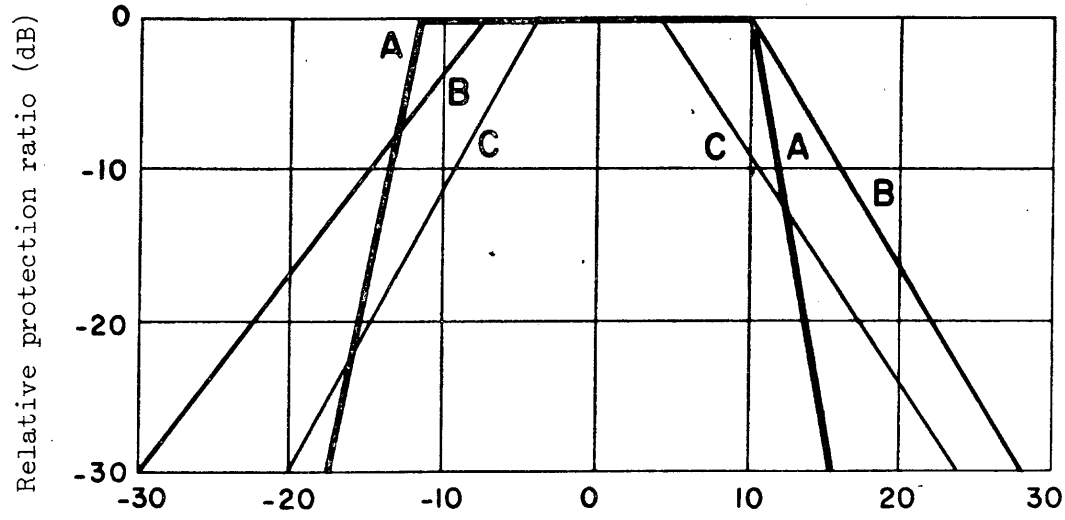

Figure 1 - Reference case protection ratios relative to co-channel values

A. TV/VSB-protected, TV/FM interfering

B. TV/FM-protected, TV/FM interfering

C. TV/FM-protected, TV/VSB interfering

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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28 January 1977
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COMMITTEE 4

Working Group 4B

PROTECTION REQUIREMENTS FOR SHARING BETWEEN SERVICES IN THE 12 GHz BAND*)

1. Having considered the documents dealing with this subject presented to Working Group 4B, the Working Group reached the following conclusions which are submitted to Committee 4 for consideration :

2. For purposes of planning the Broadcasting-Satellite Service during this Conference, sharing between the different services using the 12 GHz band should be based on the protection requirements listed in the table :

Protected service[1]	Protected signal	Interfering Service[1]	Interfering signal	Protection requirements[3]	
				Total acceptable[2]	Single entry
BSS	TV/FM	BSS, FSS, FS, BS	TV/FM	C/I = 30 dB[4]	C/I = 35 dB[4]
FSS	FDM/FM	BSS	TV/FM	N = 500 pWOp	N = 300 pWOp
FSS	TV/FM	BSS, FSS	TV/FM	C/I = 32 dB[5]	C/I = 37 dB[5]
FSS	4Ø - PSK	BSS, FSS	TV/FM	C/I = 30 dB	C/I = 35 dB
FSS	FDM/FM	FSS	FDM/FM	N = 1000 pWOp	N = 400 pWOp
FS	FDM/FM	BSS	TV/FM	N = 1000 pWOp	-125 dBW/m^2/4 kHz[6]
BS	TV/VSB	BSS	TV/FM	50 dB	not applicable

Notes : 1) BSS = Broadcasting-Satellite Service
FSS = Fixed-Satellite Service
BS = Broadcasting Service
FS = Fixed Service

2) Values in dB are protection ratios for sum of interfering signals. Values in pWOp are for interference noise in the worst telephone channels caused by sum of interfering signals.

*) This document combines the provisions of Document No. 99(Rev.1) and Document No. 111, and as a consequence Document No. 99(Rev.1) is cancelled.

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3) These limits include both up-path and down-path contributions.

4) For BSS satellites located at the interfaces of Region 1/3 and Region 2, the C/I ratios should be one dB higher.

5) See CCIR Recommendation 483.

6) See § 5.1.5 of Report 631(Rev.76). This value may be suitably modified for tropical Regions to take into account rain attenuation. Polarization discrimination can be taken into account as indicated in / /.

3. The values given as "total acceptable" are those necessary to protect the protected signal. The "single entry" values are those which should be used as a guide for planning purposes. The total interference from all sources must be calculated since the single entry criteria being satisfied for each source may not guarantee that the total interference meets the above protection requirements. One entry is defined as the aggregate of emissions of any one station entering any receiver in the protected Service within the channel to be protected.

4. The term C/I refers to the predetection ratio of interfered-with and interfering radio frequency powers within a bandwidth equal to and coinciding with the predetection bandwidth of the protected signal in the interfered-with earth station. The value given shall be exceeded for all but 20 % of the worst month for the FSS, and for all but 1 % of the worst month for the BS and the BSS.

5. The term N refers to the post-detection noise power at a point of 0 dBm0 relative test tone level in any voice channel of an FDM/FM telephony system. The value given shall not be exceeded for more than 20 % of the worst month.

6. The specified values of protection ratio (i.e., the carrier-to-interference power ratio corresponding to a specified picture quality) are applicable, for planning purposes, to television signals of any of the several television standards.

7. For BSS systems with FM/TV as the protected signal, the protection ratios are given for particular reference conditions. Most important of these are :

1) frequency deviation of the protected signal (12 MHz peak-to-peak)

2) quality of service protected (grade 4.5)*)

3) co-channel carriers (no carrier-frequency offset).

8. If system design is based on conditions other than 1) and 2) above, the FM-TV protection ratio is given by :

$$PR = 12.5 - 20 \log (Dv/12) - Q + 1.1\ Q^2$$

where Dv = nominal peak-to-peak frequency deviation
Q = the impairment grade, concerning the interference only.

9. When carriers are offset in frequency, condition 3) does not apply and the adjacent channel protection ratios should be adjusted with the frequency offset as shown in the figure. For example, at a frequency offset of 20 MHz, the total acceptable protection ratio against interference to an FM/TV signal from another FM/TV signal is 13 dB. The corresponding single-entry value is 18 dB.

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*) Quality grade on a 5-point impairment scale as defined in Recommendation 500.

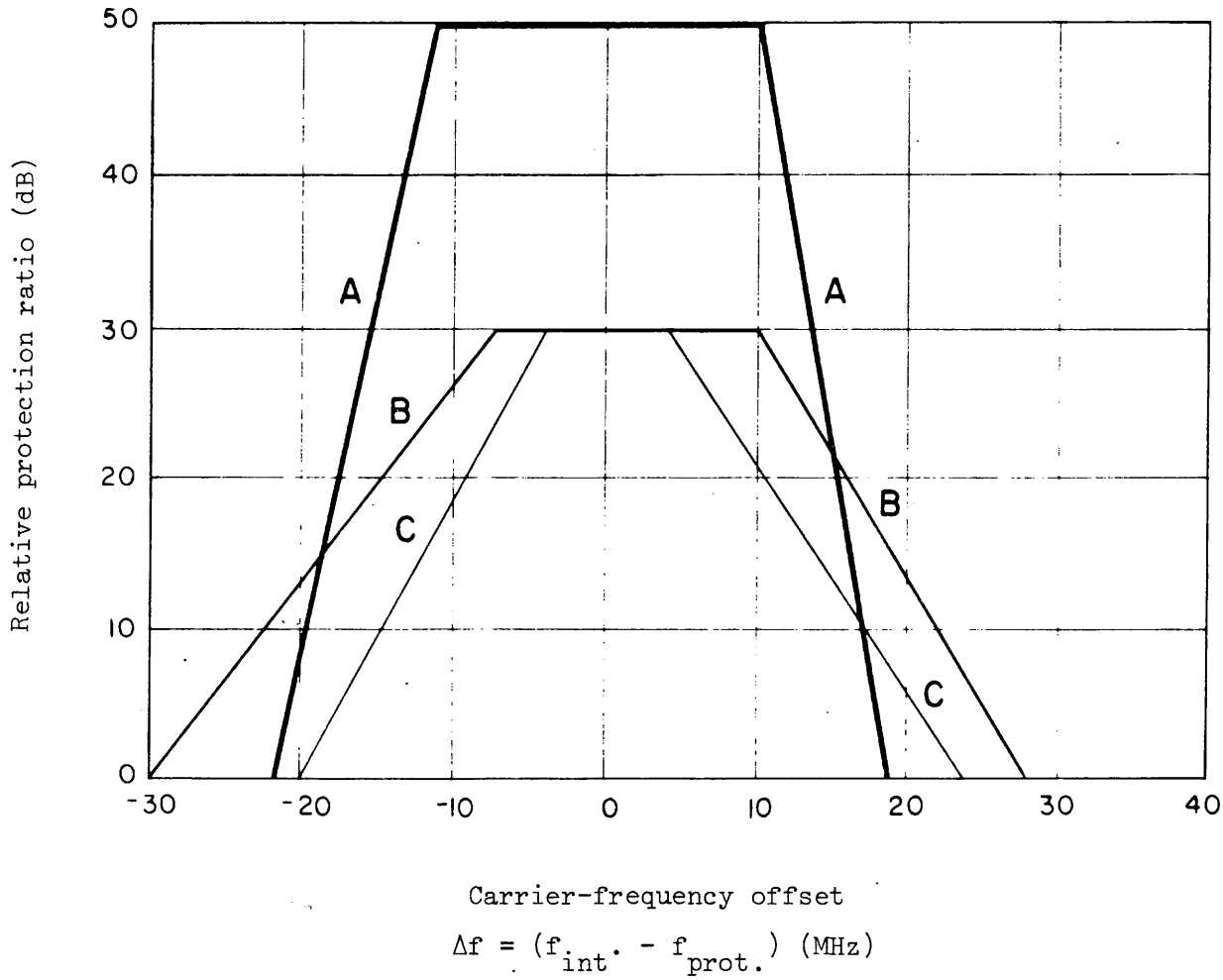

Figure 1 - Reference case protection ratios relative to co-channel values

A. TV/VSB-protected, TV/FM interfering

B. TV/FM-protected, TV/FM interfering

C. TV/FM-protected, TV/VSB interfering

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 111(Rev.2)-E
26 January 1977
Original : English

COMMITTEE 4

Working Group 4B

PROTECTION REQUIREMENTS FOR SHARING BETWEEN SERVICES IN THE 12 GHz BAND

1. Having considered the documents dealing with this subject presented to Working Group 4B, the Working Group reached the following conclusions which are submitted to Committee 4 for consideration :

2. For purposes of planning the Broadcasting-Satellite Service during this Conference, sharing between the different services using the 12 GHz band should be based on the protection requirements listed in the table :

Protected service [1]	Protected signal	Interfering Service [1]	Interfering signal	Protection requirements [3]	
				Total acceptable [2]	Single entry
BSS	TV/FM	BSS, FSS, FS, BS	TV/FM	C/I = 30 dB [4]	C/I = 35 dB [4]
FSS	FDM/FM	BSS	TV/FM	N = 500 pW0p	N = 300 pW0p
FSS	TV/FM	BSS	TV/FM	C/I = 32 dB	C/I = 37 dB
FSS	4Ø - PSK	BSS	TV/FM	C/I = 30 dB	C/I = 35 dB
FSS	FDM/FM	FSS	FDM/FM	N = 1000 pW0p	N = 400 pW0p
FS	FDM/FM	BSS	TV/FM	N = 1000 pW0p	-128 dBW/m^2/ 4 kHz
BS	TV/VSB	BSS	TV/FM	50 dB	not applicable

Notes : 1) BSS = Broadcasting-Satellite Service
FSS = Fixed-Satellite Service
BS = Broadcasting Service
FS = Fixed Service

2) Values in dB are protection ratios for sum of interfering signals. Values in pW0p are for interference noise in the worst telephone channels caused by sum of interfering signals.

3) These limits include both up-path and down-path contributions

4) For BSS satellites located at the interfaces of Region 1/3 and Region 2, the C/I ratios should be one dB higher.

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3. The values given as "total acceptable" are those necessary to protect the protected signal. The "single entry" values are those which should be used as a guide for planning purposes. The total interference from all sources must be calculated since the single entry criteria being satisfied for each source may not guarantee that the total interference meets the above protection requirements. One entry is defined as the aggregate of emissions of any one station entering any receiver in the protected Service within the channel to be protected.

4. The term C/I refers to the predetection ratio of interfered-with and interfering radio frequency powers within a bandwidth equal to and coinciding with the predetection bandwidth of the protected signal in the interfered-with earth station. The value given shall be exceeded for all but 20 % of the worst month.

5. The term N refers to the post-detection noise power at a point of 0 dBm0 relative test tone level in any voice channel of an FDM/FM telephony system. The value given shall not be exceeded for more than 20 % of the worst month.

6. The specified values of protection ratio (i.e., the carrier-to-interference power ratio corresponding to a specified picture quality) are applicable, for planning purposes, to television signals of any of the several television standards.

7. For BSS systems with FM/TV as the protected signal, the protection ratios are given for particular reference conditions. Most important of these are :

1) frequency deviation of the protected signal (12 MHz peak-to-peak)

2) quality of service protected (grade 4.5)*)

3) co-channel carriers (no carrier-frequency offset).

8. If system design is based on conditions other than 1) and 2) above, the FM-TV protection ratio is given by :

$$PR = 12.5 - 20 \log (Dv/12) - Q + 1.1\, Q^2$$

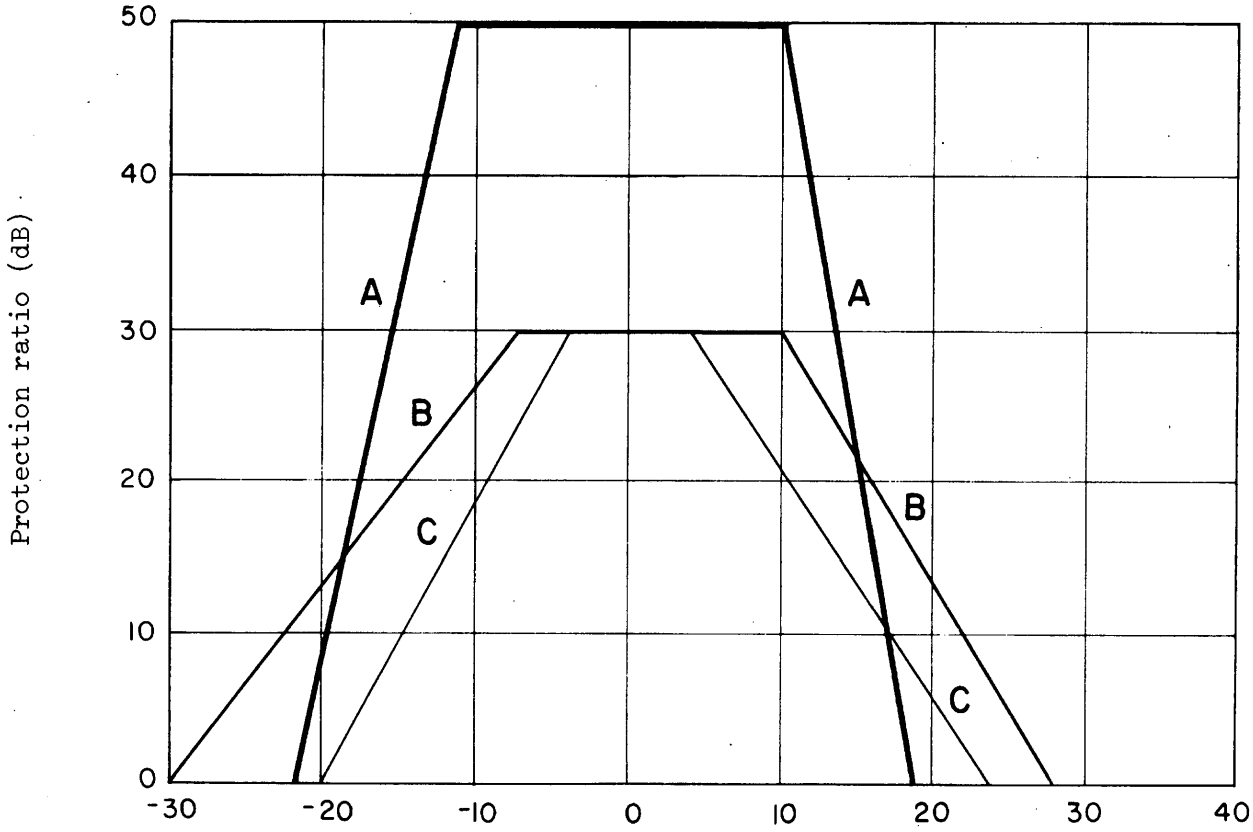
where Dv = nominal peak-to-peak frequency deviation
Q = the impairment grade, concerning the interference only.

9. When carriers are offset in frequency, condition 3) does not apply and the adjacent channel protection ratios depend on the frequency offset as shown in the figure. For example, at a frequency offset of 20 MHz, the protection ratio against interference to an FM/TV signal from another FM/TV signal is 13 dB.

---

*) Quality grade on a 5-point impairment scale as defined in Recommendation 500.

Note : This document combines the provisions of Document No. 99(Rev.1) and Document No. 111, and as a consequence Document No. 99(Rev.1) is cancelled.



Detuning of protected and interfering signal mid-frequencies
$\Delta f = (f_{int.} - f_{prot.})$ (MHz)

Figure 1 - Reference case protection ratios

A. Protection ratio for TV/VSB-protected, TV/FM interfering

B. Protection ratio for TV/FM-protected, TV/FM interfering

C. Protection ratio for TV/FM-protected, TV/VSB interfering

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

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24 January 1977
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COMMITTEE 4

Working Group 4B

PROTECTION REQUIREMENTS FOR SHARING BETWEEN SERVICES IN THE 12 GHz BAND

1. Having considered the documents dealing with this subject presented to Working Group 4B, the Working Group reached the following conclusions which are submitted to Committee 4 for consideration :

2. For purposes of planning the Broadcasting-Satellite Service during this Conference, sharing between the different services using the 12 GHz band should be based on the protection requirements listed in the table :

Protected[1] service	Protected signal	Interfering[1] Service	Interfering signal	Protection requirements	
				Total acceptable[2]	Single entry
BS	TV/FM	BSS, FSS, FS, BS	TV/FM	C/I = 30 dB	C/I = 36 dB
FSS	FDM/FM	BSS	TV/FM	N = 500 pWOp	N = 300 pWOp
FSS	TV/FM	BSS	TV/FM	C/I = 32 dB	C/I = 37 dB
FSS	4Ø - PSK	BSS	TV/FM	C/I = 30 dB	C/I = 36 dB
FSS	FDM/FM	FSS	FDM/FM	N = 1000 pWOp	N = 400 pWOp
FS	FDM/FM	BSS	TV/FM	N = 1000 pWOp	
BS	TV/VSB	BSS	TV/FM	50 dB	

Notes : 1) BSS = Broadcasting-Satellite Service
FSS = Fixed-Satellite Service
BS = Broadcasting Service
FS = Fixed Service

2) Values in dB are protection ratios for sum of interfering signals. Values in pWOp are for interference noise in the worst telephone channel caused by sum of interfering signals.

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3. The values given as "total acceptable" are those necessary to protect the protected signal. The "single entry" values are those which should be used as a guide for planning purposes in determining the total acceptable interference between services. One entry is defined as the aggregate of emissions of any one station entering any receiver in the protected Service within the channel to be protected.

4. The term C/I refers to the predetection ratio of interfered-with and interfering radio frequency powers within a bandwidth equal to and coinciding with the predetection bandwidth of the protected signal in the interfered-with earth station. The value given shall be exceeded for all but 20 % of the worst month.

5. The term N refers to the post-detection noise power at a point of 0 dBm0 relative test tone level in any voice channel of an FDM/FM telephony system. The value given shall not be exceeded for more than 20 % of the worst month.

6. The specified values of protection ratio (i.e., the carrier-to-interference power ratio corresponding to a specified picture quality) are applicable, for planning purposes, to television signals of any of the several television standards.

7. For systems with FM/TV as the protected signal, the protection ratios are given for particular reference conditions. Most important of these are :

1) frequency deviation of the protected signal (12 MHz peak-to-peak)

2) quality of service protected (grade 4.5)*)

3) co-channel carriers (no carrier-frequency offset).

8. If system design is based on conditions other than 1) and 2) above, the FM-TV protection ratio is given by :

$$PR = 12.5 - 20 \log (Dv/12) - Q + 1.1\ Q^2$$

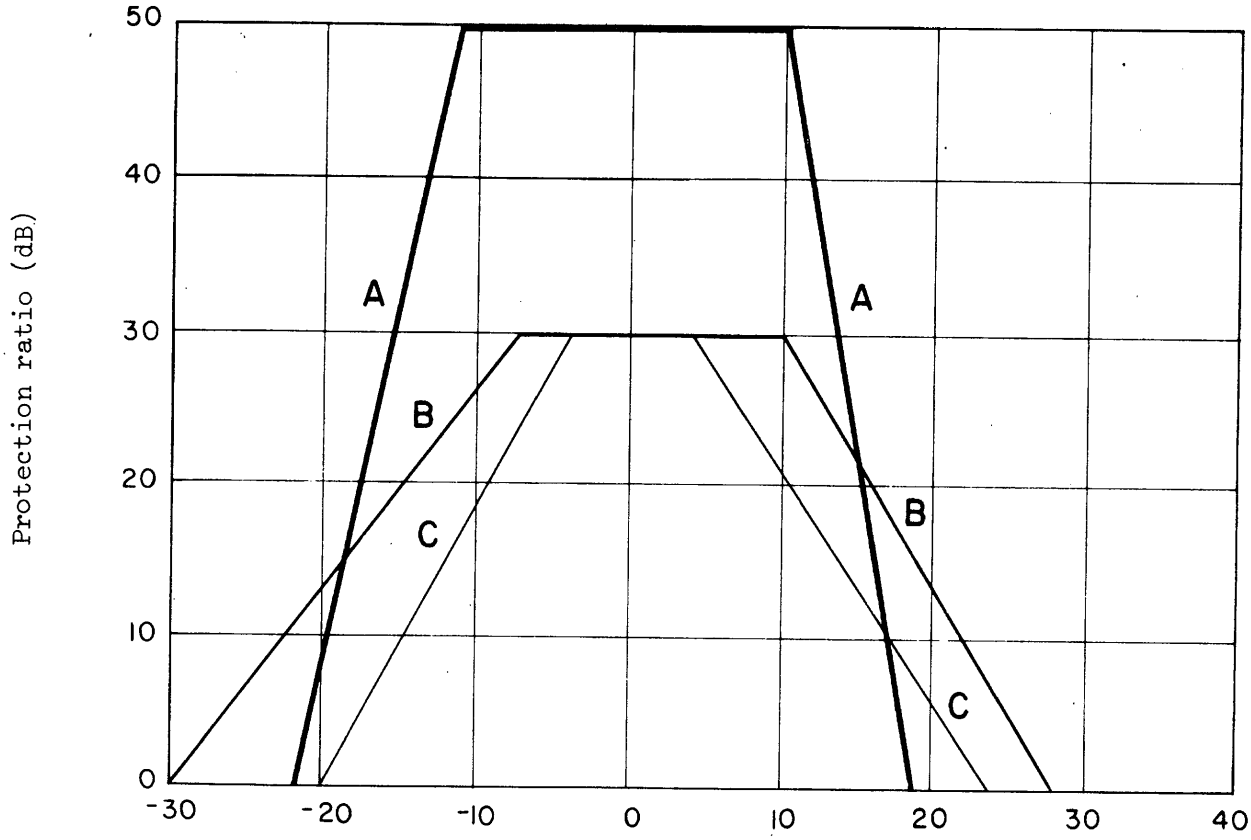
where Dv = nominal peak-to-peak frequency deviation
Q = the impairment grade, concerning the interference only.

9. When carriers are offset in frequency, condition 3) does not apply and the adjacent channel protection ratios depend on the frequency offset as shown in the figure. For example, at a frequency offset of 20 MHz, the protection ratio against interference to an FM/TV signal from another FM/TV signal is 13 dB.

---

*) Quality grade on a 5-point impairment scale as defined in Recommendation 500.

Note : This document combines the provisions of Document No. 99(Rev.1) and Document No. 111, and as a consequence Document No. 99(Rev.1) is cancelled.



Detuning of protected and interfering signal mid-frequencies
$\Delta f = (f_{int.} - f_{prot.})$ (MHz)

Figure 1 - Reference case protection ratios

A. Protection ratio for TV/VSB-protected, TV/FM interfering

B. Protection ratio for TV/FM-protected, TV/FM interfering

C. Protection ratio for TV/FM-protected, TV/VSB interfering

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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COMMITTEE 4

Working Group 4B

PROTECTION RATIO AND INTERFERENCE NOISE
POWER REQUIREMENTS FOR SHARING BETWEEN SERVICES IN THE 12 GHz BAND

1. Having considered the documents dealing with this subject presented to Working Group 4B, the Working Group reached the following conclusions which are submitted to Committee 4 for consideration :

2. For purposes of planning the Broadcasting-Satellite Service during this Conference, sharing between the different services should be based on the protection ratios and interference noise power requirements listed in the table :

Protected[1] service	Protected signal	Interfering[1] service	Interfering signal	Co-channel[2] protection requirement
BSS	TV/FM	BSS FSS FS BS	TV/FM	30 dB
FSS FS	FDM/FM	BSS	TV/FM	1000 pW0p
BS	TV/VSB	BSS	TV/FM	50 dB

Notes : 1) BSS = Broadcasting-Satellite Service
FSS = Fixed-Satellite Service
BS = Broadcasting Service
FS = Fixed Service

2) Values in dB are protection ratios for sum of interfering signals
Value in pW0p is for interference noise in worst telephone channel caused by sum of interfering signals.

3. The protected signals included in the table were selected as the most interference-sensitive in each of the services. Values of the protection requirement apply to the total interference from all sources. For single-interference entries, the protection ratio values should be increased by about 5 dB and the interference noise power reduced by 5 dB to 300 pW0p.

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4. The specified values of protection ratio (i.e., the carrier-to-interference power ratio corresponding to a specified picture quality) are are applicable, for planning purposes, to television signals of any of the several television standards.

5. For systems with FM-TV as the protected signal, the protection ratios are given for particular reference conditions. Most important of these are :

1) frequency deviation of the protected signal (12 MHz peak-to-peak)

2) quality of service protected (grade 4.5)*)

3) co-channel carriers (no carrier-frequency offset).

6. If system design is based on conditions other than 1) and 2) above, the FM-TV protection ratio is given by :

$$PR = 12.5 - 20 \log (Dv/12) - Q + 1.1\ Q^2$$

where Dv = nominal peak-to-peak frequency deviation
Q = the impairment grade, concerning the interference only.

7. When carriers are offset in frequency, condition 3) does not apply and the adjacent channel protection ratios depend on the frequency offset as shown in the figure. For example, at a frequency offset of 20 MHz, the protection ratio against interference to an FM/TV signal from another FM/TV signal is 13 dB.

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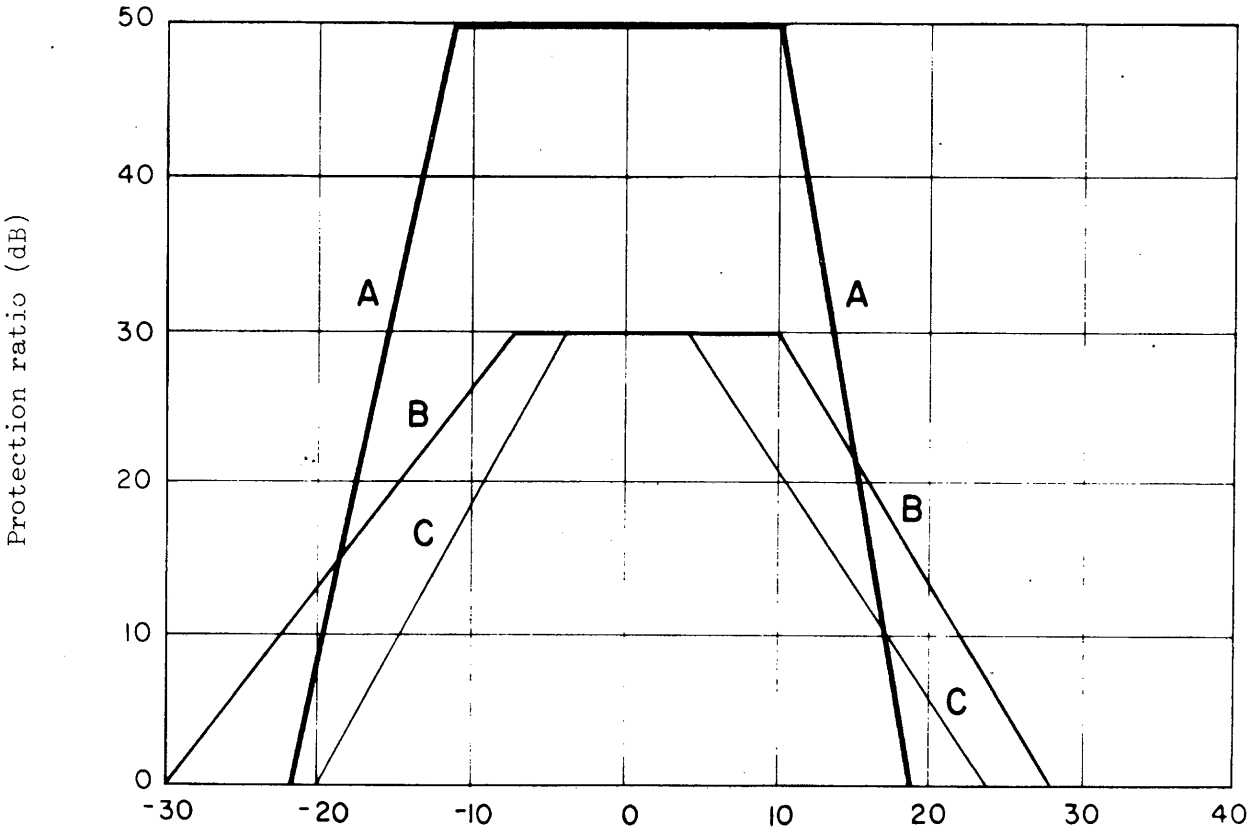
*) Quality grade on a 5-point impairment scale as defined in Recommendation 500.



Detuning of protected and interfering signal mid-frequencies
$\Delta f = (f_{int.} - f_{prot.})$ (MHz)

Figure 1 - Reference case protection ratios

A. Protection ratio for TV/VSB-protected, TV/FM interfering

B. Protection ratio for TV/FM-protected, TV/FM interfering

C. Protection ratio for TV/FM.protected, TV/VSB interfering

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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19 January 1977
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COMMITTEE 4

Working Group 4B

CHOICE OF POLARIZATION TO BE USED IN PLANNING FOR THE BROADCASTING-SATELLITE SERVICE

1. Having considered the documents available and presented to Working Group 4B, the Working Group has reached the following conclusions regarding the choice of polarization.

2. For the purpose of planning the Broadcasting-Satellite Service during this Conference, this Working Group recommends the use of circular polarization in Regions 1, 2 and 3 taking into account the reservations expressed in paragraphs 3 and 4 below.

3. One Region 2 Administration expressed reservation about adopting circular polarization for planning the Broadcasting-Satellite Service in Region 2. In the opinion of this Administration, the strong possibility that the Fixed-Satellite Service will adopt linear polarization would foreclose the possibility of using orthogonal polarization to facilitate the sharing between the two space services and would have an effect on the orbit-spectrum utilization within the Region.

4. One Region 3 Administration expressed reservation about adopting circular polarization for planning the Broadcasting-Satellite Service in Region 3 and stated that it is their intent to use linear polarization.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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24 January 1977
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COMMITTEE 4

Working Group 4B

OUT-OF-BAND SPURIOUS EMISSIONS FROM BROADCASTING SATELLITES - PLANNING CONSIDERATIONS

1. Having considered the documents presented to Working Group 4B on this subject, this group reached the following conclusion which is submitted to Committee 4 for its consideration.

2. For the purposes of a priori planning for the Broadcasting-Satellite Service at this Conference, the guard bands necessary for the protection of services in adjacent frequency bands from spurious emissions are shown in Table 1.

TABLE 1

Regions	Guard band at the lower edge of the band (11.7 GHz)	Guard band at the upper edge of the band (12.2/12.5 GHz)
1 and 3	14 MHz	11 MHz
2	12 MHz	9 MHz

These guard bands assume maximum beam centre e.i.r.p. values of 67dBW for regions 1 and 3 and 63 dBW for region 2 (these being values relating to individual reception), and a filter roll-off of 2 dB/MHz. If smaller e.i.r.p. values are assumed, the guard bands can be reduced in width by 0.5 MHz for each decibel decrease in e.i.r.p.

3. A guard band referred to in this document is defined as the portion of the frequency spectrum between the edge of the allocated band and the edge of the necessary bandwidth of the nearest channel allocation.

4. Since it seems likely that future developments in technology or the choice of lower e.i.r.p. values than those given above will enable a reduction in the necessary guard bands, it is recommended that for purposes other than "a priori" planning at this conference, the latest recommendations of the CCIR on the subject of out-of-band emissions from broadcasting satellites should be used.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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20 January 1977
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WORKING GROUP 4B

Working Group 4B-3

OUT-OF-BAND SPURIOUS EMISSIONS FROM BROADCASTING SATELLITES - PLANNING CONSIDERATIONS

1. Having considered the documents presented to Working Group 4B on this subject, this group reached the following conclusion which is submitted to Committee 4 for its consideration.

2. For the purposes of planning the broadcasting satellite service and specifically with regard to an "a priori" planning approach, the guard bands necessary for the protection of services in adjacent frequency bands from spurious emissions are shown in Table 1.

TABLE 1

Regions	Guard band at the lower edge of the band (11.7 GHz)	Guard band at the upper edge of the band (12.2/12.5 GHz)
1 and 3	14 MHz	11 MHz
2	13 MHz	10 MHz

These guard bands assume maximum beam centre e.i.r.p. values of 67dBW for regions 1 and 3 and 65dBW for region 2, these being the values relating to individual reception.

3. A guard band referred to in this document is defined as the portion of the frequency spectrum between the edge of the allocated band and the edge of the necessary bandwidth of the nearest channel allocation.

4. Since it seems likely that future developments in technology or the choice of lower e.i.r.p. values than those given above will enable a reduction in the necessary guard bands, it is recommended that for purposes other than "a priori" planning at this conference, the latest recommendations of the CCIR on the subject of out-of-band emissions from broadcasting satellites should be used.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 1 to
Document No. 114-E
26 January 1977

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 6

On page 3, delete (in fine) : "The delegate of Colombia ... . of Committee 4" and replace by :

"The delegate of Colombia made the statement reproduced in the Annex below."

Annex : 1

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A N N E X

STATEMENT BY THE DELEGATION OF COLOMBIA

Any nominal geographical position of a geostationary satellite which is notified to the International Telecommunication Union or which is planned, placed in position or operated by an administration or government must necessarily be specified in terms of its geodesic longitude expressed in degreees and minutes with reference to the Greenwich meridian and it is the universal practice, for all countries throughout the world, whether Members or non-Members of the ITU, to define their political frontiers or any position whatever on land or sea or in the air also with reference to the Greenwich meridian. Hence, the positions of geostationary satellites will inevitably coincide with positions in sovereign equatorial countries when the satellites are located within their political limits.

Only geostationary satellites constituting fixed radiocommunication stations and using combinations of transmitters and receivers for purposes of telemetry, broadcasting or any other purpose designed to provide one of the services defined in the Regulations may operate as fixed radiocommunication stations in accordance with the definitions and standards contained in the ITU Convention and its regulations and such satellites may only be operated by the respective administrations or with their express consent under the terms of the relevant national laws and rules.

Consequently, if any fixed radiocommunication station taking the form of a geostationary satellite were to be positioned or operated within the geographical coordinates delimiting the sovereign equatorial countries without the full individual and specific consent of those countries, they would be subject to the provisions of the Convention and its regulations and to the resolutions adopted by the General Assemblies of the United Nations and other international organizations and we should reserve the right to apply all technological resources or other means at our disposal to safeguard the sovereign prerogatives enshrined in the preamble of the Torremolinos Conventions.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 114-E
25 January 1977
Original : English, French

COMMITTEE 6

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 6

(PROCEDURES)

Wednesday, 12 January 1977, at 1410 hrs

Chairman : Mr. R.J. BUNDLE (New Zealand)

Subjects discussed :	Documents Nos.
1. General discussion on proposals for the procedures to be adopted	2, 5, 7, 9, 11, 12, 14, 18, 24, 27, 29, 30(Rev.1), 33, 37, 42, 43, 44, 49
2. Organization of the work of the Committee	

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1. General discussion on proposals for the procedures to be adopted (Documents Nos. 2, 5, 7, 9, 11, 12, 14, 18, 24, 27, 29, 30(Rev.1) 33, 37, 42, 43, 44, 49)

The delegate of Mexico said that Document No. 24, submitted by his delegation, fell mainly within the purview of Committee 5, although some general ideas regarding procedures were given in Section III : Conclusions.

He introduced Document No. 49 which had been prepared on the basis that the Conference should draw up a world plan for the allocation of frequencies for the Broadcasting-Satellite Service. The two proposals made in the document referred to that part of Article 5 of the Radio Regulations which made allocations for frequencies in the 12 GHz band. Consideration of the proposals would, however, depend on the decision to be taken as to whether or not the Conference was competent to amend the Radio Regulations.

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The delegate of Nigeria introduced Document No. 30(Rev.1).

The representative of the IFRB, referring to Annex 6 to Document No. 27, said that so far as procedures were concerned the IFRB had studied which procedures were at present applicable and which could be established by the Conference without prejudging its decision on the nature of the Final Instrument. To facilitate consideration, Annex 6 classified proposals from administrations by categories.

It would be useful for Committee 6 to try to isolate those problems which required procedural study and in that connection he drew attention to Figure 1 (Document No. 27, page 11). Obviously, since the 12 GHz band was shared between several services some of those services were already covered by existing provisions of the Radio Regulations. The Broadcasting-Satellite Service was covered by Resolution No. Spa2 - 3; however, some links between services were not covered and that was probably due to an omission by the 1971 Conference.

Considering Figure 1, it would be seen that there was interference caused by broadcasting-satellite space stations, namely interfering paths C1 and R1. These cases were at present covered by Resolution No. Spa2 - 3, Section B. The IFRB had noted proposals by administrations to replace those provisions by provisions designed for the updating of the Plan and for the notification of assignments. Interfering path C3 should in principle be covered by limitation of the power flux-density of broadcasting satellites and there would therefore be no need to provide any special procedure in that case. There was at present no provisions covering interfering path R3 either in Article 9 or in Resolution No. Spa2 - 3. Terrestrial transmitting stations were at present covered by Nos. 490 and 501 of the Radio Regulations and there was no obligation to carry out notification and coordination procedures for them. If Committee 4 approved Document No. 15, which contained procedures for coordination between terrestrial transmitting stations and service zones of broadcasting satellites, he thought that those calculation procedures would have to be supplemented by regulatory procedures designed to change the procedure for notification and recording in the Master Register. Interfering path C2 was covered by Resolution No. Spa2 - 3, Section B, and no proposals had been made in that connection except for those regarding notification of stations in the Broadcasting-Satellite Service. Finally, the case of fixed-satellite space stations vis-à-vis broadcasting services was not covered at present either by Article 9A or Resolution No. Spa2 - 3 so that theoretically an administration which wished to bring into operation a fixed-satellite space station was not required to coordinate with Broadcasting-Satellite Services, and it would probably be necessary to provide for new procedures in that case.

The delegate of Brazil introduced Document No. 33, saying that since his country's broadcasting-satellite requirements could not yet be accurately estimated, his Administration favoured a flexible approach which would enable planning to be adapted in accordance with scientific and technological progress. The Brazilian Administration had allocated the 11.7-12.2 GHz band exclusively to the Broadcasting-Satellite and Fixed Satellite Services, and would take an equal interest in the development of both services. He drew attention to paragraphs 3.3 and 3.4 of Document No. 33.

The delegate of Australia introduced Document No. 37. He pointed out that footnote 405BA of Article 5 of the Radio Regulations referred to decisions of the appropriate broadcasting frequency assignment planning conference. Since no Broadcasting-Satellite Services were yet in operation and none were yet covered by the decisions of a planning conference, some administrations had considered footnote 405BA as inhibiting the planning of other services in the band, since sharing criteria had not yet been defined. To remove that inhibition, his delegation made the recommendation in paragraph 3.1 of Document No. 37 to be implemented as soon as appropriate sharing criteria between services were established and came into force. Those sharing criteria should recognize both the use of the band by all nominated services on an equal primary basis, and the need for the protection of future broadcasting-satellite systems from harmful interference from other services in the band.

The delegate of Venezuela, introducing Document No. 42, said it related mainly to the work of Committees 4 and 5, but he drew attention to the fundamental principles in paragraphs VEN/42/1, VEN/42/3 and VEN/42/4.

The delegate of Yugoslavia introduced Document No. 43, highlighting paragraphs 1.1, 2 and 4.

The delegate of the Federal Republic of Germany pointed out that the Annex to Document No. 15 which was primarily intended for Committee 4 contained information of special relevance to the work of Committee 6 and, accordingly, should be added to the list of documents allocated to the latter.

The delegate of Italy said that the views of Committee 4 would be useful in regard to the numerical values proposed by his delegation in the Annex to Document No. 44. The footnote should refer to Document No. 40 submitted by Denmark.

The delegate of Colombia made the statement reproduced in the Annex to the summary record of the second meeting of Committee 4.

The Chairman said that the Committee might now discuss some points connected with the question of whether or not the Conference was competent to amend the Radio Regulations or draw up an agreement that might stand as a separate agreement.

The delegate of the United Kingdom said he understood that the Deputy Secretary-General had indicated in Committee 4 that the Conference was not competent to revise the Radio Regulations. He would not take up the Committee's time in elaborating the underlying considerations which had prompted his own Administration's legal experts to endorse that opinion.

His Administration believed that under the terms of its own agenda, the Conference was fully competent to draw up a World Agreement in accordance with Resolution No. Spa2 - 2 and to associate with such an Agreement a plan or plans covering all regions of the world or only some. Under Resolution No. Spa2 - 2, the provisions of Resolution Spa2 - 3 no longer applied in the case of a Region where there was a plan associated with the agreement, but did apply when there was no such plan. However, that would not affect the validity of an agreement having world-wide application. When there was a plan, the agreement would contain the requisite provisions for operating the plan and when there was no plan the agreement would contain such provisions as were required between Administrations in order to protect their services. But that did not imply any conflict whatever with the application of the provisions contained in Resolution No. Spa2 - 3, when relevant.

His Administration believed it to be essential for the Conference to work out a World Agreement containing associated plans for regions, as necessary, and that every effort should be made by the Working Groups to satisfy the requirements of those Administrations which had submitted proposals for the revision of the Radio Regulations. The Committee should eschew sterile discussions concerning the competence of the Conference and should strive to resolve problems as they arose.

The delegate of the USSR agreed that the Committee should proceed with its own work, as defined in its terms of reference, without enlarging upon general issues pertaining to the task of the Conference which was to elaborate a World Plan and regulatory procedures for its implementation.

The delegate of Japan said that although the agenda was not explicit, his delegation considered that the Conference was competent to revise the Radio Regulations otherwise its decisions would be unworkable. However, he could not agree that the Conference was competent to adopt a world-wide Agreement which would have binding force on each Member State of the Union : that was his Administration's interpretation of Resolution No. Spa2 - 2. It would be neither reasonable nor practicable to arrive at two sets of Radio Regulations i.e. the existing ones and additional ones mandatory for each Administration.

The delegate of India endorsed the views of the previous speaker and agreed with his interpretation of Resolution No. Spa2 - 2.

The delegate of the United States of America considered there was nothing in the agenda of the Conference that would preclude a modification of the Radio Regulations : the issue appeared to have been left open. All previous world administrative conferences had been competent to change the Radio Regulations. Accordingly, the Committee ought to proceed with its work, leaving aside the question of the final form which any agreement reached might take.

The delegate of Algeria said that although he agreed that the Committee should proceed with its task as expeditiously as possible, it should perhaps ascertain the views of members about the competence of the Conference to amend the Radio Regulations since that could affect the manner in which the Committee organized its work.

His delegation believed that it was entirely within the competence of the Conference to modify the Radio Regulations but there was nothing in the 1973 Convention empowering the Conference to frame some kind of world-wide Agreement. It could discuss regional agreements on condition that they did not conflict in any way with any provisions of the 1973 Convention.

The Deputy Secretary-General believed that the United Kingdom delegate had gone a bit further than he himself had done when the question had arisen in Committee 4 where he had suggested that it needed to be studied in detail and that the right place to study it was in Committee 6. He had touched briefly on the two well-known tendencies. The Secretary-General as Secretary of the Conference had asked him to express a view but firstly it might be more appropriate if the Legal Adviser were to speak and then he himself would supplement his views. As Secretary of the Administrative Council and Secretary of the Conference the Secretary-General was obliged to put before the Conference all the issues of which he was aware both with regard to the Convention and to the background of the establishment of the agenda of the Conference.

The Legal Adviser drew the Committee's attention to the texts of No. 428A of the Radio Regulations and of Resolution No. Spa2 - 2 particularly paragraph 1 of the operative part as adopted by the 1971 World Administrative Radio Conference for Space Telecommunications. Those provisions must be borne in mind when discussing the purpose and competence of the present Conference because they, together with Resolution No. 27 of the 1973 Plenipotentiary Conference, had provided the main guidelines for the Administrative Council in taking the requisite preparatory measures for the convening of a World Administrative Radio Conference for the planning of the Broadcasting-Satellite Service in the 12 GHz band. Such measures included, inter alia, determining the precise agenda through consultation with and the agreement of the majority of Member States.

As a result of the discussions at the 31st Session of the Administrative Council, an additional item 2.4 had been added to the agenda in accordance with the procedure provided for in the Convention (Document No. 1, Annex, page 2). Given the provisions of Resolution No. 28 of the Plenipotentiary Conference, the General Secretariat was of the opinion that the present Conference

should study the substance of the relevant Radio Regulations i.e., those allocating the 12 GHz band (11.7-12.5 in Region 1 and 11.7-12.2 in Regions 2 and 3) to various Broadcasting Services. The services using that band and sharing it with the Broadcasting-Satellite Service in Regions 1 to 3 were the Fixed Services, the Mobile Service (except the Aeronautical Mobile), terrestrial Broadcasting Services and the Fixed-Satellite Service (Space-to-Earth in Region 2). However, there might be some problems of implementation connected with the existing provisions of the Radio Regulations and they would have to be referred to the 1979 Conference which, according to Resolution No. 28 would undoubtedly be competent to deal with them.

Thus in the General Secretariat's opinion the task of the present Conference was to establish procedures governing the use of that band by the Broadcasting-Satellite Service and by the other services he had mentioned. The Administrative Council would have been perfectly free to have made express reference to the possible revision of the Radio Regulations in its Resolution but that had not been done.

The Deputy Secretary-General said it was important for the Conference to be in full possession of the facts and the history of the preparation of its agenda. The original proposal had been to convene a conference of a regional character and clearly no conflict between its decisions and the Radio Regulations could have been envisaged. If the Conference were to decide that a particular Region was not to hold a conference at the present stage but later, that future regional conference would have no right to decide upon anything that might affect the Radio Regulations.

The Administrative Council, at its 29th Session, in 1974, had considered a preliminary agenda for the Conference and in that connection two working documents had been submitted dealing with the possible revision or modification of the Radio Regulations resulting from Resolution No. 27 of the 1973 Plenipotentiary Conference. That Conference itself had not accepted the Administrative Council's initial advice on the matter which had been to convene a World Conference in 1979 entrusted with the task of revising the general provisions Radio Regulations and, also, with the problem of planning Broadcasting-Satellite Services. The Plenipotentiary Conference had separated the two subjects and had decided upon a specialized planning conference followed by a more general conference in 1979.

The two members of the Administrative Council concerned had advocated at its 29th Session the revision, as necessary, of the Radio Regulations in respect of the frequency bands 11.7-12.2 and 12.5 GHz, but those suggestions had not been taken up in that form. However, Members of the Union had been consulted on the preliminary agenda of the Conference drawn up in 1974. One Member of the Union (and also a Member of the Council) had formally proposed the inclusion in the agenda of the present Conference of the revision of the Radio Regulations in respect of the frequencies he had mentioned. When the subject had come up for further consideration at the 30th session of the Administrative Council in 1975, those suggestions had not been taken up or adopted, as far as was known to the

Secretary of the present Conference and the Secretary of the Working Group majority of Members of the Union had agreed to the definitive agenda as drawn up at the session of the Council.

He thought it useful to recall that the Broadcasting-Satellite Conference was a specialized planning conference, of the kind to which reference was made in the 1959 Convention and which was clearly envisaged in the revised provisions of the Montreux Convention under which the agenda of a Conference which was not held for the specific purpose of amending the Radio Regulations should, if such amendment was intended, include an item to that effect.

Another relevant point was that when the agenda for the Aeronautical Mobile Service Conference was being prepared at the same time as the agenda for the present Conference, the Council had inserted in the former an item concerning the revision, if necessary, of the Radio Regulations. As for the reference to world conferences, an item covering consequential changes in the Radio Regulations had always appeared in their agendas in the past. In addition, there was a provision in the Statutes of the Union concerning agreements to be drawn up on a world-wide basis; such agreements might be reached outside or inside the Union's conference structure.

The present Conference was primarily concerned with the planning of national services. The issues raised about its competence would now have to be decided by the Conference itself after the General Secretariat had discharged its duty of presenting all the relevant factual information.

The delegate of the United Kingdom, referring to the statements by some delegations, said that under the terms of the Convention administrative conferences could only review and revise the Radio Regulations if their agenda made explicit provision for them to do so. Until 1965, the Convention and the Plenipotentiary Conferences had made a distinction between ordinary administrative conferences, extraordinary administrative conferences and special administrative conferences. The 1952 and 1959 Conventions specified that ordinary administrative conferences "shall revise the Regulations ... with which they are respectively concerned", whereas the terms of reference of extraordinary administrative conferences simply provided that they "may revise certain provisions of any set of Administrative Regulations with which they are concerned, provided that the revision of such provisions is included in the Agenda approved by a majority of the Members". That distinction was no longer made in the Montreux Convention, which only mentioned world administrative conferences, whose terms of reference were not those of the former ordinary Conferences but those of the extraordinary conferences, i.e., they could only debate questions expressly included in their agenda, which did not automatically cover revision of the Radio Regulations.

The delegate of Canada thought for his part that the Conference was competent to revise the Radio Regulations within the limits indicated in its agenda. Referring to the provisions of the Radio Regulations governing the criteria for band sharing and the procedures for notification and coordination, he pointed out that the provisions of Resolution No. Spa2 - 3 only covered the

Broadcasting-Satellite Service up to the entry into force of the agreements and plans that were to be drawn up. If the Conference succeeded in finding a definite solution, particularly for Region 2, in which the frequency bands 11.7-12.2 GHz were shared with the Fixed-Satellite Service, it would be necessary to modify the relevant provisions of the Radio Regulations accordingly. Admittedly, the Conference's agenda did not specify that it could revise the Radio Regulations. On the other hand, it stated clearly (item 2.3) that the Conference was to establish procedures to govern the use of the bands in question by the Broadcasting-Satellite Service and by the other services concerned and did not state that those procedures would have to be the subject of an agreement. The establishment of those procedures could well necessitate a revision of the Radio Regulations. His delegation was therefore of the opinion that the Conference was entitled to revise the Radio Regulations and at all events could take a decision to do so. If that was indeed the case, it would always be possible to prepare an agreement covering the decisions taken.

The Chairman of the IFRB considered that the essential thing was for the Conference to move ahead with its work and carry out the task entrusted to it. It was more or less certain that the determination of criteria for sharing frequencies between the Broadcasting-Satellite Service and the other services to which the bands in question were allocated and the establishment of procedures governing the use of those bands would entail a revision of some provisions of the Radio Regulations. Thus, in Sub-Section IIB of Article 9 of the Radio Regulations, there was no mention of terrestrial stations in the vicinity of the area served by the Broadcasting-Satellite Service. Similarly, Article 9A made no provision for coordination between stations in the Fixed-Satellite Service and those in the Broadcasting-Satellite Service. Finally, the provisions of No. 505 on the procedures for notification and registration only concerned Terrestrial Radiocommunication Services, so that it would be necessary to draw up similar provisions for Space Radiocommunication Services. It could thus be concluded, not just that the Conference was competent to carry out a revision of the Radio Regulations, but that it would have to do so, while endeavouring, of course, to make as few changes as possible. Furthermore, it was desirable that the decisions taken by the Conference should be an integral part of the Radio Regulations.

The delegate of Greece considered that the question whether the Conference was or was not competent to revise the Radio Regulations could only be settled in plenary meeting and that the Committee should for the time being devote itself to the specific task it had been set.

The delegate of Belgium, referring to the Deputy Secretary-General's account of the background, asked why the Administrative Council had not retained the proposals to supplement the agenda, which had been submitted on two occasions.

The Deputy Secretary-General said that it would perhaps be preferable for the members of the Administrative Council who had participated in the Working Group to reply to that question, but he could state that two documents

(DT/12 and DT/14 dated June 1974) had posed the question of revision, one "to revise, as necessary, the provisions of the Radio Regulations relating to the bands 11.7-12.2 and 11.7-12.5 GHz in Region 1" and the other, "to revise, as necessary, the Radio Regulations pertaining to the frequency bands 11.7-12.2 and 11.7-12.5 GHz in Region 1" in the context of the establishment of the preliminary agenda.

As a result of the subsequent consultation by the Secretary-General, the following advice was received and submitted to the Council :

1) to consider the revision, as necessary, of Article 5 relating to the bands and services;

2) to establish, as necessary, the sharing criteria, etc.

3) to make any such consequential changes to the Radio Regulations as are essential to effect the implementation of the decisions of the Conference; and

4) to consider the possibility of establishing agreements and associated claims concerning bands and such other resolutions.

Those proposals were presented to the Working Group, whose outcome was put to the Council minus the propositions. That was one of the reasons why there might at the present stage be differences of opinion between administrations who were in the Working Group.

The other point that had been mentioned was the small "a" in the word agreement and he drew attention to the fact that when the agenda for the LF/MF Broadcasting Conference (Regions 1 and 3) was considered, the small "a" was used, even though the outcome of the Conference was a capital "A" in terms of agreement.

The delegate of Mauritania thought that it had to be decided whether the plan to be drawn up by the Conference was to be annexed to the Radio Regulations or whether it would simply be the subject of an agreement to be signed by all the parties. The first solution seemed to him the better of the two. However that might be, the Conference would have to submit the plan and the procedures it established to the World Administrative Radio Conference in 1979, which would be competent to introduce the changes consequent upon the decisions taken by the present Conference into the Radio Regulations.

The delegate of the USSR considered that by deciding not to include partial revision of the Radio Regulations in the Conference's agenda, the Administrative Council had shown wisdom and foresight and that due account should be taken of the fact. For the time being, the Conference should devote itself to drawing up the plan for the Broadcasting-Satellite Service in the 12 GHz bands and establishing the corresponding procedures. There was nothing to prevent it from adopting a recommendation or resolution later on requesting

the 1979 World Conference, when reviewing the Radio Regulations, to take into account the Final Acts of the present Conference and annex them to the Radio Regulations.

The delegates of the United Kingdom and of Italy supported that statement.

The Chairman said that he would adjourn the debate on the question, which could only be settled in plenary.

2. Organization of the work of the Committee

The Chairman said that it had been decided to set up three Working Groups - 6A, 6B and 6C. The terms of reference of the last of the three would have to be fixed later in the light of the Committee's debates. A document (No. DT/6) giving the terms of reference of the first two would be circulated to delegates before the next meeting of the Committee.

The meeting rose at 1715 hours.

The Secretary
R. PLUSS

The Chairman
R.J. BUNDLE

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 115-E
20 January 1977
Original : English

COMMITTEE 6

SUMMARY RECORD

OF THE

THIRD MEETING OF COMMITTEE 6

(PROCEDURES)

Thursday, 13 January 1977, at 1410 hrs

Chairman : Mr. R.J. BUNDLE (New Zealand)

Subject discussed	Document No.
1. Organization of the work of the Committee	DT/6

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1. Organization of the work of the Committee (Document No. DT/6)

The Chairman invited the Committee to consider the proposed terms of reference of Working Group 6A as set out in Document No. DT/6.

The delegate of the United States of America proposed that the words "the Plan" in the first line should be replaced by "plans" and the words "the modifications of the Plan" in the second line by "subsequent modifications".

The delegate of Switzerland wondered whether Working Group 6A was also to deal with notification and registration, and, if so, whether it might not be advisable to specify that fact in the terms of reference.

The delegate of Venezuela remarked that the amendment proposed by the United States implied the existence of several plans. In his opinion, it would be a mistake to prejudge the issue. Accordingly, he suggested the insertion of the words "or plans" after the word "Plan" in the first line of the proposed terms of reference.

The delegate of the USSR said that discussions in the Plenary and the Committees had shown that a majority of delegations favoured the adoption of a single world-wide Plan. However, to avoid controversy, he would be prepared to go along with the Venezuelan delegate's proposal, provided the words "or plans" were placed in parentheses.

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The delegate of Mexico supported the suggestion made by the delegate of Venezuela.

The delegate of the United Kingdom also supported that proposal, but suggested that the words "To consider and to take action as necessary on" should be inserted at the beginning of the terms of reference.

The delegate of Japan asked what was the precise significance of the word "procedures" in the context of the proposed terms of reference.

The Chairman said that he interpreted the word to mean the various steps required to bring the Plan or plans into operation.

Noting that there was a consensus in favour of the amendments proposed by the delegations of Venezuela and the United Kingdom, he said that a revised text of the terms of reference of Working Group 6A would be issued in due course. He proposed that Mr. D'Arcey (Australia) should be the Chairman of the Working Group and that Mr. Pluss should be its Secretary.

It was so agreed.

The terms of reference of Working Group 6A, as amended, were approved.

The Chairman invited delegates to consider the terms of reference of Working Group 6B as set out in Document No. DT/6.

The delegate of the United Kingdom proposed the insertion of the words "To consider the" at the beginning of the proposed terms of reference and the addition of the following words at the end : "... to the extent considered necessary and taking into account Articles 9 and 9A and Resolution No. Spa2 - 3 of the Radio Regulations where applicable, and to take action as necessary".

The proposal was intended to cover the possibility that no plan would be adopted for Region 2, in which case, so far as the terrestrial services were concerned, there would be no need for a special coordination procedure.

The delegate of Mexico agreed that the terms of reference of Working Group 6B should be as flexible as possible to allow for such a possibility.

The delegate of Venezuela remarked that it was unnecessary to mention the terrestrial services at all, since they were already covered by Articles 9 and 9A and Resolution No. Spa2 - 3.

The delegate of Italy pointed out that new provisions would have to be introduced in order to protect the Broadcasting-Satellite Services sharing the band from interference by terrestrial stations.

The delegate of Norway supported the United Kingdom proposal, but suggested that the brackets round the words "in relation to the Broadcasting-Satellite Service" should be deleted.

The delegate of the Federal Republic of Germany also supported the United Kingdom proposal.

Replying to a query by the delegate of Mexico, the Deputy Secretary-General said that Resolutions and Recommendations did not form an integral part of the Radio Regulations; it would therefore be more correct if the text of the terms of reference were to read : "... Articles 9 and 9A of the Radio Regulations and Resolution No. Spa2 - 3".

With that modification, the terms of reference of Working Group 6B, as amended by the United Kingdom, were approved.

The Chairman proposed that Mr. F. Urbany (United States of America) should be the Chairman of Working Group 6B and Mr. Bozonnet should be its Secretary.

It was so agreed.

The Chairman invited delegates to consider his suggestion, set out in Document No. DT/6, that the terms of reference of Working Group 6C should be fixed at a later date depending on discussions in the Committee.

The delegate of Norway proposed the following terms of reference for Working Group 6C :

- "To consider and produce any resolutions or recommendations for the World Administrative Radio Conference, 1979, with the intention of incorporating the WARC-BS Agreement in the Radio Regulations as an appendix;
- any consequential revision of the Radio Regulations that may be necessary as a proposal to the World Administrative Conference, 1979;
- and to consider the date of entry into force of the Agreement."

The proposed terms of reference took account of the suggestions made by the delegates of Mauritania and the USSR at the preceding meeting, and were motivated by the wish to solve the problem of the Conference's competence without adopting any formal decision on that issue.

The delegates of Italy and the United Kingdom seconded the Norwegian delegate's proposal.

The delegate of Japan asked for clarification as to the proposed status of the Agreement between the date of its entry into force and that of the revised Radio Regulations in 1979.

The delegate of Norway said that the Agreement would have effective status as a world-wide agreed plan even before its incorporation in the volume of Radio Regulations.

The delegate of Algeria said that, in view of the importance of the competence issue, he would prefer to discuss it in Plenary rather than in Committee, if only because the credentials of his delegation - and, he believed, of all other delegations - did not confer the right to sign an Agreement. The proposed terms of reference of Working Group 6C were unacceptable because they presupposed that an agreement would indeed be signed. Furthermore, it was hardly necessary to set up a third working group merely for the purpose of drafting a few resolutions or recommendations for the 1979 Conference; that work could be done by any delegation in a matter of a few hours.

The delegate of the USSR said that the question of credentials raised by the Algerian delegate was a most important one. Before proceeding with the discussion of the Norwegian proposal, the Committee should clarify the question of the form of the Final Acts of the Conference.

The delegates of the United States of America and Mexico agreed.

The delegate of Mauritania said that in his statement at the preceding meeting he had not had in mind the signing of an Agreement but only a Plan for the 1979 Conference. The Norwegian proposal would be acceptable if the word "Agreement" were replaced by "Plan".

The delegate of Colombia associated himself with the Algerian delegate's remarks.

The delegate of the United Kingdom suggested that the problem might be solved by replacing the reference to an Agreement by a reference to the Final Acts. The credentials of all delegations presumably empowered them to sign the Final Acts of the Conference. Those Final Acts could then be incorporated as an appendix in the Radio Regulations, or else, if they conflicted with the existing Radio Regulations, it would be for the 1979 Conference to revise the Radio Regulations accordingly.

The delegate of Togo remarked that questions involving the rearrangement of the Radio Regulations should be dealt with by Committee 7 and not by a working group of Committee 6.

The Chairman explained that rearranging the Radio Regulations did not include dealing with actual proposals for their revision.

The delegate of Japan proposed that the terms of reference of Working Group 6C should read as follows : "to consider the possible forms of the Final Acts of this Conference in relation to the existing provisions of the Radio Regulations and to make recommendations concerning the preferred form of the Final Acts."

The delegates of the United Kingdom and France supported the Japanese proposal.

The delegate of Norway also supported the Japanese proposal and withdrew his delegation's proposal.

The delegation of Venezuela suggested that the words "the International Telecommunication Convention and" should be inserted after "the existing provisions of" in the Japanese proposal.

The delegate of Japan accepted that amendment,

The Japanese proposal, as amended, was approved.

The Chairman suggested that the Committee should authorize him to appoint the Chairman of Working Group 6C.

It was so agreed.

The meeting rose at 1615 hours.

The Secretary :
R. PLUSS

The Chairman :
R.J. BUNDLE

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 116-E
20 January 1977
Original : English

PLENARY MEETING

Egypt

PROPOSALS CONCERNING THE WORK OF THE CONFERENCE

Considering :

1. the information contained in Documents Nos. 54, 79 and 86 and its implications for planning;

2. the influence of the pointing error on the foot-print and the possible shift of the latter, which may affect planning;

3. the effect of the different sizes of countries,

the Egyptian delegation proposes that the IFRB be requested to :

i) estimate the shifts of foot-prints which may result from the maximum permissible satellite drift in orbit indicated in Document No. 79 together with the pointing error given in Document No. 86.

These estimates could be presented in a manner which enables each country to obtain the total shift of the foot-print of its beam (or beams);

ii) estimate the effect of the movement of the transmitting antenna beam around its axis according to the data given in Document No. 86;

iii) submit the data thus obtained to the planning working groups to enable them to assign the planning parameters to each country more efficiently and to take account of them in the interference estimates;

iv) produce working examples for interference estimates under extreme conditions, including the maximum shift in the foot-print. Such examples include grouping of countries in the following manner :

a) - Three neighbouring small countries;

b) - " " big " ;

c) - One small country situated between two big countries;

d) - One big country situated between two small countries.

The above examples may be worked out, taking into account the different plans proposed.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 117(Rev.1)-E
24 January 1977
Original : English

COMMITTEE 4

Working Group 4A

CROSS-SECTION OF ANTENNA BEAMS

1. For technical reasons, planning in the Broadcasting-Satellite Service should be based only on the use of transmitting antennae with beams of elliptical or circular cross-section.

2. For planning the system, if the cross-section of the transmitted beam is elliptical, the effective beamwidth, ϕ_o, is a function of the angle of rotation, q from the plane containing the major axis, to the plane in which the beamwidth is required.

3. The relationship between the maximum gain of an antenna and the half-power beamwidth can be derived from the expression :

$$G_m = 27{,}000/ab$$

or :

$$G_{m(dB)} = 44.3 - 10 \log_{10} a - 10 \log_{10} b$$

where :

a and b are the angles (in degrees) subtended at the satellite by the intersections of the major and minor axes of the ellipse respectively, with the half-power contour on the surface of the Earth.

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INTERNATIONAL TELECOMMUNICATION UNION

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COMMITTEE 4

Working Group 4A

CROSS-SECTION OF ANTENNA BEAMS

For technical reasons planning for the Broadcasting-Satellite Service should only be based on the use of transmitting antennae having elliptical or circular cross-section.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 118-E
21 January 1977
Original : English

COMMITTEE 7

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 7

(Re-arrangement of the Radio Regulations)

Monday, 17 January 1977, at 1405 hrs

Chairman : Mr. J.J. HERNANDEZ-G. (Mexico)

Subjects discussed :	Document Nos.
1. Presentation of the report of the Group of Experts	RR1
2. Presentation and examination of Committee 7 documents	RR2 to RR4 DL/RR1 to DL/RR4
3. Organization of the Committee's work	

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1. Presentation of the report of the Group of Experts (Document No. RR1)

The delegate of the Federal Republic of Germany, speaking as Chairman of the Group of Experts, presented its report (Document No. RR1). Paragraphs 3 to 18.3 summarized the Group's terms of reference, its comments and the recommendations on which agreement had been reached. One of the questions that would probably come up for consideration was the Experts' recommendation to transfer the provisions in Article 7 (Special Rules Relating to Particular Services) to Part B for what they believed to be good reasons. The IFRB's report (Document No. RR3) made reference to that point.

Many of the provisions in the suggested new Chapter N XII were the logical outcome of the decision to separate out provisions pertaining to the different services. The re-arrangement might look odd but was designed to help users and make it easier for future conferences dealing with specific services to make appropriate amendments without touching other portions of the Radio Regulations. In his own view, many of the provisions in that new chapter would be found superfluous and might be deemed by a future conference to be no longer necessary.

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The Chairman thanked the Chairman of the Group of Experts. Drawing attention to the Committee's terms of reference (Document No. DT/1) he said that as the Committee had been asked by the Steering Committee to complete its work by 19 January in order to comply with the time-table set for the processing of its recommendations, it would be more expeditious to proceed immediately with the examination of the documents submitted to it.

It was so agreed.

2. Presentation and examination of Committee 7 documents (Documents Nos. RR2 to RR4; DL/RR1 to DL/RR4)

The delegate of Canada presented the paper setting out his delegation's view and proposal (Document No. RR2).

The Chairman drew attention to the Secretary-General's note to which IFRB's report was attached (Document No. RR3).

The delegation of the United Kingdom said that while his delegation had no objections to paragraphs 2 to 4 of IFRB's report, it regarded the last two sentences in paragraph 5 as constituting a proposal and paragraph 6 as constituting another. It was clear from the provisions of Article 66, No. 358 of the Malaga-Torremolinos Convention that the Union's permanent organs could participate in discussions involving revision of the text of the Convention or Administrative Regulations but were not entitled to submit proposals. In accordance with the Administrative Council's Resolution No. 768, representatives of the permanent organs had attended meetings of the Group of Experts and their views had been fully discussed in conjunction with proposals put forward by Administrations. However, the Group of Experts had taken a unanimous decision on a compromise solution to the problems raised by Article 7 concerning which the Secretary-General had made no proposal. It would set a most undesirable precedent and one that conflicted with the provisions of the Convention for one of the permanent organs to do so now, particularly as none of the Administrations attending the present Conference had re-submitted proposals discussed and set aside by the Group of Experts.

The delegate of Norway expressed the concern of his delegation and Administration concerning the content of IFRB's report. At the outset, the Norwegian expert had clearly indicated a preference which tallied with that of IFRB. However, the discussion in the Group of Experts had revealed that the difficulty over Article 7 raised delicate issues and the compromise finally achieved had been welcomed because of its positive elements. Accordingly, his delegation, though initially of the contrary opinion, would now abide by that compromise and oppose its being re-opened at the present Conference.

The delegate of Japan said that although he agreed with the substance of paragraph 5 in IFRB's report, he supported the stand taken by the Norwegian delegate.

The Chairman said that since, under the terms of Article 66, No. 358 of the 1973 Convention, no permanent organ nor the Secretary-General could move a formal proposal, the points made in IFRB's report must be regarded as an expression of opinion.

The Chairman of the IFRB confirmed the Chairman's observation. IFRB's report had not been intended as anything but an expression of opinion and was self-explanatory. Of course, it was the prerogative of delegations to disagree with its content and place their own interpretation on it. The Committee would take such action as it thought fit on the report.

There were some discrepancies in Annex 4 which might be of a minor character and the IFRB expert could assist the Committee on matters of detail when that topic came up for discussion.

The Chairman, speaking as delegate of Mexico, introduced Document No. RR4 which supported the re-arrangement of the Radio Regulations proposed by the Group of Experts, while indicating that it had not been possible for the Experts to finalize all details of their work, because of the circumstances prevailing at the time.

Since the results of the work of the CCITT's last Plenary Assembly and of various Study Groups were probably not yet available to all delegations, it would be difficult for Committee 7 to consider the re-arrangement of Articles 38 and 40A during the course of that week but it should recommend to the 1979 Conference that it take measures for such re-arrangement.

Moreover, as the Canadian delegate had said, the presentation of the Regulations should be left to the 1979 Conference to decide since a number of factors, such as cost and ease of reference, must be borne in mind.

The Deputy Secretary-General explained that the 1974 Maritime Conference had recommended that the action to be taken in respect of certain operational provisions, including Articles 38 and 40A of the Radio Regulations and the Additional Radio Regulations should be decided by the 1976 CCITT Plenary Assembly. Time had not permitted a sufficiently detailed study of two items for decisions to be made on them; the Plenary Assembly had therefore authorized the Joint Study Group to proceed with further study and produce a report by November 1977, and it was on that report that proposals for the 1979 Conference would be based. The agenda for the 1979 Conference, as approved by the Administrative Council, included action arising from that study pursuant to the request by the Maritime Conference.

He believed that the format of the Radio Regulations was a matter for the 1979 Conference to decide, and Committee 7 need not discuss it at length. He mentioned, however, that data retrieval facilities were available which would render any alteration in format less costly than it would otherwise be.

The delegate of Japan said that if the 1979 Conference were to decide to incorporate all the substantial provisions of the Additional Radio Regulations in the Radio Regulations, he feared that would conflict with provision No. 571 of the ITU Convention which said that there were four kinds of Administrative Regulations.

The United Kingdom delegate said that although the CCITT Plenary Assembly was to make a recommendation on the Additional Radio Regulations, that was only in respect of the maritime mobile service and would not deal with the aeronautical or land mobile services.

He believed that the Torremolinos Convention mentioned the Additional Radio Regulations because they existed, but that did not imply that they must continue to exist. The 1979 Conference would be acting in accordance with the terms of its agenda if it were to decide to abolish them, and if it did so, the 1980 Plenipotentiary Conference could amend the Convention accordingly.

The Deputy Secretary-General said that it was an extremely hypothetical question whether the work of the CCITT would result in a recommendation involving the abolition of the Additional Radio Regulations.

Under provisions Nos. 147 and 571 of the Torremolinos Convention, the Convention was completed by the Administrative Regulations, and since the Telegraph and Telephone Regulations had been largely amended by previous conferences, the 1979 Conference was obviously competent to amend the Radio Regulations and the Additional Radio Regulations. However, should it indeed decide to abolish the Additional Radio Regulations, an interval of some 15 months would probably elapse before the entry into force of the decision, and by that time the 1980 Plenipotentiary Conference would have been able to make the necessary consequential amendments to the Convention.

The delegate of Australia introduced Document No. DL/RR1. While his delegation agreed with the principle of the re-arrangement of terms and definitions in different sections, as indicated in Note 2 of Annex 1 to Appendix 4 of the Group of Experts' Report, it believed that there was also a need for an alphabetical index to make things easier for the infrequent user who was not thoroughly familiar with the substance of the Radio Regulations. That would constitute the simplest way of improving access to the terms and definitions.

The delegate of the United Kingdom said that his delegation had suggested to the Group of Experts that terms and definitions be put in alphabetical order for ease of reference, but had come to the conclusion that the proposal was impractical because of the differing alphabetical order in the three languages involved, and the number of entries which would be required. In his view, it would be better to improve the presentation of the analytical table, and that was a job which the General Secretariat might tackle.

The delegate of Japan said that an alphabetical index would be helpful, but pointed out that it would be purely editorial and not an integral part of the Radio Regulations, and therefore should not be included in the text of the Radio Regulations. It might be placed in an introduction.

The delegate of Spain agreed with the views expressed by the delegates of Japan and the United Kingdom.

The delegate of New Zealand supported the Australian proposal saying there was a need for an alphabetical index, wherever it was placed, and the difficulties of translating it would not be insurmountable.

The Deputy Secretary-General said a distinction must be made between the Final Acts of the 1979 Conference, which would include the formal text of the Radio Regulations, and the working document known as the Red Book; the analytical table was merely a reference page and not part of the Radio Regulations as a legal instrument.

In ITU documents to date the principle of parallelism had been followed, in other words, everything appeared in the same order in the three languages, but since an alphabetical index would not be part of a legal instrument, no problem would arise if it were included in conjunction with the analytical table and the index concerned would be elaborated for each individual language concerned. He believed that a decision on that point would be best left to the 1979 Conference.

The delegate of Australia, introducing the proposals on cross-referencing contained in Document No. DL/RR2 and Add. 1, said that the sole purpose of those proposals was to facilitate the task of the 1979 Conference. It was not envisaged that the proposed system of cross-referencing would necessarily remain in use after 1979.

The delegate of the United States of America remarked that the proposal ran contrary to one of the basic objectives of the Group of Experts, namely, that operational regulations should be separated by service.

The delegate of Norway endorsed that view and wondered whether cross-references might not be issued as a separate booklet instead of being included in the text of the Radio Regulations.

The delegate of Australia said that his delegation was by no means inflexible about the proposals in question, but merely wanted others to benefit from a system of cross-referencing which it had found useful in practice.

The delegate of the United States of America suggested that the Working Group which the Committee was about to establish should examine the Australian proposals giving particular attention to the use of symbols D and L.

The delegate of Spain agreed with that suggestion.

The delegate of Australia introduced the proposed presentation changes contained in Document No. DL/RR3.

The delegates of the Federal Republic of Germany and the United Kingdom, referring to the second of the Australian proposals, expressed themselves in favour of maintaining the title of Chapter [IV] / NV / as it stood.

The delegate of Australia withdrew that proposal.

The delegate of the Federal Republic of Germany introduced the proposed amendments contained in Document No. DL/RR4.

The delegate of Norway, referring to the first of the amendments proposed by the Federal Republic of Germany, expressed the view that Provision No. 3250 appeared in the right place and should not be transferred.

The delegate of the Federal Republic of Germany said that he was prepared to withdraw that amendment.

The Chairman suggested that the remaining amendments by the Fedral Republic of Germany should be referred to the Working Group.

It was so decided.

The delegate of the USSR said that the structure proposed by the Group of Experts was acceptable to his Administration with certain minor corrections, as follows :

1) Article N3 to appear at the end of Chapter NI (Terminology), as before, rather than in Chapter NII (Technical Provisions).

2) No. 116A on the radio astronomy service to appear in Part B, possibly as a separate Article 33A.

3) The maps of regions to appear near the beginning of the Radio Regulations rather than in Appendix 24.

4) No. 330.1 (definition of the African Broadcasting Area) to appear after No. 133 (European Broadcasting Area).

5) The general provisions contained in Article N8 to be included in N5 and the remainder of Article N8 in Part B.

6) The provisions in No. 470J, being in the nature of a footnote, to appear as such.

The delegate of the United Kingdom expressed concern at the possibility of re-opening discussion on matters of substance already considered at length by the Group of Experts. For example, it was by no means as a result of an oversight that No. 116A appeared where it did. Similarly, transferring the definition of the African Broadcasting Area to another place in the Radio Regulations would entail consequences going far beyond a simple re-arrangement. In his opinion, the Working Group should distinguish between proposals aimed at correcting minor errors or oversights and those involving actual re-arrangements.

The delegates of Spain and Norway supported that view.

The delegate of the German Democratic Republic remarked that the Group of Experts, by its own admission, had laboured under considerable pressure of time. The present Conference should pay due regard to all relevant proposals, including those just made by the USSR.

The delegate of the USSR said that it was not his intention to complicate the work of the Committee or its Working Group. As already stated, the structure proposed by the Group of Experts was acceptable to his Administration. He was prepared to review his delegation's suggestions prior to their consideration by the Working Group, retaining only those which concerned simple errors or oversights.

The delegate of the United States of America agreed that it was important not to re-open the discussion of substance already conducted within the Group of Experts. However, the Group's report contained a number of obvious errors and oversights which should be corrected.

3. Organization of the Committee's work

The Chairman proposed the setting up of a Working Group under the chairmanship of Mr. Øwre (Norway) , open to all delegations, to consider corrections of errors, discrepancies and omissions in the Report of the Group of Experts and to draft a Recommendation to Administrations on the use of the new structure in their proposals to the World Administrative Radio Conference, 1979, to be included in the Final Acts.

It was so decided.

The delegates of the USSR and Spain urged that documents relating to the Committee's work should be distributed as promptly as possible.

The Deputy Secretary-General apologized for any inconvenience that might have been caused by the late receipt of documents. Once it was known which delegations were proposing to participate in the work of the Working Group, documents would be distributed to them without delay.

The meeting rose at 1725 hours.

The Secretary :
A. ZACCAGNINI

The Chairman :
J.J. HERNANDEZ-G.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 119-E
21 January 1977
Original : English

COMMITTEE 6

SUMMARY RECORD

OF THE

FOURTH MEETING OF COMMITTEE 6

(PROCEDURES)

Tuesday, 18 January 1977, at 0930 hrs

Chairman : Mr. R.J. BUNDLE (New Zealand)

Vice-Chairman : Mr. M. LÔ (Mauritania)

Subject discussed	Document No.
Consideration of the Report of Working Group 6C	88

Consideration of the Report of Working Group 6C (Document No. 88)

The Chairman of Working Group 6C introduced the Working Group's Report (Document No. 88), observing that the recommendations it contained were the result of a compromise reached between the different positions adopted by delegations during the discussion. The recommendation in paragraph 4 had been included in order to circumvent possible future difficulties to which the representative of the IFRB had drawn the Working Group's attention.

The delegate of India said that his delegation was not entirely satisfied with the phrase "namely an agreement or Final Acts" which appeared in the paragraph beginning with the words "Working Party 6C finally agreed.....".

After a discussion in which the Chairman of Working Group 6C, the delegates of Algeria, Italy, Japan and the United Kingdom and the Deputy-Secretary-General took part, it was agreed to alter the sentence in question to read : "Working Party 6C finally agreed to recommend to Committee 6 a preferred form of presentation of the Final Acts comprising inter alia :".

On proposals by the delegates of Canada and the United Kingdom, it was agreed to amend sub-paragraph 2 to read : "procedures governing the implementation and modification of the Plan (or Plans)".

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The delegate of the United Kingdom observed that there was no mention in any of the sub-paragraphs of sharing criteria and the procedures concerned with avoiding harmful interference between the Fixed- and Broadcasting-Satellite Services. However, he would not press for the inclusion of a specific reference to those matters if they could be considered to be fully covered by the words "inter alia".

The Chairman said he took it that the words "inter alia" would include points such as those mentioned by the United Kingdom delegate.

The delegate of Canada stressed that it would be necessary to give further consideration to the recommendation in sub-paragraph 4 should the Plan (or Plans) and the relevant procedures be inconsistent in any way with the Convention and the Radio Regulations.

The delegate of the Federal Republic of Germany, referring to sub-paragraph 5 a), observed that it was not yet known what the exact contents of the Final Acts of the Conference would be. Furthermore, it was possible that the 1979 WARC might modify the Radio Regulations in such a way as to render inappropriate the annexing to them of the Final Acts as a whole. Consequently, he considered that the text of that sub-paragraph should be altered so as to allow the 1979 Conference greater flexibility in that respect.

The delegate of the United Kingdom suggested, in the light of the comments by the previous speaker, that the phrase "and to the extent" might be inserted after the words "in the form" in sub-paragraph 5 a).

The delegate of Portugal said that there was an apparent contradiction in sub-paragraph 5 a) between the latitude given to the 1979 WARC by the phrase "in the form it deems most appropriate" and the restrictions implied by the presence of both the word "annexing" and the phrase "without thereby affecting their.....integrity".

The Chairman of Working Group 6C said that the word "annexing" did not, in his view, have a restrictive connotation. The words "or integrity" had been included in the text in order to take into account the clearly-stated view of some delegations that the Final Acts of the Conference should not subsequently be broken down into several parts and dispersed through the Radio Regulations. With regard to the comments by the delegate of the Federal Republic of Germany, he did not believe it had been the Working Group's intention to give the 1979 WARC the latitude to judge whether or not the Final Acts should be annexed to the Radio Regulations.

The delegate of Italy, referring to the comments by the delegate of Portugal, said that one of the essential points of the compromise reached in the Working Group was that the Final Acts, in so far as they concerned the Broadcasting-Satellite Service, should be considered as an indivisible whole.

The delegate of the Federal Republic of Germany said that he would not press the point he had raised, although he continued to believe that greater flexibility would be desirable.

The delegate of the United Kingdom withdrew his suggestion.

The delegate of Canada, referring to sub-paragraph 6, asked whether the resolution or recommendation in question might not more appropriately be addressed to the Administrative Council.

The Chairman of Working Group 6C said that the Working Group had agreed to recommend that either a resolution or a recommendation, according to the Committee's preference, should be addressed to WARC 1979. It was, however, for the Committee to take a final decision on the matter.

The delegate of Italy said that the decision that the Final Acts should be revised only by a world administrative radio conference convened for that specific purpose was one that should be taken by the present Conference and annexed to its Final Acts. Accordingly, he proposed that the words "to WARC 1979" should be deleted from sub-paragraph 6.

The delegate of the United States of America considered that the whole of the sub-paragraph should be placed in square brackets and deferred for consideration until more was known about the outcome of the Conference and the contents of the Plan or Plans.

The delegate of Brazil endorsed that view. Since the Conference might produce regional plans which had different characteristics and which might be updated at regional conferences - in so far that could be done without violating or altering any of the decisions taken by the present Conference - the provision in the sub-paragraph was somewhat restrictive. He suggested that the words "a World Administrative Radio Conference for Satellite-Broadcasting" should be replaced by "a competent world administrative radio conference".

The delegate of Mexico supported that suggestion. Since the Final Acts of the Conference would also contain material relating to the work of Committee 7, which was not concerned with the Broadcasting-Satellite Service, it would not be appropriate to stipulate that those Acts should be revised only by a satellite-broadcasting conference.

The delegate of the United Kingdom agreed with the previous speaker. A statement to the effect that the Plan or Plans and associated procedures should be revised only by a competent conference should be inserted in an appropriate place in the Final Acts so that it could be taken into account by the 1979 WARC and the Administrative Council.

The delegate of the USSR considered that the Working Group's Report could be approved as a whole, subject to the amendments which had already been accepted by the Committee and those suggested to sub-paragraph 6 by the delegates of Italy and Brazil. In his view, it would be most inappropriate to make any reference to regional plans or conferences in sub-paragraph 6.

The Deputy Secretary-General, replying to a question by the delegate of Switzerland, said that it was not within the present Conference's competence to take a final decision on the procedure for future revision or modification. Any resolution which the Conference were to adopt on that question would, in accordance with No. 210 of the Convention, be regarded as a recommendation requiring approval by the Administrative Council in consultation with all the Members of the Union.

Taking into account the views expressed concerning sub-paragraph 6, he suggested that the following text, which would cater for all possibilities, might be acceptable to the Committee : "a resolution (or recommendation) requesting that the aforesaid Final Acts, after being annexed to the Radio Regulations, should be revised only by a competent administrative radio conference convened in accordance with Article 54 of the Convention."

The delegates of the United Kingdom, the USSR and the United States of America said that the Deputy Secretary-General's suggestion was acceptable to them.

The Chairman said that if he heard no objection he would take it that the Committee agreed to amend sub-paragraph 6 as suggested by the Deputy Secretary-General.

It was so agreed.

The delegate of Italy, referring to the penultimate paragraph, expressed the view that the text should be modified in order to make it more flexible.

The Chairman of the IFRB suggested that the Committee should take into account the previsions of No. 151 of the Convention during its further consideration of the matter to which the previous speaker had referred.

Following a discussion in which the Chairman, the Chairman of Working Group 6C and the delegates of Italy and the United Kingdom took part, it was agreed to refer the penultimate paragraph to one of the other Working Groups of the Committee, possibly Working Group 6B, for further consideration.

The Report of Working Group 6C, as amended, was approved.

The delegate of Canada said that he could accept the Working Group's Report; however, he stressed the need to take into consideration the outcome of Committee 5's work.

The Chairman thanked the Chairman and members of Working Group 6C for their very useful work.

The meeting rose at 1100 hrs.

The Secretary :

R. PLUSS

The Chairman :

R.J. BUNDLE

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 120-E
21 January 1977
Original : Spanish

PLENARY MEETING

Spain

FORESEEABLE REQUIREMENTS FOR THE BROADCASTING-SATELLITE SERVICE IN THE 12 GHz BAND FOR THE PRINCIPALITY OF ANDORRA

The Spanish request contained in Document No. 76-E relating to the foreseeable requirements for the Principality of Andorra is amended, in the sense that the requirements for Andorra are the same as those submitted by France (Document No. 103 of 19 January 1977), as specified in the Annex hereto.

The Spanish delegation has endorsed the request of the French delegation so that the present Spanish request may be considered complementary.

Annex : 1

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A N N E X

FORESEEABLE REQUIREMENTS FOR THE BROADCASTING-SATELLITE SERVICE IN THE 12 GHz BAND FOR THE PRINCIPALITY OF ANDORRA

02	03	04	06	07	08	09	13
E	AND	5	00-24	24.0W	01W36 42N30	00.6	024W 015W

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 1 to
Document No. 121-E
24 January 1977

COMMITTEES 5 AND 6

In the title, kindly add "Zaire" after "Uganda".

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 121-E
21 January 1977
Original : Spanish

COMMITTEES 5 AND 6

Colombia, Congo, Ecuador, Gabon, Kenya, Uganda

EQUATORIAL COUNTRIES

With reference to the contents of Document No. 103 submitted to Committee 5, we note that some administrations have requested orbital positions for their satellites that are located within the geographical coordinates corresponding to the territorial boundaries of the equatorial countries.

We wish to inform those administrations and the Conference that the positioning of any such geostationary satellite is subject to the prior consent of the equatorial country concerned and to its national legislation.

In the event of such consent not being sought or obtained, the equatorial countries will be obliged to enforce the relevant national laws, with all the consequences that this might entail, resorting to any technical or other means at their disposal.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 122-E
21 January 1977
Original : English, French

COMMITTEE 5
PLENARY MEETING

Committee 4

TECHNICAL PARAMETERS FOR PLANNING

(Report No. 2)

Following the decisions presented in Document No. 108, Committee 4, having examined the pertinent documents, has agreed upon the following values of the technical parameters for planning :

3. Pointing accuracy of satellite antennae

3.1 For the purposes of planning the Broadcasting-Satellite Service during this Conference, Committee 4 recommends that a limit of 0.1° be imposed on the deviation of the antenna beam in any direction from its nominal pointing direction. It is further recommended that a limit of ± 2° be imposed on the angular rotation of the transmitting beam about its axis. This latter limit is not necessary for beams of circular cross-section using circular polarization.

3.2 It should be noted by Committee 5 that there are additional factors which contribute to the total geographical variation in area on the surface of the earth illuminated by the satellite beam. Firstly, a contribution can be expected from variations in satellite station-keeping. Secondly, the variations caused by the above pointing accuracies will become more significant for coverage areas with low angles of elevation. Thirdly, the importance of yaw error increases as the beam becomes more elliptical.

3.3 Additionally, if linear polarization is adopted, it should be noted that yaw error is significant in contributing to an increase in the transmitted cross-polarized component which will tend to increase the interference into any other carriers which were originally cross-polarized with it.

3.4 In summary, while the accuracies given in 3.1 are recommended, the effect of these possible variations must be assessed on a case-by-case basis, since their total effect on geographical coverage will vary as the geometry of the satellite beam varies, and it is not reasonable to indicate a single value of shift in the coverage area for all situations.

3.5 The CCIR is requested to specify the technical factors necessary to achieve the beam pointing accuracy mentioned in 3.1.

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18. The use of energy dispersal in planning for the Broadcasting-Satellite Service

18.1 Artificial energy dispersal is useful in promoting the sharing between the Broadcast-Satellite Service and other services with which it shares the band.

18.2 Energy dispersal as discussed here is achieved by the addition at baseband of a triangular waveform with the video signal to form a composite baseband which, in turn, is caused to frequency modulate the up-link carrier. The rate of the triangular waveform is usually synchronized at some sub-multiple of the TV field rate. Typical rates range from 12.5 Hz to 30 Hz.

18.3 Table 1 illustrates the relative reduction in spectral power flux-density in a 4 kHz bandwidth as a function of the peak-to-peak deviation due to the energy dispersal waveform. This table is based on the following equation :

$$\left.\begin{array}{l}\text{Relative reduction in dB} \\ \text{relative to 4 kHz}\end{array}\right) = 10 \log \frac{\Delta F_{pp} + \delta f_{rms}}{4 \text{ kHz}}$$

where ΔF_{pp} = peak-to-peak deviation due to the energy dispersal waveform (kHz)

δf_{rms} = rms deviation caused by "natural" energy dispersal (kHz)

In constructing Table 1, a value of 40 kHz was assumed for δf_{rms}, based on the value of 10 dB for "natural" dispersion given in Table 4 of draft Report 631(Rev.76).

TABLE 1

Reduction of Spectral Power Flux-Density relative to a 4 kHz band

Peak-to-peak deviation (kHz)	Relative reduction (dB)
0	10
100	15.44
200	17.78
300	19.29
400	20.41
500	21.30
600	22.04
700	22.67
800	23.22
900	23.71
1 000	24.15

18.4 During the discussion of the amount of energy dispersal to be used for planning purposes, a number of delegates from the developing nations expressed a concern about the implications of adopting energy dispersal on the cost of the ground receiving equipments.

18.5 For purposes of planning the Broadcasting-Satellite Services, the Committee recommends that a value of energy dispersal should be used which reduces the spectral power flux-density by 22 dB, corresponding to a peak-to-peak deviation of 600 kHz, as measured in a 4 kHz bandwidth in comparison to the total transmittal power flux-density.*)

18.6 For more detailed information, see Document No. 90.

19. Characteristics of broadcasting-satellite receiving systems for community reception

For the purposes of planning for the Broadcasting-Satellite Service for community reception, Committee 4 recommends that :

a) the minimum size of receiving antenna should be that having a half power beamwidth of 1^{o};

b) the G/T of the receiving station should be 14 dB/K. This value is calculated in accordance with the method used in Annex 1 of CCIR Report 473-1(Rev.76);

c) the power flux-density at the edge of the / service area / should be - 111 dBW/m^2 for 99 % of the worst month.

Note : By service area in this document we mean the area intended to be served by the broadcasting-satellite system.

20. Up-link thermal noise considerations for the Broadcasting-Satellite Service

For the purposes of planning the Broadcasting-Satellite Service during this Conference, Committee 4 recommends that the effect of the up-path noise contributions on the quality of the down-path of this service for individual reception should be equivalent to a degradation in the down-path carrier-to-noise (C/N) ratio of not greater than 0.5 dB for 99 % of the worst month.

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*) Note : The estimated cost of the components in the simple diode clamping circuit needed at the earth station receiver to remove the amount of energy dispersal for the peak-to-peak deviation of 600 kHz is in the order of US $ 0.40.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Addendum No. 1 to
Document No. 123-E
24 January 1977
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WORKING GROUPS OF
COMMITTEE 5

INSTRUCTIONS TO THE SUB-WORKING GROUPS OF GROUP 5A ON ORBIT POSITION ASSIGNMENTS TO BE USED IN THE ESTABLISHMENT OF THE PLAN

(See paragraph 3 of Document No. 123)

1. It is desirable that the most easterly orbit positions assigned to any country should be such that eclipse effects will not start to occur until after 1 a.m. It is essential that eclipse effects will not start to occur until after midnight for all countries.

2. It is essential (with the exception of point 4 below) that the most westerly orbit position assignment to any country should be such that the minimum elevation at any point in that country does not fall below 20°.

3. For tropical countries it is essential that the orbital assignment is chosen such that the minimum elevation angle at any point in that country does not fall below 40°.

4. For high-latitude countries (countries whose territory extends to latitudes of more than 60°) it will not be possible to give the minimum elevation angle provision mentioned in point 2 above. For such countries the experts should use the range of acceptable orbital position given in the requirements submitted by those administrations.

5. For mountainous countries a minimum elevation angle of 30° may be necessary and the Sub-Working Groups should ensure this where specific mention has been made by administrations of such conditions either in their requirements submitted to the Conference or to the Chairman of Working Group 5A.

6. The requirements by administrations for their countries to have the same orbit position should be met.

7. The Sub-Working Groups should use the minimum total orbital arc necessary to meet the above objectives.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 123-E
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WORKING GROUPS OF
COMMITTEE 5

Note by the Chairman of Committee 5

At its third meeting held on 21 January 1977, Committee 5 inter alia adopted the following principles submitted by Working Group 5A :

1. Plan for Regions 1 and 3

The Plan for Regions 1 and 3 will be based on individual reception and technical standards unified for the two regions will be adopted.

2. Conciliation Group

A Conciliation Group has been set up which will act as the interface between the delegations of countries and the planning sub-groups in order to reach agreement on any changes in the broadcasting-satellite requirements submitted to the Conference.

This Group is chaired by the Chairman of the Coordination Committee and its permanent members are the Chairman and Vice-Chairman of Committee 5, and the Chairman of Working Group 5A with his assistants Mr. Arasteh (Iran) and Mr. Harbi (Algeria). The Chairmen of the planning sub-groups will also attend as members of the Group when it discusses any problems concerning their work.

3. Orbital positions

The planning sub-groups are authorized to modify the values of the nominal satellite longitude indicated by administrations if this change is within the arc of orbit specified by administrations in their requirements.

As far as these changes are concerned, the instructions issued by Working Group 5A should be complied with.

For any change outside this arc the agreement of the administrations concerned will be sought through the Conciliation Group.

4. Countries not represented at the Conference

For countries not represented at the Conference which have not announced their requirements, it is envisaged that the Plan will make provision for reserve beams. These beams will contain an adequate number of programmes.

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5. Beams to be taken into consideration for planning

These are :

- beams which are shaped to limit the service area to the territory of the notifying administration taking into account the provisions of No. 428A of the Radio Regulations;

- beams concerning countries not represented at the Conference;

- beams notified by an administration which are shaped to cover all or part of the territories of other administrations with the agreement of the administrations concerned. However, if negotiations are in progress between governments, the requirements as submitted will be considered for planning purposes if there is no opposition from the delegations concerned and without prejudice to the outcome of the negotiations. If these negotiations had not been completed by the deadline of 28 January 1977, "the territory to be served" to be taken into account in subsequent planning work will be that of the notifying administration.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 124-E
25 January 1977
Original : English

WORKING GROUPS OF
COMMITTEE 5

Note by the Chairman of Committee 5 (Planning)

INTENTIONAL EXTENDED SERVICE AREA

Pursuant to a decision of Committee 5 (Planning), information is provided in the Annex on agreement reached, or being sought, concerning intentional extended service area (see No. 428A of the Radio Regulations.

2. The second and third columns will be kept up to date by addenda to the present document as information is received from Delegations. In this connection, Administrations are requested to hand in any changes or additions to this information in writing to Box "4000 IFRB" at the Document Distribution Desk. It would be most helpful if each communication could include the country symbol and Serial No. of each requirement concerned and the Box number of the Delegate signing.

3. Committee 5 has set the date limit of Friday, 28 January 1977, for confirming agreement on intentional extended service area.

Annex : 1

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ANNEXE - ANNEX - ANEXO

EXTENSION INTENTIONNELLE DE LA ZONE DE SERVICE

INTENTIONAL EXTENDED SERVICE AREA

EXTENSIÓN DELIBERADA DE LA ZONA DE SERVICIO

Symbole de pays et numéro de la demande Country symbol and Serial No. of the Requirement Símbolo del país y número de serie de la solicitud	Un accord a été conclu avec : Agreement has been reached with: Se ha llegado a un acuerdo con:	Un accord est encore à l'étude avec : Agreement is still being sought with: Se está aún negociando un acuerdo con:
AUT 0017	D, SUI	
CVA 0084		I
CVA 0085		AUT, BEL, D, E, F, I, LIE, LUX, MCO, MLT, POR, TUN, SUI
D 0088	AUT, SUI	
DNK 0089	FNL, NOR, S	
DNK 0090	FNL, NOR, S	
DNK 0091	FNL, ISL, NOR, S	
FNL 0103	S	
FNL 0104	DNK, NOR, S	
ISL 0050	DNK	
LUX 0114		BEL, D, F
MCO 0227		F
MCO 0228		F
NOR 0121	DNK, FNL, S	
NZL 0287	AUS, PNG	
PNG 0271	AUS, NZL	
S 0139	DNK, FNL, NOR	
SNG 0151	INS, MLA	
SUI 0141	AUT, D	
TUN 0272	ALG, LBY, MRC, MRT	

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 125-E
24 January 1977
Original : English

COMMITTEES 4 and 5

Sudan

MAXIMUM ANTENNA BEAMWIDTH CORRESPONDING
TO THE FEASIBLE SATELLITE OUTPUT POWER

It is noted that technical parameters recommended by Committees 4 and 5 (such as the type of modulation, G/T, energy dispersal, minimum antenna beamwidth of 0.6°, etc.), have been fully discussed. However, the feasible satellite output power, which is an important parameter in the choice of the size of the spot beam and the satellite orbital position, has not been discussed or touched upon during this Conference.

It is not enough to assign orbital positions and number of beams (as requested by Administrations), because it may turn out that the power requirements necessary for achieving a PFD of -103 dBW/m^2 for 99 % of the worst month are beyond feasible limits.

Administrations may discover at a later stage in the Conference that the beam sizes they asked for (or assigned for them by the IFRB), require powers which are beyond feasible limits. This will lead to alterations of requirements and delay of the conference work.

We therefore recommend that this Conference consider :

1. The feasible satellite output power in the near future.

2. The maximum antenna beamwidths (circular and elliptical) ccoresponding to the feasible satellite output power for the full channel assignment allowed (e.g. 5 channels).

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Addendum No. 1 to
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27 January 1977
Original : French

BUDGET CONTROL COMMITTEE

Report by the Secretary-General

SITUATION CONCERNING EXPENDITURE OF THE SATELLITE BROADCASTING CONFERENCE AT 21 JANUARY 1977

Notes to be added to the Annex to Document No. 126

1) Budget approved by the Administrative Council, account being taken of the additional credits under Administrative Council Resolution No. 647.

2) In keeping with the Financial Regulations of the Union, Article 15, paragraph 3.

3) Pursuant to a change in the budgetary structure decided upon by the Administrative Council in 1976, staff expenses under the head of Common Services of the General Secretariat are to be transferred to a special section from the 1977 budget onwards (Section 17).

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 126-E
25 January 1977
Original : French

BUDGET CONTROL COMMITTEE

Report by the Secretary-General

SITUATION CONCERNING EXPENDITURE FOR THE BROADCASTING SATELLITE CONFERENCE AT 21 JANUARY 1977

Numbers 442 to 446 of the International Telecommunication Convention, Torremolinos, 1973, specify that the Budget Control Committee is responsible for approving the accounts for expenditure incurred throughout the duration of the Conference. It must also present a report to the plenary meeting showing, as accurately as possible, the estimated total expenditure of the Conference.

A statement of the expenditure effected up to 21 January 1977 for the Broadcasting Satellite Conference is accordingly submitted to the Budget Control Committee for examination. This statement is accompanied by an estimate of expenditure anticipated by the end of the Conference.

Transfer of credits

Under Article 15, paragraph 3 of the Financial Regulations of the Union, the Budget Control Committee may authorize transfers of credits from one sub-head to another, whereas transfers from one item to another within the same sub-head is within the competence of the Secretary-General.

It is therefore proposed that the Budget Control Committee should authorize the transfer of 110,000 Swiss francs :

from Sub-head II - Premises and equipment

to Sub-head III - Other expenses.

Situation of accounts

The Annex to this Document shows that the total expenditure is at present estimated at 1,510,000 Swiss francs, or 84,000 Swiss Francs less than the budget estimate.

The Budget Control Committee is requested to consider the attached accounts.

M. MILI

Secretary-General

Annex : 1

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A N N E X

Number	Item	Budget approved by AC	Revised budget 1)	Credit transfers: Item to item	Credit transfers: Sub-head to sub-head 2)	Credits available	Expenditure at 21 January 1977: Actual	Committed	Estimated	Total	Difference +/-
1	2	3	4	5	6	7	8	9	10	11	12
	Sub-head I - Staff										
11.101	Salaries and related expenses										
	Interpretation	671,600	671,600	-	-	671,600	-	650,797	9,203	660,000	+ 11,600
	Common services	3) -	-	-	-	-	-	-	-	-	-
		671,600	671,600	-	-	671,600	-	650,797	9,203	660,000	+ 11,600
11.102	Travel expenses										
	Travel expenses	86,000	86,000	-	-	86,000	9,936	58,156	4,908	73,000	+ 13,000
11.103	Insurance										
	UNJSPF	-	-	-	-	-	-	-	-	-	-
	Sickness	10,000	10,000	-	-	10,000	-	-	9,900	9,900	+ 100
	Accidents	4,400	4,400	-	-	4,400	-	-	4,100	4,100	+ 300
		14,400	14,400	-	-	14,400	-	-	14,000	14,000	+ 400
TOTAL	Sub-head I	772,000	772,000	-	-	772,000	9,936	708,953	28,111	747,000	+ 25,000

Number	Item	Budget approved by AC	Revised budget 1)	Credit transfers		Credits available	Expenditure at 21 January 1977				Difference +/-
				Item to item	Sub-head to Sub-head 2)		Actual	Committed	Estimated	Total	
1	2	3	4	5	6	7	8	9	10	11	12
Sub-head II - Premises and equipment											
11.111	Premises, furniture, machines										
	Rental CICG	575.000	575.000	-	-110.000	465.000	201.300	201.300	20.400	423.000	+ 42.000
	Cleaning	10.000	10.000	-	-	10.000	-	-	10.000	10.000	-
	Guards	10.000	10.000	-	-	10.000	-	-	8.000	8.000	+ 2000
	Machine rental	10.000	10.000	-	-	10.000	-	-	10.000	10.000	-
		605.000	605.000	-	- 110.000	495.000	201.300	201.300	48.400	451.000	+ 44.000
11.112	Computer costs										
	ITU computer	10.000	10.000	-	-	10.000	-	-	10.000	10.000	-
11.113	Document production										
	Document production	55.000	55.000	-	-	55.000	11.158	-	43.842	55.000	-
11.114	Office supplies and overheads										
	Supplies	30.000	30.000	-	-	30.000	5.000	-	13.000	18.000	+ 12.000
	Local transport	5.000	5.000	-	-	5.000	-	5.000	-	5.000	-
	Sundry	-	-	-	-	-	-	-	-	-	-
		35.000	35.000	-	-	35.000	5.000	5.000	13.000	23.000	+ 12.000

Number	Item	Budget approved by AC	Revised budget 1)	Credit transfers		Credits available	Expenditure at 21 January 1977				Difference +/-
				Item to item	Sub-head to Sub-head 2)		Actual	Committed	Estimated	Total	
1	2	3	4	5	6	7	8	9	10	11	12
11.115	PTT										
	Postage	10.000	10.000	-	-	10.000	-	-	10.000	10.000	-
	Telephone	3.000	3.000	-	-	3.000	-	-	3.000	3.000	-
	Telegrams	2.000	2.000	-	-	2.000	-	-	2.000	2.000	-
		15.000	15.000	-	-	15.000	-	-	15.000	15.000	-
11.116	Technical material	3.000	3.000	-	-	3.000	-	-	-	-	+ 3.000
11.117	Sundry and unforeseen	9.000	9.000	-	-	9.000	220	-	8.780	9.000	-
TOTAL	Sub-head II	732.000	732.000	-	110.000	622.000	217.678	206.300	139.022	563.000	+ 59.000
Sub-head III - Other expenses											
11.121	Final Acts of the Conference										
	Final Acts	40.000	40.000	-	-	40.000	-	-	20.000	20.000	+ 20.000
	Chinese Translation	25.000	25.000	-	-	25.000	-	-	15.000	15.000	+ 10.000
	Russian Translation	25.000	25.000	-	-	25.000	-	-	15.000	15.000	+ 10.000

Number	Item	Budget approved by AC	Revised budget 1)	Credit transfers		Credits available	Expenditure at 21 January 1977				Difference +/-
				Item to item	Sub-head to sub-head 2)		Actual	Committed	Estimated	Total	
1	2	3	4	5	6	7	8	9	10	11	12
	Doc. RR	-	-	-	+110,000	110,000	-	-	150,000	150,000	- 40,000
TOTAL Sub-head III		90,000	90,000	-	+110,000	200,000	-	-	200,000	200,000	-
GENERAL TOTAL		1,594,000	1,594,000	-	-	1,594,000	227,614	915,253	367,133	1,510,000	+ 84,000
Pro memoria											
Budget 1976											
Preparatory work		494,000	531,400	-	-	531,400	368,231	-	-	368.231	+163,169

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 127-E
24 January 1977
Original : English

COMMITTEE 5
PLENARY MEETING

Socialist Federal Republic of Yugoslavia

BASIC CONSIDERATION ON THE PLANNING PRINCIPLES

1. In the work accomplished so far, Committee 5 established the basic technical principles and defined the methods essential for working out the first planning exercises and trial plan. The Yugoslav Administration considers that the further planning work, which is ahead of the Conference, will not be possible without agreements on the principles on which the commonly acceptable solution could be found.

2. In the first place, it is utmost necessary to express explicitly those principles which lead to the equal rights of the people in any country to receive the broadcasting programmes under satisfactory conditions.

3. By considering the requirements in the process of further planning, the Yugoslav Administration's views are that the starting point should be on those requirements primarily based on the real needs of the coverage of each country. In doing so, as it was adopted during the last Regional Administrative LF/MF Broadcasting Conference for the Regions 1 and 3, the number of constitutional autonomous federal units, national entities, officially recognized languages (Report of the First Session, Geneva 1974) and other relevant peculiarities should be taken into account in order to meet the above-mentioned equal rights of the people in all countries over the world.

4. The Yugoslav Administration is of the opinion that in the course of the elaboration of the plan and during the negociations, all constructive compromise steps should be possible and necessary in order to achieve the commonly acceptable solution. In this sense, the variation of different technical parameters, such as the choice of orbital position, angular separation, may be the protection ratio, beam pointing in some cases and others, should be taken into consideration.

5. At the end, the Yugoslav Administration would like to state that the requirements submitted by it to the Conference are in full agreement to the constitutional composition of the country and are in accordance with the principles displayed above.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 128-E
24 January 1977
Original : English

PLENARY MEETING

Committee 4

DRAFT CCIR RECOMMENDATION

ON

OUT-OF-BAND SPURIOUS EMISSIONS

considering

a) that broadcasting satellites operating at high power levels are likely to cause interference to services in adjacent and in harmonically related frequency bands due to spurious emissions;

b) that the planning of the Broadcasting-Satellite Service must take account of the need to reduce interference to services operating in the adjacent bands to acceptable levels at the lower and upper edges of the bands 11.7 GHz to 12.2 GHz in Regions 2 and 3 and 11.7 GHz to 12.5 GHz in Region 1, and to the radio astronomy service which has an exclusive allocation at 23.6 to 24 GHz in all three regions.

The Broadcasting-Satellite Conference recommends :

that the CCIR be requested to continue as a matter of urgency its studies of the technical and operational aspects of spurious emissions from broadcasting satellites and complete a report at the special joint meeting of CCIR study groups to be held in preparation for the World Administrative Radio Conference 1979.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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26 January 1977
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COMMITTEE 4

Working Group 4A

LIMITATION OF OUTPUT POWER IN THE SATELLITE TRANSMITTER

1. It is considered that it should be possible to prevent the output power of a satellite transmitter rising by more than 0.25 dB relative to its nominal value throughout the life of the satellite.

2. The attention of Committee 6 is drawn to the necessity of making provision for limiting the output power of the satellite transmitter in accordance with § 1 above.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 129-E
24 January 1977
Original : English

COMMITTEE 4

Working Group 4A

CONTROL OF OUTPUT POWER IN THE SATELLITE TRANSMITTER

1. For planning purposes in the Broadcasting-Satellite Service, Committee 4 considers that it should be possible to maintain the output power of a satellite transmitter to within ± 0.25 dB of its nominal value throughout the life of the satellite.

2. The attention of Committee 6 is drawn to the necessity of making provision for controlling the output power of the satellite transmitter in accordance with § 1 above.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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25 January 1977
Original : English

COMMITTEE 4

Working Group 4A

EFFECTS OF PROPAGATION ON CROSS-POLARIZATION

1. In planning the Broadcasting-Satellite Service, for emissions applying circular polarization, the relative level of the depolarized component, A_d, should be taken as :

- 27 dB for rain-climatic zones 1 and 2,
- 30 dB for rain-climatic zones 3, 4 and 5.

2. The CCIR is urgently requested to pursue its studies in this matter and to submit appropriate data to the WARC-1979.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 130-E
24 January 1977
Original : English

COMMITTEE 4

Working Group 4A

EFFECT OF CROSS POLARIZATION

For planning in the Broadcasting-Satellite Service, applying circular polarization, the level of the depolarized component, A_d, relative to the level of the co-polar component, may be expressed by :

$$A_d = - (30 - 20 \log_{10} A_c) \quad \text{(dB)}$$

where :

A_c is the attenuation of the co-polar component (dB).

For planning purposes in Europe, a value of -30 dB for A_d is suggested for 1 % of the worst month.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 131-E
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Note by the Secretary-General

You will find attached a Note from the Chairman of the IFRB relative to the symbols designating countries or a geographical area.

M. MILI

Secretary-General

Annex 1

ARCHIVES U.I.T. GENÈVE

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A N N E X

Note by the Chairman of the IFRB

SYMBOLS DESIGNATING COUNTRIES OR A GEOGRAPHICAL AREA

In answer to requests from a number of delegations, the explanation of the symbols designating countries or a geographical area are reproduced in the attached Annex. These have been taken from Table No. 1 of the Preface to the International Frequency List.

Annex : 1

Annex

TABLE No. 1

COUNTRY SYMBOLS

Meanings of the symbols used in Columns 4b and 5a of the International Frequency List

N.B.: The country symbols have a geographical significance only. The presence of any given symbol designating a country or a geographical area with respect to a frequency assignment to a station is without prejudice to any question of territorial status which may be involved.

Symbol	Name of the country or geographical area
ADL	Adelie Land
AFG	Afghanistan (Republic of)
AFI	French Territory of the Afars and Issas
AFS	Republic of South Africa [1]
AGL	Angola (People's Republic of)
ALB	People's Republic of Albania
ALG	Algeria (Algerian Democratic and Popular Republic)
ALS	State of Alaska, United States of America
AMS	S Paul and Amsterdam Islands
AND	Andorra
AOE	Spanish Saharian Territory
ARG	Argentine Republic
ARS	Kingdom of Saudi Arabia
ASC	Ascension
ATN	Netherlands Antilles
AUS	Australia
AUT	Austria
AZR	Azores
B	Brazil (Federative Republic of)
BAH	Bahamas (Commonwealth of the)
BDI	Republic of Burundi
BEL	Belgium
BER	Bermuda
BGD	Bangladesh
BHR	State of Bahrain
BIO	British Indian Ocean Territory
BLR	Byelorussian Soviet Socialist Republic
BOL	Bolivia (Republic of)
BOT	Botswana Republic
BRB	Barbados
BRM	Burma (Socialist Republic of the Union of)
BRU	Brunei
BUL	People's Republic of Bulgaria
CAF	Central African Republic
CAN	Canada
CAR	Caroline Islands
CBG	Khmer Republic
CHL	Chile (except Easter Island)
CHN	China (People's Republic of)
CHR	Christmas Island (Indian Ocean)
CKH	Cook Islands
CKN	Cook Islands (Northern Group)
CLM	Republic of Colombia
CLN	Sri Lanka (Ceylon) (Republic of)
CME	United Republic of Cameroon
CNR	Canaries
COG	People's Republic of the Congo
COM	Comoro Islands
CPV	Cape Verde (Republic of)
CRO	Crozet Archipelago
CTI	Republic of the Ivory Coast
CTR	Costa Rica
CUB	Cuba
CVA	Vatican City State
CYP	Republic of Cyprus
D	Germany (Federal Republic of)
DAH	People's Republic of Benin
DDR	German Democratic Republic
DNK	Denmark
DOM	Dominican Republic
E	Spain
EGY	Egypt (Arab Republic of)
EQA	Ecuador
ETH	Ethiopia
F	France
FJI	Fiji Islands
FLK	Falkland Islands and Dependencies [2]
FNL	Finland
G	United Kingdom of Great Britain and Northern Ireland
GAB	Gabon Republic
GDL	French Department of Guadeloupe
GHA	Ghana
GIB	Gibraltar
GIL	Gilbert Islands
GMB	Gambia (Republic of the)
GNE	Republic of Equatorial Guinea
GNP	Guinea-Bissau (Republic of)
GRC	Greece
GRL	Greenland
GTM	Guatemala
GUB	Guyana
GUF	French Department of Guyana
GUI	Republic of Guinea
GUM	Guam
HKG	Hongkong
HNB	Belize
HND	Republic of Honduras
HNG	Hungarian People's Republic
HOL	Kingdom of the Netherlands
HTI	Republic of Haiti
HVO	Republic of Upper Volta
HWA	State of Hawaii, United States of America
HWL	Howland Island
I	Italy
ICO	Cocos Keeling Islands
IND	Republic of India
INP	Portuguese India
INS	Republic of Indonesia
IOB	British West Indies
IRL	Ireland
IRN	Iran
IRQ	Republic of Iraq
ISL	Iceland
ISR	State of Israel
IWA	Iwo Jima
J	Japan
JAR	Jarvis Island
JMC	Jamaica
JON	Johnston Island
JOR	Hashemite Kingdom of Jordan
KEN	Kenya (Republic of)
KER	Kerguelen Islands
KOR	Republic of Korea
KRE	Democratic People's Republic of Korea
KWT	State of Kuwait

[1] See I.T.U. Administrative Council Resolution No. 619 (22nd Session, 1967)

[2] As regards jurisdiction over the Falkland (Malvinas) Islands and certain other territories, see the statement by the Argentine Republic (paragraph V of the Final Protocol to the International Telecommunication Convention, Montreux, 1965) and that by the United Kingdom of Great Britain and Northern Ireland (paragraph L of that Protocol)

Symbol	Name of the country or geographical area
LAO	Lao Peoples Democratic Republic
LBN	Lebanon
LBR	Republic of Liberia
LBY	Libyan Arab Republic
LIE	Liechtenstein
LSO	Kingdom of Lesotho
LUX	Luxembourg
MAC	Macao
MAU	Mauritius
MCO	Monaco
MCS	Marcus Island
MDG	Madagascar (Democratic Republic of)
MDR	Madeira
MDW	Midway Islands
MEX	Mexico
MLA	Malaysia
MLD	Republic of Maldives
MLI	Republic of Mali
MLT	Malta (Republic of)
MNG	Mongolian People's Republic
MOZ	Mozambique (People's Republic of)
MRA	Mariana Islands
MRC	Kingdom of Morocco
MRL	Marshall Islands
MRN	Marion Island
MRT	French Department of Martinique
MTN	Islamic Republic of Mauritania
MWI	Malawi
MYT	Mayotte Island
NCG	Nicaragua
NCL	New Caledonia and Dependencies
NGR	Republic of the Niger
NHB	New Hebrides (British-French Condominium)
NIG	Federal Republic of Nigeria
NIU	Niue Island
NMB	Namibia
NOR	Norway
NPL	Nepal
NRU	Nauru Island
NZL	New Zealand
OCE	French Polynesia
OMA	Sultanate of Oman
PAK	Pakistan
PAQ	Easter Island, Chile
PHL	Republic of the Philippines
PHX	Phoenix Islands
PLM	Palmyra Island
PNG	Papua New Guinea
PNR	Panama (Republic of)
PNZ	Panama Canal Zone
POL	People's Republic of Poland
POR	Portugal
PRG	Paraguay (Republic of)
PRU	Peru
PTC	Pitcairn Island
PTR	Puerto Rico
QAT	State of Qatar

Symbol	Name of the country or geographical area
REU	French Department of Reunion
RHS	Rhodesia[3]
ROD	Rodriguez
ROU	Socialist Republic of Roumania
RRW	Republic of Rwanda
RYU	Ryu Kyu Islands
S	Sweden
SDN	Democratic Republic of the Sudan
SEN	Republic of the Senegal
SEY	Seychelles
SHN	S. Helena
SLM	Solomon Islands
SLV	Republic of El Salvador
SMA	American Samoa
SMO	Western Samoa
SMR	Republic of San Marino
SNG	Republic of Singapore
SOM	Somali Democratic Republic
SPM	S. Pierre and Miquelon
SRL	Sierra Leone
STP	Sao Tome and Principe (Democratic Republic of)
SUI	Confederation of Switzerland
SUR	Surinam (Republic of)
SWN	Swan Island
SWZ	Kingdom of Swaziland
SYR	Syrian Arab Republic
TCD	Republic of the Chad
TCH	Czechoslovak Socialist Republic
TGK	United Republic of Tanzania (Tanganyika)
TGO	Togolese Republic
THA	Thailand
TKL	Tokelau Islands
TMP	Portuguese Timor
TON	Tonga (Kingdom of)
TRC	Tristan da Cunha (Station of the Republic of South Africa)
TRD	Trinidad and Tobago
TUN	Tunisia
TUR	Turkey
TUV	Tuvalu
UAE	United Arab Emirates
UGA	Uganda (Republic of)
UKR	Ukrainian Soviet Socialist Republic
URG	Oriental Republic of Uruguay
URS	Union of Soviet Socialist Republics
USA	The 48 contiguous States of the United States of America (excluding the States of Alaska and Hawaii)
VEN	Republic of Venezuela
VIR	Virgin Islands
VTN	Viet Nam (Socialist Republic of)
WAK	Wake Island
WAL	Wallis and Futuna Islands
YEM	Yemen Arab Republic
YMS	Yemen (People's Democratic Republic of)
YUG	Socialist Federal Republic of Yugoslavia
ZAI	Zaire (Republic of)
ZAN	United Republic of Tanzania (Zanzibar)
ZMB	Republic of Zambia

[3] See Resolution No. 676, I.T.U. Administrative Council, 25th Session, 1970

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 132-E
24 January 1977
Original : English
French

WORKING GROUP 4A

Sub-Working Group 4A-3

DEFINITIONS

The definitions given in the attached Annex have been prepared by Sub-Group 4A-3 and are submitted for the consideration of Working Group 4A. It is felt that some explanatory notes regarding the three definitions of Service Area, Coverage Area and Beam Area would be useful and these are given below.

Explanatory notes on the definitions given in the Annex

a) In the definition of Service Area, it is made clear that within the Service Area the agreed protection conditions can be demanded. This is the area where there should be at least the wanted power flux density and protection against interference based on the agreed protection ratio for the agreed percentage of time should be achieved. In some circumstances a further technical definition may become necessary.

b) The Coverage Area, which normally will totally embrace the Service Area, will result from the effect of the antenna beam shape (elliptical or circular) on the surface of the earth and will be defined by a given value of power flux-density. For example, in the case of a Region 1 or 3 country with a service planned on an individual reception basis, it would be the contour corresponding to a level of $-103 dBW/m^2$ for 99 % of the worst month. There will usually be an area outside of the Service Area but within the Coverage Area where there would be at least the minimum specified power flux-density but this area would not be afforded protection against interference.

c) The Beam Area is simply that area on the earth's surface corresponding to the -3dB points on the satellite antenna radiation pattern. In many cases the Beam Area would almost coincide with the Coverage Area, the discrepancy being accounted for by the permanent difference in path lengths from the satellite throughout the Beam Area, and also by the permanent variations, if any, in propagation factors across the area. However, for a Service Area where the maximum dimension as seen from the satellite position is less than 0.6^o (the agreed minimum practicable satellite antenna half-power beamwidth) there could be a significant difference between the Beam Area and the Coverage Area.

ORLA HANSEN
Chairman
Sub-Working Group 4A-3

Annex : 1

ARCHIVES U.I.T. GENÈVE

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A N N E X

DEFINITIONS

1. Service Area

The area on the surface of the earth in which the Administration responsible for the service has the right to demand that the agreed protection conditions be provided.

2. Coverage Area

The area on the surface of the earth delineated by a contour of a constant given value of power flux-density which would permit the wanted quality of reception in the absence of interference.

Note : In accordance with the provisions of Radio Regulation 428A, the Coverage Area must be the smallest area which embraces the Service Area.

3. Beam Area

The area delineated by the intersection of the half-power beam of the satellite transmitting antenna with the surface of the earth.

BLUE PAGES

Document No. 133(Rev.1)-E
31 January 1977

PLENARY MEETING

B.1

1st SERIES OF TEXTS SUBMITTED BY THE EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for first reading :

Source	Document No.	Title
C.7	RR7	Text to be included in the Final Acts of the Conference
C.7	RR7	Resolution A

Miss M. HUET
Chairman of the
Editorial Committee

Annexes : 3 pages

ARCHIVES U.I.T. GENÈVE

[TEXT TO BE INCLUDED IN THE FINAL ACTS OF THE CONFERENCE]

The World Broadcasting-Satellite Administrative Radio Conference, Geneva, 1977, acting within its terms of reference relating to the re-arrangement of the Radio Regulations and the Additional Radio Regulations, decided:

a) Publication of the "Re-arrangement of the Radio Regulations"

to instruct the Secretary-General to draw up and distribute the final text of the "Re-arrangement of the Radio Regulations" as endorsed in principle by this Conference. This edition [should] be published [around] September 1977 and its main aim will be to serve as a basis for Administrations in submitting their proposals to the World Administrative Radio Conference in 1979 (see Resolution No. A);

b) Presentation of the new edition

the presentation of the new edition should conform to the following pattern:

Title:

Re-arrangement

of the

Radio Regulations

Contents:

- Table of contents (blue pages)
- Resolution adopted by the Conference
- Preface explaining how to use the publication
- Text of the Re-arrangement
- Appendices, Resolutions and Recommendations
- Separate booklet containing the references whose inclusion was approved by the Conference.

In preparing this new edition, the Secretary-General shall take into account the Report by Committee 7 entitled "Re-arrangement of the Radio Regulations" as approved by the Conference in [plenary session];

c) to instruct the Secretary-General to bring Resolution No. A to the notice of Administrations and the appropriate organs of the Union.

B.1-2 (Rev.1)

RESOLUTION No. A

Relating to the Possible Re-arrangement of the Radio Regulations and the Additional Radio Regulations

The World Broadcasting-Satellite Administrative Radio Conference, Geneva, 1977,

considering

a) the Report "Possible Re-arrangement of the Radio Regulations and the Additional Radio Regulations" of the Group of Experts set up by the Administrative Council at its 30th Session in June 1975;

b) item 2.6 of the agenda of the 1979 World Administrative Radio Conference (WARC-1979) contained in Resolution No. 783 of the Administrative Council (31st Session, June 1976) which provides for the consideration of the recommendations of this Conference on the re-arrangement of the Radio Regulations and the Additional Radio Regulations and to make such consequential changes as may be necessary to harmonize revisions of the Radio Regulations since 1959;

recognizing

a) that such harmonization can include the further refinement of the re-arrangement of the Radio Regulations, and any deletion, which the Group of Experts was unable to make, of superfluous or redundant provisions;

b) that Member countries may submit proposals for harmonization under item 2.6 of the agenda for WARC-1979 as well as proposals relating to other items of the agenda;

c) that WARC-1979 will make the final decision on the re-arrangement of the Radio Regulations and the Additional Radio Regulations, including harmonization under item 2.6 of its agenda;

endorses in principle

the re-arrangement proposed in the Report of the Group of Experts;

resolves

1. that the re-arrangement of the Radio Regulations proposed by the Group of Experts, as endorsed by this Conference, which includes two new Appendices, B and C, established by the Group of Experts and the re-arrangement, by titles only, of other Appendices, Resolutions and Recommendations shall be published by the Secretary-General by September 1977;

2. that the Additional Radio Regulations and the texts of Appendices, Resolutions and Recommendations contained in the 1976 loose-leaf edition should not be so published;

B.1-3 (Rev.1)

urges the CCITT

to complete as soon as possible the studies being carried out in accordance with Resolutions No. Mar2 – 22 and No. Mar2 – 23 and Recommendation No. Mar2 – 18 and to distribute the results to Administrations to enable them to prepare their proposals on this basis for WARC-1979 under agenda item 2.8 of that Conference;

urges Member countries

to use the re-arranged form of the Radio Regulations in resolves 1 and the present form of the Additional Radio Regulations as a basis for submitting proposals to the WARC-1979 for the revision of the Radio Regulations and the Additional Radio Regulations in accordance with its agenda, including any proposals relating specifically to harmonization under item 2.6 of its agenda (Resolution No. 783 of the Administrative Council);

requests WARC-1979

to agree that the documents in resolves 1 and 2 above should be used as the basic reference documents by delegates to that conference in discussing proposals.

B.1-4 (Rev. 1)

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 133-E
25 January 1977

PLENARY MEETING

B.1

1st SERIES OF TEXTS SUBMITTED BY THE
EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for first reading :

Source	Document No.	Title
C7	RR7	Text to be included in the Final Acts of the Conference
C7	RR7	Resolution A

Miss M. HUET
Chairman of the
Editorial Committee

Annexes : 3 pages

For reasons of economy, this document is printed in a limited number. Participants are therefore kindly asked to bring their copies to the conference since only a few additional copies can be made available.

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[TEXT TO BE INCLUDED IN THE FINAL ACTS OF THE CONFERENCE]

The World Administrative Broadcasting-Satellite Conference (Geneva, 1977), acting within its terms of reference relating to the re-arrangement of the Radio Regulations and the Additional Radio Regulations, decided:

a) Publication of the "Re-arrangement of the Radio Regulations"

To instruct the General Secretariat to draw up and distribute the final text of the "Re-arrangement of the Radio Regulations" as endorsed by this Conference. This edition should be published around September 1977 and its main aim will be to serve as a basis for Administrations in submitting their proposals to the World Administrative Radio Conference in 1979 (see Resolution No. A).

b) Presentation of the new edition

The presentation of the new edition shall conform to the following pattern:

Title:

"Re-arrangement

of the

Radio Regulations"

Contents:

- Index (blue pages);
- Resolution adopted by the Conference;
- Preface giving information on the use of the publication;
- Text of the Re-arrangement;
- Appendices, Resolutions and Recommendations;
- Separate booklet containing the references whose inclusion was approved by the Conference.

In preparing this new edition, the General Secretariat shall take into account the Report by Committee 7 entitled "Re-arrangement of the Radio Regulations" as approved by the Conference in plenary session.

c) To instruct the Secretary-General to bring Resolution A to the notice of Administrations and the organs of the Union concerned.

RESOLUTION A

relating to the Possible Re-arrangement of the Radio Regulations and the Additional Radio Regulations

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) the report "Possible Re-arrangement of the Radio Regulations and the Additional Radio Regulations" of the Group of Experts set up by the Administrative Council at its 30th Session in June 1975;

b) item 2.6 of the agenda of the 1979 World Administrative Radio Conference (WARC) contained in Resolution No. 783 of the Administrative Council (31st Session, June 1976) which provides for the consideration of the recommendations of this Conference on the re-arrangement of the Radio Regulations and the Additional Radio Regulations and for any changes that may be required to harmonize revisions of the Radio Regulations since 1959;

recognizing

a) that such harmonization can include the further refinement of the re-arrangement of the Radio Regulations, and any deletion, which the Group of Experts was unable to make, of superfluous or redundant provisions;

b) that Member countries may submit proposals for harmonization under item 2.6 of the agenda as well as proposals relating to other items of the agenda;

c) that the 1979 WARC will make the final decision on the re-arrangement of the Radio Regulations, and the Additional Radio Regulations including harmonization under item 2.6 of its agenda;

endorses, in principle

the re-arrangement proposed in the Report of the Group of Experts; and

resolves

1. that the re-arrangement of the Radio Regulations proposed by the Group of Experts, as endorsed by this Conference, which includes two new Appendices, B and C, shall be published, with two new Appendices B and C by the Secretary-General by September 1977, the other Appendices, Resolutions and Recommendations being mentioned by title only in the re-arranged order;

2. that the Additional Radio Regulations and the texts of Appendices, Resolutions and Recommendations contained in the 1976 loose-leaf edition shall not be published;

urges

3. the CCITT to complete as soon as possible the studies being carried out in accordance with Resolutions Mar2-22 and 23 and Recommendation Mar2-18 and to distribute the results to Administrations to enable them to prepare their proposals on this basis for the 1979 WARC under agenda item 2.8 of that Conference;

4. Member countries to use the re-arranged form of the Radio Regulations in resolves 1. and the present form of the Additional Radio Regulations as a basis for submitting proposals to the 1979 WARC for the revision of the Radio Regulations and the Additional Radio Regulations in accordance with its agenda, including any proposals specifically for harmonization under item 2.6 of its agenda (Resolution No. 783 of the Administrative Council);

requests

5. the 1979 WARC to agree that the documents in resolves 1. and 2. above should be used as the basic reference documents by delegates to that conference in discussing proposals.

B.1

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 134-E
24 January 1977
Original : English

WORKING GROUP 5A

NOTE FROM SUB-WORKING GROUP 5A-3 ON THE BEAMS TO BE USED FOR THE FIRST PLANNING STUDIES UNDER ITS TERMS OF REFERENCE

One of the conditions for initial studies is that up to five programmes only should be intended for reception in any area. As a result Sub-Working Group 5A-3 is, for the present, leaving out of its planning studies the beams listed in Table 1 attached.

R. RYVOLA
Chairman of Sub-Working Group 5A-3

Annex : 1

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A N N E X

TABLE 1

Beams that have been omitted under the terms of reference of Sub-Working Group 5A-3

Country	IFRB Code No.	Country	IFRB Code No.
AFS	0022	MTN	0288
	0023		
	0024	NOR	0121
ALG-1	0250	OMA	0124
AND	0261		0125
	0262		0126
ARS	0003	ROU	0137
AUT	0017	S	0139
CVA	0084	SUI	0141
	0085		
D	0088	TUN	0272
DNK	0090	YUG	0149
	0091		
F	0094		
FNL	0104		
ISL	0049		
MAU	0243		
MCO*)	0116		
	0117		

*) For MCO the 0116 beam should be replaced by an 0.60° circular beam

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 135-E
24 January 1977
Original : English

WORKING GROUP 5A

NOTE FROM SUB-WORKING GROUP 5A-3 ON THE PROVISIONAL PROPOSALS FOR THE ORBIT POSITIONS

The Sub-Working Group is making its first studies on the basis of a series of orbit positions at 6° spacing, starting from a position at 2°E.

The proposed scheme, given in Annex, has assigned provisional orbit positions as close as practicable to those requested, taking into account the upper limit to the number of assignments that can be accommodated from one orbit position. Table 1 gives a list of those countries for whom the proposed orbit position is not within the requested range of orbital arc.

R. RYVOLA
Chairman of Sub-Working Group 5A-3

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TABLE 1

Positions on orbit which have been moved outside the acceptable arc

Country code	IFRB No.	Arc	Provisional orbit position (5A3)
AND	0238	24W - 15W	28W
CNR	0130	26W - 11W	28W
COM	0207	10E - 30E	32E
CPV	0607	no arc - 52.5W	34W
CVA	0083	18W - 10W	4W
CYP	0086	15W - 11W	4W
D	0087	15W - 5W	16W
DAH	0233	75W - 20W	10W
E	0129	26W - 11W	28W
GMB	0608	no arc - 50W	34W
GNP	0610	no arc - 50W	34W
GRC	0105	15W - 11W	4W
GUI	0192	no arc - 45W	34W
INS-3	0030	no arc - 77E	86E
INS-4	0031	no arc - 83E	86E
INS-5	0032	no arc - 83E	86E
INS-6	0033	no arc - 83E	86E
IRQ	0256	no arc - 22.5E	8E
LBR	0244	no arc - 45W	34W
LIE	0253	15W - 5W	2E
MCO	0116	25W - 10W	4W
MDG	0236	10E - 30E	32E
MLT	0147	no arc - 15W	4W
SEN	0222	no arc - 45W	34W
SRL	0259	no arc - 45W	34W
THA	0142	65E - 75E	56E
TUR	0145	3W - 6E	4W

Annex : 1

A N N E X

-34	-28	-22	-16	-10	-4	2	8	14	20	26	32	38	44	50	56	62
CPV 4	AND 5	ALG-2 5	AUT 5	ALB 4	CYP 5	DNK 5	IRQ 4	BLR 1	ARS 5		COM 4	PAK-1 3	MLD 4	AFG-1 4	IND-2 4	CHN-1 4
GMB 4	AZR 5	ALG-3 5	BEL 5	BUL 5	GRC 5	FNL 5	JOR 5	UKR 1	BHR 4		IRN 4	PAK-2 2	URS-3 5	AFG-2 4	IND-3 4	-2 4
GNP 4	POR 5	LBY 5	D 5	DDR 5	TUR 5	ISL 5	LBN 5	URS-1 4	KWT 5		MDG 5	PAK-3 2	URS-4 4	CLN 4	IND-4 4	-3 3
GUI 5	E 5	MRC 5	F 5	HNG 5	SMR 4	NOR 5	SOM 5	URS-2 4	OMA 5		MYT 5	PAK-4 2	URS-13 2	NPL 3	IND-5 4	-4 3
LBR 4	CNR 5	MTN 5	HOL 5	POL 5	CVA 5	S 5	SYR 5	URS-9 5	QAT 4		REU 5	PAK-5 2	URS-16 2		IND-7 4	-30 1
NIG 5	G 5	TUN 5	I 5	ROU 5	MCO 5	LIE 5		URS-10 5	UAE 4		MAU 1		URS-17 2			
SEN 5	IRL 5		LUX 5	TCH 5	MLT 4	BDI 5	AFS 5	URS-11 1	YEM 5				URS-14 2		IND-9 4	-31 1
SRL 5			SUI 5	YUG 5	EGY 5	MOZ 4	LSO 4		YMS 5				URS-15 2		THA*	-32 2
					SDN-1 5	RHS 5	MWI 4	KEN 5					URS-12 2			-33 1
	CTI 5				SDN-2 5	RRW 4	TGK 4	ETH 5								-35 1
	GHA 5	CME 4	AGL 4	BOT 5	SDN-3 5	SWZ 4		AFI 5								
	HVO 5	STP 5	GAB 5	CAF 5		UGA 5		ISR 4								
	MLI-1 5	TGO 5	GNE 4	COG 5												
	MLI-2 5	DAH 5	ZAI 5	ZMB 5												
	NGR 5		NMB 5													
			TCD 5													

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68	74	80	86	92	98	104	110	116	122	128	134	140	146	152	158	170
IND-1 4	BGD 5	CHN-5 3	INS-3 4	CHN-7 3	INS-8 4	AUS-1A 2	J 5			AUS-3A 3	AUS-1D 2	NCL 4		CKH 4	NZL 4	TON 4
IND-6 4	BRM 4	-6 3	-4 4	-8 3	INS-9 4	AUS-1B 2	PNG 3			-3B 3	AUS-1E 2	NHB 4		CKN 4	SMO 4	
IND-8 4	CBG 4	-10 1	-5 4	-9 3	PHL 5	AUS-1C 2	URS-6 5			-3C 3	AUS-1F 2	URS-7 5		FJI 3		
IND-10 4	INS-1 4	-11 1	-6 4	-13 1						-3D 3		URS-8 2				
						KOR 5	URS-20 2			-3E 3	NZL 1			NIU 2		
IND-11 4	INS-2 4	-12 1	-7 4	-14 1		KRE 5				-3F 3	NRU 4	URS-21 4		TKL 2		
IND-12 4	LAO 5	-23 1		-15 1							PNG 2	WAL 4				
	SNG 4	-24 1		-16 1												
	MNG 5	-25 1		-17 1												
	URS-5 4	-28 1		-18 1												
	URS-18 2	-29 1		-19 1												
	URS-19 2	-34 1		-20 1									-160			
		MLA-W 4		-21 1									OCE 4			
		MLA-E 4		-22 1												
				-26 1												
				-27 1												

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 1 to
Document No. 136-E
26 January 1977

COMMITTEE 5

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 5

On page 4 delete "The delegate of Colombia ... of that meeting"
and replace by : "The delegate of Colombia made the statement annexed hereto."

Annex : 1

ARCHIVES U.I.T. GENÈVE

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ANNEX

STATEMENT BY THE DELEGATION OF COLOMBIA

Any nominal geographical position of a geostationary satellite which is notified to the International Telecommunication Union or which is planned, placed in position or operated by an administration or government must necessarily be specified in terms of its geodesic longitude expressed in degreees and minutes with reference to the Greenwich meridian and it is the universal practice, for all countries throughout the world, whether Members or non-Members of the ITU, to define their political frontiers or any position whatever on land or sea or in the air also with reference to the Greenwich meridian. Hence, the positions of geostationary satellites will inevitably coincide with positions in sovereign equatorial countries when the satellites are located within their political limits.

Only geostationary satellites constituting fixed radiocommunication stations and using combinations of transmitters and receivers for purposes of telemetry, broadcasting or any other purpose designed to provide one of the services defined in the Regulations may operate as fixed radiocommunication stations in accordance with the definitions and standards contained in the ITU Convention and its regulations and such satellites may only be operated by the respective administrations or with their express consent under the terms of the relevant national laws and rules.

Consequently, if any fixed radiocommunication station taking the form of a geostationary satellite were to be positioned or operated within the geographical coordinates delimiting the sovereign equatorial countries without the full individual and specific consent of those countries, they would be subject to the provisions of the Convention and its regulations and to the resolutions adopted by the General Assemblies of the United Nations and other international organizations and we should reserve the right to apply all technological resources or other means at our disposal to safeguard the sovereign prerogatives enshrined in the preamble of the Torremolinos Conventions.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 136-E
24 January 1977
Original : French

COMMITTEE 5

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 5

Thursday, 13 January 1977, at 0900 hrs

Chairman : Mr. A. PETTI (Italy)

Subjects discussed :	Documents Nos. :
1. Confirmation of requirements submitted by countries to the IFRB. Working documents and forms	16 + Add. 1 & 2, 27
2. Introduction of documents	2, 5, 6, 7, 8, 9, 10, 12, 13 (14, 15, 16, 17, 18, 23, 24, 27, 29, 30, 32, 33, 34, 35, 39, 40, 42, 43, 45, 52)

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1. Confirmation of requirements submitted by countries to the IFRB. Working documents and forms (Documents Nos. 16 and Add. 1 and 2, and 27)

The Technical Secretary of the Conference, referring to the above-mentioned documents and addenda, gave the Conference various explanations on the use of the working documents and requirement confirmation forms. Test points should appear in the appropriate list. The deadline for submitting the forms to the IFRB (box 4000) was Monday, 17 January.

The representative of the IFRB, replying to the delegate of the United States, who found the time allowed surprisingly short, explained that the date had been chosen in the light of the requirements of the computer utilization programme for making the necessary calculations, and of the time available for administrations to do their planning work. Preparation of the initial calculation results would have to be based on a number of decisions that the Conference had to take, either in committee or in plenary (basic decisions on planning as such, on the technical criteria applicable to planning, on the method of planning, and on the computer programmes that IFRB had prepared and the way they were to be used).

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The delegate of the United States urged that the calculations should not be made in a hurry and that they should take due account of the decisions of Committees 4 and 5, as the representative of the IFRB had just indicated.

The representative of the IFRB, replying to the delegate of New Zealand, said that in the absence of any guidance in the CCIR Report and of proposals by administrations on the subject of channel allocation, the IFRB had prepared Annex 5 to Document No. 27. The delegation of New Zealand, however, had proposed a different method of dealing with the question. It would thus be for the Conference to take a final decision on the matter.

Replying to the delegate of the Netherlands, he explained that according to the method suggested by the Board, the service areas and orbital positions would be determined by administrations, once the Conference had made a choice between uniform and non-uniform spacing. The data provided would be used as inputs in the computer programme described in Annex 5 to Document No. 27, in order to arrive at a matrix which would enable channel allocation to be done properly. To ensure that the matrix would be effective and make it possible to deal not just with current problems but also with future ones that might arise for countries that were not represented at the Conference and had not submitted requirements, the IFRB suggested introducing into the programme a symbol corresponding to an antenna beam covering that category of countries, for which a television channel would be set aside. If the Conference so decided, such hypothetical requirements would appear in the results of the calculations as sources of interference, which would have to be taken into account in arriving at a solution.

The Committee agreed to the confirmation of the satellite-broadcasting requirements submitted to the IFRB, subject to possible modifications.

It was specified that the IFRB would give all the necessary assistance to the Working Groups concerned with planning, without making any calculations other than those required for the work of those Groups.

2. Introduction of documents (Documents Nos. 2, 5, 6, 7, 8, 9, 10, 12, 13 and Corr. No. 1)

Documents Nos. 2 (and addenda and corrigendum) and 6 (and corrigendum)

The Director of the CCIR stated briefly that the documents in question had already been introduced in Committee 4 of the Conference and that they were intended to provide technical information on satellite systems.

The Committee took note of the documents.

Document No. 5

The delegate of Chile said that he was very interested in the evolutionary planning approach proposed by the delegation of the United States, according to which the plan would have to meet two fundamental conditions :

- it should take account of the right of all States to use the new Broadcasting-Satellite Service when they needed to;
- a date should be set for revising the plan so that any faults found in applying it could be put right in good time.

Document No. 7

The delegate of the United States reviewed the most important questions dealt with in the document, such as those in paragraphs 1.7, 1.8 and 1.9. The differences between the various ITU Regions, and more particularly those distinguishing Region 2, meant that that Region could have a planning method of its own which would best meet its needs. It was essential at all events that the planning of the Broadcasting-Satellite and Fixed-Satellite Services should be as flexible as possible. Most countries were still at an early stage in determining their requirements, and the United States therefore proposed an "evolutionary" approach based on respect for sharing principles in planning satellite systems in the 11.7 - 12.2 GHz band. It was of the opinion that application of those principles would make possible a considerable increase in the capacity of the geostationary satellite orbit and that the "evolutionary planning" it advocated would guarantee access to the orbit for later geostationary satellites. It was not, however, excluding the possibility of drawing up an orbital position assignment plan at a later stage. In conclusion, he pointed out that on page 7 of Document No. 7, his country was proposing an addition to Article 7 of the Radio Regulations and the adoption of several criteria which would facilitate the sharing of the 11.7 - 12.2 GHz band among the various services.

The Committee took note of the document.

Document No. 8

The delegate of France, pointing out that the document had already been introduced in Committee 4, drew attention in particular to paragraph 4, recommending that the plan should include only the minimum number of parameters that were necessary, which was in line with the wishes expressed by several members of Committee 5. He also referred in that connection to Annex 2 to Document No. 8.

The Committee took note of Document No. 8.

Document No. 9

The delegate of Canada said that the document had already been introduced in Committees 4 and 6 and that it essentially described the background against which his country's requirements for space services in the 12 GHz band should be considered. Vast regions of Canada still had no adequate telecommunication services and the use of the 12 GHz frequency band should make it possible to solve their problems to a large extent. Canada considered it premature to prepare plans for the sharing of frequency bands and of the orbit in Region 2, as explained in point 4 (Approach), page 2 of Document No. 9. The draft resolutions in Annexes C and D of the document which took account of the need to divide the geostationary orbit equitably between the Broadcasting-Satellite and the Fixed-Satellite Services, should be of general interest.

Referring to point 1 of the operative part of the resolution in Annex C, the delegate of Uganda observed that the portion of the geostationary satellite orbit between 75°W and 100°W longitude was part of the equatorial countries' natural resources. He fully shared the views expressed by the delegate of Colombia in the statement made at the first plenary meeting and annexed to the minutes of that meeting, which referred, inter alia, to the sovereignty of the equatorial countries. He desired to reaffirm the right of peoples and nations at all times to exercise sovereignty over their natural wealth and resources in the interests of their development and of national welfare. Consequently, no country outside the region was entitled to use any segment of the equatorial countries' geostationary orbit. There was an urgent need for action based on the Colombian statement.

The delegate of Indonesia made the statement reproduced in Annex 1 below.

The delegate of Ecuador made the statement reproduced in Annex 2 below.

The delegate of Colombia reiterated the statement he had made at the second meeting of Committee 4 which was annexed to the record of that meeting.

In the light of the above statements, the Committee took note of Document No. 9.

Document No. 10

The delegate of Switzerland remarked that the document had already been submitted to Committee 4. He gave a brief summary of it, stressing the need for the Conference to establish a plan of frequency assignments and orbital positions. It was important that countries which did not intend to operate a Broadcasting-Satellite Service for the time being should be assured that frequencies and orbital positions would be available to them when necessary. After a review of the various sections of Document No. 10, he emphasized the conclusion in point 12.

The delegate of the United States thought that, in the absence of a plan, the adoption of an "evolutionary" approach would prevent the development of a Broadcasting-Satellite Service on the basis of the "first come, first served" principle.

The delegate of Australia pointed out that he had already expressed opposition to the idea that the plan should be based on the principle of individual reception.

In the light of the above observations, the Committee took note of Document No. 10.

Document No. 12

The delegate of New Zealand said that the document had already been submitted to Committees 4 and 6. The ultimate aim of the Conference should be to establish a world plan that provided adequate guarantees for the countries accepting it. Provision should also be made for the conditions in which the plan might subsequently be amended to reflect technological progress. He stressed the need to respect the right of all countries to use the geostationary satellite orbit on an equal footing and gave additional explanations of paragraphs (iv), (v) and (vii) of Document No. 12.

In the absence of any comments, the Committee took note of the document.

Document No. 13 + Corrigendum No. 1

The delegate of New Zealand introduced the document, reviewing its various parts and stressing the primary importance of Part B which dealt with transmitting antenna discrimination and a method (use of honeycomb lattices) that would produce much better results than those hitherto obtained. He drew special attention to certain paragraphs which he discussed in detail, and invited participants to refer to Document No. 45, which provided more recent information on a number of questions dealt with in Document No. 13.

Since the document contained proposals on a new planning system, the delegate of the United States asked the IFRB representative whether the Board was in a position to compare the results obtainable by the new system with those which the other methods proposed might produce.

The IFRB representative replied that in order to apply the method described in Document No. 13, a new computer programme would have to be prepared.

The delegate of Australia recognized the great usefulness of the work described in Document No. 13, but thought that the New Zealand proposals did not necessarily meet the needs of all Administrations and that an east-west extension would be desirable. The arrangement of channels suggested in Document No. 13 would necessitate the use of a larger number of guard bands than would the arrangements previously proposed.

The delegate of New Zealand explained that Document No. 13 did not deal with all aspects of the question and should be considered in conjunction with Document No. 45.

In reply to a question raised by the delegate of Colombia on paragraph 8.2, he said that the text had been prepared with a view to meeting the needs of countries possessing dispersed islands. It should not be forgotten that the

Pacific islands would rely exclusively on the Broadcasting-Satellite Service. Adequate orbital capacity would therefore have to be provided for these land areas.

In the light of the above statements, the Committee took note of Document No. 13 and Corrigendum No. 1.

The meeting rose at 1200 hours.

The Secretary :
D. KANE

The Chairman :
A. PETTI

Annexes : 2

ANNEX 1

STATEMENT BY THE INDONESIAN DELEGATION

"Mr. Chairman,

Referring to the statement of Uganda, the delegation of the Republic of Indonesia has the following opinion :

It would be wise to consider and study the matter from all existing international and national points of view.

These are, among others :

1. the views and principles expressed by the delegation of Colombia,

2. technical and legal problems arising from the geostationary orbit.

The frequency spectrum and the space, to describe the geostationary satellite orbit, are in fact limited natural resources.

We are aware that the principle of "first come, first served" is becoming inadequate. We recognize also that it will be quite some time before a large number of small and developing nations will have the means for placing their own satellites in the geostationary orbit. But this situation gives no reason why the problem should be stored away. Therefore, Mr. Chairman, we should bear in mind the following questions :

1. to find a system of advanced planning and coordination which will be flexible and can ensure the availability of the very limited resources for late-comers;

2. to review the dubious principle of "first come, first served";

3. has the first occupier the right to occupy, continuously, a particular orbital location?

Finally, Mr. Chairman, since the matter of the geostationary orbit is not a simple one, from the technical as well as from the legal points of view, it necessitates exhaustive solving of the questions and concentration from all of us because of its complexity, and it has been neglected for some time."

A N N E X 2

STATEMENT BY THE DELEGATION OF ECUADOR

"Mr. Chairman,

The Ecuadorian delegation listened with the utmost attention to the presentation of Document No. 9 by the distinguished Canadian delegation.

The Ecuadorian delegation already commented on this document when it was submitted in Committee 4. In short, these comments fully coincide with the position adopted by Colombia in previous days and recalled this morning by the delegations of Uganda and Indonesia. I shall therefore confine myself, Mr. Chairman, to echoing the point that this Conference is not competent to deal with these matters.

The view of the Ecuadorian delegation is that there are no grounds for discussing the distribution of segments of the geostationary orbit situated above the land or sea areas under the jurisdiction of the equatorial countries, since there is a stated legal position which, as suggested by the distinguished Indonesian delegation, should be duly taken into account and analyzed by the Conference. In this sense, Mr. Chairman, I agree that the Conference is not competent to discuss the distribution of these segments.

Thank you.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 137-E
24 January 1977
Original : English/French

COMMITTEE 5

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 5

(Planning)

Friday, 14 January 1977, at 0905 hrs and at 1410 hrs

Chairman : Mr. A. PETTI (Italy)

Subjects discussed :	Document No. :
1. Presentation of documents (continued)	14, 15 and Corr.1, 16 and Add.1 and 2, 17, 18, 24, 27, 29(Rev.1), 30(Rev.1), 31, 32, 33, 34, 35, 39, 40, 42, 43, 45, 52, 58, 60, 61, 62
2. Organization of work of the Committee	DT/7
3. Other business	

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1. Presentation of documents (Documents Nos. 14, 15 and Corr.1, 16 and Add.1 and 2, 17, 18, 24, 27, 29(Rev.1), 30(Rev.1), 31, 32, 33, 34, 35, 39, 40, 42, 43, 45, 52, 58, 60, 61, 62) (continued)

Document No. 14

The delegate of the USSR said that those of his delegation's proposals which concerned Committee 5 appeared in Section 2 of the document.

Document No. 15 and Corr.1

The delegate of the Federal Republic of Germany said that his delegation's proposal D/15/1 was of interest to Committee 5, whereas the regulatory text for calculating power flux-densities, contained in the Annex, fell within the competence of Committee 4.

Document No. 16 and Add.1 and 2

The representative of the IFRB said he had nothing to add to the introduction of the basic document in Committee 4, except that information which had not been communicated to the IFRB had inadvertently been included in columns 7 to 12 of Addendum 2 with respect to certain administrations. It would be seen from Remark No. B017 that the values had been calculated by the IFRB; they were, of course, subject to acceptance by the administrations concerned of the system characteristics already approved.

Document No. 17

The delegate of the United Kingdom said that the planning aspects of his delegation's proposals were to be found primarily on page 1 of the document.

Document No. 18

The delegate of Japan said that Committee 5 was concerned with Sections 1 and 2 of his delegation's document.

Document No. 24

The delegate of Mexico said that his delegation's proposals in Section 7 of the document were based on the realization that, although the terms of reference of the Conference required it to do everything in its power to draw up an *a priori* Plan, although the CCIR had provided the necessary technical data and although a number of administrations had submitted their requirements, some of the proposals for the work of the Conference did not take the preparation of a Plan into account, but merely set out technical parameters for the use of the 12 GHz band. Accordingly, without prejudging the results of the Conference, the Mexican delegation had proposed certain measures which would guarantee the possibility of developing broadcasting-satellite systems until a definitive Plan could be produced.

Document No. 27

The representative of the IFRB said that the parts of the document which mainly concerned Committee 5 were Annexes 1 to 5, describing methods of calculation and computer programmes. It would be seen that, in addition to a brief description of a computer programme for calculating the basic characteristics of a space station in the Broadcasting-Satellite Service, Annex 1 also referred to a simplified manual method for use by administrations which would be content with approximate calculations. The computer programme described in Annex 2 was primarily intended to calculate the protection margins of broadcasting-satellite systems in relation to all the satellites in the Plan; it would be used, first, in conjunction with the programme in Annex 5 on channel allocation, to determine the protection margin for each pair of wanted and unwanted broadcasting satellites and, secondly, for the overall calculation of interference levels. Annex 3 was self-explanatory, and the IFRB Secretariat was prepared to supply administrations with the simplified programme referred to in Annex 4 for use in portable calculators.

Detailed explanations, especially of the manual methods described, would be given at the forthcoming information meeting. The IFRB would also provide delegations with the results of its calculations : a condensed summary of the positions of all satellites would be issued as a Conference document and each delegation would be given, directly on paper from the computer, the first eight unwanted satellites and the protection margin obtained at six control points.

Document No. 29(Rev.1)

The delegate of Kenya introduced his delegation's proposals, stressing that the effects of rainfall on propagation in the bands above 10 GHz had not been studied for the African and Arab countries, whereas those effects were so serious in the areas concerned as to warrant a higher protection margin.

The delegate of Sudan endorsed those remarks.

Document No. 30(Rev.1)

The delegate of Nigeria introduced his delegation's proposals and the draft resolution annexed thereto.

Documents Nos. 31 and 32

The delegate of France said that the two documents, which complemented one another, had already been introduced in Committee 4. Sections 1, 2 and 3 of Document No. 31 set out reception characteristics which it should be possible to obtain. Referring to the table, he said that "ABAB" and "ABCD" should be inserted, respectively, at the top of the first and second columns. In the paragraph immediately following the table, the English abbreviation "CF" was incorrect; the correct translation of "FC" ("fréquence conjuguée") was "image frequency". With regard to Section 3, he stressed the need for each country to conduct studies in order to identify the available channels.

Document No. 32 discussed some examples of reception configurations. Sections 5 and 6, in particular, were concerned with collective receiving systems in fairly common use in the European area.

Document No. 33

The delegate of Brazil said that his Administration's proposals had already been introduced in Committee 6. For the purposes of the present meeting, he drew particular attention to the observations and proposals contained in Sections 2.3, 2.6, 3.3 and 3.4 of the document.

Document No. 34

The delegate of Australia said that although Document No. 34 had been assigned to Committees 4 and 5, it was primarily of interest to the latter. It was concerned with the method to be used for deriving and adopting channels, having regard to the desirability of taking into account the requirements of the fixed service. If the broadcasting-satellite channels were grouped together in one part of the band for each service area, it would be necessary to establish a separate frequency assignment plan in a different part of the band for the fixed service. In view of the complications to which such a system would give rise, particularly in respect of overlapping between different service areas, the Australian Administration considered that the Conference should draw up a plan which could be used by all the services sharing the band and, with that end in view, recommended that the principles set out in Document No. 34 should be taken into account by the Committee.

The delegate of New Zealand, referring to Figure 1, said that his delegation intended to submit an alternative which was based on wider channel spacing, but proceeded from the same concept as that adopted by the Australian Administration.

Document No. 35

The delegate of Australia said that the document, which had been introduced in Committee 4, was of interest also to Committee 5. His delegation considered that it would be advantageous for all the services sharing the 12 GHz band to extend the latter by up to 300 MHz in Regions 2 and 3. Recognizing that the Conference was not competent to alter the Radio Regulations, the Australian Administration proposed that the CCIR should be requested to study the technical and operational factors affecting the use of the band 11.7 - 12.5 GHz and, in particular, its extension in Regions 2 and 3 for the Broadcasting-Satellite Service. Furthermore, in establishing sharing criteria and plans, consideration should be given to such possible future extension, particularly in respect of compatibility between regions.

Document No. 39

The delegate of Australia, after observing that the document had been introduced in Committee 4, stressed the need to take into account the problem of out-of-band emissions from the broadcasting-satellite channels which would appear in the plan fairly near to the edge of the 11.7 - 12.5 GHz band. His delegation hoped that the Working Group of Committee 4 which would be considering the problem would be able to put forward agreed proposals that could be used for planning purposes.

Document No. 40

The delegate of Denmark said that the document, which was being considered by Committee 4, was self-explanatory.

Document No. 42

The delegate of Venezuela said that his Administration's proposals could be summed up in seven points. First, the plan should be drawn up on a world-wide basis and for all three regions simultaneously, using the same planning approach and criteria. Second, it should guarantee access to the service for all countries on the basis of their respective requirements, and Committee 5 should work out the parameters to be used to define those requirements; in that connection, his Administration did not consider that an "evolutive" plan would provide sufficient guarantee of access for all nations of the world. Third, the plan should be sufficiently comprehensive, precise and unequivocal to be immediately applicable. Fourth, conformity with the world plan should be a prerequisite for the introduction of geostationary satellites using the band in question. Fifth, the plan should be sufficiently flexible to allow for revision and modification by a future world administrative conference; however, it should not contain gaps that might be filled later through bilateral agreements. Sixth, it should be based on individual reception. Finally, sharing criteria should be laid down in order to permit the utilization of the bands in question by terrestrial services.

Document No. 43

The delegate of Yugoslavia said that the proposals in Document No. 43 had already been introduced in Committee 6. He drew particular attention to the comments and proposals in paragraphs 1.1, 2 and 5.

Document No. 45

The delegate of New Zealand said that Document No. 45 extended and developed material covered in Document No. 13 and also provided some new material for consideration by the Conference. Section 1.2 extended the practical use of the honeycomb lattice concept referred to in Section 9.3 of Document No. 13. Sections 2.1 to 2.6, together with Figures 6 and 7, clarified and enlarged upon the basic lattice grid concept and also introduced the concept of single-column and multi-column lattices. Section 2.7, together with Figures 8 and 9, clarified the meaning of the "N" value in satellite-broadcasting lattices. The definition of crucial channelling areas given in that section was perhaps the most fundamental concept in the entire document and followed from the dB isolation tables in Document No. 13. Sections 3 and 4 set out some provisional rules and hypotheses relating to polarization and orbit sequence arrangement, and introduced an important difference between clumped and distributed orbit parameters in the north-south allocation columns.

Section 5 contained a detailed examination of low "N" value satellite lattice solutions. The N = 2 series, the use of which was implied in some proposals for the work of the Conference, was the most difficult to handle. The N = 3 series had a better performance, and Figure 20 illustrated a particular example of its use which could be applied on a world-wide basis to provide 8 programmes per footprint with 24 channels and 500 MHz. The N = 4 series was fairly unrewarding; its main usefulness consisted in showing what should not be done.

The N = 5 series was the most profitable for all concerned, including the fixed service; the use of Figure 29 or Figure 30 for small areas and of Figure 28 for medium or large area channelling constituted a possible and promising world-wide solution.

Section 6 might more appropriately have been entitled "The spectrum division channel block system". Comprehension of Section 7 would be facilitated by considering an actual lattice plan such as that given in Figure 28. Section 8.1 was concerned with the concept of a multi-tiered system which would cater for the future requirements of larger countries for additional coverage in provincial or smaller areas. Section 9 discussed the concept of reducing interference to the fixed services in other countries by restricting all unnecessary low-angle east/west radiation from broadcasting satellites. The same honeycomb and the same reasoning could be used to deal with other proposals that would produce similar undesirable results in terms of interference.

The delegate of India introduced Document No. 52, which presented his Administration's views. The Satellite-Broadcasting Service provided a good means of broadcasting to a population scattered over vast areas at reasonable cost, and since the 12 GHz band was a limited natural resource all countries should be entitled to an equitable share in it.

In view of the newness of satellite broadcasting and the rapid technological advances which were to be expected, some delegations had questioned the desirability of establishing a Plan at that juncture. However, recalling the chaos and confusion resulting from the haphazard growth of LF/MF broadcasting and the way in which the adoption of a Plan by the LF/MF Broadcasting Conference had improved the situation, his Administration strongly supported the adoption of an a priori Plan for satellite broadcasting which would ensure for the future a fair share of the orbit and spectrum for those countries not yet in a position to commence Broadcasting-Satellite Services. The Plan must be such as to provide reasonable flexibility and should be on the basis of individual reception.

So far as planning procedure details were concerned, he supported the USSR proposals in Document No. 14.

The delegate of France presented Document No. 58 on the choice of diameter of the reference receiving antenna for purposes of planning. He summarized the provisions of the document and reiterated the conclusion that his delegation advocated the adoption of a diameter of 0.75 m as a planning parameter.

The delegate of Cuba presented Document No. 60, touching briefly on his delegation's proposals and emphasizing that the fact that some countries in Region 2 had decided not to use fixed territorial services in the 12 GHz band, did not mean that all countries in the region must follow suit.

The delegate of Sudan introduced Documents Nos. 61 and 62 which had already been presented to Committee 4.

2. Organization of work of the Committee (Document No. DT/7)

The Chairman invited the Committee to consider the possible organization of work as proposed in Document No. DT/7, a proposal which had been produced to facilitate discussion on the basis of consultations with various groups of

delegations. The Committee might consider first whether it wished to set up three working groups.

The delegates of Kenya, Iran and India supported the setting up of three working groups as proposed in Document No. DT/7.

The delegate of Cuba questioned the propriety of the division of work between Working Groups 5A and 5B which suggested that the planning principles invoked for Regions 1 and 3 might be different from those for Region 2. It would be preferable to wait until Committees 4 and 5 had made some progress with their work, and once universal principles had been established, then to set up working groups to deal with regions on the basis of bandwidth and distribution of services.

The delegate of New Zealand said that in his view the formation of the working groups which automatically presupposed that each region would have a different system, was premature, and it would be better for the Committee to continue with joint discussions for a few days.

The delegate of the United Kingdom said that it was his delegation's view that all countries between the same lines of longitude were neighbours on the geostationary orbit and therefore had to be planned on some mutually agreed basis. Region 2 was the only region in which there was a Fixed-Satellite Service and the countries in that region had been happy to see that service established by the 1971 Space Conference, but the fact of its existence must have an impact on planning, and it was for the Region 2 countries, as neighbours on that part of the orbit, to determine the extent of the impact.

Another consideration to be borne in mind was that in Regions 1 and 3 there were considerably more countries to be accommodated in the plan than in Region 2, and those Regions were being given a very difficult task to do in a very short space of time. It was therefore desirable for them to proceed with it without waiting for Region 2 to settle its problems, particularly since the large areas of ocean between Region 2 and the other Regions provided some insulation.

The most difficult interfacing problem would arise not between broadcasting satellites, but between the sensitive Fixed-Satellite Service and the relatively powerful Broadcasting-Satellite Services. There was, therefore, no reason why a perfectly consistent broadcasting-satellite arrangement could not come later from Region 2 on a world-wide basis, and the first priority was for Regions 1 and 3 to proceed with the development of the plan as rapidly as possible.

In reply to a question by the delegate of Mauritania, the Chairman explained that because of the connections between Regions 1 and 3 it had been thought reasonable to deal with them in one working group, and to have a separate working group for Region 2 which was divided from Regions 1 and 3 by oceans and which had different problems. That did not preclude the establishment of a world plan, but would enable the working groups to choose the solutions which were best for the regions they were dealing with. Working Group 3 would cope with any inter-regional problems.

The delegate of Japan supported the views expressed by the United Kingdom delegate.

The delegates of the United States of America, Guatemala, Nigeria and Belgium supported the proposals made in Document No. DT/7 in the light of the views stated by the United Kingdom delegate.

The delegate of Chile supported the proposals of Document No. DT/7, while suggesting that the terms of reference of the working groups were to establish principles, but not a plan, and therefore the word "establish" in the second paragraph of each set of terms of reference might be changed to "consider".

The delegate of Australia suggested that the terms of reference of Working Group 5C should be enlarged to include problems of compatibility between Regions 1 and 3.

The Chairman said that those problems would be discussed in Working Group 5A.

The delegate of Algeria said that he would support Document No. DT/7 on the basis of the Chairman's explanation that the setting up of the three working groups would not in any way prejudge the possibility of the establishment of a world plan.

The Chairman said that the Committee had decided by a clear majority in favour of the setting up of three working groups.

He invited delegates to consider the terms of reference of Working Group 5A.

The United States delegate proposed the addition of the phrase "on an equal primary basis" after the word "shared" in the penultimate line, and the Venezuelan delegate proposed the further addition of the words "and the terrestrial service".

The delegate of Italy suggested that the terms of reference, if thus amended, might be in contradiction with Radio Regulation 405BA.

The meeting was suspended at 1200 hours and resumed at 1410 hours.

The delegate of the United Kingdom suggested that the words "the fact that the band 11.7 - 12.2 GHz is shared with the Fixed-Satellite Service in Region 2" should be replaced by the words "the output of Working Group 5C".

The delegate of the United States of America supported that suggestion in principle, but thought that the word "work" would be preferable to the word "output" because it avoided the implication that Working Group 5A should have to wait for Working Group 5C to complete its work.

The delegate of Australia reiterated the suggestion made earlier to the effect that Working Group 5A should take into account the other services which shared the band on an equal primary basis.

After a brief discussion in which the delegates of Italy, the United Kingdom and Turkey took part, the delegate of Mexico suggested that the point might be covered by adding a reference to the relevant provisions of Article 5 of the Radio Regulations.

The delegates of Italy and Portugal supported that suggestion.

The Chairman invited the Committee to approve the revised terms of reference of Working Group 5A, reading as follows :

"To establish the principles on which planning should be based for the Broadcasting-Satellite Service in the bands 11.7 - 12.2 GHz (Region 3) and 11.7 - 12.5 GHz (Region 1).

To establish an appropriate plan for the Broadcasting-Satellite Service in Regions 1 and 3, taking into account the relevant provisions of Article 5 of the Radio Regulations and the work of Working Group 5C.

To determine the data to be included in the plan."

Those terms of reference were approved.

The Chairman invited delegates to consider the terms of reference of Working Group 5B as set out in Document No. DT/7.

Those terms of reference were approved.

The Chairman invited delegates to consider the terms of reference of Working Group 5C as set out in Document No. DT/7.

The delegate of India proposed the addition of the words "if any" after the word "problems" in the first line.

That proposal was adopted.

The delegate of Colombia requested that the Spanish text of the first sentence should be brought into line with the French and English texts.

The terms of reference of Working Group 5C, as amended, were approved.

The Chairman called for nominations to the office of Chairmen of the Working Groups.

Working Group 5A

The delegate of Kenya nominated Mr. Temple (United Kingdom) as Chairman.

The delegates of Nigeria, Sudan, Tunisia, Senegal, Yugoslavia, Zaire, India, Ivory Coast, Iran, Ghana, Morocco, Japan and Belgium seconded the nomination.

Mr. Temple (United Kingdom) was elected Chairman of Working Group 5A by acclamation.

The delegate of Mauritania suggested that Mr. Temple should be assisted in his work by representatives of the African and Asian countries, respectively.

It was so agreed.

Working Group 5B

The delegate of Venezuela proposed that the Canadian delegation should put forward the name of one of its members to serve as Chairman.

The delegates of Brazil, Guatemala, India, Chile and the United States of America seconded that proposal.

The delegate of Canada put forward the name of Mr. Blevis.

Mr. Blevis (Canada) was elected Chairman of Working Group 5B by acclamation.

Working Group 5C

The delegate of Indonesia nominated Mr. Rao (India) as Chairman of Working Group 5C.

The nomination was supported by the delegates of the following countries : Malaysia, Senegal, United States of America, Kenya, Iran, Norway, United Kingdom, Zaire, Nigeria, USSR, Japan, Brazil and Yugoslavia.

Mr. Rao (India) was elected Chairman of Working Group 5C by acclamation.

Mr. Rao (India) thanked the members of the Committee for the confidence which they had demonstrated in him and assured them that he would do his utmost to bring his task to a successful conclusion.

3. Other business

The delegate of Papua-New Guinea said that he would like the IFRB, when it studied the list of frequency requirements, and the possibility of altering orbital positions, to take into account the fact that utilization of the 12 GHz band offered the only possibility for Papua-New Guinea to introduce television into its country. So far as the establishment of a satellite-broadcasting system was concerned, in view of the limited resources at its disposal, Papua-New Guinea would be prepared to consider the possibility of sharing a space segment with another country.

The meeting rose at 1515 hours.

The Secretary :

D. KANE

The Chairman :

A. PETTI

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 138-E
24 January 1977
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WORKING GROUP 5A

Sub-Working Group 5A3

PROBLEMS OF THE PARTS OF REGIONS 1 AND 3 WITH THE HIGHEST DENSITY OF REQUIREMENTS IN THE ORBITAL ARC

1. Introduction

Sub-Working Group 5A-3 has proceeded with a first investigation with proposed 6°-spaced orbit positions as close as practicable to those preferred, taking into account the upper limit to the number of assignments that can be accommodated from one orbit position. A TDF print-out of the transmitting antenna discrimination matrix has identified some residual problems where there is a high density of requirements.

2.1 Central Europe

In the above-mentioned proposals for orbit positions, it was found that two groups of Central European countries were placed in adjacent orbit positions (6° apart). The first group is :

AUT, BEL, D, F, HOL; I, LUX, SUI

on position 16°W which has been indicated as a desirable common position. The second group is :

ALB, BUL, DDR, HNG, POL, ROU, TCH, YUG

who have required an orbit position not further East than about 10°W.

A problem arises because the first group contains 8 countries and all 40 channels must be used in the group to give the required 5 programmes each, and because of the fact that at least one country (DDR) of the second group is geographically close to every member of the first group. As a result a choice of channels that is satisfactory for every member of the first group cannot be made without the existence of significant co-channel interference.

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This problem can be seen in detail by reference to a matrix of total antenna discrimination (cross-polar, co-channel) for 6^{o} orbit spacing (Figure 1). There seems to be a need to obtain about at least 3 dB extra discrimination, taking into account that more than one interference entry may occur.

Possible courses open are :

a) to modify the orbital separation for the two groups to at least 18^{o}. A separation of 12^{o} does not give any advantage;

b) it may be possible to have a small improvement which is just sufficient if in the case of the most difficult pairs of assignments the transmitting antenna pointing accuracy is improved, for example 0.05^{o} for 99 % of time;

c) to reduce the number of programmes in each service area to 4. This requires further examination;

d) to modify the assumed receiving antenna pattern so that 33 dB cross-polar discrimination is obtained 6^{o} off-axis.

2.2 Asia

The part of the orbital arc which appears most likely to give rise to problems similar to those in Central Europe has been examined. However, the corresponding matrix for total antenna discrimination shows that nearly half of the values are 34 dB or greater, and that there should therefore be far fewer difficulties in determining satisfactory co-channel assignments (Figure 2).

2.3 Africa

The situation here is still being examined, but it appears at first sight that any problem will be less serious than that in Central Europe.

R. RYVOLA
Chairman of Sub-Working Group 5A-3

Annexes : 2 Figures

A N N E X E - A N N E X - A N E X O

	BEL	HOL	LUX	F	D	SUI	I	AUT
DDR	31	30.5	30.9	29.4	26.1	29.7	30	29.6
BUL	52.3	52.6	52.1	39.2	47.5	49.2	31.7	40.7
ROU	49.6	49.6	48.6	36.5	40.1	45.5	30.1	32.1
POL	36.3	35.7	36.8	34.1	27.7	33	31.1	27.7
HNG	49.7	49.8	48.1	32.8	31.2	34.7	28.4	28.3
TCH	33.4	33.5	33.4	31.1	26.4	30.4	29.8	28
ALB	52.6	52.5	52.8	36.4	45.7	50.8	28	41.2
YUG	39.2	39.6	37.9	30.1	29.4	31.4	27.0	28.0

6° orbit spacing

Figure 1

	12° CO-POLAR				6° X-POLAR		
	CHN-1	CHN-2	CHN-3	CHN-4	CHN-5	CHN-6	MLA-W
BGD	38	26	35	30	>40	>40	>40
BRM	40	26	29	25	38	32	32
LAO	>40	35	>40	25	>40	31	>40
MNG	24	38	25	34	28	>40	>40
URS-5	24	>40	32	>40	>40	>40	>40

74°E	62°E	80°E

Figure 2

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

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WORKING GROUP 5A

Sub-Working Group 5A2

PROGRESS REPORT - SUB-WORKING GROUP 5A2

1. We have allocated orbit positions/channels for each country in Regions 1 and 3.

2. Cards for Region 1 have been punched and put in the computer. Computer could not find beam for MTO (0288) (Mauritania) which was in the LNT but missing in the file. Use has been made of the other Mauritania beam MTN (0223).

Implication of the above is that it might affect the interference level on Channels 1, 5, 9, 13 and 17. Correction being done for the next run.

3. Cards for Region 3 are being punched and will be ready by 6 p.m. today. This will be checked and corrected if necessary. Punching of corrected cards will be done tonight and put in the computer.

4. We have listed the countries according to the orbit positions (see the Annex).

5. We are calculating the orbit limits according to the guidelines given in Document No. DL/15.

6. An initial proposal for orbit positions from Sub-Working Group 5A2 is attached. This proposal is for the purpose of consultation and calculation of interferences. An explanation for the reason for indicating some countries outside of the orbital arc set by the guidelines (Document No. DL/15) is given in a separate paper together with other relevant observations.

Annex : 1

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A N N E X E - A N N E X - A N E X O

Position	-34	-28	-22	-16	-10	-4	+2	+8	+14	+20	+26
	GUI	IRL	MTN1	I(5)	LIE	RHS	NOR1	F(1)	YEM	IRQ	OMA1
	LBR	GHA	TUN1*	COG	TCD	ALB	NOR2	TGK	SYR	URS1	OMA2
	ICV	POR	TUN2*	BEL	DDR*	EGY	DNK1	LSO	AFI	URS2	OMA3
	SEN	AZR	MRC	AGL		SMR	DNK2	KEN*	YMS	URS9	OMA4
		AND1*	LBY		ROU	GRC*	S1	ETH	ARS1*	URS10	BHR
	GMB	AND2*	STP	CME	ASO	MLT	S2	UGA	ARS2*	URS11	QAT
	NIG	AND3*	ALG	HOL	TCH	POL*	FNL1	MWI	LBN	REU*	KWT*
	SRL	MCO1*	E	DAH*	SDN1	TUR*	FNL2	SOM	JOR	MDG	UAE
	GNP	G	CNR	AUT1*	SDN2	BOT	RRW			COM	
	MLI1*	CTI	ISL1	AUT2*	SDN3	CYP*	AFS1			BLR	
	MLI2*	CVA1	MTN2	D1*	BUL		AFS2			UKR	
		TGO		D2*	ZMB		AFS3			MYT*	
		HVO		SUI1*	YUG1		AFS4				
		I(2)		SUI2*	HNG		BDI				
		MCO2*		CAF*	YUG2		ISR				
		CVA2*		F	NGR		SWZ				
		CVA3*		ZAI			MOZ				
				GNE			ISL2				
				LUX							
				GAB							

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Position	+32	+38	+44	+50	+56	+62	+68	+74	+80
	MAU1	PAK1	CLN	AFG1	IND9	IND5	BRM	CBG	CHN5
	MAU2	PAK2	MLD	AFG2	IND2	IND6	THA	BGD	CHN6
		PAK3	URS3	NPL	IND3	IND7	IND1	LAO	CHN10
		PAK4	URS13	URS4	IND4	IND8	IND10	INS1	CHN11
		PAK5	URS16	URS15		CHN1	IND11	INS2	CHN12
			URS17	URS12		CHN2	IND12	INS3	CHN23
			URS14			CHN3		VTN	CHN24
						CHN4		SNG	CHN25
						CHN30			CHN34
						CHN31			CHN28
						CHN32			CHN29
						CHN33			MLA1
						CHN35			MLA2
									MNG
									URS5
									URS18
									URS19
	+140		+152		+158		+170		-160
	NCL		FJI		NZL		TON		OZE
	WAL				CKH				
	URS7				SMO				
	URS8				CKN				
	URS21				TKL				
	NHB				NIU				

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Position	+86	+92	+98	+104	+110	+116	+122	+128	+134
	INS4	CHN7	CHN9*	AUS1	J			AUS4	NRU
	INS5	CHN8	CHN21*	AUS2	PNG			AUS5	
	INS6	CHN(10)13	CHN22*	AUS3	URS6			AUS6	
	INS7	CHN14	INS8	KOR	URS20			PNG	
		CHN15	INS9					NZL	
		CHN16	KRE						
		CHN17	CHN26*						
		CHN18	CHN27*						
		CHN19							
		CHN20							
		PHL							

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

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WORKING GROUP 5A

REPORT OF JOINT MEETING OF SUB-WORKING GROUPS 5A2 AND 5A3 ON PLANNING PARAMETERS (20 January 1977)

The joint meeting noted Documents Nos. 66, 67, 68, 69, 75, 77, 78, 79, 80, 86, 92, 93, 97 and 105, which provide much of the essential technical data for planning. Other technical principles related to planning were discussed, with the following results :

a) The orbital spacing is tentatively taken as 6° starting at 2°E.

b) Recognizing that Working Group 5A has adopted a principle of planning with approximately 20 MHz channel spacing, a figure of 14 dB is proposed for the adjacent-channel protection ratio. For obtaining the protection margins 1 dB will be added to the protection ratio.

c) It was not considered necessary to agree at this stage on the use of a single system of channel grouping for both Regions 1 and 3. The decision as to a preferable grouping was left to each Sub-Working Group to make independently.

d) The use of alternate polarizations on alternate channels may be used as a useful technique within a limited geographical area but, taking the plan as a whole, the use of both polarizations on each channel and from each orbit position can be allowed.

e) The question of the grouping of countries requesting the same orbital position was discussed because there appeared to be an excessive number of countries making such requests for certain orbit positions. It was decided to resolve this matter through the consultation process adopted at the second meeting of Working Group 5A.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

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WORKING GROUP 6B

Report of Sub-Working Group 6B2

PROCEDURES FOR COORDINATION, NOTIFICATION AND REGISTRATION FOR STATIONS OF TERRESTRIAL SERVICES IN THE BANDS 11.7 - 12.2 GHz (IN REGIONS 2 AND 3) and 11.7 - 12.5 GHz (IN REGION 1) IN THE CASE BROADCASTING-SATELLITE STATIONS ARE INVOLVED

The Sub-Working Group having considered procedures for coordination, notification and registration for stations of Terrestrial Services in the frequency bands under consideration has reached the following conclusions :

1. It is proposed that in the 11.7 - 12.2 GHz band (12.5 GHz in Region 1) the requirements for consultation between a country wishing to introduce a terrestrial station and a country with a planned or operational satellite broadcasting service should be based on the power flux-density produced by the terrestrial station at the other country's /edge of service area/ frontier/. This density should be compared to a limit necessary to protect the Broadcasting-Satellite Service. No consultation between administrations would be necessary if the interfering power flux-density produced by the terrestrial station is found to be less than the limit for any point on the /edge of service area/ frontier/. The Annex proposes a regulatory text and a method for calculating the limiting power flux-density and the power flux-density produced by a terrestrial station, the technical details of the method and the values to be inserted being subject to confirmation by Committee 4.

2. In cases where the terrestrial station has not to be coordinated the present provisions of Nos. 486, 490 and 501 of the Radio Regulations apply.

3. In cases where the terrestrial station is to be co-ordinated, a coordination procedure as described in provisions Nos. 492A to 492GB of the Radio Regulations in which the coordination distance approach is replaced by the power flux-density approach, apply.

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4. The notification and registration of such assignments are to be done in application of provisions of No. 486 of the Radio Regulations and following, and sub-section IIB of Article 9. A terrestrial station could be recorded, with an unfavourable finding relating to technical examination. However, it should cease emission as soon as harmful interference is reported.

5. The details of the procedure are outlined in the Annex.

This Report has been adopted by the Sub-Working Group.

K. OLMS
Chairman of Sub-Working Group 6B2

Annex : 1

A N N E X

COORDINATION, NOTIFICATION AND RECORDING IN THE MASTER INTERNATIONAL FREQUENCY REGISTER OF FREQUENCY ASSIGNMENTS TO TERRESTRIAL STATIONS IN THE FREQUENCY BAND 11.7 - 12.2 GHz (IN REGIONS 2 AND 3) AND 11.7 - 12.5 GHz (IN REGION 1) IN THE CASE BROADCASTING-SATELLITE STATIONS ARE INVOLVED[1)]

Section I. Coordination procedure to be applied

1. Before a /contracting/ Administration notifies to the Board a frequency assignment to a terrestrial transmitting station, it shall initiate coordination with any other Administration for which an assignment to a broadcasting-satellite station appears in /the Plan/ if

- the occupied bandwidths of the two transmissions overlap or are separated by less than /---/ MHz and

- the PFD which would be produced by the proposed terrestrial transmitting station exceeds

  /--- dBW/m^2/

  /the value specified in /the Plan/ for the service area concerned/

  /a value derived in accordance with Appendix /X//

  at one or more points of /the frontier/ /the edge of service area of the Broadcasting-Satellite Service station/.

1.1 For the purpose of effecting the coordination, the administration responsible for the terrestrial station shall send to the administrations concerned by the fastest possible means, 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 bring the station into use.

---

1) These procedures do not dispense from applying the procedures prescribed for terrestrial stations in Article 9 of the Radio Regulations in the case where stations other than those of the Broadcasting-Satellite Service are involved.

1.2 An administration with which coordination is sought shall acknowledge receipt of the coordination data immediately by telegram. If no acknowledgement is received within fifteen days of dispatch, the administration seeking coordination may dispatch a telegram requesting acknowledgement of receipt of the coordination data, to which the receiving administration shall reply. Upon receipt of the coordination data an administration shall promptly examine the matter with regard to interference[1] which would be caused to its assignments operating in accordance with /the Plan/ and shall, within an overall period of sixty days from dispatch of the coordination data, either notify the administration requesting coordination 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.

1.3 No coordination is required when an administration proposes to change the characteristics of an existing assignment in such a way as not to increase the level of interference to the earth stations of other administrations.

1.4 An administration seeking coordination may request the Board to endeavour to effect coordination, in those cases where :

a) an administration with which coordination is sought fails to acknowledge receipt under paragraph 1.2 within thirty days of dispatch of the coordination data;

b) an administration which has acknowledged receipt under paragraph 1.2 but fails to give a decision within ninety days of dispatch of the coordination data;

c) there is disagreement between the administration seeking coordination and an administration with which coordination is sought as to the acceptable level of interference; or

d) coordination 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 endeavour to effect such coordination.

1.5 Either the administration seeking coordination or an administration with which coordination is sought, or the Board, may request additional information which they may require to assess the level of interference to the services concerned.

1.6 Where the Board receives a request under paragraph 1.4 a), it shall forthwith send a telegram to the administration concerned requesting immediate acknowledgement.

---

1) The criteria to be employed in evaluating interference levels shall be based upon relevant CCIR Recommendations or, in the absence of such Recommendations, shall be agreed between the administrations concerned.

1.7 Where the Board receives an acknowledgement following its action under paragraph 1.6 or where the Board receives a request under paragraph 1.4 b), it shall forthwith send a telegram to the administration concerned requesting an early decision in the matter.

1.8 Where the Board receives a request under paragraph 1.4 d), it shall endeavour to effect coordination in accordance with the provisions of paragraph 1.1. Where the Board receives no acknowledgement of its request for coordination within the period specified in paragraph 1.2, it shall act in accordance with paragraph 1.6.

1.9 Where an administration fails to reply within thirty days of dispatch of the Board's telegram sent under paragraph 1.6 requesting an acknowledgement, or fails to give a decision in the matter within sixty days of dispatch of the Board's telegram of request sent under paragraph 1.7, it shall be deemed that the administration with which coordination was sought has undertaken that no complaint will be made in respect of any harmful interference which may be caused by the terrestrial station being coordinated to the service rendered by its earth station.

1.10 Where necessary, as part of the procedure under paragraph 1.4, the Board shall assess the level of interference. In any case, the Board shall inform the administrations concerned of the results obtained.

1.11 In the event of continuing disagreement between one administration seeking to effect coordination and one with which coordination has been sought, provided that the assistance of the Board has been requested, the administration seeking coordination may, after sixty days from the date of the request for the assistance of the Board, taking into consideration the provisions of paragraph 2.3, send its notice concerning the proposed assignment to the Board.

1.12 / Where the Board receives information from an administration in accordance with the provisions of No. 639AQ in reply to a request for coordination for an earth station, it shall consider as notifications under this Section, only that information relating to assignments to existing terrestrial stations or to those to be brought into use within the time limits defined in No. 491. Such notifications shall be examined by the Board with respect to the provisions of Nos. 570AB and 570AD, as appropriate, and shall be treated accordingly. / depending on the decisions of Working Group 6A on proposal J/18/30

Section II. Notification of frequency assignments

2.1 Any frequency assignment to a fixed, land or broadcasting station shall be notified to the International Frequency Registration Board if the use of the frequency concerned is capable of causing harmful interference to the service rendered by a broadcasting-satellite station of another administration.

---

1) The attention of administrations is specifically drawn to the application of the provisions of paragraph 1 above.

2.2 For this notification, an individual notice for each frequency assignment shall be drawn up as prescribed in Section A of Appendix 1 to the Radio Regulations, which specify 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 that Appendix, together with such further data as it may consider appropriate.

2.3 Whenever practicable, each notice should reach the Board before the date on which the assignment is brought into use. The notice made in accordance with paragraph 2.2 must reach the Board not earlier than three years and not later than ninety days before the date on which the assignment is to be brought into use.

2.4 Any frequency assignment, the notice of which reaches the Board less than ninety days before it is brought into use, shall, where it is to be recorded, bear a remark in the Master Register to indicate that it is not in conformity with paragraph 2.3.

Section III. Procedure for the examination of notices and the recording of frequency assignments in the Master Register

3.1 Whatever the means of communication, including telegraph, by which a notice is transmitted to the Board, it shall be considered complete if it contains at least those appropriate basic characteristics specified in Section A of Appendix 1 to the Radio Regulations.

3.2 Complete notices shall be considered by the Board in the order of their receipt.

3.3 Any notice which is incomplete shall be returned by the Board immediately, by airmail, to the notifying administration with the reasons therefor.

3.4 Upon receipt of a complete notice, the Board shall include the particulars thereof, with the date of receipt, in a weekly circular sent by airmail to administrations, Members and Associate Members of the Union; this circular shall contain the particulars of all such notices received since the publication of the previous circular.

3.5 The circular shall constitute the acknowledgement to the notifying administration of the receipt of a complete notice.

3.6 Complete notices shall be considered by the Board in the order specified in paragraph 3.2. The Board cannot 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.

3.7 The Board shall examine each notice :

3.8 a) with respect to its conformity with the Convention the relevant provisions of the Radio Regulations and the other provisions of the Final Acts (with the exception of those relating to the coordination procedure and the probability of harmful interference);

3.9 b) with respect to its conformity with the provisions of paragraph 1.1 relating to coordination of the use of the frequency assignment with the other administrations concerned;

3.10 c) where appropriate, with respect to the probability of harmful interference to a broadcasting-satellite station existing in the / Plan /.

3.11 Depending upon the findings of the Board subsequent to the examination prescribed in paragraphs 3.8, 3.9 and 3.10, further action shall be as follows :

3.12 Finding unfavourable with respect to paragraph 3.8.

3.13 Where the notice includes a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115 of the Radio Regulations, it shall be examined immediately with respect to paragraphs 3.9 and 3.10.

3.14 If the finding is favourable with respect to paragraph 3.9 or 3.10, as appropriate, 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.

3.15 If the finding is unfavourable with respect to paragraph 3.9 or 3.10, as appropriate, the notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding. Should the administration insist upon reconsideration of the notice, the assignment shall be recorded in the Master Register. However, this recording is made under the condition that the notifying administration undertakes to cease immediately the emission as soon as harmful interference is reported.

3.16 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 of the Radio Regulations, 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.

3.17 If the notifying administration resubmits the notice unchanged, it shall be treated in accordance with the provisions of paragraph 3.16.

3.18 If the notifying administration resubmits the notice with a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115 of the Radio Regulations, it shall be treated in accordance with the provisions of paragraphs 3.13 and 3.14 or 3.15, as appropriate.

3.19 If the notifying administration resubmits the notice with modifications which, after re-examination, result in a favourable finding by the Board with respect to paragraph 3.8, the notice shall be treated under the provisions of paragraphs 3.20 to 3.32. However, in any subsequent recording of the assignment, the date of receipt by the Board of the resubmitted notice shall be entered in Column 2d.

3.20 Finding favourable with respect to paragraph 3.8.

3.21 Where the Board finds that the coordination procedure mentioned in paragraph 3.9 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.

3.22 Where the Board finds that the coordination procedure mentioned in paragraph 3.9 has not been applied, and the notifying administration requests the Board to effect the required coordination, 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 paragraph 3.21. If the Board's efforts are unsuccessful, the notice shall be examined by the Board with respect to the provisions of paragraph 3.10.

3.23 Where the Board finds that the coordination procedure mentioned in paragraph 3.9 has not been applied, and the notifying administration does not request the Board to effect the required coordination, 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.

3.24 Where the notifying administration resubmits the notice and the Board finds that the coordination procedure mentioned in paragraph 3.9 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 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.

3.25 Where the notifying administration resubmits the notice with a request that the Board effect the required coordination, it shall be treated in accordance with the provisions of paragraph 3.22. 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.

3.26 Where the notifying administration resubmits the notice and states it has been unsuccessful in effecting the coordination, it shall be examined by the Board with respect to the provisions of paragraph 3.10. 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.

3.27 Finding favourable with respect to paragraphs 3.8 and 3.10.

3.28 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.

3.29 Finding favourable with respect to paragraph 3.8 but unfavourable with respect to paragraph 3.10.

3.30 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.

3.31 Should the notifying administration resubmit the notice with modifications which result, after re-examination, in a favourable finding by the Board with respect to paragraph 3.10, 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.

3.32 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 paragraph 3.31 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 recording is made under the condition that the notifying administration undertakes to cease immediately the emission as soon as harmful interference is reported.

3.33 Change in the Basic Characteristics of Assignments already recorded in the Master Register.

3.34 A notice of a change in the basic characteristics of an assignment already recorded, as specified in Appendix 1 to the Radio Regulations (except those entered in Columns 3 and 4a of the Master Register), shall be examined by the Board according to paragraphs 3.8 and 3.9 and, where appropriate, paragraph 3.10 and the provisions of paragraphs 3.12 to 3.32 inclusive applied. Where the change should be recorded, the original assignment shall be amended according to the notice.

3.35 However, in the case of a change in the basic characterisitcs of an assignment which is in conformity with paragraph 3.8, should the Board reach a favourable finding with respect to paragraph 3.9 and, where its provisions are applicable, with respect to paragraph 3.10, 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.

3.36 In applying the provisions 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.

3.37 Recording of frequency assignments notified before being brought into use.

3.38 If a frequency assignment notified in advance of bringing into use has received a favourable finding by the Board with respect to paragraphs 3.8 and 3.9 and, where appropriate, with respect to paragraph 3.10, it shall be entered provisionally in the Master Register with a special symbol in the Remarks Column indicating the provisional nature of that entry.

3.39 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 bringing 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.

4. If use by a terrestrial station of an assignment, which is not in conformity with the foregoing, causes harmful interference to the reception of emissions from a space station in the Broadcasting-Satellite Service using an assignment in conformity with the / plan /, the administration having jurisdiction over the terrestrial station, on being advised accordingly, shall take immediate measures to eliminate the interference.

APPENDIX / X /

(See DT/25 to be agreed within Committee 4)

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 142-E
25 January 1977
Original : French

PLENARY MEETING

Note from the French Delegation

to the Broadcasting-Satellite Conference

The arrangements worked out by the Committee on Procedures and the plenary Conference with regard to the form to be given to the decisions taken by the Broadcasting-Satellite Conference do not call for any comment on the part of the French Administration. The delegation of France accordingly withdraws the reservation it made at the plenary meeting on 21 January.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 143-E
25 January 1977
Original : English

COMMITTEE 4

United States of America

CONTRIBUTION TO THE QUESTION OF INTRASERVICE SHARING IN THE BROADCASTING-SATELLITE SERVICE

1. Introduction

1.1 In Conference Document 7, the United States described its general approach to planning, intended to achieve efficient use of the geostationary orbit and spectrum. This contribution proposes specific criterion for use in sharing within the broadcasting-satellite service (BSS) both within Region 2 and between Region 2 and Regions 1 and 3. The interference paths involved are shown in Figure 1.

1.2 The sharing criterion should reflect the allowable interference levels for the message channels carried by the signals being protected. Of the several signals that might be used in the BSS (FM/TV and multiple sound channels, for example), the FM/TV signal is the most interference sensitive. Also, FM/TV is the most damaging as an interfering signal. Accordingly the protection ratio for analog FM/TV interfered upon by analog FM/TV will serve as the basis for evaluating sharing within the BSS.

2. Protecting BSS earth stations from interfering transmissions from BSS space stations

2.1 The necessary protection is achieved by requiring that the carrier-to-interference ratio at the broadcasting-satellite earth station receiver equal or exceed the specified protection ratio (30 dB for multiple entries, co-channel, from Doc. 111). A multiple-to-single entry allowance of 5 dB is added, to give a single-entry, co-channel protection ratio of 35 dB.

2.2 It might be considered necessary to apportion the total allowable interference among the interfering services (BSS, fixed-satellite service, and terrestrial), and then modify the 35 dB value given above according to the apportionment made. However, this would lead to overly conservative system plans, where the total allowable interference would not be completely used if there were to be "clusterings" of satellites of the same type of service. It is proposed that the protection ratio of 35 dB be used for the allowable single entry interference during preliminary planning. For final evaluation of any plans, the total interference from all sources in all services should be calculated to insure that the 30 dB requirement for total interference is met.

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ARCHIVES U.I.T. GENÈVE

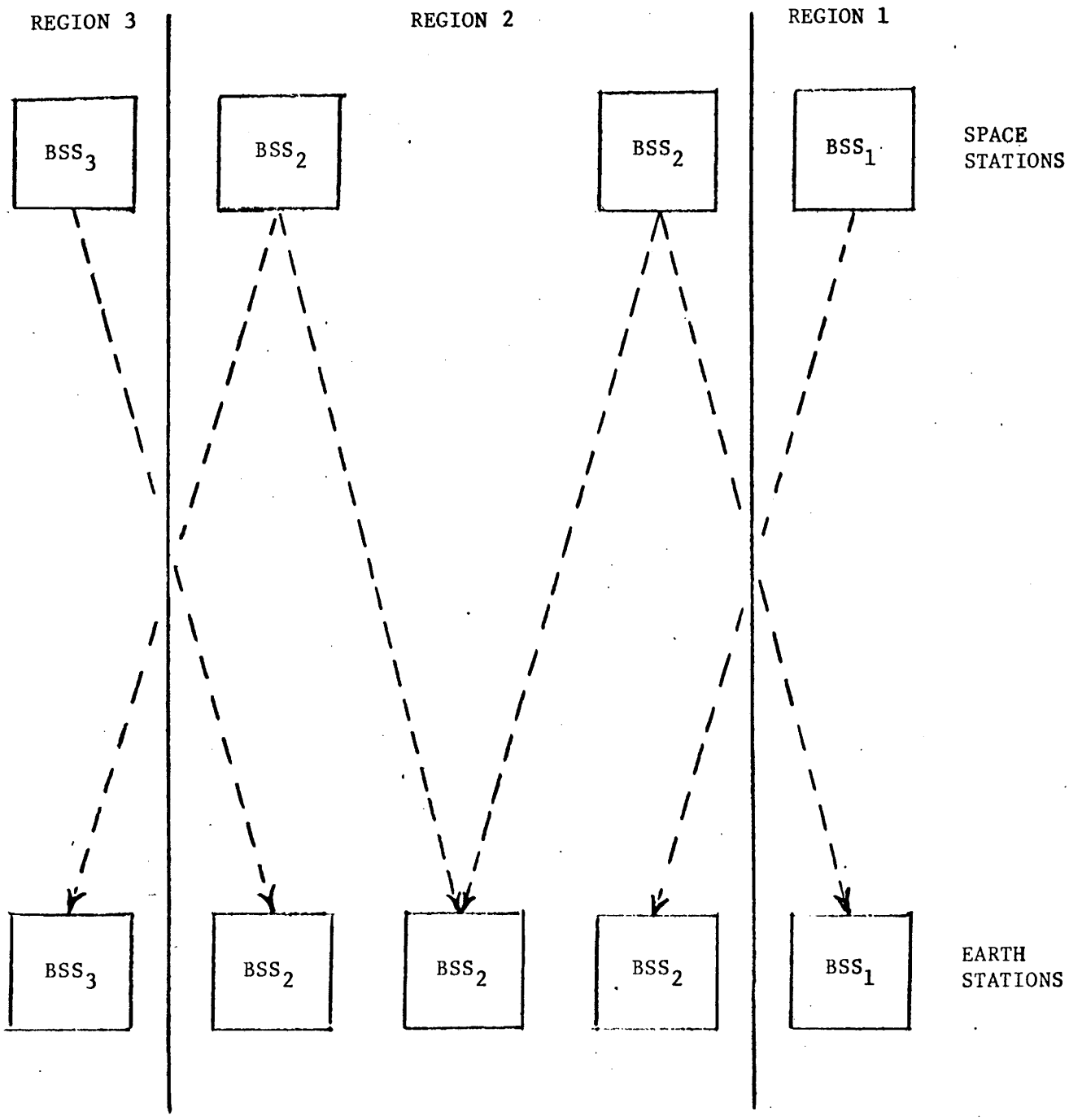


Figure 1 - Interference Paths Under Consideration

2.3 In the Annex of this document, the single-entry, co-channel, protection ratio is used together with planning values of beam edge power flux densities to determine the interfering flux densities allowable at the edge of the protected service areas. Then, planning values of earth and space station antenna characteristics are used to develop several examples of sharing within the broadcasting-satellite service.

3. Application of the protection ratio criterion

3.1 This criterion would be applied through the use of procedures developed by this Conference.

3.2 If the initial coordination reveals that the total interference protection ratio of 30 dB given in the sections above cannot be realized for a particular system, the Administrations concerned can then discuss ways of achieving these levels through the use of such techniques as orbital separation, cross-polarization, partial or complete frequency offset, and improved antenna sidelobe characteristics.

Annex : 1

ANNEX

EXAMPLES OF SHARING WITHIN THE BROADCASTING-SATELLITE SERVICE

The single-entry protection criterion proposed in this Report can be applied to several cases of intraservice sharing. This Annex describes a method of applying the criterion, gives several examples, draws several conclusions, and discusses how certain changes in system characteristics would facilitate sharing.

For planning purposes, the power flux density (pfd) of the wanted signal at the edge of the service area has been agreed as set forth in Document 108. These values are listed in Table 1 for several sharing situations. Figure 2 illustrates the geometrical relationships. If the value for the single-entry protection criterion shown in the body of this Report is subtracted from this wanted pfd, the result is the maximum allowable, on-axis, co-polarized, interfering pfd for sharing within the broadcasting-satellite service.

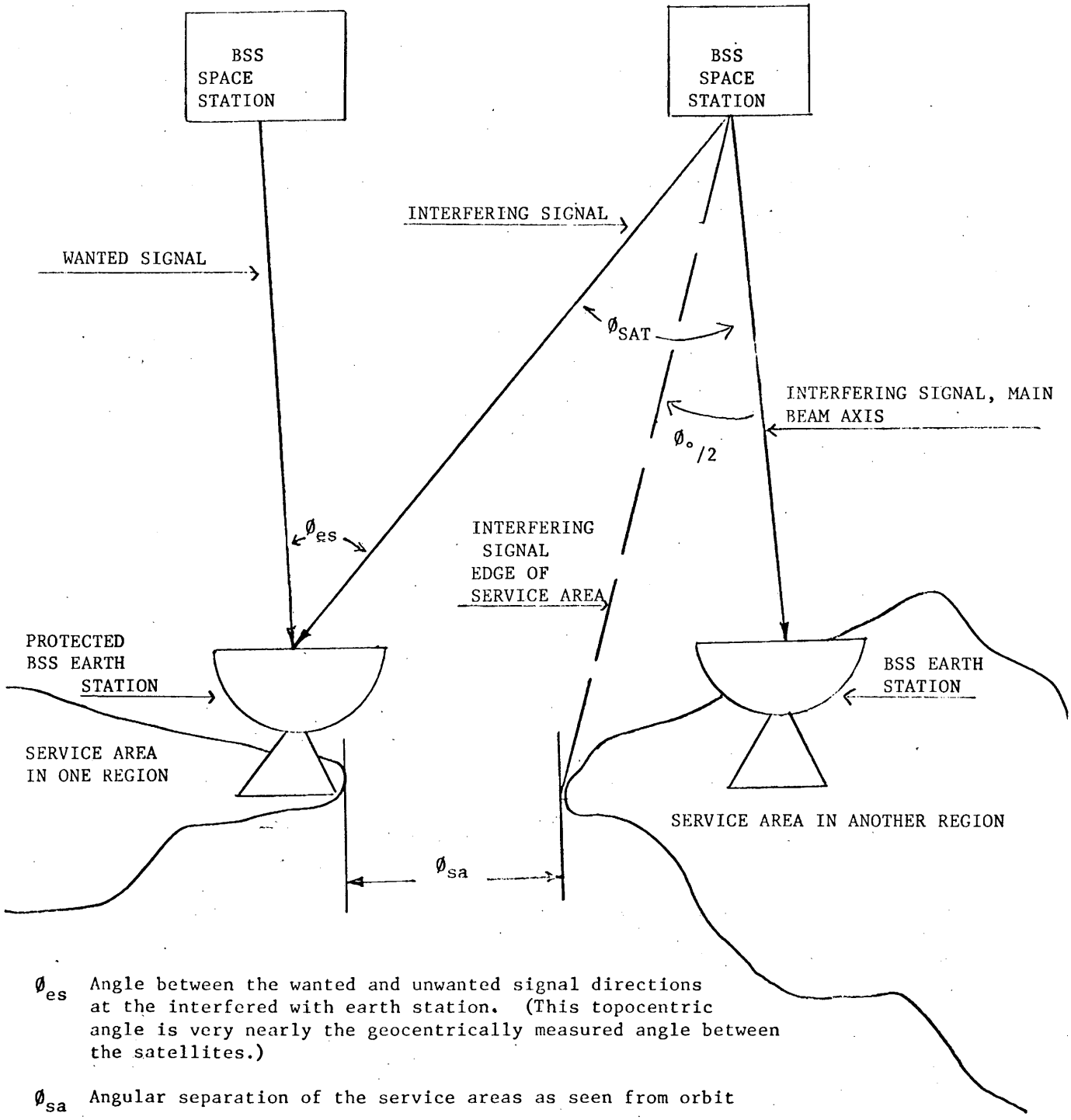
TABLE 1

Maximum allowable, on-axis interfering pfd at the antenna of the protected earth station*

Service		Receiver Type**	Wanted pfd at Beam Edge [dB(W/m^2)]	Protection Ratio dB	Max. Allowable On-Axis pfd at Protected Earth Station [dB(W/m^2)]
Interfering	Protected				
$BSS_{1,2,3}$	—— BSS_2	I	-105	35	-140
$BSS_{1,2,3}$	—— BSS_2	C	-111	35	-146
BSS_2	—— $BSS_{1,3}$	I	-103	35	-138
BSS_2	—— $BSS_{1,3}$	C	-111	35	-146

*Co-polarization of interfering and protected signals is assumed as well as equal rain margins

**I = Individual, C = Community



ϕ_{es} Angle between the wanted and unwanted signal directions at the interfered with earth station. (This topocentric angle is very nearly the geocentrically measured angle between the satellites.)

ϕ_{sa} Angular separation of the service areas as seen from orbit

ϕ_{sat} Angle between the center of the interfering beam and the closest edge of the interfered with service area. $\phi_{sat} = \phi_{SA} + \phi_o/2$

ϕ_o Satellite transmitting antenna half power beamwidth

Figure 2

Table 1 shows the maximum allowable, on-axis pfd at the protected earth station. For satisfactory sharing, the interfering flux must be reduced to the value shown in the last column of the table. But the interfering flux does not, in general, arrive on-axis. Typically, it comes in at some angle off the main beam both because of the separation of the wanted and interfering satellites, and the separation of the service areas.

The effect of satellite separation is shown in Figure 3.

Table 2 lists several examples of interference between the BSS in Regions 1, 2, and 3. Examples in Table 2 are constructed as follows. The protected and interfering regions are chosen. The maximum pfd at the interfering beam center is taken from Doc. 108 for the edge of the service area, with 3 dB added to obtain a beam center value. The separation of the service areas is selected.

adjacent - service areas touching, 3 dB discrimination of interfering signal by satellite antenna

separated - spacing between service areas, variable satellite antenna discrimination in the direction of the protected earth station, 25 dB used in these examples

overlapping - interfering beam center on protected receiver at edge of service area

The interfering pfd incident at the protected earth station is the maximum unwanted pfd at interfering beam center minus the discrimination due to the satellite antenna. For the specific type of earth station being protected (individual or community), the satellites producing the wanted and the interfering signals must be separated by an angle as given on the applicable curve in Figure 3. The specific values of topocentric satellite separation angles are listed in the last column of Table 2.

For example, consider the case of the BSS in Region 2 interfering with individual reception BSS in Regions 1 or 3. If the service areas are adjacent, case 5 of Table 2 describes the situation. The interfering pfd is read as -105 dB(W/m^2). Entering Figure 3 with this value, the required spacing of 19 degrees is read from curve "A".

The examples listed in Table 2 illustrate that sharing is possible when a sufficient amount of discrimination can be obtained from the interfering satellite transmitting antenna pattern and the BSS receiving earth station antenna pattern. This discrimination can be obtained by separation of the satellites in orbit, or separation of the service areas on the ground, or both. Satellite spacings of 2 to 3 degrees are typical, if the service areas are separated by at least 3 degrees.

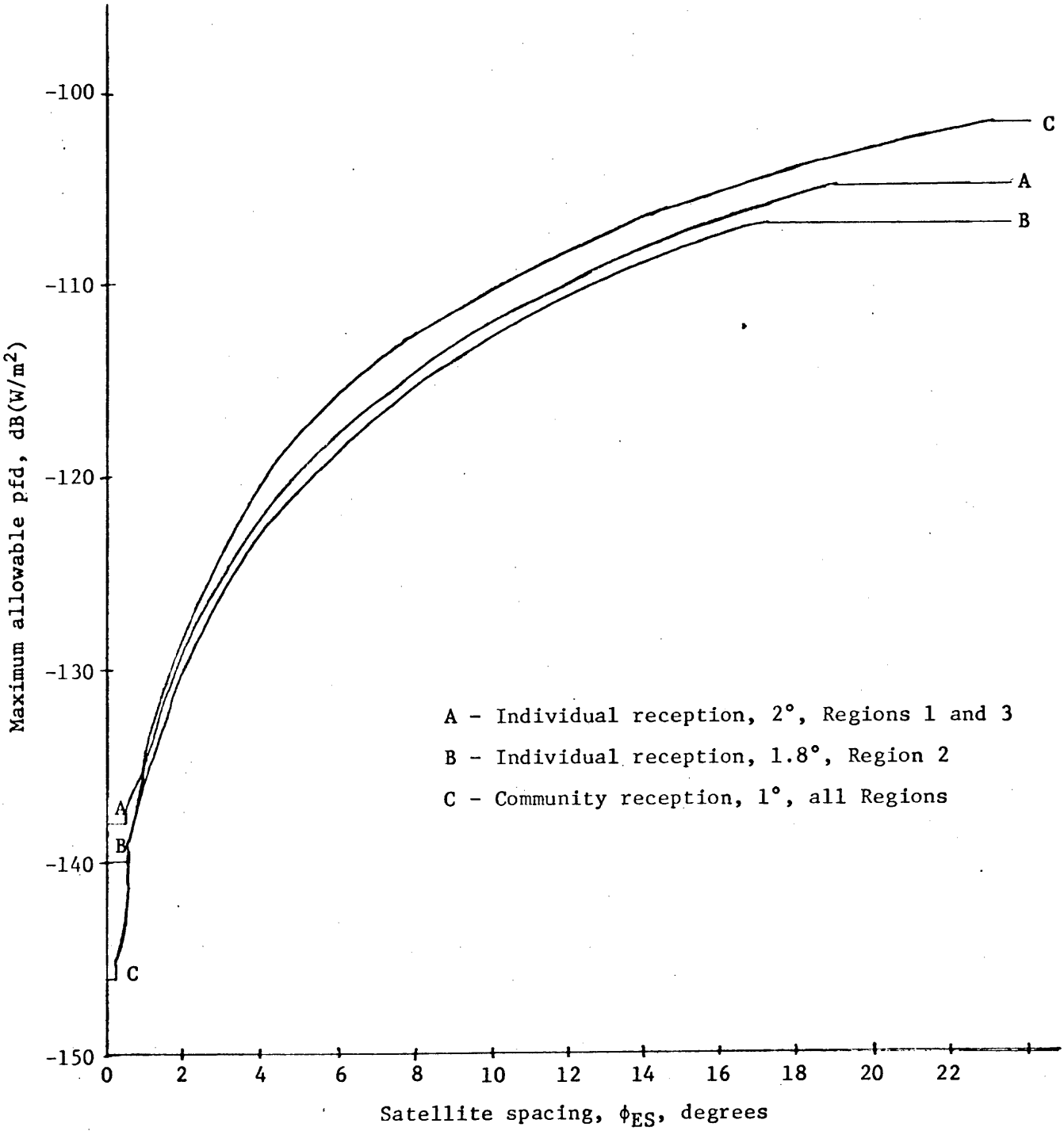


Figure 3 - Maximum allowable interfering co-channel, co-polar power flux-density (pfd) for earth stations in the Broadcasting Satellite Service

TABLE 2

Examples of Broadcasting-Satellite Service Sharing

Case Number	Service: Interfering	Service: Protected	Maximum pfd at Interfering Beam Center [dB(W/m²)] [1]	Separation of Service Areas	Discrimination Due to Separation of Service Areas (dB)	Interfering pfd Incident at Protected Earth Station [dB(W/m²)]	Type/Beamwidth of Receiving Earth Station [2]	From Fig. 3 Required Separation of Satellites (deg) [3]
1	$BSS_{1,3}$	BSS_2	-100	Adjacent	3	-103	I/1.8°	N.A.[4]
2			-100	Adjacent	3	-103	C/1.0°	N.A.
3			-100	Separated	25 [5]	-125	I/1.8°	3.3
4			-100	Separated	25 [5]	-125	C/1.0°	2.6
5	BSS_2	$BSS_{1,3}$	-102	Adjacent	3	-105	I/2.0°	19.0
6			-102	Adjacent	3	-105	C/1.0°	N.A.
7			-102	Separated	25 [5]	-127	I/2.0°	2.5
8			-102	Separated	25 [5]	-127	C/1.0°	2.2
9	BSS_2	BSS_2	-102	Overlapping	0	-102	I/1.8°	N.A.
10			-102	Overlapping	0	-102	C/1.0°	N.A.
11			-102	Separated	25 [5]	-127	I/1.8°	2.7
12			-102	Separated	25 [5]	-127	C/1.0°	2.2

[1] Values given in Doc. 108, par. 16, plus 3 dB

[2] I - Individual, C - Community

[3] Measured topocentrically

[4] N.A. - Not Achievable

[5] 25 dB for $1.44 \leq \phi_{SAT}/\phi \leq 3.16$

Note however, that in the cases where there is no separation of service areas, just separating the satellites is not sufficient to produce the required discrimination. These cases, denoted "N.A.", will not permit co-channel, co-polarized sharing.

Sharing could be facilitated, that is, smaller separations would suffice, and some of the cases shown as "not achievable" might be possible if certain characteristics of the interfering and interfered-with system were changed, e.g., the use of antenna pattern A" [Report AF/10-11, Figure 2] (typical of antennas utilizing sidelobe suppression techniques).

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 144-E
25 January 1977
Original : English

WORKING GROUP 4B

Sub-Group 4B3

DRAFT RECOMMENDATION TO THE CCIR ON UP-LINK CONSIDERATIONS

The WARC for the Planning of the Broadcasting-Satellite Service in the 12 GHz band,

considering

a) that the Broadcasting-Satellite Service in the 11.7 GHz to 12.2 GHz/12.5 GHz bands is dependent on the choice of up-link characteristics in order to achieve the desired grade of service;

b) that this Conference has adopted provisional up-link noise and interference allocations which influence planning and

c) that relevant technical information may be provided by Administrations as documents for the consideration of the CCIR;

recommends

that the CCIR be requested to continue as a matter of urgency its studies of the technical characteristics of the up-links required to implement this planned service and complete a report at the Special Joint Meeting of CCIR Study Groups to be held in preparation for the World Administrative Radio Conference 1979.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 145-E
26 January 1977
Original : French

COMMITTEE 4

SUMMARY RECORD

OF THE

THIRD MEETING OF COMMITTEE 4

(TECHNICAL)

Tuesday, 18 January 1977, at 1545 hrs

Chairman : Mr. F. KRÁLÍK (Czechoslovakia)

Subject discussed	Documents Nos.
Approval of documents	66, 67, 68, 69, 75, 77, 78, 79, 80, 86, 92, 93

Approval of documents (Documents Nos. 66, 67, 68, 69, 75, 77, 78, 79, 80, 86, 92, 93)

Document No. 66 - Maximum dimension of an antenna beam in the Broadcasting-Satellite Service

The Chairman of Working Group 4A introduced the document and proposed that the title should be brought in line with the text by substituting the words "minimum aperture" for the words "maximum dimension".

The delegate of the United States of America considered that it would be preferable to use the same wording as in paragraph 2, namely, "minimum beamwidth" instead of "minimum aperture".

The delegate of France agreed with the previous speaker. Furthermore, it should be specified that what was involved was the transmitting antenna of the satellite.

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It was decided to amend the title of the document to read : "Minimum antenna beamwidth in the Broadcasting-Satellite Service".

The delegate of Canada proposed that the word "findings" in paragraph 3 should be replaced by the word "Recommendations".

It was so agreed.

Document No. 66, as amended, was approved.

Document No. 67 - Antenna reference patterns

The Chairman of Working Group 4A introduced the document, indicating that the words "given in Fig. 2 / on page 8 of CCIR Report AF/10-11 /" should be inserted before the words "should be used" in paragraph 3.

It was so agreed.

The delegate of Canada proposed that the words "the latest findings" should be replaced by the words "the latest Recommendations" in the English text of paragraph 4.

Document No. 67, as amended, was approved.

Document No. 68 - Protection ratio between two frequency-modulation television systems

The Chairman of Working Group 4A, introducing the document, indicated that the delegations of the United States of America and Canada had proposed to simplify the text of paragraph 2 by referring to only one protection-ratio curve.

The delegate of the United States of America said that the proposal was to replace "protection-ratio curves" by "protection-ratio curve", and "curves B and C" by "curve C" in the first sentence of paragraph 2, and to replace the second sentence of that paragraph by the following sentence : "Committee 4 recognizes that the protection-ratio values are different for the several television standards, but a compromise value has been agreed upon for planning".

Document No. 68, as amended, was approved.

Document No. 69 - Type of modulation, bandwidth and channel spacing

Document No. 69 was approved.

Document No. 75 - Minimum size of a receiving antenna for the Broadcasting-Satellite Service

The Chairman of Working Group 4B introduced the document, indicating that the words "1 metre" in paragraph 2 should be replaced by the words "that having a half power beamwidth of 1.8°". In paragraph 3, the words "bandwidth less than 2°" should be replaced by the words "beamwidth of 2°".

The delegate of Australia asked whether the values set out in the paper were regarded as applying both to individual and community reception or whether the intention was to define different values for the latter.

The Chairman of Working Group 4B replied that for the time being they were minimum values applicable to the two types of reception but that the intention was that Sub-Working Group 4B4 should define specific values for community reception.

Document No. 75, as amended, was approved.

Document No. 77 - Polarization of emissions

Document No. 77 was approved.

Document No. 78 - Tuning range of television receivers

Document No. 78 was approved.

Document No. 79 - Station keeping of satellites

Document No. 79 was approved.

Document No. 80 - Angle of elevation of receiving antennae

The Chairman of Working Group 4A, introducing Document No. 80, said that the Brazilian delegation had informed him that the wording of paragraph 3 did not exactly reflect the conclusions reached in the Working Group. In order to take account of that comment, he proposed that the words "Similar considerations apply to" be replaced by the words "An angle of up to 40° may be required for" in the second sentence of paragraph 3.

The delegate of India, supported by the delegate of Malaysia said that he would have preferred the phrase "An angle of elevation at least 40° may be required for ..."

Following a discussion in which the delegates of the Sudan, Brazil, the United Kingdom, Canada and India took part, the Committee decided to amend the second sentence in paragraph 3 of the document to read as follows :

"An angle of elevation of up to 40° or even higher may be required for service areas subject to high precipitation (e.g. climatic Zone 1)."

Replying to a question by the delegate of Zaire about the position of countries situated near the Equator, the Chairman of Working Group 4A pointed out that the point was covered in Note 1 of the document.

Document No. 80, as amended, was approved.

Document No. 86 - Pointing accuracy of satellite antennae

The Chairman of Working Group 4A explained that Document No. 86 had been drawn up by Sub-Working Group 4A1 and had been examined at the last meeting of that Working Group which had agreed on the following amendments :

- Paragraph 2, third line : replace the word "beam" by the words "transmitting antenna";

- Paragraph 3, second and third lines : replace the words "coverage area of the footprint" by the words "area on the surface of the Earth illuminated by the satellite beam";

- Paragraph 3, fifth line : delete the word "coverage"

- Paragraph 4, first line : insert the words "if linear polarization is adopted" after the word "Additionally".

The delegate of France wished to make two comments. In the first place a purely formal amendment, which probably involved only the French text should be made to paragraph 2. The amendment was to replace the words : "et une précision de $\pm$ 2,0° pour la stabilisation de l'axe de lacet" in the fourth line of the paragraph by the words : "et une stabilisation de $\pm$ 2,0° du mouvement du satellite autour de son axe de lacet". His second comment was on the substance of paragraph 2, which did not define clearly the pointing accuracy of satellite antennae. A $\pm$ 2.0° accuracy in yaw control might, in some areas in high latitudes, induce not only rotation of the elliptical axis but also displacement of the axis of the beam, and that displacement might be more than $\pm$ 0.1° for certain latitudes. In view of the importance of that factor for planning, Committee 4 must produce an exact definition of the global pointing accuracy of the satellite beam. Bearing in mind the current state of technology, it might be desirable to recommend an accuracy of $\pm$ 0.1° in relation to the nominal aiming point. However, that point required further study.

It was decided to invite the Chairman of Working Group 4A, the Chairman of Sub-Working Group 4A1 and the delegate of France to draft a text defining the global pointing accuracy of the satellite beam for insertion in Document No. 86, which would be considered again later.

Document No. 92 - Power flux-density at edge of service area

The delegate of the United Kingdom said that the phrase "at edge of service area" which appeared in the title, should be added after the words "power flux-density" in paragraphs 2 and 3.

In view of comments by the Australian delegate and the Secretary of the Committee, it was decided in paragraph 3 to add the words "for individual reception" after "Region 2".

Referring to the title of the document, the delegate of Italy said that the expression "service area" was ambiguous and for planning purposes it would be desirable to define its exact scope.

The Chairman of Sub-Working Group 4B4 said that in that context it meant the area intended to be served by the broadcasting-satellite system.

The Chairman suggested that Sub-Working Group 4A3 - Terminology - should be asked to provide an exact definition of the expression "service area".

On a proposal by the USSR delegate it was finally decided, to enable Committee 5 to proceed with its work, not to amend the title of the document but to add the following note : "By service area in this document we mean the area intended to be served by the broadcasting-satellite system."

Document No. 92, as amended, was approved.

Document No. 93 - Figure of merit (G/T) of a broadcasting satellite receiving station

In view of a comment by the Ethiopian delegate, and on a proposal by the delegate of Australia, it was decided to add in paragraph 2, second line, at the end of the sentence the words "for individual reception".

Document No. 93, as amended, was approved.

The meeting rose at 1715 hours.

Co-Secretaries :

J. RUTKOWSKI
M. AHMAD

The Chairman :

F. KRÁLÍK

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 146-E
25 January 1977
Original : English

COMMITTEE 8

SUMMARY RECORD

OF THE

FIRST MEETING OF COMMITTEE 8

(EDITORIAL)

Thursday, 20 January 1977, at 1410 hrs

Chairman : Miss M. HUET (France)

Subjects discussed :

1. Terms of reference of the Editorial Committee (No. 527 of the Malaga-Torremolinos Convention)

2. Membership of the Committee

3. Arrangements for drafting of the Final Acts of the Conference

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1. Terms of reference of the Editorial Committee (No. 527 of the Malaga-Torremolinos Convention)

The Committee took note of its terms of reference.

2. Membership of the Committee

The Chairman said that the participants for the French language would be Mr. Bisner (France) and herself.

The delegate of the United Kingdom said that the members of his delegation participating in the Committee would be Mr. Carter, Miss Eagles and, later, Mr. Hammond.

The delegate of the United States of America said that his delegation would be represented on the Committee by Mr. Jahn and Mr. Anderson, with the possible assistance of experts for technical texts.

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Mr. Quintas Castans, Vice-Chairman of the Committee, said that he himself would participate in the Committee for the Spanish language, and would be assisted in principle by Mr. Chamorro during the concluding part of the Conference.

The Secretary of the Committee said that the members of the Language Division assisting the Committee would be Mrs Garnier for the French language, Mr. Jennings for English and Mr. Penaranda for Spanish.

3. Arrangements for drafting of the Final Acts of the Conference

The Chairman suggested that she should ask the Chairmen of Committees 4, 5 and 6 in the Steering Committee to supply the list of texts that they intended to include in the Final Acts, showing the order in which those texts should appear.

It was so agreed.

The Deputy Secretary-General reminded members that it was customary for the Editorial Committee to prepare an introductory text to appear in the Final Acts, based on the Secretary-General's report summarising the events that had led up to the Conference, as well as a suitable title for the document to be signed.

The meeting rose at 1420 hours.

The Secretary :

R. MACHERET

The Chairman :

M. HUET

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 147-E
25 January 1977
Original : French

COMMITTEE 4

SUMMARY RECORD

OF THE

FOURTH MEETING OF COMMITTEE 4

(TECHNICAL)

Thursday, 20 January 1977, at 1530 hrs

Chairman : Mr. F. KRÁLÍK (Czechoslovakia)

Subject discussed :	Documents Nos.
Approval of documents	105, DT/16(Rev.1)

Approval of documents (Documents Nos. 105, DT/16(Rev.1))

Document No. 105 - Radio propagation factors

The Chairman of Working Group 4A said that the text of the document had been approved by the Working Group; however, certain doubts had been expressed with regard to the curves reproduced in the Annex.

The representative of the CCIR observed that the curves, which related to 1 % of the worst month (0.25 % of the time), had been worked out under the guidance of Dr. Lane and Dr. Saxton of the CCIR.

The delegate of the USSR said that the curves were not consistent with those which his Administration had in its possession and should perhaps be studied again with the representative of the CCIR.

The delegate of the United States of America supported that suggestion, stressing the importance of the data in question and the need for administrations to be able to compare them with their own measured values.

The Chairman suggested that Document No. 105 should be referred back to Working Group 4A for further consideration.

It was so decided.

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Document No. DT/16(Rev.1) - Rain climatic zones

The representative of the IFRB said that the forms attached to the document (Annex 2) should be completed and returned to the IFRB not later than Friday, 21 January, at 1200 hrs.

The Chairman suggested that the Committee should merely take note of Document No. DT/16(Rev.1), since delegations might subsequently wish to introduce modifications to Annex 1.

It was so agreed.

The meeting rose at 1545 hours.

The Secretaries :

J. RUTKOWSKI/M. AHMAD

The Chairman :

F. KRÁLÍK

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 148-E
25 January 1977
Original : English

WORKING GROUP 4B

Sub-Working Group 4B3

UPLINK CARRIER-TO-INTERFERENCE RATIO - PLANNING CONSIDERATIONS

1. For the purposes of planning the Broadcasting-Satellite Service during this Conference, Committee 4 recommends that the effect of the up-path co-channel interference contributions on the overall carrier-to-interference ratio (C/I) of this service for individual reception should be equivalent to a degradation in the down-path carrier-to-interference ratio (C/I) of not greater than 0.5 dB for 99 % of the worst month.

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UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Document N° 149-F/E/S
25 janvier 1977

COMMISSION 5
COMMITTEE 5
COMISIÓN 5

Note du Président de la Commission 5 (Planification)
Note by the Chairman of Committee 5 (Planning)
Nota del Presidente de la Comisión 5 (Planificación)

LISTE DES POINTS DE MESURE
(en degrés et centièmes de degrés)

LIST OF TEST POINTS
(in degrees and hundredths)

LISTA DE PUNTOS DE PRUEBA
(en grados y centésimas de grado)

-07310	-4860	=	07310W	4860S
03750	3200	=	03750E	3200N
12450	-1550	=	12450E	1550S
-00205	4917	=	00205W	4917N

Pour des raisons d'économie, ce document n'a été tiré qu'en nombre restreint. Les participants sont donc priés de bien vouloir apporter à la conférence leurs documents avec eux, car il n'y aura que fort peu d'exemplaires supplémentaires disponibles.

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ARG	0001	1	-07310 -4860
ARG	0001	2	-07200 -4150
ARG	0001	3	-06000 -5280
ARG	0001	4	-06900 -5300
ARG	0001	5	-06500 -5500
ARG	0001	6	-06630 -3750
ARG	0002	1	-06600 -2220
ARG	0002	2	-05760 -2520
ARG	0002	3	-07100 -3208
ARG	0002	4	-07250 -3900
ARG	0002	5	-05400 -2590
ARG	0002	6	-05650 -3700
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ARS	0003	2	03700 3000
ARS	0003	3	05550 2400
ARS	0003	4	05000 1850
ARS	0003	5	05650 2000
ARS	0003	6	05000 2850
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AUT	0016	2	01500 4906
AUT	0016	3	01305 4825
AUT	0016	4	00949 4728
AUT	0016	5	01092 4678
AUT	0016	6	01460 4640
AUT	0017	1	01650 4700
AUT	0017	2	01717 4800
AUT	0017	3	01120 5450
AUT	0017	4	00600 4600
AUT	0017	5	00590 5075
AUT	0017	6	00900 4570
BEL	0018	1	00250 5100
BEL	0018	2	00340 5140
BEL	0018	3	00480 5150
BEL	0018	4	00580 5120
BEL	0018	5	00640 5030
BEL	0018	6	00560 4950
BOL	0019	1	-06500 -1220
BOL	0019	2	-06550 -0980
BOL	0019	3	-06900 -1120
BOL	0019	4	-06000 -1610
BOL	0019	5	-05750 -1800
BOL	0019	6	-06780 -2280
BUL	0020	1	02260 4430
BUL	0020	2	02870 4380
BUL	0020	3	02240 4230
BUL	0020	4	02810 4200
BUL	0020	5	02300 4130
BUL	0020	6	02530 4120

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AFS	0021	3	02400 -2300
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AFS	0023	2	03150 -2450
AFS	0023	3	02890 -2870
AFS	0023	4	02930 -2960
AFS	0023	5	03020 -3120
AFS	0023	6	03300 -2800
AFS	0024	1	03100 -2240
AFS	0024	2	02900 -2250
AFS	0024	3	02950 -2450
AFS	0024	4	02270 -2640
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AFS	0024	6	02900 -2850
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NMB	0025	3	02500 -1760
NMB	0025	4	02100 -2200
NMB	0025	5	02000 -2840

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EGY	0026	2	02550 3140
EGY	0026	3	02500 2920
EGY	0026	4	03550 2400
EGY	0026	5	03120 2200
EGY	0026	6	02700 2500
G	0027	1	00138 5115
G	0027	2	-00205 4917
G	0027	3	00173 5248
G	0027	4	-00633 4990
G	0027	5	-00818 5447
G	0027	6	-00088 6085
INS	0028	1	09770 0570
INS	0028	2	09970 0355
INS	0028	3	10220 0180
INS	0028	4	09910 -0250
INS	0028	5	09700 0250
INS	0029	1	10430 0100
INS	0029	2	10880 -0300
INS	0029	3	10610 -0630
INS	0029	4	09970 -0260
INS	0030	1	10580 -0750
INS	0030	2	11250 -0610
INS	0030	3	11610 -0870
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INS	0031	1	10960 0200
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INS	0031	6	10800 -0300

INS 0032	1	11600	0430
INS 0032	2	11750	0420
INS 0032	3	11900	0100
INS 0032	4	11470	-0430
INS 0032	5	11300	-0250
INS 0032	6	11360	0200
INS 0033	1	12560	0370
INS 0033	2	12530	-0190
INS 0033	3	12280	-0570
INS 0033	4	12050	-0630
INS 0033	5	12100	0130
INS 0034	1	11600	-0890
INS 0034	2	12800	-0800
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INS 0036	1	13000	-0300
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IND 0037	1	09300	2200
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IND 0037	3	08980	2600
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IND 0038	1	07390	3000
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IND 0038	3	07250	3590
IND 0038	4	07460	3700
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IND 0039	1	07190	1230
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IND 0040	1	06780	2400
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IND	0046	5	08230 2100
IND	0047	1	09380 1480
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IND	0048	1	08330 2520
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ISL	0049	6	-02430 6550
ISL	0050	1	-02300 6650
ISL	0050	2	-01600 6650
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ISL	0050	6	-02430 6550
UGA	0051	1	03400 0430
UGA	0051	2	03120 0375
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UGA	0051	4	02980 -0130
UGA	0051	5	03380 -0100
UGA	0051	6	03460 0130
CKH	0052	1	-16350 -1750
CKH	0052	2	-15850 -1940
CKH	0052	3	-15720 -2000
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NIU	0054	1	-16990 -1900

NZL	0055	1	16630 -4550
NZL	0055	2	17180 -3410
NZL	0055	3	17900 -3760
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SMO	0057	3	-17200 -1382
SMO	0057	4	-17100 -1410
TKL	0058	1	-17246 -0866
TKL	0058	2	-17126 -0950
TKL	0058	3	-17218 -0920
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URS	0059	3	02202 5894
URS	0059	4	02795 5944
URS	0059	5	02870 4521
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UKR	0063	2	04020 4960
UKR	0063	3	02211 4844
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UKR	0063	5	03090 5210
UKR	0063	6	03400 4440
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URS	0064	2	04890 3840
URS	0064	3	05038 4030
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URS	0065	2	03000 6380
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URS	0066	1	05394 3736
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URS	0078	1	10780	5000
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URS	0078	6	11650	5480
URS	0079	1	13095	4486
URS	0079	2	13060	4229
URS	0079	3	12840	7330
URS	0079	4	14340	4601
URS	0079	5	14710	5936
URS	0079	6	15256	6465
URS	0080	1	-17925	6550
URS	0080	2	17950	6268
URS	0080	3	17639	6800
URS	0080	4	14548	4360
URS	0080	5	15186	4685
URS	0080	6	14564	6385
URS	0081	1	-17925	6550
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URS	0081	3	15810	6780
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URS	0081	6	16861	6310
I	0082	1	01260	3540
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I	0082	4	00830	4650
I	0082	5	01370	4650
I	0082	6	01860	4000
CVA	0083	1	01200	4000
CVA	0083	2	01410	4070
CVA	0083	3	01100	4250
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CVA	0083	6	01490	4200
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CVA	0084	6	00900	4000

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CVA	0085	5	01800	4000
CVA	0085	6	01500	4400
CYP	0086	1	03237	3487
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CYP	0086	4	03450	3570
CYP	0086	5	03388	3538
CYP	0086	6	03318	3468
D	0087	1	01350	5240
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D	0087	3	00700	5375
D	0087	4	00780	4760
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DNK	0089	1	01200	5467
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ETH	0092	1	04245	1301
ETH	0092	2	03550	0750
ETH	0092	3	03904	0331
ETH	0092	4	03457	0628
ETH	0092	5	04500	0500
ETH	0092	6	03929	1750
F	0093	1	00250	5120
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F	0093	3	00950	4120
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F	0094	4	00305	4250
F	0094	5	-00190	4330
F	0094	6	-00450	4850
GDL	0095	1	-06100	1450
GDL	0095	2	-06150	1633
GDL	0095	3	-06250	1755
GDL	0095	4	-06317	1801
GDL	0095	5	-06122	1593
GUF	0096	1	-05400	0600
GUF	0096	2	-05150	0450
GUF	0096	3	-05300	0200
GUF	0096	4	-05450	0200
GUF	0096	5	-05450	0500
REU	0097	1	05475	-1570
REU	0097	2	05540	-2110
REU	0097	3	05585	-2145
REU	0097	4	05800	-2000
MYT	0098	1	04500	-1280
AFI	0099	1	04350	1250
AFI	0099	2	04190	1080
AFI	0099	3	04300	1080
AFI	0099	4	04350	1160
AFI	0099	5	04270	1260
AFI	0099	6	04190	1180
NCL	0100	1	16400	-1970
NCL	0100	2	16720	-2080
NCL	0100	3	16750	-2300

OCE	0101	1	-15300	-2300
OCE	0101	2	-15470	-1570
OCE	0101	3	-13930	-0900
OCE	0101	4	-13450	-2330
WAL	0102	1	-17800	-1405
WAL	0102	2	-17615	-1318
WAL	0102	3	-17660	-1337
WAL	0102	4	-17818	-1425
FNL	0103	1	02497	6000
FNL	0103	2	03150	6290
FNL	0103	3	01925	6000
FNL	0103	4	02401	6600
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FNL	0104	1	00800	5600
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FNL	0104	6	01500	5500
GRC	0105	1	01940	3990
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GRC	0105	3	02960	3610
GRC	0105	4	02650	3900
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GRC	0105	6	02290	4140
HNG	0106	1	02290	4800
HNG	0106	2	02080	4860
HNG	0106	3	01730	4810
HNG	0106	4	01610	4680
HNG	0106	5	01800	4576

HVO	0107	1	-00500	1000
HVO	0107	2	00000	1500
HVO	0107	3	00250	1300
HVO	0107	5	-00250	0950
HVO	0107	4	00000	1100
HVO	0107	6	-00550	1200
GHA	0108	1	-00290	1100
GHA	0108	2	-00330	0660
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CNR	0130	1	-01800	2900
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MLT	0147	1	01440	3590
YUG	0148	1	01345	4645
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COM	0207	4	04426	-1207
COM	0207	5	04440	-1225
COM	0207	6	04417	-1248
CHL	0208	1	-07000	-1750
CHL	0208	2	-06750	-2400
CHL	0208	3	-07000	-3300
CHL	0208	4	-07200	-4500
CHL	0208	5	-07000	-5220
CHL	0208	6	-06750	-5500
MRC	0209	1	-01300	2300
MRC	0209	2	-00600	2800
MRC	0209	3	-00125	3228
MRC	0209	4	-00100	3500
MRC	0209	5	-00600	3600
MRC	0209	6	-01500	2600

PAK	0210	1	07526 3226
PAK	0210	2	07015 2780
PAK	0210	3	07233 3372
PAK	0210	4	07376 3395
PAK	0210	5	07180 2800
PAK	0210	6	07040 3130
IRL	0211	1	-00730 5540
IRL	0211	2	-00600 5330
IRL	0211	3	-01030 5430
IRL	0211	4	-00980 5130
IRL	0211	5	-00620 5220
IRL	0211	6	-00550 5430
HOL	0213	1	00310 5120
HOL	0213	2	00620 5060
HOL	0213	3	00720 5220
HOL	0213	4	00730 5330
HOL	0213	5	00660 5370
HOL	0213	6	00510 5340
SUR	0214	1	-05390 0590
SUR	0214	2	-05400 0220
SUR	0214	3	-05810 0170
SUR	0214	4	-05810 0420
SUR	0214	5	-05790 0500
SUR	0214	6	-05710 0610
TON	0215	1	-17563 -1566
TON	0215	2	-17376 -1597
TON	0215	3	-17403 -1862
TON	0215	4	-17472 -1995
TON	0215	5	-17520 -2113

DDR	0216	1	01250 5450
DDR	0216	2	01450 5340
DDR	0216	3	01500 5100
DDR	0216	4	01300 5050
DDR	0216	5	00990 5149
DDR	0216	6	01100 5400
VEN	0217	1	-06640 0100
VEN	0217	2	-06070 0450
VEN	0217	3	-06000 0850
VEN	0217	4	-06180 1070
VEN	0217	5	-07150 1170
VEN	0217	6	-07250 0730
CUB	0218	1	-08510 2159
CUB	0218	2	-08332 2341
CUB	0218	3	-07400 2000
CUB	0218	4	-08130 2336
CUB	0218	5	-07800 1932
CUB	0218	6	-07600 1926
CLN	0219	1	08000 1000
CLN	0219	2	07980 0750
CLN	0219	3	08100 0600
CLN	0219	4	08200 0740
BGD	0220	1	08980 2600
BGD	0220	2	08800 2700
BGD	0220	3	08800 2400
BGD	0220	4	08900 2200
BGD	0220	5	09250 2150
BGD	0220	6	09250 2500

SLV	0221	1	-09010	1330
SLV	0221	2	-08925	1430
SLV	0221	3	-08940	1400
SLV	0221	4	-08760	1380
SLV	0221	5	-08750	1300
SLV	0221	6	-08880	1315
SEN	0222	1	-01470	1770
SEN	0222	2	-01675	1610
SEN	0222	3	-01675	1420
SEN	0222	4	-01526	1240
SEN	0222	5	-01225	1110
SEN	0222	6	-01225	1675
MTN	0223	1	-01575	2400
MTN	0223	2	-01200	2345
MTN	0223	3	-00560	2000
MTN	0223	4	-00520	1530
MTN	0223	5	-01205	1445
MTN	0223	6	-01632	1602
JOR	0224	1	03454	2915
JOR	0224	2	03612	2900
JOR	0224	3	03818	3030
JOR	0224	4	03830	3330
JOR	0224	5	03400	3500
JOR	0224	6	03330	3118
TGK	0225	1	03050	-0100
TGK	0225	2	03400	-0100
TGK	0225	3	04000	-0500
TGK	0225	4	04000	-1050
TGK	0225	5	03500	-1150
TGK	0225	6	03000	-0600
TGO	0226	1	00120	0610
TGO	0226	2	00050	0690
TGO	0226	3	-00020	1110
TGO	0226	4	00070	1100
TGO	0226	5	00170	0920
TGO	0226	6	00160	0900
MLA	0227	1	10260	0620
MLA	0227	2	10540	0220
MLA	0227	3	10380	0120
MLA	0227	4	10130	0260
MLA	0227	5	09880	0620
MLA	0227	6	09980	0680
MLA	0228	1	10900	0240
MLA	0228	2	11750	0820
MLA	0228	3	11950	0520
MLA	0228	4	11360	0100
MLA	0228	5	11020	0600
SYR	0229	1	04220	3720
SYR	0229	2	04105	3430
SYR	0229	3	03690	3240
SYR	0229	4	03560	3300
SYR	0229	5	03590	3570
SYR	0229	6	03830	3700
SDN	0230	1	03600	0460
SDN	0230	2	03400	0850
SDN	0230	3	03000	1000
SDN	0230	4	02300	1100
SDN	0230	5	02350	0870
SDN	0230	6	03000	0400

SDN	0231	1	03400 0850
SDN	0231	2	03680 1600
SDN	0231	3	03200 1600
SDN	0231	4	02300 1560
SDN	0231	5	02200 1300
SDN	0231	6	02300 1070
SDN	0232	1	03680 1600
SDN	0232	2	03850 1800
SDN	0232	3	03550 2300
SDN	0232	4	02500 2200
SDN	0232	5	02400 1580
SDN	0232	6	03200 1600
DAH	0233	1	00220 0620
DAH	0233	2	00200 0710
DAH	0233	3	00230 0920
DAH	0233	4	00340 1050
DAH	0233	5	00100 1040
DAH	0233	6	00320 1150
ATN	0234	1	-07020 1280
ATN	0234	2	-07020 1240
ATN	0234	3	-06880 1200
ATN	0234	4	-06820 1200
ATN	0234	5	-06820 1230
COG	0235	1	01858 0437
COG	0235	2	01268 0245
COG	0235	3	01358 -0163
COG	0235	4	01065 -0342
COG	0235	5	01530 -0430
COG	0235	6	01898 0205

MDG	0236	1	04908 -1236
MDG	0236	2	04925 -1809
MDG	0236	3	04633 -2120
MDG	0236	4	04346 -2328
MDG	0236	5	04400 -1800
MDG	0236	6	04620 -1542
CTI	0237	1	-00772 0442
CTI	0237	2	-00875 0642
CTI	0237	3	-00800 1017
CTI	0237	4	-00630 1075
CTI	0237	5	-00350 0980
CTI	0237	6	-00250 0817
AND	0238	1	-00160 4320
AND	0238	2	-00000 4370
AND	0238	3	-00130 4360
AND	0238	4	-00430 4330
STP	0241	1	00740 0170
STP	0241	2	00680 0040
STP	0241	3	00500 0000
STP	0241	4	00500 0200
MAU	0242	1	06000 -1500
MAU	0242	2	06400 -2020
MAU	0242	3	05680 -2120
MAU	0242	4	05600 -1800
MAU	0242	5	06320 -1680
MAU	0242	6	06000 -2300
MAU	0243	1	05700 -1000
MAU	0243	2	06000 -1660
MAU	0243	3	05380 -1620
MAU	0243	4	05300 -1280
MAU	0243	5	06080 -1280
MAU	0243	6	05700 -1800

LBR	0244	1	-01020 0850
LBR	0244	2	-00860 0760
LBR	0244	3	-00740 0570
LBR	0244	4	-00745 0450
LBR	0244	5	-00980 0510
LBR	0244	6	-01150 0690
AFG	0245	1	06940 3710
AFG	0245	2	07080 3840
AFG	0245	3	07492 3710
AFG	0245	4	07106 3400
AFG	0245	5	06930 3200
AFG	0246	1	06130 3560
AFG	0246	2	06100 2990
AFG	0246	3	06625 3000
AFG	0246	4	06710 3125
AFG	0246	5	06575 3760
QAT	0247	1	05110 2620
QAT	0247	2	05230 2480
QAT	0247	3	05080 2470
QAT	0247	4	05070 2530
MNG	0248	1	09880 5190
MNG	0248	2	11890 4740
MNG	0248	3	11000 4320
MNG	0248	4	10340 4230
MNG	0248	5	09500 4320
MNG	0248	6	08790 4890
KEN	0249	1	04192 0392
KEN	0249	2	04167 -0167
KEN	0249	3	03925 -0475
KEN	0249	4	03392 -0100
KEN	0249	5	03400 0425
ALG	0250	1	-00220 3500
ALG	0250	2	-00300 3200
ALG	0250	3	00900 3550
ALG	0250	4	00900 3700
ALG	0250	5	00300 3600
ALG	0250	6	-00100 3600
ALG	0251	1	-00220 3500
ALG	0251	2	-00100 3600
ALG	0251	3	00300 3600
ALG	0251	4	00900 3700
ALG	0251	5	00900 3550
ALG	0251	6	00950 3000
ALG	0252	1	00950 3000
ALG	0252	2	01200 2300
ALG	0252	3	00500 1900
ALG	0252	4	00000 2200
ALG	0252	5	-00500 2500
ALG	0252	6	-00900 2750
LIE	0253	1	00932 4716
LIE	0253	2	00928 4703
LIE	0253	3	00937 4704
LIE	0253	4	00938 4708
SPM	0254	1	-05650 4690
BHR	0255	1	04800 3000
BHR	0255	2	04300 2700
BHR	0255	3	05230 1700
BHR	0255	4	05800 1800
BHR	0255	5	05930 2230
BHR	0255	6	05630 2630

IRQ 0256	1	03750	3330
IRQ 0256	2	04120	3500
IRQ 0256	3	04400	3730
IRQ 0256	4	04580	3420
IRQ 0256	5	04800	3000
IRQ 0256	6	04350	3000
PRG 0257	1	-06200	-2300
PRG 0257	2	-06300	-2100
PRG 0257	3	-05800	-2000
PRG 0257	4	-05600	-2200
PRG 0257	5	-05500	-2700
PRG 0257	6	-05800	-2700
CAF 0258	1	01550	0750
CAF 0258	2	01460	0610
CAF 0258	3	01650	0210
CAF 0258	4	02750	0500
CAF 0258	5	02320	1100
CAF 0258	6	02200	1070
SRL 0259	1	-01320	0850
SRL 0259	2	-01170	0700
SRL 0259	3	-01170	1000
SRL 0259	4	-01050	0850
GAB 0260	1	00800	-0100
GAB 0260	2	01100	0100
GAB 0260	3	01400	0200
GAB 0260	4	01400	-0250
GAB 0260	5	01200	-0260
GAB 0260	6	01100	-0090

AND 0261	1	00130	4200
AND 0261	2	00100	4250
AND 0261	3	00175	4270
AND 0261	4	00180	4230
AND 0262	1	00130	4200
AND 0262	2	00100	4250
AND 0262	3	00175	4270
AND 0262	4	00180	4230
YEM 0266	1	04300	1750
YEM 0266	2	04580	1700
YEM 0266	3	04750	1680
YEM 0266	4	04630	1400
YEM 0266	5	04320	1250
YEM 0266	6	04260	1650
YMS 0267	1	04325	1240
YMS 0267	2	04550	1500
YMS 0267	3	05250	1875
YMS 0267	4	05260	1660
YMS 0267	5	04907	1430
YMS 0267	6	04802	1250
ATN 0268	1	-06280	1730
ATN 0268	2	-06340	1760
ATN 0268	3	-06320	1810
ATN 0268	4	-06300	1820
MLI 0269	1	-01200	1380
MLI 0269	2	-00830	1100
MLI 0269	3	-00400	1210
MLI 0269	4	-00510	1360
MLI 0269	5	-01000	1550

BDI 0270 1 02920 -0280
BDI 0270 2 02910 -0270
BDI 0270 3 02950 -0420
BDI 0270 4 03030 -0270
PNG 0271 1 15000 -0100
PNG 0271 2 15700 -0700
PNG 0271 3 15400 -1200
PNG 0271 4 14100 -0920
PNG 0271 5 14100 -0260
TUN 0272 1 00900 3750
TUN 0272 2 01130 3720
TUN 0272 3 00700 3400
TUN 0272 4 00930 3000
TUN 0272 5 01200 3530
TUN 0272 6 01170 3230
BOL 0273 1 -06500 -1220
BOL 0273 2 -06550 -0980
BOL 0273 3 -06900 -1120
BOL 0273 4 -06000 -1610
BOL 0273 5 -05750 -1800
BOL 0273 6 -06780 -2280
UAE 0274 1 05080 2460
UAE 0274 2 05190 2300
UAE 0274 3 05490 2240
UAE 0274 4 05580 2400
UAE 0274 5 05630 2540
UAE 0274 6 05600 2600

ARS 0275 1 03550 3000
ARS 0275 2 03670 2350
ARS 0275 3 03800 2000
ARS 0275 4 04250 0650
ARS 0275 5 04750 0600
ARS 0275 6 03800 3200
EQA 0276 1 -07880 0150
EQA 0276 2 -07550 -0020
EQA 0276 3 -07900 -0500
EQA 0276 4 -08080 -0480
EQA 0276 5 -08058 -0202
EQA 0277 1 -07880 0150
EQA 0277 2 -07550 -0020
EQA 0277 3 -07900 -0500
EQA 0277 4 -08080 -0480
EQA 0277 5 -08058 -0202
EQA 0278 1 -07880 0150
EQA 0278 2 -07550 -0020
EQA 0278 3 -07900 -0500
EQA 0278 4 -08080 -0480
EQA 0278 5 -08058 -0202
LBN 0279 1 03540 3370
LBN 0279 2 03530 3300
LBN 0279 3 03620 3370
LBN 0279 4 03680 3450
LBY 0280 1 01800 2250
LBY 0280 2 02400 1950
LBY 0280 3 02500 2000
LBY 0280 4 02520 3200
LBY 0280 5 02200 3300
LBY 0280 6 02000 3250

PAK	0281	1	06950	3220
PAK	0281	2	06180	2524
PAK	0281	3	06130	2950
PAK	0281	4	06680	2500
PAK	0281	5	06930	2860
PAK	0281	6	06648	3050
PAK	0282	1	06680	2520
PAK	0282	2	07100	2425
PAK	0282	3	06830	2872
PAK	0282	4	06815	2410
PAK	0282	5	06722	2726
PAK	0283	1	07030	3128
PAK	0283	2	07985	3560
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PAK	0283	4	07510	3726
PAK	0283	5	07280	3675
PAK	0283	6	07000	3400
LAO	0284	1	10000	2050
LAO	0284	2	10200	2250
LAO	0284	3	10450	2000
LAO	0284	4	10100	1760
LAO	0284	5	10550	1400
LAO	0284	6	10750	1450
PHL	0285	1	12200	2100
PHL	0285	2	11720	0800
PHL	0285	3	12000	0500
PHL	0285	4	12600	0600
PHL	0285	5	12600	1100
PHL	0285	6	12400	1350
KRE	0286	1	13000	4300
KRE	0286	2	12450	4000
KRE	0286	3	12660	3800
KRE	0286	4	12830	3830
NZL	0287	1	17180	-3410
NZL	0287	2	17590	-4430
NZL	0287	3	16630	-4550
NZL	0287	4	18000	-4000
NZL	0287	5	17500	-4700
MTN	0288	1	-00560	2000
MTN	0288	2	-01200	2345
MTN	0288	3	-00840	2720
MTN	0288	4	-00451	2500
CLM	0289	1	-07000	-0400
CLM	0289	2	-07500	-0005
CLM	0289	3	-07850	0200
CLM	0289	4	-07150	1250
CLM	0289	5	-06750	0650
CLM	0289	6	-06700	0159
MRC	0292	1	-01300	2300
MRC	0292	2	-00600	2800
MRC	0292	3	-00125	3228
MRC	0292	4	-00100	3500
MRC	0292	5	-00600	3600
MRC	0292	6	-01500	2600
MTN	0293	1	-00560	2000
MTN	0293	2	-01200	2345
MTN	0293	3	-00840	2720
MTN	0293	4	-00451	2500

MTN	0294	1	-01575	2400
MTN	0294	2	-01200	2345
MTN	0294	3	-00560	2000
MTN	0294	4	-00520	1530
MTN	0294	5	-01205	1445
MTN	0294	6	-01632	1602
AGL	0295	1	01200	-1750
AGL	0295	2	01250	-0650
AGL	0295	3	02000	-0600
AGL	0295	4	02400	-1100
AGL	0295	5	02300	-1750
ALB	0296	1	01980	4260
ALB	0296	2	01930	4180
ALB	0296	3	01940	4040
ALB	0296	4	02030	3970
ALB	0296	5	02100	4090
ALB	0296	6	02070	4200
BOT	0297	1	02100	-1840
BOT	0297	2	02530	-1780
BOT	0297	3	02930	-2210
BOT	0297	4	02560	-2560
BOT	0297	5	02060	-2700
BOT	0297	6	02000	-2330
BRM	0298	1	10100	2170
BRM	0298	2	09890	1640
BRM	0298	3	09960	1180
BRM	0298	4	09800	0950
BRM	0298	5	09750	2830
BRM	0298	6	09240	2140
CBG	0299	1	10350	1050
CBG	0299	2	10250	1300
CBG	0299	3	10400	1410
CBG	0299	4	10650	1400
CBG	0299	5	10750	1250
CBG	0299	6	10600	1100
CME	0300	1	01420	1320
CME	0300	2	01560	1000
CME	0300	3	01560	0770
CME	0300	4	01620	0140
CME	0300	5	00880	0220
CME	0300	6	00850	0480
CPV	0301	1	-02290	1680
CPV	0301	2	-02430	1440
CPV	0301	3	-02490	1690
CPV	0301	4	-02510	1720
CPV	0301	5	-02510	1700
CPV	0301	6	-02320	1510
GMB	0302	1	-01420	1330
GMB	0302	2	-01650	1330
GMB	0302	3	-01670	1340
GMB	0302	4	-01430	1350
GMB	0302	5	-01610	1350
GMB	0302	6	-01560	1360
GNE	0303	1	00960	0120
GNE	0303	2	01130	0120
GNE	0303	3	01130	0240
GNE	0303	4	00980	0240
GNE	0303	5	01130	0180

GNP	0304	1	-01630 1180
GNP	0304	2	-01520 1150
GNP	0304	3	-01420 1230
GNP	0304	4	-01420 1230
GNP	0304	5	-01570 1120
LSO	0305	1	02700 -2980
LSO	0305	2	02850 -2850
LSO	0305	3	02950 -2940
LSO	0305	4	02800 -3050
LSO	0305	5	02930 -3000
MLD	0306	1	07250 0700
MLD	0306	2	07350 0670
MLD	0306	3	07400 0250
MLD	0306	4	07370 -0150
MLD	0306	5	07250 -0200
MLD	0306	6	07150 0250
MOZ	0307	1	04030 -1030
MOZ	0307	2	04000 -1600
MOZ	0307	3	03250 -2680
MOZ	0307	4	03030 -1500
MOZ	0307	5	03500 -1180
MWI	0308	1	03280 -0930
MWI	0308	2	03400 -0980
MWI	0308	3	03460 -1100
MWI	0308	4	03580 -1480
MWI	0308	5	03520 -1720
MWI	0308	6	03200 -1300
NRU	0309	1	16200 0000
NRU	0309	2	16800 0000
NRU	0309	3	16200 -0300
NRU	0309	4	16800 -0300
NRU	0309	5	16690 -0050
RRW	0310	1	03030 -0100
RRW	0310	2	02900 -0220
RRW	0310	3	02980 -0450
RRW	0310	4	03100 -0300
RRW	0310	5	03050 -0250
SMR	0311	1	01230 4350
SMR	0311	2	01200 4300
SOM	0312	1	04328 1122
SOM	0312	2	05046 1158
SOM	0312	3	04520 0202
SOM	0312	4	04200 -0300
SOM	0312	5	04444 0955
SWZ	0313	1	03197 -2670
SWZ	0313	2	03110 -2590
SWZ	0313	3	03130 -2650
SWZ	0313	4	03080 -2660
SWZ	0313	5	03190 -2650
ZMB	0314	1	02850 -0800
ZMB	0314	2	03300 -0900
ZMB	0314	3	03300 -1380
ZMB	0314	4	02551 -1750
ZMB	0314	5	02620 -1500
ZMB	0314	6	02410 -1100
AUS	0315	1	12450 -1450
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AUS 0316 1 13080 -1250
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AUS 0320 3 15300 -3000
AUS 0320 4 14900 -2900
AUS 0320 5 14470 -3610
AUS 0320 6 14100 -3400

LBY 0321 1 01800 2250
LBY 0321 2 01400 2250
LBY 0321 3 01000 2450
LBY 0321 4 00920 2650
LBY 0321 5 00920 3000
LBY 0321 6 01140 3350

ZAI 0322 1 02750 0500
ZAI 0322 2 03150 0225
ZAI 0322 3 02150 -0350
ZAI 0322 4 02400 -0400
ZAI 0322 5 01600 -0200
ZAI 0322 6 01950 0500
ZAI 0323 1 03000 -1200
ZAI 0323 2 02216 -1100
ZAI 0323 3 01250 -0590
ZAI 0323 4 01616 -0250
ZAI 0323 5 02350 -0350
ZAI 0323 6 02950 -0600

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 150-E
24 January 1977
Original : English

WORKING GROUP 5A

Report of Sub-Working Group 5A2

We have split up Regions 1 and 3 into three parts for the computer runs :

- the first part from 34°W to 8°E covering 104 countries,
- the second part from 4°E to 68°E covering 106 countries,
- the third part from 50°E to 160°W covering 107 countries.

We have received an output for the first run for the first part. The cards for the second and third parts have been punched and put into the computer. We expect results for the second part later this morning. The results for the third part may come out late this afternoon.

We have used the optimum beam file of TDF and we are studying the differences in beam characteristics compared with the requirements.

Remarks about the results from the first part output, i.e. for countries between 34°W to 8°E :

- negative margins appear for 50 countries out of 104 countries,
- the worst margin is -8 dB in one case on co-channel relative to 31 dB protection ratio,
- the average value of the negative margins is about -3.5 dB.

When we receive the results of the second and third parts, we will check all the trial plans of Parts 1, 2 and 3 and make necessary corrections in order to combine the plans into one trial plan for Regions 1 and 3.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 151-E
25 January 1977
Original : French

COMMITTEE 2

Working Group of Committee 2

CREDENTIALS

1. The Working Group set up by Committee 2 at its meeting of 14 January 1977 for the purpose of examining in detail the credentials presented by delegations met twice, on 19 and on 25 January 1977.

2. At these two meetings it examined the credentials of the delegations listed in the Annex and found them to be in order.

3. The Working Group has requested its Secretary (Mr. Winter, Office J 166) to approach those delegations whose credentials have not yet been presented and to report on the situation at its next meeting, scheduled for 1 February 1977.

Annex : 1

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A N N E X

CREDENTIALS EXAMINED

ALGERIA (Algerian Democratic and Popular Republic)
GERMANY (Federal Republic of)
SAUDI ARABIA (Kingdom of)
AUSTRALIA
BAHRAIN (State of)
BANGLADESH (People's Republic of)
BELGIUM
BENIN (People's Republic of)
BYELORUSSIAN SOVIET SOCIALIST REPUBLIC
BOLIVIA (Republic of)
BURUNDI (Republic of)
CANADA
CHILI
CHINA (People's Republic of)
CYPRUS (Republic of)
VATICAN CITY STATE
COLOMBIA (Republic of)
COMOROS (State of the)
KOREA (Republic of)
CUBA
DENMARK
EGYPT (Arab Republic of)
ECUADOR
SPAIN
ETHIOPIA
FINLAND
FRANCE
GABON REPUBLIC
GHANA
GREECE
GUATEMALA
GUINEA (Republic of)

HAITI (Republic of)

UPPER VOLTA (Republic of)

HUNGARIAN PEOPLE'S REPUBLIC

INDIA (Republic of)

IRAN

IRELAND

ITALY

JAPAN

KENYA (Republic of)

KUWAIT (State of)

LAO PEOPLE'S DEMOCRATIC REPUBLIC

LIBYAN ARAB REPUBLIC

LIECHTENSTEIN (Principality of)

LUXEMBOURG

MADAGASCAR (Democratic Republic of)

MALI (Republic of)

MALTA (Republic of)

MAURITIUS

MAURITANIA (Islamic Republic of)

MEXICO

MONACO

NIGERIA (Federal Republic of)

NORWAY

NEW ZEALAND

UGANDA (Republic of)

PAPUA NEW GUINEA

PARAGUAY (Republic of)

NETHERLANDS (Kingdom of the)

POLAND (People's Republic of)

GERMAN DEMOCRATIC REPUBLIC

UKRANIAN SOVIET SOCIALIST REPUBLIC

UNITED KINGDOM of Great Britain and Northern Ireland

SENEGAL (Republic of the)

SINGAPORE (Republic of)

SUDAN (Democratic Republic of the)

SWEDEN

SWITZERLAND (Confederation of)

TANZANIA (United Republic of)

CHAD (Republic of the)

CZECHOSLOVAK SOCIALIST REPUBLIC

THAILAND

TOGOLESE REPUBLIC

TUNISIA

TURKEY

UNION OF SOVIET SOCIALIST REPUBLICS

VENEZUELA (Republic of)

YEMEN (People's Democratic Republic of)

YUGOSLAVIA (Socialist Federal Republic of)

ZAIRE (Republic of)

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Document N° 152-F/E/S
26 janvier 1977
Original : français
anglais
espagnol

COMMISSION 6
COMMITTEE 6
COMISIÓN 6

MANDAT DU GROUPE DE TRAVAIL 6D

TERMS OF REFERENCE OF WORKING GROUP 6D

MANDATO DEL GRUPO DE TRABAJO 6D

Groupe de travail 6D

Président : M. H.K. De Zwart, Pays-Bas (Case N° 211)
Secrétaire : M. H. Pouliquen (Case N° 3008)

Mandat :

- Examiner quelles sont, en plus des dispositions que rédigent actuellement les Groupes de travail 6A et 6B, celles nécessaires à l'application satisfaisante des Actes finals de la Conférence, conformément aux principes énoncés dans le premier rapport soumis en séance plénière par la Commission 6; préparer les textes appropriés.

Working Group 6D

Chairman : Mr. H.K. De Zwart, Netherlands (Box No. 211)
Secretary: Mr. H. Pouliquen (Box No. 3008)

Terms of reference:

- To examine what provisions, additional to those being drafted by Working Groups 6A and 6B, are necessary to ensure the satisfactory application of the Final Acts of the Conference in accordance with the principles stated in the first report of Committee 6 to the Plenary meeting, and to draft the appropriate texts.

Grupo de trabajo 6D

Presidente: Sr. H.K. De Zwart, Países Bajos (Casilla N.° 211)
Secretario: Sr. H. Pouliquen (Casilla N.° 3008)

Mandato:

- Examinar cuales son además de las disposiciones que redactan actualmente los Grupos de trabajo 6A y 6B las que son necesarias para asegurar la aplicación satisfactoria de las Actas Finales de la Conferencia de acuerdo con los principios enunciados en el primer informe de la Comisión 6 al Pleno, y preparar los textos apropiados.

R.J. BUNDLE
Président de la Commission 6

Pour des raisons d'économie, ce document n'a été tiré qu'en nombre restreint. Les participants sont donc priés de bien vouloir apporter à la conférence leurs documents avec eux, car il n'y aura que fort peu d'exemplaires supplémentaires disponibles.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 153-E
26 January 1977
Original : English

WORKING GROUP 4B

Sub-Groups 4B2 and 4B4

REFERENCE ANTENNA DIAMETER FOR A
FIXED-SATELLITE EARTH STATION FOR CALCULATING INTERFERENCE
FROM SATELLITES IN THE BROADCASTING SERVICE

1. Having considered the documents presented to Sub-Group 4B4 on this subject, the Sub-Group reached the following conclusion which is submitted to Committee 4A for its consideration.

2. It was noted that for antennae larger than 100 λ (2.5 m) in the Fixed-Satellite Service, the gain of the sidelobes is given by the equation $32 - 25 \log \theta$, where θ is the angle from the boresight (CCIR Recommendation 465), and that the sidelobe gain is independent of antenna diameter.

3. However, it was noted that for the case of transmitting earth stations, the amount of interference radiated into the uplink of other satellite systems would be proportional to the antenna diameter squared. In this case the interference decreases as the antenna diameter is increased. Since the 11.7 - 12.2 GHz band is only assigned in the space-to-earth direction, this point is not of direct concern.

4. In view of the above, it does not appear appropriate for antenna diameters greater than 100 λ to identify a minimum antenna diameter for receiving earth stations in the Fixed-Satellite Service sharing the band 11.7 - 12.2 GHz. It may be useful to consider a 4.5 m antenna, having an efficiency of 60 % and an on-axis-gain of 53 dB, as typical for the purposes of planning the sharing of this band; however, it should be noted that consideration is being given by Administrations in Region 2 to the use of antennae having diameters ranging from 3 m to 10 m.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 154-E
26 January 1977
Original : English

Note by the Chairman of the Conference

VICE-CHAIRMAN (JAPAN)

Mr. Yutaka MAKI has informed me that for urgent reasons he is obliged to leave the Conference, and that therefore Mr. Hiroshi KADOTA is designated as Vice-Chairman of the Conference.

Mr. Kadota will also be the Head of the Japanese delegation.

IB LØNBERG
Chairman of the Conference

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 1 to
Document No. 155-E
1 February 1977
Original : English

COMMITTEE 7

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 7

(RE-ARRANGEMENT OF THE RADIO REGULATIONS)

Page 2, point 3 :

The first paragraph should read as follows :

"The delegate of China considered that pages 1 to 9 of the Report of the Group of Experts should be brought to the notice of the 1979 WARC so that that Conference could take them into account in the course of the complete revision of the Radio Regulations and note the basic principles which had guided the work of the above-mentioned Group of Experts. He therefore proposed that the pages in question be annexed to the documents which the current Conference would submit to the 1979 Conference."

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 155-E
26 January 1977
Original : English

COMMITTEE 7

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 7

(RE-ARRANGEMENT OF THE RADIO REGULATIONS)

Thursday, 20 January 1977, at 1555 hrs

Chairman : Mr. J.J. HERNANDEZ-G (Mexico)

Subjects discussed :	Document No.
1. The first draft Report of Working Group 7A	RR5
2. The draft Report of Working Group 7A1	RR6

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1. The first draft Report of Working Group 7A (Document No. RR5)

The Chairman of Working Group 7A presented its Report (Document No. RR5) and stated that because of the strict time-table set by the Steering Committee it had not always been easy to do justice to all the points raised in the discussion or to formulate the right conclusions. Thanking the Secretariat for its diligent and unfailing support, he expressed the hope that the Report faithfully reflected the results achieved. He also listed a number of editorial corrections which would be made in the final version of the document.

The Chairman invited the Committee to consider the Report point by point.

Point 1

Approved without comment.

Point 2

The delegate of Australia said that point 2, c) would have to be amended by substituting the word "Addendum" for the number "DL/RR-3" since that document did not deal with the cross-referencing system.

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It was so agreed.

The delegate of the USSR said that some reference should be made in point 2 to the fact that a USSR proposal had been discussed in the Working Group. He also favoured the expression "divided provisions" rather than "split up provisions" in point 2, c).

Subject to those amendments, point 2 was approved.

Point 3

The delegate of China considered that pages 1 to 9 of the Report of the Group of Experts should be incorporated in Committee 7's own Report because they set out the guiding principles which had governed the work of the Group of Experts and should be brought to the notice of the 1979 WARC.

The Deputy Secretary-General observed that the Chinese delegation had raised a matter of principle involving the question of whether or not the Conference should transmit to Administrations the Report itself of the Group of Experts as distinct from their proposals concerning re-arrangement of the Radio Regulations and the Additional Radio Regulations. The Committee at its first meeting had decided to forward only the proposed re-arrangements as a working document for the preparations by Administrations of their proposals to the 1979 WARC. The Chinese point would call for a separate decision and if such a decision were taken it would be necessary to edit parts of the pages concerned.

The Chairman observed that reference might be made to the Chinese delegation's statement in the Report of Committee 7 which was to be submitted to the Plenary.

The delegate of the United Kingdom was in favour of the course suggested by the Chairman. Under the Committee's terms of reference it would be inappropriate to require the publication in toto of the re-arranged Radio Regulations and that could certainly conflict with the decisions reached about the competence of the present Conference regarding the Group of Experts' Report. It had already been sent to all administrations and was thus available as a working document in preparation for the 1979 WARC : surely there was no need to reproduce the text with all the attendant expense that would entail.

The delegate of Norway said he had understood the Chinese delegation to have asked for pages 1 - 9 only in the Group of Experts' Report to be annexed to Committee 7's Report for information so as to help administrations when the Report came to be examined by any body or conference dealing with the possible re-arrangement of the Radio Regulations.

The delegate of Algeria agreed with the previous speaker.

The Chairman said that it would certainly be too costly to reproduce the Group of Experts' Report for use by administrations at the 1979 WARC.

The delegate of the United States of America observed that the new publication concerning possible re-arrangement to be prepared by the Secretary-General by September 1977 would be a working document for the 1979 WARC and not a full report containing the complete history of the work done on the subject. The Experts' Report had already been received by all administrations and was thus available for consultation in every country. In connection with the comment made by the delegate of China he drew attention to point 17.5 in the Experts' Report and to the decision reached in Working Group 7A about not including a reference in its own draft Report to the Resolutions adopted by the World Maritime Administrative Radio Conference of 1974 or Resolution No. 768 of the Administrative Council.

The delegate of the United Kingdom, supported by the delegate of Norway proposed that further consideration of the request made by the delegate of China be deferred until the Committee came to consider the draft resolution on which he had a proposal to make which was contained in the draft Report of Working Working Group 7A1 (Document No. RR6).

It was so agreed.

Subject to that question, point 3 was approved.

Point 4

The delegate of the USSR said that point 4, a) should be re-drafted so as to indicate that the final revision of the Radio Regulations would be carried out by the 1979 WARC.

The delegate of the United Kingdom, supported by the delegate of the Federal Republic of Germany, said that as it stood the text of point 4, a) would go beyond Committee 7's terms of reference. The text might be amended to read "The endorsement by the WARC-BS of the proposal of the Group of Experts in the re-arrangement of the Radio Regulations, ...".

That amendment was approved.

Point 5

Approved without comment.

Annex 1

Approved, subject to editorial corrections.

2. The draft Report of Working Group 7A1 (Document No. RR6)

The Chairman of Working Group 7A1, presenting its Report (Document No. RR6), explained that owing to lack of time the Report was being submitted direct to Committee 7, Members of Working Group 7A1 had worked under considerable pressure to produce a document that was perforce as brief as possible. Some editorial corrections would be made in the definitive version.

The Chairman invited the Committee to examine the Report point by point.

Points 1 - 3

Approved without comment.

Annex 1

The delegate of the United Kingdom proposed in the interests of clarity that paragraph 2 be reworded to read : "The provisions of the Re-arrangement bear marginal serial numbers from 3001 to distinguish them from the present numbers. They are placed immediately to the left of the latter."

It was so agreed.

The delegate of the United Kingdom said that as the table of cross references had already been approved by the Committee, under point 1 d) of Document No. RR5, the following sentence should be inserted after the word "booklet" in paragraph 9 : "The part of the Table showing the present to new marginal serial numbers also includes the present marginal serial numbers bearing the symbol SUP in the Radio Regulations."

It was so agreed.

Annex 1, as amended, was approved.

Annex 2

The delegate of the USSR proposed that the full title of the Report of the Group of Experts be inserted in paragraph a) of the preamble to the draft resolution contained in Annex 2.

It was so agreed.

The delegate of New Zealand observed that from the editorial point of view it would be preferable for the sub-paragraphs of the second preambular paragraph to be re-lettered a) to c).

The delegate of Denmark expressed grave concern about the lack of time allowed for comments on the Experts' Report. It was a matter of general knowledge that by virtue of their terms of reference the Experts had not been empowered to recommend changes, deletions or new provisions in the Radio Regulations. Yet, if their comments and suggestions were examined as they stood, in conjunction with Committee 7's own conclusions the latter might be thought to have acted without reflection. As an example, he mentioned page 399 in the Experts' Report and said that his delegation could have indicated numerous provisions which ought to be placed in a more sensible and logical order. However, that had not been feasible because of the tight schedule imposed. He would not press the point provided it were made clear in the proper place that the working conditions for Working Groups 7A and 7A1 had been such as to preclude a careful examination of their agenda.

The delegate of the United Kingdom proposed the addition of the words "approves the re-arrangement proposed in the Report of the Group of Experts, subject to the corrections adopted by this Conference; and" at the end of the second preambular paragraph.

The delegate of the Democratic People's Republic of Korea made the statement reproduced in the Annex below.

The meeting rose at 1710 hours.

The Secretary :

A. ZACCAGNINI

The Chairman :

J.J. HERNANDEZ-G.

Annex : 1

ANNEX

STATEMENT BY THE DELEGATION OF THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

"The Democratic People's Republic of Korea joined the ITU in September 1975 and since then has been making sincere efforts as a member of the Union to strengthen international ties and cooperation in the field of telecommunications, discharging its duties and exercising its rights in accordance with the convention and regulations of the Union.

The Democratic People's Republic of Korea had no opportunity to participate in the meetings organized by the Union, and so could not fully present its opinions for reflection in the decisions and resolutions of the ITU.

In particular, the possible re-arrangement of the Radio Regulations and the Additional Radio Regulations 1976 at this Conference has not included the radio call signs and frequency assignments for traffic and broadcasting which are being used in the Democratic People's Republic of Korea and moreover the radio call signs being used by the Democratic People's Republic of Korea have been registered as those of the south Korean authorities.

We, the communications delegation of the Democratic People's Republic of Korea, are therefore confident that the radio call signs and the frequency band allocation for traffic and broadcasting which we have already used will be included in the Radio Regulations to be discussed and adopted at the 1979 Conference."

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 156-E
26 January 1977
Original : French

COMMITTEE 6

Note from the Chairman of Committee 4 to Committee 6

During the discussion that took place in Committee 4 on the problems of energy dispersal, some delegations expressed the wish that the introduction of energy dispersal in broadcasting-satellite systems should be optional for those countries that did not plan to use the 11.7 - 12.2 (12.5) MHz band for the Terrestrial Services, and, if not applied, that the continuous modulation of the carrier signal would be ensured.

Committee 4 took note of this point, but considered that any decision on the matter had to be taken by Committee 6, which is responsible for procedures.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 157(Rev.2)-E
31 January 1977
Original : English/French

COMMITTEE 4

Working Group 4A

RELATION BETWEEN THE ANTENNA BEAMWIDTH AND THE FEASIBLE OUTPUT POWER FROM A SATELLITE

The maximum beamwidth of a transmitting antenna in the Broadcasting-Satellite Service is limited by the maximum available radio-frequency power generated in the satellite.

At 12 GHz this limit in the near future will be in the neighbourhood of 1 kW.

This radio-frequency output power corresponds approximately to the values of maximum beam area given in the Table below, assuming individual reception and a power flux-density of -103 dBW/m^2*) at the edge of the coverage area and an e.i.r.p. of 65 dBW, including additional losses of 2 dB between the power tube and the antenna.

Radio-frequency power per channel (W)	Maximum beam area[1)]
200	1.1
400	2.3
600	3.3
800	4.6
1000	5.6

1) The beam area is here defined as the product, ab, of the minor axis, b, and the major axis, a, of the cross-section of the beam, both a and b being expressed in degrees. For a beam of circular cross-section the beam area is given by a^2, where a is the diameter of the area.

An increase in the number of channels will lead to an increase in the radio-frequency power to be provided. Should this value exceed the maximum available radio-frequency power for one satellite, the deployment of more than one satellite may be necessary.

In future, it may be possible to generate a total radio-frequency power, going up to 4 kW in the 12 GHz band. In this case the values for the maximum beam area will be increased fourfold.

*) In Region 2, a value of -105 dBW/m^2 is used, as a result of which the values of beam in the Table will be slightly different from those quoted.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 157(Rev.1)-E
27 January 1977
Original : English

COMMITTEE 4

Working Group 4A

MAXIMUM ANTENNA BEAMWIDTH CORRESPONDING TO THE FEASIBLE OUTPUT POWER FROM A SATELLITE

The maximum beamwidth of a transmitting antenna in the Broadcasting-Satellite Service is limited by the maximum available radio-frequency power generated in the satellite.

At 12 GHz this limit is assumed to be in the neighbourhood of 1 kW.

This radio-frequency output power corresponds approximately to the values of maximum beam area given in the Table below, assuming individual reception and a power flux-density of -103 dBW/m^2*) at the edge of the coverage area and an e.i.r.p. of 65 dBW, including additional losses of 2 dB between the power tube and the antenna.

Radio-frequency power per channel (W)	Maximum beam area 1)
200	1.1
400	2.3
600	3.3
800	4.6
1000	5.6

1) The beam area is here defined as the product, ab, of the minor axis, b, and the major axis, a, of the elliptical trace on the surface of the Earth defined by the contour -103 dBW/m^2, both a and b being expressed in degrees. For a beam of circular cross-section the beam area is given by a^2, where a is the radius of the area.

An increase in the number of channels will lead to an increase in the radio-frequency power to be provided. Should this value exceed the maximum available radio-frequency power for one satellite, the deployment of more than one satellite may be necessary.

In future, it may be possible to generate a total radio-frequency power, going up to 4 kW in the 12 GHz band.

---

*) In Region 2, a value of -105 dBW/m^2 is used, as a result of which the values of beam in the Table will be slightly different from those quoted.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 157-E
26 January 1977
Original : English

COMMITTEE 4

Working Group 4A

MAXIMUM ANTENNA BEAMWIDTH CORRESPONDING TO THE FEASIBLE OUTPUT POWER FROM A SATELLITE

The maximum beamwidth of a transmitting antenna in the Broadcasting-Satellite Service is limited by the maximum available radio-frequency power generated in the satellite.

At 12 GHz, this limit is in the neighbourhood of 4 kW.

This output power corresponds approximately to the values of maximum half-power beamwidth given in the Table below, assuming individual reception and a power flux-density of -103 dBW/m^2 at the edge of the coverage area.

Number of channels transmitted per satellite	1	5	10	15
Maximum half-power beamwidth (degrees)	5°	2.3°	1.6°	1.3°

Note : If the maximum available radio-frequency power is reduced to 1 kW, the values of maximum half-power beamwidth will be one half of those given in the Table.

These values correspond to antennae with circular beams or elliptical beams with the same gain.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 158-E
26 January 1977
Original : Spanish

COMMITTEE 5

Republic of Venezuela

PROPOSALS FOR PLANNING THE BROADCASTING-SATELLITE SERVICE IN REGION 2

In accordance with the terms of reference of Working Group 5B (Document No. 84), the second part of which specifies that a plan should be established for the Broadcasting-Satellite Service in Region 2, and bearing in mind the planning principles approved by that Working Group (Document No. 110), the Venezuelan Administration submits to Committee 5 the proposal reproduced in the Annex and intended to define the geostationary orbital arc to be used by the Broadcasting-Satellite Service in Region 2.

The Venezuelan Administration desires to see a plan established which would effectively and equitably guarantee satisfactory access for all Administrations to the orbital positions and frequencies they require. For this purpose, account should be taken of the requirements submitted to the IFRB by Administrations and of the needs of Administrations which have not yet submitted their requirements.

In the opinion of the Venezuelan Administration, only a plan which assigns to every country a number of orbital positions and frequencies in these conditions will provide an effective guarantee of equity.

The sharing of the geostationary orbital arc between the Fixed-Satellite Service and the Broadcasting-Satellite Service has been proposed in Working Group 5B. The Venezuelan Administration believes that although this does not constitute a plan, it is a useful measure likely to facilitate planning.

The Brazilian Administration (Document No. 33) and the Canadian Administration (Document No. 9) propose that for Region 2 the orbital arcs between 75° and 100° and between 145° and 170°W longitude should be assigned to the Broadcasting-Satellite Service as the primary service (the term being used as in the Radio Regulations) and to the Fixed-Satellite Service as the secondary service (or, alternately, that the 1979 World Administrative Conference should be recommended so to assign them). They also propose that the other orbital segments should be assigned in inverse order.

This arrangement is extremely restrictive for the countries of Central and South America and the Caribbean which would have to share the arc between 75° and 100°W longitude (25° of the orbit) with a number of densely populated areas of North America. The Venezuelan Administration therefore considers that the longitude of this arc should be extended westwards, so as to ensure satisfaction of the requirements of the Central and South American and the Caribbean countries.

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A planning exercise is accordingly proposed in order to determine the minimum frequency and orbital requirements capable of meeting the needs of this zone, as a preliminary step to planning. For this purpose, the procedure described in the Annex is proposed, which suggests certain studies to be conducted by Working Group 5B and an evaluation to be prepared by the IFRB.

The work of Working Group 5B prior to the final evaluation by the IFRB could be continued, so as to provide reliable data for subsequent final planning in the Conference.

Annex : 1

A N N E X

PLANNING EXERCISE FOR THE AREA OF CENTRAL AND SOUTH AMERICA AND THE CARIBBEAN WITH A VIEW TO OBTAINING AN ESTIMATE OF THE SPECTRUM AND ORBIT REQUIREMENTS OF THE AREA

1. Make a general allocation of the band, which would give an estimate of the number of usable channels and of the spacing between them.

2. Determine groups of compatible channels which can be used in a single antenna beam (as far as possible, each group should contain the same number of channels).

3. Consider the countries of the area which have not submitted requirements as an additional service area for the coverage of which one beam must be assigned; a number of reserve beams must also be provided for the coverage of North America.

4. Calculate the number of channels required on the basis of the above considerations.

5. Select the orbital arcs corresponding to each service area, taking the following criteria into account :

a) The minimum angle of elevation shall be determined on the basis of criteria relating to the classification of service areas : tropical, mountainous, very high latitude, etc.

b) Space stations should be situated in the West of their service areas. Every attempt should be made to ensure that, during the equinoctial period, the eclipse begins after 0100 hours and in any case never before midnight.

6. Fix one or more values for the spacing between orbital positions.

7. Assign to each defined orbital position a given number of service areas in accordance with the results given by point 5.

8. Determine for each service area the minimum ellipse (or circle) required to cover the proposed service area.

9. Determine for each service area the test points required for the calculation of interference.

10. Carry out the IFRB programme.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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French

COMMITTEES 5 AND 6
PLENARY MEETING

THIRD REPORT OF COMMITTEE 4

(TECHNICAL PARAMETERS FOR PLANNING)

Subjects : - Difference between the e.i.r.p. directed towards the edge of the coverage area and that on the axis of the beam

- Definitions

- Radio propagation factors

- Polarization

- Channel spacing and guard bands

Following the data furnished in Documents Nos. 108(Rev.1) and Corrigenda and 122 the Committee 4 presents herewith for use of Committee 5 its third Report on technical parameters for planning, as specified in the Annex.

All the decisions concerning the above-mentioned parameters have been adopted by the Committee 4 unanimously except the decision on adoption of circular polarization for planning (§ 23 (2.2) of the Annex), for which general consensus was reached within the Committee 4, however, 2 Administrations expressed reservations in this matter as follows :

- Administration of the United States of America expressing reservation about adoption of circular polarization for Region 2 expressed the opinion that the strong possibility that the Fixed-Satellite Service will adopt linear polarization would foreclose the possibility of using orthogonal polarization to facilitate the sharing between the two space services and would have an effect on the orbit-spectrum utilization within the Region.

- Administration of Iran expressed reservation about adopting circular polarization for planning the Broadcasting-Satellite Service in Region 3 and stated that it is their intent to use linear polarization.

Attention of Committee 6 is drawn to the paragraph 22 (1) of the Annex (Definitions) on which this Committee should take definitive decisions.

F. KRÁLÍK
Chairman

Annex : 1

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A N N E X

6.(3.11.2) DIFFERENCE BETWEEN THE e.i.r.p. DIRECTED TOWARDS THE EDGE OF THE COVERAGE AREA AND THAT ON THE AXIS OF THE BEAM

For the purpose of planning, the absolute value of the difference between the e.i.r.p. directed towards the edge of the coverage area and that on the axis of the beam should preferably be 3 dB.

Note : If the beam area is larger than the coverage area the value will be less than 3 dB.

22.(1.) Definitions

1. Service Area

The area on the surface of the earth in which the Administration responsible for the service has the right to demand that the agreed protection conditions be provided.

Note : In the definition of Service Area, it is made clear that within the Service Area the agreed protection conditions can be demanded. This is the area where there should be at least the wanted power flux-density and protection against interference based on the agreed protection ratio for the agreed percentage of time should be achieved. In some circumstances a further technical definition may become necessary.

2. Coverage Area

The area on the surface of the earth delineated by a contour of a constant given value of power flux-density which would permit the wanted quality of reception in the absence of interference.

Note 1 : In accordance with the provisions of Radio Regulation 428A, the Coverage Area must be the smallest area which embraces the Service Area.

Note 2 : The Coverage Area, which normally will totally embrace the Service Area, will result from the effect of the antenna beam shape (elliptical or circular) on the surface of the earth and will be defined by a given value of power flux-density. For example, in the case of a Region 1 or 3 country with a service planned on an individual reception basis, it would be the contour corresponding to a level of $-103 dBW/m^2$ for 99 % of the worst month. There will usually be an area outside of the Service Area but within the Coverage Area where there would be at least the minimum specified power flux-density but this area would not be afforded protection against interference.

3. Beam Area

The area delineated by the intersection of the half-power beam of the satellite transmitting antenna with the surface of the earth.

Note : The Beam Area is simply that area on the earth's surface corresponding to the -3dB points on the satellite antenna radiation pattern. In many cases the Beam Area would almost coincide with the Coverage Area, the discrepancy being accounted for by the permanent difference in path lengths from the satellite throughout the Beam Area, and also by the permanent variations, if any, in propagation factors across the area. However, for a Service Area where the maximum dimension as seen from the satellite position is less than 0.6^{o} (the agreed minimum practicable satellite antenna half-power beamwidth) there could be a significant difference between the Beam Area and the Coverage Area.

4. Nominal orbit poition

The longitude of the position in the orbit of a geostationary satellite associated with an assignment to a space station in a Space Radiocommunication Service. The position is given in degrees from the Greenwich meridian.

4.(2.) RADIO PROPAGATION FACTORS

1. It is noted that extensive measurements of attenuation due to rain have not been carried out in the tropical countries, especially in the African region. Based on the meteorological data which the countries may provide they can be divided into rain climates as set out in CCIR Report 563.

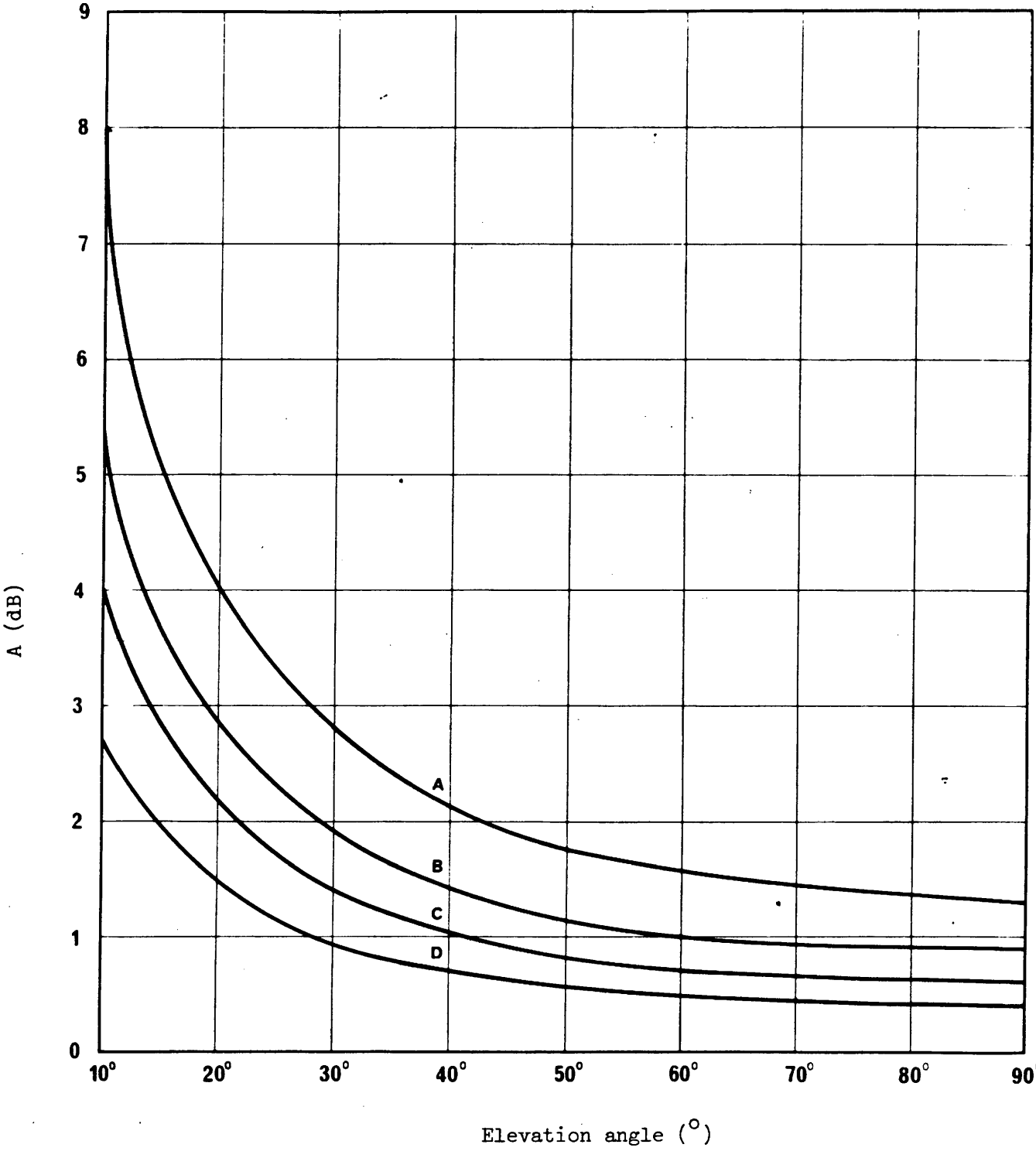
2. For the purpose of planning the Broadcasting-Satellite Service during this Conference, it is recommended that planning should be based only on achieving a carrier-to-noise ratio of 14 dB for 99 % of the worst month. It is understood that the time percentage for the worst month is about 4 times greater than the yearly percentage. However, this procedure is a provisional one and it should be used with caution.

3. Appropriate curves relating to 1 % of the worst month for the five rain climatic regions are shown in the following figure.

4. In using these curves, it is recommended that as far as possible the difference between clear weather attenuation and the attenuation for 99 % of the worst month be limited to a maximum of 2 dB by appropriate choice of angle of elevation.

5. The CCIR is requested urgently to verify the above-mentioned relationship between worst month and yearly percentages, and to pursue its studies especially concerning attenuation due to precipitation at low angles of elevation, so that appropriate data may be submitted to the WARC in 1979.

The CCIR should also study the effects of sand and dust storms and present the results obtained to the WARC of 1979.



Predicted values of attenuation exceeded for not more than 1% of the worst month (0.25% of the time) on Earth-Space paths at 12 GHz in the rain climates indicated in Report 563 of the CCIR.

A : Climate 1
B : Climate 2
C : Climates 3 and 4
D : Climate 5

23.(2.2) Polarization

2. For the purpose of planning the Broadcasting-Satellite Service during this Conference, circular polarization shall be used in Regions 1, 2 and 3.

Note : See comments on reservations given in the introduction for this document.

24.(3.7) Channel spacing and guard bands

1. For the purposes of "a priori" planning for the Broadcasting-Satellite Service at this Conference, the guard bands necessary for the protection of services in adjacent frequency bands from spurious emissions are shown in Table 1.

TABLE 1

Regions	Guard band at the lower edge of the band (11.7 GHz)	Guard band at the upper edge of the band (12.2/12.5 GHz)
1 and 3	14 MHz	11 MHz
2	12 MHz	9 MHz

These guard bands assume maximum beam centre e.i.r.p. values of 67 dBW for Regions 1 and 3 and 63 dBW for Region 2 (these being values relating to individual reception), and a filter roll-off of 2 dB/MHz. If smaller e.i.r.p. values are assumed, the guard bands can be reduced in width by 0.5 MHz for each decibel decrease in e.i.r.p.

2. A guard band referred to in this document is defined as the portion of the frequency spectrum between the edge of the allocated band and the edge of the necessary bandwidth of the nearest channel allocation.

3. Since it seems likely that future developments in technology or the choice of lower e.i.r.p. values than those given above will enable a reduction in the necessary guard bands, it is recommended that for purposes other than "a priori" planning at this Conference, the latest recommendations of the CCIR on the subject of out-of-band emissions from broadcasting-satellites should be used.

25.(3.10.1) CROSS-SECTION OF ANTENNA BEAMS

1. For technical reasons, planning in the Broadcasting-Satellite Service should be based only on the use of transmitting antennae with beams of elliptical or circular cross-section.

2. For planning the system, if the cross-section of the transmitted beam is elliptical, the effective beamwidth, ϕ_o, is a function of the angle of rotation, q from the plane containing the major axis, to the plane in which the beamwidth is required.

3. The relationship between the maximum gain of an antenna and the half-power beamwidth can be derived from the expression :

$$G_m = 27{,}843/ab$$

or :

$$G_m(dB) = 44.44 - 10 \log_{10} a - 10 \log_{10} b$$

where :

a and b are the angles (in degrees) subtended at the satellite by the intersections of the major and minor axes of the ellipse respectively, with the half-power contour on the surface of the Earth.

An antenna efficiency of 55 % is assumed.

INTERNATIONAL TELECOMMUNICATION UNION

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COMMITTEE 5

Cuba

PROPOSAL FOR THE WORK OF COMMITTEE 5

Introduction

The Administration of the Republic of Cuba, having regard to the terms of reference assigned to Working Group 5B, and with a view to expediting the process of drawing up a plan for a Broadcasting-Satellite Service in Region 2, wishes to submit a proposal concerning the matters to be dealt with if the Working Party is to fulfil its terms of reference.

Bases of the proposal

In preparing this document, the Administration of the Republic of Cuba has taken the following matters into consideration :

1. The proposals for the division of the geostationary orbit put forward by two Administrations in Region 2, to the effect that the orbital arc between 75° and 100°W should be used by the Satellite-Broadcasting Service; in the opinion of the Cuban Administration, this proposal does not satisfy the Satellite-Broadcasting requirements of the countries of the Region.

2. Document No. 103, submitted by the IFRB, in which 18 countries of the Region have submitted their requirements; these countries, together with those attending the Conference which have submitted no requirements, constitute more than half the countries of the Region and their territories represent more than 90 % of the total area of the Region.

3. The work carried out by Committee 4, which has defined the basic technical parameters required for the preparation of technical planning criteria.

4. The principles adopted by Working Group 5A concerning the various situations which may arise in the planning of the Broadcasting-Satellite Service

5. The present state of discussions in Working Group 5B concerning the division of the orbit, which has not permitted any progress to be made in respect of any other aspect of the drafting of a Regional plan.

Proposal

In view of the above-mentioned points, the Cuban Administration proposes that a planning exercise should be carried out in collaboration with the IFRB for the area of Central and South America and the Caribbean with a view to obtaining an estimate of the spectrum and orbit requirements of the area. The proposal for the exercise is annexed to this document.

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Annex : 1

A N N E X

PLANNING EXERCISE FOR THE AREA OF CENTRAL AND SOUTH AMERICA AND THE CARIBBEAN WITH A VIEW TO OBTAINING AN ESTIMATE OF THE SPECTRUM AND ORBIT REQUIREMENTS OF THE AREA

1. Make a general allocation of the band, which would give an estimate of the number of usable channels and of the spacing between them.

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4. Calculate the number of channels required on the basis of the above considerations.

5. Select the orbital arcs corresponding to each service area, taking the following criteria into account :

a) The minimum angle of elevation shall be determined on the basis of criteria relating to the classification of service areas : tropical, mountainous, very high latitude, etc.

b) Space stations should be situated in the West of their service areas. Every attempt should be made to ensure that, during the equinoctial period, the eclipse begins after 0100 hrs and in any case never before midnight.

6. Fix one or more values for the spacing between orbital positions.

7. Assign to each defined orbital position a given number of service areas in accordance with the results given by point 5.

8. Determine for each service area the minimum ellipse (or circle) required to cover the proposed service area.

9. Determine for each service area the test points required for the calculation of interference.

10. Carry out the IFRB programme.

INTERNATIONAL TELECOMMUNICATION UNION

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COMMITTEE 4

Working Group 4B

INFORMATION CONCERNING SPURIOUS EMISSIONS - POWER FLUX-DENSITY LEVELS, PLANNING CONSIDERATIONS

Having considered the need to protect services in adjacent bands from spurious emissions from broadcasting satellites having frequency assignments adjacent to the edges of the 11.7 to 12.2/12.5 GHz band, Committe 4 recommends that for planning purposes at this Conference the power flux-densities be limited to -177 dBW/m^2/4 kHz at 11.7 GHz and to -171 dBW/m^2/4 kHz at 12.2 GHz/12.5 GHz.

Further, these emissions should be controlled such that a spectral decay rate of no less than 2 dB/MHz be maintained from the band edge into the adjacent band until a power flux-density level of no greater than -200 dBW/m^2/4 kHz is reached.

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WORKING GROUP 4B

Sub-Group 4B3

SPURIOUS EMISSIONS - POWER FLUX-DENSITY LEVELS,
PLANNING CONSIDERATIONS

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WORKING GROUP 4B

SUB-GROUP 4B3

INFORMATION RELATING TO UP-LINKS FOR THE BROADCASTING-SATELLITE SERVICE

In order to minimize the effects of interference in the up-paths of broadcasting-satellite systems, the up-path protection ratios must be about order of magnitude ($\sim$ 10 dB) greater than those in the down-path.

As regards up-path interference between broadcasting satellites at different orbit locations this would appear to be readily achievable by antenna pattern discrimination in earth station transmitting antennae which would, of course, have to be larger in diameter than the receiving antennae used in the down-path.

However, where planning makes use of isolation parameters such as satellite transmit antenna patterns, carrier interleaving, and/or polarization discrimination in meeting the down-path C/I requirements between service areas served from a single orbit position, the increased C/I requirements in the up-paths serving the satellite(s) at that same orbit position will have to use the very same isolation parameters but with the requirement to produce about 10 dB better net isolation. Obviously, the characteristics of transmitting earth stations have no influence on this isolation, except as regards their on-beam polarization purity.

As a consequence of these considerations it will be necessary to perform at least the following studies :

a) What are the adjacent channel isolation requirements in up-paths of broadcasting satellite(s) occupying a given orbit position?

b) What are the broadcasting satellite receive antenna radiation characteristics which, singly or in combination with other discrimination mechanisms, produce the necessary up-path protection ratios to broadcasting satellite(s) occupying a given orbit position?

c) What are the broadcasting satellite receive antenna polarization characteristics which, singly or in combination with other discrimination mechanisms, produce the necessary up-path protection ratios to broadcasting satellite(s) occupying a given orbit position?

It is recommended that the CCIR be requested to study these questions as a matter of urgency, with a view to submitting its findings to the SJM preceding the 1979 WARC.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

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WORKING GROUP 4B

Sub-Group 4B3

DRAFT RECOMMENDATION TO ADMINISTRATIONS AND TO THE CCIR ON UP-LINKS FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Radio Conference for the Broadcasting-Satellite Service, Geneva, 1977

Considering

a) that the Fixed-Satellite Service includes, by the present provisions of the Radio Regulations, earth-to-space links for the Broadcasting-Satellite Service (Radio Regulation No. 84AG);

b) that there is an imbalance in the bandwidths allocated to earth-to-space links compared to space-to-earth links in the Fixed-Satellite and Broadcasting-Satellite Services between 10 and 15 GHz;

c) that as a consequence there may be insufficient earth-to-space capacity to meet future demands for, and to match the capacity of, space-to-earth links for the Broadcasting-Satellite and Fixed-Satellite Services;

d) that satellites in both services could find themselves severely constrained due to interference considerations in attempting to implement the up-links.

Recommends

1. that Administrations examine their future requirements for such links;

2. that the CCIR be requested to continue as a matter of urgency its studies of the technical and operational aspects of the provision of up-links for the Broadcasting-Satellite Service and complete a report at the Special Joint Meeting of CCIR Study Groups to be held in preparation for the World Administrative Radio Conference 1979.

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WORKING GROUP 4B

Sub-Group 4B3

DRAFT RECOMMENDATION TO THE CCIR ON THE IMPLEMENTATION AND OPERATION OF UP-LINKS FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Radio Conference for the Broadcasting-Satellite Service, Geneva 1977

considering

a) that the protection ratios in the up-links to broadcasting satellites need to be approximately one order of magnitude greater than those in the down-links;

b) that, as regards up-link interference between broadcasting satellites at different orbit locations, adequate up-path protection ratios (of the order of approximately 10 dB greater than those in the down-path) would appear to be readily achievable by antenna pattern discrimination in earth station transmitting antennae which would, of course, have to be larger in diameter than the receiving antennae used in the down-link;

c) that, where planning makes use of isolation parameters such as satellite transmit antenna patterns, carrier interleaving, and/or polarization discrimination in meeting the down-path C/I requirements between service areas served from a single orbit position, the increased C/I requirements in the up-paths serving the satellite(s) at that same orbit position will have to use the very same isolation parameters but with the requirement to produce about 10 dB better net isolation. Obviously, the characteristics of transmitting earth stations have no influence on this isolation, except as regards their on-beam polarization purity.

d) that in the actual implementation of broadcasting-satellite systems, consideration must be given to all aspects of the provision of associated space operation service functions (tracking, telemetry, ranging and telecommand) in connection with the operation of broadcasting satellites.

recommends

that the CCIR be requested to undertake as a matter of urgency the following studies and to present a report at the Special Joint Meeting of CCIR Study Groups in preparation for the WARC 1979 :

1. the adjacent channel isolation requirements in up-links of broadcasting satellite(s) occupying a given orbit position,

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2. the broadcasting-satellite receive antenna radiation characteristics which, singly or in combination with other discrimination mechanisms, produce the necessary up-link protection ratios to broadcasting satellite(s) occupying a given orbit position,

3. the broadcasting-satellite receive antenna polarization characteristics which, singly or in combination with other discrimination mechanisms, produce the necessary up-link protection ratios to broadcasting satellite(s) occupying a given orbit position,

4. the technical and design characteristics and requirements which affect the provision of "space operation service functions" for broadcasting satellites.

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WORKING GROUP 4B

Sub-Group 4B3

DRAFT RECOMMENDATION TO THE CCIR ON THE IMPLEMENTATION AND OPERATION OF UP-LINKS FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Radio Conference for the Broadcasting-Satellite Service, Geneva 1977

Considering

a) that the protection ratios in the up-links to broadcasting satellites need to be one order of magnitude greater than those in the down-links;

b) that in the actual implementation of broadcasting-satellite systems consideration must be given to all aspects of the provision of associated space operation service functions (tracking, telemetry, ranging and telecommand) in connection with the operation of broadcasting satellites.

Recommends

that the CCIR be requested to undertake as a matter of urgency the following studies and to present a report at the Special Joint Meeting of CCIR Study Groups in preparation for the WARC 1979 :

1. what are the adjacent channel isolation requirements in up-paths of broadcasting satellite(s) occupying a given orbit position;

2. what are the broadcasting-satellite receive antenna radiation characteristics which, singly or in combination with other discrimination mechanisms, produce the necessary up-path protection ratios to broadcasting satellite(s) occupying a given orbit position;

3. what are the broadcasting-satellite receive antenna polarization characteristics which, singly or in combination with other discrimination mechanisms;

4. what are technical and design characteristics and requirements which affect the provision of space operation service functions for broadcasting satellites ?

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BROADCASTING SATELLITE CONFERENCE

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COMMITTEE 5

Document submitted by the equatorial countries -

Colombia, Ecuador, Kenya, Uganda, Zaire

PLANNING OF THE ORBIT

Any nominal geographical position of a geostationary satellite which is notified to the International Telecommunication Union or which is planned, placed in position or operated by an administration or government must necessarily be specified in terms of its geodesic longitude expressed in degrees and minutes with reference to the Greenwich meridian and it is the universal practice, for all countries throughout the world, whether Members or non-Members of the ITU, to define their political frontiers or any position whatever on land or sea or in the air also with reference to the Greenwich meridian. Hence, the positions of geostationary satellites will inevitably coincide with positions in sovereign equatorial countries when the satellites are located within their political limits. Only geostationary satellites constituting fixed radiocommunication stations and using combinations of transmitters and receivers for purposes of telemetry, broadcasting or any other purpose designed to provide one of the services defined in the Regulations may operate as fixed radiocommunication stations in accordance with the definitions and standards contained in the ITU Convention and its Regulations and such satellites may only be operated by the respective administrations or with their express consent under the terms of the relevant national laws and rules.

Accordingly any fixed station which is operated or which it is intended to operate within a territory, regardless of its altitude, is subject to the laws of that territory.

Consequently, if any fixed radiocommunication station taking the form of a geostationary satellite is to be positioned or operated within the geographical coordinates delimiting the sovereign equatorial countries, that must be done with the full individual and specific consent of each equatorial country; otherwise such a station would be subject to the provisions of the Convention and its Regulations and to the resolutions adopted by the General Assemblies of the United Nations and other international organizations and those countries would reserve the right to apply all technological resources or other means at their disposal to apply national law and thus safeguard the sovereign prerogatives enshrined in the preamble of the Torremolinos Conventions.

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WORKING GROUP 4B

Sub-Group 4B2

INTERREGIONAL SHARING

1. Introduction

This document has been written to serve as a working paper for Working Group 4B2. An example is developed which is particularly developed for the sharing problem between the Broadcasting-Satellite Service in Region 1 and the Fixed-Satellite Service in Region 2. The problem is presented parametrically in Figure 1.

2. Maximum PFD from a BSS (Region 1 or 3) interfering with a FSS (Region 2)

The maximum power flux-density (pfd) from a Broadcasting Satellite (BSS) in Region 1 or 3 interfering with a Fixed Satellite (FSS) in Region 2 is given by :

1) $PFD_{MAX.INT} = -103\ dBW/m^2 + A + B$

A = ratio of beam centre to service area edge
= 3 dB

B = atmospheric attenuation factor
= 2 dB

thus

2) $PFD_{MAX.INT} = -98\ dBW/m^2$

Corresponding to a maximum value of 65 dBW for BSS beam centre e.i.r.p.

3. Maximum PFD from a BSS (Region 1) interfering with a FSS (Region 2)

Considering a minimum geographic separation between service areas in Region 1 and Region 2 of 4.8 degrees, for BSS (Region 1) beamwidth of between 1.6 and 5 degrees, gives an isolation at the BSS satellite antenna of approximately 25 dB. The maximum interfering pfd from a BSS (Region 1) into a FSS earth station (Region 2) would therefore be $-123\ dBW/m^2$. This value is plotted in Figure 1 as curve B.

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4. Isolation due to polarization

Assuming that the FSS in Region 2 will use linear polarization and the BSS in Region 1 uses circular polarization, a maximum isolation of 3 dB can be achieved. For this example, the maximum interfering pfd from a BSS (Region 1) into an FSS earth station (Region 2), accounting for polarization isolation is therefore -126 dBW/m^2. This is plotted as curve C in Figure 1.

5. Summary of maximum interfering PFD from a BSS (Region 1) into an FSS (Region 2)

Three lines are plotted for the interfering pfd from a BSS (Region 1) as follows :

A) -119 dBW/m^2 corresponding to the example presented in Document 7 Addendum 3.

B) -123 dBW/m^2 corresponding to the example of Section 3.

C) -126 dBW/m^2 corresponding to the same example as B) above with 3 dB polarization isolation assumed.

In each case 25 dB is assumed for BSS satellite isolation corresponding to a service area separation of 4.8 degrees.

6. FSS (Region 2) maximum acceptable interference

Figure 1 gives a parametric presentation of 6 types of FSS systems in terms of maximum acceptable interference ($pfd_{M.A.I.}$) as a function of angular separation between the BSS and FSS satellites. The curves are labelled a. through f. and are derived as follows :

- Curve c. is derived for an FSS digital link with the following assumptions :

$\frac{C}{I} = 35$ dB

$T = 200^{o}K$

$G_{ON} = 53$ dB

$G(0) = 32 - 25\log\phi \leq 1^{o} \leq 48^{o}$

$\frac{E_b}{N_o} = 15$ dB

DATA RATE = 10 Mbit

$PFD_{M.A.I.} = -145 + 25\log\phi$ dBW/m^2 $1^{o} \leq \phi \leq 48^{o}$

- Curve e. is derived from c. assuming a 10 dB increase in $\frac{C}{I}$ for a decrease of 10 dB in data rate.

- Curve f. is assumed to be representative of SCPC on a 56 kbit data link. Curve f. is derived from curve c. with the following changes :

  $\frac{C}{I}$ is reduced by approximately 5 dB

  $\frac{E_b}{N_o}$ is increased by approximately 5 dB

  Energy dispersal factor added of 3.6 dB (Document DL/10)

  Bit rate decreases by approximately 23 dB

  Net change is approximately 10 dB

- Curve d. is the example presented in Document 7, Addendum 3.

- Curve a. is derived from curve c. assuming a net decrease of 4 dB. This value is obtained from the difference between a 10 dB reduction in $\frac{C}{I}$ due to the 10 dB increase in data rate and a 6 dB factor due to the increased bandwidth.

- Curve b. represents a reduction in $\frac{C}{I}$ from 39 to 35 and is derived from curve d.

- Curve d. is derived from a value of -131 dBW/m^2 for the wanted FSS pfd at the service area edge. The value -131 dBW/m^2 is derived as follows :

  $e.i.r.p._{MAIN\ BEAM} = 38$ dBW

  With spreading loss of -163 dBW/m^2 and a 4 dB ratio between beam centre and service area edge leads to a value of -129 dBW/m^2. Finally, incorporating a 2 dB factor for antenna pointing losses and satellite motion leads to the value -131 dBW/m^2 as indicated above.

7. Use of Figure 1

To illustrate the use of Figure 1, two examples are given of the required separation between a BSS (Region 1) satellite and an FSS (Region 2) satellite.

Example 1 :

The intersection of curve A. and curve d. indicate a required satellite separation of 16 degrees as shown in Figure 1. This is the case presented in Document 7, Addendum 3.

Example 2 :

The intersection of curve C. and curve b. indicate a required satellite separation of approximately 6 degrees as shown in Figure 1. This example reflects the changes made at the last meeting of Working Group 4B2.

PARAMETRIC PRESENTATION OF INTERREGIONAL
SHARING - REQUIRED ORBITAL SEPARATION

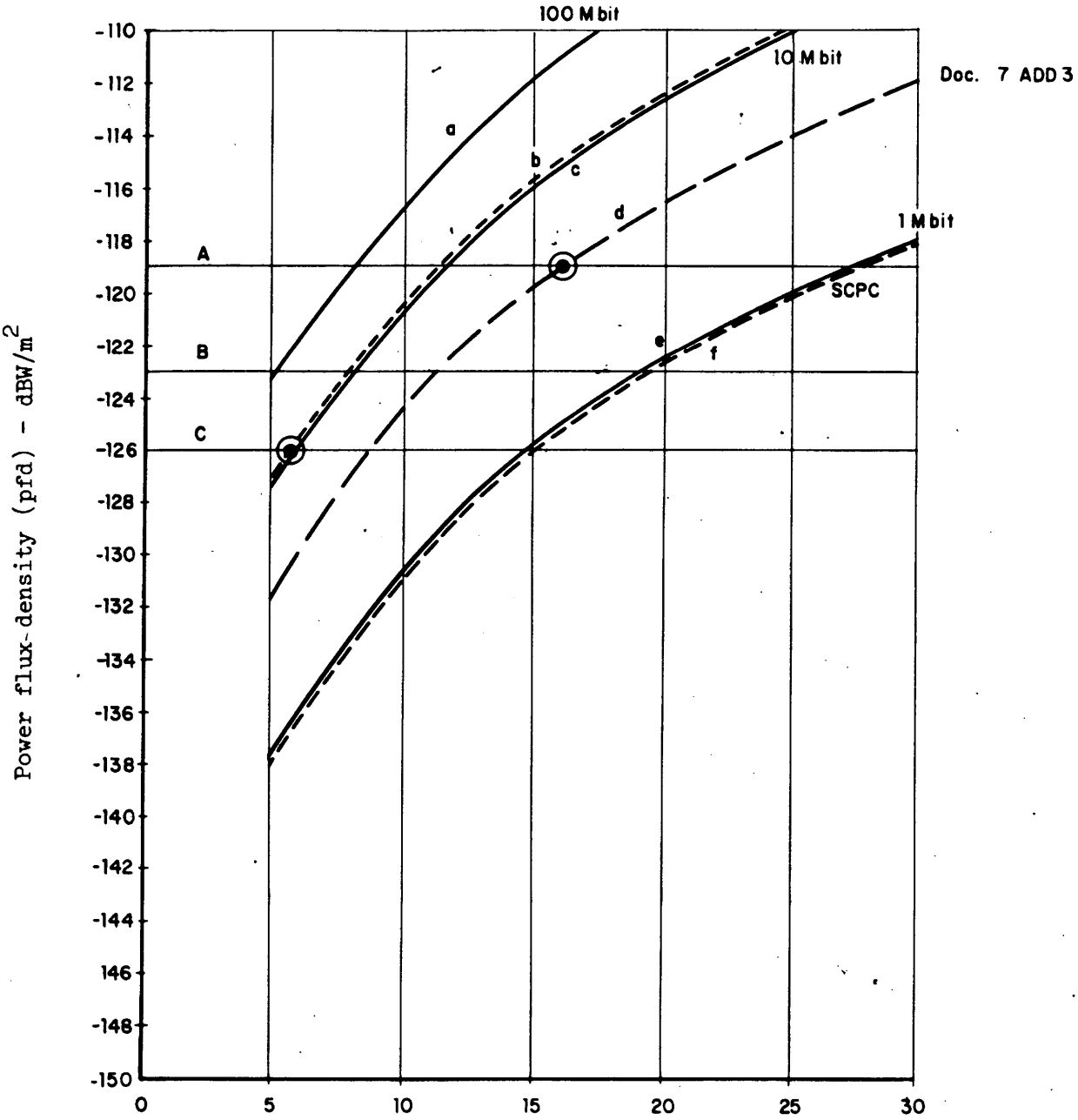

Figure 1 - Angular separation in degrees between a Fixed Satellite and a Broadcasting Satellite operating on the same frequency

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 167-E
27 January 1977
Original : English

PLENARY MEETING

MINUTES

OF THE

THIRD PLENARY MEETING

Friday, 21 January 1977, at 1410 hrs

Chairman : Mr. Ib LØNBERG (Denmark)

Subjects discussed :	Documents Nos.
1. Death of the Prime Minister of Yugoslavia	
2. Approval of the minutes of the first and second plenary meetings	81 + Corr.1, 95
3. Documents submitted to the plenary meeting for approval	101, 108
4. Progress reports by Committee Chairmen	

---

1. Death of the Prime Minister of Yugoslavia

Speaking both personally and on behalf of the Conference, the Chairman extended to the Yugoslav delegation his deepest sympathy and condolences on the death of the Prime Minister of Yugoslavia, Demal Bijedić, victim of an aircraft accident.

The meeting observed a minute's silence in tribute to the memory of the Prime Minister of Yugoslavia.

2. Approval of the minutes of the first and second plenary meetings (Documents Nos. 81 + Corr.1, 95)

Minutes of the first plenary meeting (Document No. 81 + Corr.1)

The delegate of the Lao People's Democratic Republic, referring to his delegation's statement at the top of page 8, requested that the word "difficulties" in the second sentence be replaced by the word "formalities".

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The minutes of the first plenary meeting (Document No. 81 + Corr.1) were approved subject to that amendment.

Minutes of the second plenary meeting (Document No. 95)

Approved.

3. Documents submitted to the plenary meeting for approval (Documents Nos. 101, 108)

Document No. 108 (submitted by Committee 4)

The Chairman of Committee 4 introduced the document, indicating that it contained the first series of technical parameters drawn up by the Committee following consideration of the documents prepared by the CCIR and submitted by administrations.

The Secretary of Committee 4 drew attention to certain errors and omissions in the document.

The delegate of France, referring to paragraph 16.2, said that the word "favorable" at the end of the paragraph should be replaced by "défavorable" in the French text only.

It was so agreed.

The delegate of Canada said that the phrase "for individual reception" should be inserted after the word "station" in the title of section 17.

It was so agreed.

The representative of the IFRB, referring to paragraph 1.2, asked whether the "latest Recommendation of the CCIR" to which reference was made would be applicable automatically or whether its use would be governed by the procedures laid down in Resolution No. Spa2 - 6.

The Director of the CCIR observed that the procedure laid down in that Resolution was generally recognized to be somewhat complex. As far as paragraph 1.2 was concerned, he assumed that Committee 4 was referring to the latest Recommendation approved by a CCIR Plenary Assembly.

The delegate of Mexico said that he had no objection to the paragraph in question, on the understanding that the provisions of the Convention relating to the applicability of CCI Recommendations would be taken into account.

Replying to a question by the delegate of Spain, the Chairman said it was his understanding that paragraph 1.2 related only to section 1 of the document.

The Deputy Secretary-General said that the question raised by the representative of the IFRB was a pertinent one which the Conference would no doubt wish to consider further at an appropriate time. It was related to two issues, namely, the criteria to be incorporated in the new obligatory provisions associated with the Plan that the Conference was to produce, and the applicability of Resolution No. Spa2 - 6 which laid down procedures governing the application of new CCIR Recommendations containing technical values which, by agreement between administrations, could be substituted for values already written into the Radio Regulations. However, if an administration did not accept the new Recommendations the Radio Regulations had to prevail in any cases involving that administration. Those two issues required further study, since they had direct bearing on the specific material relating to technical standards and sharing criteria to be included in the Final Acts of the Conference. In the meantime, the text proposed could remain.

The Chairman suggested that the text of paragraph 1.2 might be accepted as it stood, on the understanding that Committee 4 would provide the material which it considered should be included in the Final Acts, leaving it to Committee 6 to discuss the problem raised by the representative of the IFRB and report to the plenary meeting in due course.

It was so agreed.

The delegate of the United States of America, referring to Figure 2 (page 3), said that there were several omissions in the equations relating to curves A, A' and B. Furthermore, curve C had been omitted altogether.

The delegate of Chile drew attention to a discrepancy between the Spanish and English texts relating to curves A and A' which appeared underneath Figure 2.

The Chairman suggested, in view of the fairly large number of corrections to be made in the document, that a revised version should be prepared and submitted to the plenary meeting for approval. In the meantime, Committee 5 might be requested to continue its work on a provisional basis, using the data contained in the document and taking into account the corrections made orally during the present meeting.

It was so agreed.

Document No. 101 (submitted by Committee 6)

The Chairman of Committee 6, introducing the document, said that before the Committee could tackle the task of drawing up procedures to govern the operation of a broadcasting-satellite Plan, it had had to take certain important decisions concerning the form of the Final Acts of the Conference. With regard to the question of the Conference's competence to amend the Radio Regulations, certain delegations were of the opinion that the Plan and procedures should appear in the Regulations, which would consequently need to be amended, whereas a fairly large number of other delegations considered that the Plan and related procedures should take the form of an agreement.

Document No. 101 proposed neither of those two solutions, but was the result of a compromise reached between them. It would, of course, be necessary for the Final Acts of a Conference to contain the Plan(s), the procedures governing its (or their) implementation and modification, the date of entry into force, the period of validity, and many other details. It should be noted that the document contained no proposal for the incorporation in the Final Acts of an agreement as such, the understanding being that there would be agreement among the participants that the conditions and Plan(s) included in the Final Acts would constitute the results of the work of the Conference. Finally, according to the legal opinions given by the Legal Adviser and the Deputy Secretary-General, the form of presentation proposed in Document No. 101 would be consistent with the provisions of the Convention.

The delegate of Colombia made the following statement :

"The delegation of Colombia, acting on behalf of the equatorial states (Colombia, Congo, Ecuador, Gabon, Kenya, Uganda and Zaire), wishes to make the following statement to the plenary meeting :

With respect to the form of the Final Acts of this Conference, the above-mentioned equatorial countries do not consider that the reference to the signature of the final texts in Article 77 lays down any obligation to sign the said texts following their final approval; it should be noted that the exact words are 'shall be submitted for signature ... to the delegates'. Consequently, should the final texts contain agreements that do not take into account or reflect the position of the equatorial states, at least to the extent provided for in Document No. 110, those states will have to consider the question of whether or not to sign the Final Acts.

To make their position perfectly clear, the equatorial countries have decided to submit a working document for consideration by the Conference.*/"

The delegates of Ecuador and Zaire fully endorsed the statement by the previous speaker.

The delegate of Chile observed that there was no mention in paragraph 2 of the data to be set for modification or correction of the Plan(s).

The Chairman of Committee 6 said that not all the relevant aspects had been specifically mentioned in the document, as was indicated by the words "inter alia" which appeared at the end of the introductory paragraph. One of the questions which Committee 6 certainly intended to consider was that of the actual duration of the Plan(s). He also drew attention to paragraph 6 which recommended that the Final Acts should be revised only by a competent administrative radio conference.

The delegate of Chile said he accepted the explanation given by the Chairman of Committee 6 and assumed that the point he had raised would be covered in a subsequent document.

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*/ see Document No. 121

The delegate of Italy, referring to the question raised by the Chilean delegate, said that the Conference would have to establish procedures which would enable the Plan to be modified at any time during the period of its validity in order to take into account the changing requirements of countries as well as technological developments, while safeguarding the rights of other broadcasting-satellite stations and of the other services sharing the band in question.

The delegate of France said that his delegation had not been able to reach agreement on the form to be given to the decisions of the Conference. That question had accordingly been referred to the central administrative authorities in Paris which, he hoped, would soon propose a solution that would enable the French delegation to associate itself with a Conference consensus on the subject.

The Chairman observed that Document No. 101 contained only a very broad outline, the details of which would obviously require a great deal of further study. If he heard no objection he would take it that the meeting, having noted the comments by the French delegate, was prepared to approve the document and to request Committee 6 to continue its work within the framework set out therein.

It was so agreed.

4. Progress reports by Committee Chairmen

The delegate of Senegal, speaking as Chairman of Committee 2 (Credentials), reported that Committee 2 had met two days previously to study credentials and had examined 38 of the 83 documents submitted to it; the remainder would be dealt with at its next meeting the following week. He hoped that delegates who had not yet submitted credentials would do so as rapidly as possible, and he expressed his gratitude to the Executive Secretary, Mr. Winter-Jensen, for his valuable assistance.

The delegate of India, speaking as Chairman of Committee 3 (Budget Control), said that Committee 3 had met during the first week of the Conference and had noted the documents submitted to it. A second meeting would be held during the following week at which details of expenditure to date would be reviewed.

The delegate of Czechoslovakia, speaking as Chairman of Committee 4 (Technical), said that to date Committee 4 had approved six documents. It was preparing a second series of documents for submission to Committee 5 and to the Plenary.

The delegate of Italy, speaking as Chairman of Committee 5 (Planning), said that Committee 5 had held three meetings and had set up three Working Groups, whose terms of reference he outlined. Working Group 5A had established planning criteria which had been approved that day, and had set up various Sub-Working Groups which had already begun their work.

Committee 5 had that morning, on the proposal of Working Group 5A, decided that the Plan for Regions 1 and 3 would be based on individual reception, and it had adopted unified technical standards for the two regions. It had also established a group to act as an intermediary between delegations and the planning Sub-Group in coordinating possible requests for changes in the requirements submitted to the Conference. On the proposal of Working Group 5A, Committee 5 had also approved directives to the planning support group.

Working Group 5B had submitted its first report indicating certain planning principles and he urged it to submit its Recommendations for the following week. Working Group 5C would commence its work the following week.

Finally he requested the Plenary to add Documents Nos. 58, 60, 61 and 62 to the list of documents allocated to Committee 5.

It was so agreed.

The delegate of Egypt introduced Document No. 116, pointing out that the developing countries needed to be fully informed if they were to be able to take advantage of the technological possibilities available. His delegation had therefore submitted Document No. 116 requesting that steps be taken to enable each country to obtain the total shift of the foot-print of its beam, that technological limitations, in relation to Document No. 86, be clearly tabulated, and that the IFRB produce examples of interference under diverse conditions.

The object of his delegation's proposals was to make methods and plans more comprehensible to delegations, to establish a basis for comparison between the various plans suggested, and to enable their validity to be examined.

The Chairman said that Document No. 116 would be referred to Committee 5.

The delegate of New Zealand, speaking as Chairman of Committee 6 (Procedures), said that Committee 6 had met four times and had set up three Working Groups. The Recommendations of Working Group 6C regarding the possible form of the Final Acts of the Conference had been submitted in Document No. 101. The Working Groups had in turn set up Sub-Working Groups, which were making good progress and he hoped that the latters' work would be completed in the near future. It might be necessary to expand the terms of reference of Working Group 6C to enable it to consider further the form of the Final Acts.

The delegate of Mexico, speaking as Chairman of Committee 7 (Re-arrangement of the Radio Regulations), said that Committee 7 had met and in accordance with its terms of reference had studied the report of the Group of Experts and the proposals submitted to it. It had set up a Working Group to study the proposals in detail; the Working Group had met twice on Tuesday and had established a Sub-Working Group, which had met

twice on Wednesday; finally the Committee had met a second time to study their reports. Some problems had arisen as a result of opposing views regarding the re-arrangement of the Radio Regulations but it was hoped that the Committee would be able to finish its work by noon on Monday.

The delegate of France, speaking as Chairman of Committee 8 (Editorial), said that Committee 8 hoped to begin its work the following week.

The meeting rose at 1545 hours.

The Secretary :
M. MILI

The Chairman :
Ib LØNBERG

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 168(Rev.1)-E
28 January 1977
Original : English

COMMITTEE 4

Working Group 4B

INTERREGIONAL SHARING CRITERIA TO PROTECT THE FIXED-SATELLITE SERVICE AGAINST INTERFERENCE FROM THE BROADCASTING-SATELLITE SERVICE ORGANIZED IN AN A PRIORI PLAN

The Sub-Working Group, considering relevant documents and taking into consideration the view of the delegates present, has reached the following conclusions :

1. representative networks in the Fixed-Satellite Service will not receive interference exceeding the protection requirements specified in Document No. 111(Rev.3) from emissions by broadcasting satellites within an a priori plan (hereinafter referred to simply as a "Plan") when the angular spacing between the respective space stations exceeds a value of about 7 degrees;

2. depending on the polarization purity achievable in the sidelobes of circularly polarized broadcasting-satellite transmitting antennae and linearly polarized Fixed-Satellite Service earth station receiving antennae, this minimum intersatellite spacing could be as little as about 5 degrees;

3. the values of intersatellite spacing given above are based on co-channel frequency assignments and a maximum power flux-density of - 123 dBW/m^2/27 MHz transmitted by broadcasting satellites in the Plan towards territories of Region 2 administrations, taking into account the minimum hodocentric angular separation of 4.8° between territories of Regions 1 and 2 at the Atlantic Ocean interface / and the reference satellite transmitting antenna pattern given as curve A of Figure 1 of Document No. 108(Rev.1) /.

4. in view of these spacing requirements, it is not feasible to locate representative space stations in the Fixed-Satellite Service between broadcasting satellites of a Plan which is based on a 6° spacing between such satellites;

5. however, smaller spacings than those given above may be achieved between space stations of the Fixed-Satellite Service and those of a Plan in the Broadcasting-Satellite Service. Specific potential ways are as follows :

   a) the use of frequency assignments to broadcasting satellites of a Plan only within the frequency band 12.2-12.5 GHz, but this may not be practicable in planning;

   b) the avoidance of frequency assignments to networks in the Fixed-Satellite Service that are coincident with those assignments in a Plan that limit the intersatellite spacing;

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c) the use of systems in the Fixed-Satellite Service that are less sensitive to interference than the representative networks referred to in paragraph 1;

/ d) the use of satellite transmitting antennae in the Broadcasting-Satellite Service that provide lower gain in the direction of Region 2 administrations than those referred to in paragraph 3; /

6. practical designs of systems in the Fixed-Satellite Service may, case by case, require intersatellite spacings which are different from the values given above. For example, to achieve a spacing of 3° which might allow interlacing of space stations of the two services, the carrier capacity in the Fixed-Satellite Service network would have to be greater than about 50 Mbits/sec and a 3 dB net polarization isolation would have to be realized. On the other hand, a Fixed-Satellite Service network using single channel per carrier transmissions would require a spacing of between 14° and 17°.

7. In summary :

a) in general, the minimum spacing between space stations in the Fixed-Satellite Service and those of a Plan in the Broadcasting-Satellite Service, in the Atlantic Ocean area, is 7 degrees;

b) space stations in the Fixed-Satellite Service cannot be assumed to be located within less than 7° West of the westernmost broadcasting satellite in a Plan serving Region 1;

c) the limit of a) above applies only to broadcasting satellites of a Plan having frequency assignments in the 11.7-12.2 GHz band;

d) the limit of a) above is coupled to the proviso that the pfd produced in territories of Region 2 by emissions from broadcasting satellites in a Plan does not exceed the value of -123 dBW/m^2/27 MHz.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 168-E
27 January 1977
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WORKING GROUP 4B

Sub-Group 4B2

SHARING CRITERIA TO PROTECT THE FIXED-SATELLITE SERVICE AGAINST INTERFERENCE FROM THE BROADCASTING-SATELLITE SERVICE ORGANIZED IN A PLAN

The Sub-Working Group, considering relevant documents and taking into consideration the views of the delegates present, has reached the following conclusions :

1. Representative networks in the Fixed-Satellite Service will not receive unacceptable interference from emissions by broadcasting satellites within a Plan when the angular spacing between the respective space stations exceeds a value of about 7 degrees;

2. Depending on the polarization purity achievable in the sidelobes of circularly polarized broadcasting-satellite transmitting antennae and linearly polarized Fixed-Satellite Service earth station receiving antennae, this minimum intersatellite spacing could be as little as about 5 degrees;

3. The values of intersatellite spacing given above are based on co-channel frequency assignments and a maximum power flux-density of -123 dBW/m^2/27 MHz transmitted by broadcasting satellites in the Plan towards territories of Region 2 administrations, taking into account the minimum hodocentric angular spacing of 4.8^o between territories of Regions 1 and 2 in the Atlantic ocean;

4. In view of these spacing requirements, it is not feasible to locate representative space stations in the Fixed-Satellite Service between broadcasting satellites of a Plan which is based on a 6^o spacing between such satellites;

5. However, smaller spacings than those given above may be achieved between space stations of the Fixed-Satellite Service and those of a Plan in the Broadcasting-Satellite Service when some form of spectrum division is utilized. Specific potential ways of spectrum division are :

   a) the use of frequency assignments to broadcasting satellites of a Plan only within the frequency band 12.2 - 12.5 GHz;

   b) the avoidance of frequency assignments to networks in the Fixed-Satellite Service coincident with those of a Plan that limit the intersatellite spacing;

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6. For planning purposes at this Conference the following assumptions should be made :

a) the minimum spacing between space stations in the Fixed-Satellite Service and those of a Plan in the Broadcasting-Satellite Service, in the Atlantic ocean area, is 7 degrees;

b) space stations in the Fixed-Satellite Service cannot be assumed to be located within less than 7° West of the westernmost broadcasting satellite in a Plan serving Region 1;

c) the limit of a) above applies only to broadcasting satellites of a Plan having frequency assignments in the 11.7 - 12.2 GHz band;

d) the limit of a) above is coupled to the proviso that the pfd produced in territories of Region 2 by emissions from broadcasting satellites in a Plan does not exceed the value of -123 dBW/m^2/27 MHz.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 1 to
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31 January 1977
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COMMITTEE 4

Working Group 4B

Replace equations (2.1) in paragraph 2.4.1 and (2.2) in paragraph 2.4.2 by the following :

$$\begin{aligned} D &= 0 \text{ for } 0 \leqslant \phi \leqslant 0.5^{\circ} \\ D &= 3\phi^2 \text{ for } 0.5^{\circ} < \phi \leqslant 1.41^{\circ} \\ D &= 3 + 20 \log_{10} \phi \text{ for } 1.41^{\circ} < \phi \leqslant 2.52^{\circ} \\ D &= 1 + 25 \log_{10} \phi \text{ for } 2.52^{\circ} < \phi < 19^{\circ} \end{aligned} \qquad (2.1)$$

$$\begin{aligned} D &= 0 \text{ for } 0 \leqslant \phi \leqslant 0.45^{\circ} \\ D &= 3.7\phi^2 \text{ for } 0.45^{\circ} < \phi \leqslant 1.27^{\circ} \\ D &= 3.9 + 20 \log_{10} \phi \text{ for } 1.27^{\circ} < \phi \leqslant 2.27^{\circ} \\ D &= 2.1 + 25 \log_{10} \phi \text{ for } 2.27^{\circ} < \phi < 27^{\circ} \end{aligned} \qquad (2.2)$$

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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28 January 1977
Original : English

COMMITTEE 4

Working Group 4B

CRITERIA FOR SHARING BETWEEN THE BROADCASTING-SATELLITE SERVICE AND TERRESTRIAL SERVICES

Explanatory note on the attached Appendix

It is proposed that the attached Appendix be appended to the Regulatory Provisions contained in the Final Acts (currently being prepared in Committee 6) to specify the technical calculations necessary to determine whether a proposed terrestrial assignment needs to be coordinated, with another administration, in respect of the Broadcasting-Satellite Service.

The basic concept of the procedure is that at the edge of the service area*) of a broadcasting satellite there is a maximum interfering power flux-density limit. If calculations indicate that the proposed terrestrial assignment will produce a power flux-density in excess of the acceptable limit at the edge of the service area, then it is necessary for the assignment to be coordinated with the appropriate administration.

The maximum acceptable power flux-density at the edge of the service area depends, in part, on the angular discrimination and hence the elevation angle of the broadcasting-satellite receivers within the service area. In order to simplify the calculation of the maximum acceptable power flux-density it is proposed that, associated with the plan, there should be stated, for each service area, the elevation angle to be protected. Clearly it would be logical for this to be the lowest angle of elevation within the service area.

In a small number of cases with large service areas in high latitudes the elevation angles within the service area may cover a large range, say 7°, or more. In these cases where the maximum elevation angle is lower than 19° it may be necessary to specify two or at the most three values of elevation angle to be protected. This would ensure that under these conditions the calculated interfering power flux-density was not over-pessimistic.

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*) Note : Reference is made throughout this document to the edge of service area. Committee 6 has not yet agreed on whether Protection shall be given to the edge of service area or to the frontier of the administration having the broadcasting satellite assignment and therefore some editorial changes may be necessary in the light of the conclusions of Committee 6.

Appendix : 1

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A P P E N D I X

PROCEDURE FOR DETERMINING THE LIMITING INTERFERING POWER FLUX-DENSITY AT THE EDGE OF A BROADCASTING-SATELLITE SERVICE AREA AND FOR PREDICTING THE POWER FLUX-DENSITY PRODUCED AT THAT POINT BY A TERRESTRIAL STATION IN THE BAND 11.7-12.2 GHz (12.5 GHz REGION 1)

1. General

1.1 This Appendix describes a method of assessing the interference potential from terrestrial transmitters to broadcasting satellite receivers in the frequency range 11.7 - 12.2 GHz (12.5 GHz in Region 1).

1.2 The method is in two parts :

i) the calculation of the maximum permissible interfering power flux-density (pfd) at the edge of the Broadcasting-Satellite Service area concerned;

ii) the calculation of the likely pfd produced at any point on the edge of the service area by the terrestrial transmitter of another Administration.

1.3 The interference potential of the terrestrial transmitters must be considered case by case; the pfd produced by each terrestrial transmitter is compared to the limiting pfd at any point on the edge of the service area of another Administration. If, for a given transmitter, the value of the pfd produced is lower than the value of the limiting pfd at any point on the edge of the service area, it is considered that the interference produced to the Broadcasting-Satellite Service by this transmitter is lower than the permissible value and no coordination is required between Administrations before the terrestrial service is brought into use. Where this is not the case, coordination and further, more precise calculations derived from a mutually agreed basis are necessary.

1.4 It is emphasized that, should the calculation described in this Appendix indicate that the maximum permissible pfd is exceeded, it does not necessarily preclude the introduction of the terrestrial service since the calculations are necessarily based on worst case assumptions for :

a) the nature of the terrain of the interference path,

b) the off-beam discrimination of the broadcasting-satellite receivers,

c) the necessary protection ratios for broadcasting-satellite transmissions.

d) the type of reception in the Broadcasting-Satellite Service, that is, individual reception is assumed, this being more critical than community reception for the angles of elevation concerned.

e) the value of power flux-density to be protected in the Broadcasting-Satellite Service;

f) the propagation conditions between the terrestrial station and the Broadcasting-Satellite Service area.

2. Limit of power flux-density

2.1 General

The limiting power flux-density not to be exceeded at the edge of the service area in order to protect the Broadcasting-Satellite Service of another Administration is given by the formula :

$$F = Fo - R + D + P \qquad (1)$$

where F = the maximum permissible interfering power flux-density (in $dB(W/m^2)$) in the satellite broadcasting wanted bandwidth

Fo = the wanted power flux-density (in $dB(W/m^2)$) at the edge of the service area

R = the protection ratio (in dB) between the wanted and interfering signals

D = angular discrimination (in dB) provided by the antenna radiation pattern of the satellite broadcasting receiver.

P = polarization discrimination (in dB) between the wanted and interfering signals

2.2 Wanted power flux-density (Fo)

The value of Fo is equal to

a) -103 $dB(W/m^2)$ for service areas in Regions 1 and 3

b) -105 $dB(W/m^2)$ for service areas in Region 2

2.3 Protection ratio (R)

2.3.1 The single entry protection ratio against all types of terrestrial transmissions with the exception of a.m.-multichannel TV systems is equal to 35 dB for carrier frequency differences between the wanted and interfering signals of up to ± 10 MHz, decreasing linearly from 35 dB to 0 dB for carrier frequency differences between 10 MHz and 35 MHz and is equal to 0 dB for frequency differences in excess of 35 MHz (see Figure 1).

2.3.2 The carrier frequency difference should be determined by reference to assignments in the broadcasting-satellite plan or, in the case of broadcasting satellites not contained within a plan, by reference to the description of the characteristics of the proposed or operational system. For a.m.-multichannel TV systems which produce peaks of high power flux-density spread over a wide range of their occupied bandwidth, protection ratio R is equal to 35 dB and is independent of the carrier frequency difference.

2.3.3 A terrestrial signal should only be considered if its occupied bandwidth overlaps or is separated by less than 7 MHz from the occupied bandwidth of the broadcasting-satellite assignment.

2.4 Angular discrimination

2.4.1 Broadcasting-Satellite Service areas in Regions 1 and 3.

Where the angle of elevation for protection ϕ, either as specified in the Plan or as associated with the proposed or operational broadcasting-satellite system, for the Broadcasting-Satellite Service area concerned, is equal to or greater than 19°, then the value of (D) to be assumed in expression (1) is 33 dB. In cases where ϕ is less than 19° (D) should be derived from expression (2.1) below.

Note : If more than one value of ϕ is specified for a particular service area, then the appropriate value of ϕ should be used for each section of the edge of the service area under consideration.

$$\begin{aligned} D &= 0 \text{ for } 0 \leqslant \phi \leqslant 0.5^\circ \\ D &= 3\phi^2 \text{ for } 0.5^\circ < \phi \leqslant 1.41^\circ \\ D &= 3 + 20 \log_{10} \phi \text{ for } 1.41^\circ < \phi \leqslant 2.52^\circ \\ D &= 1 + 25 \log_{10} \phi \text{ for } 2.52^\circ < \phi \leqslant 19^\circ \end{aligned} \qquad (2.1)$$

Note : For graphical determination of D see Figure 2.

2.4.2 Broadcasting-Satellite Service areas in Region 2

Where the angle of elevation for protection ϕ, either as specified in the Plan or as associated with the proposed or operational broadcasting satellite system, for the Broadcasting-Satellite Service area concerned, is equal to or greater than 27°, then the value of D to be assumed in expression (1) is 38 dB. In cases where ϕ is less than 27° (D) should be derived from expression (2.2) below.

Note : If more than one value of ϕ is specified for a particular service area, then the appropriate value of ϕ should be used for each section of the edge of the service area under consideration.

$$D = 0 \text{ for } 0 \leq \phi \leq 0.45^{\circ}$$
$$D = 3.7\phi^2 \text{ for } 0.45^{\circ} < \phi \leq 1.27^{\circ}$$
$$D = 3.9 + 20 \log_{10} \phi \text{ for } 1.27^{\circ} < \phi \leq 2.27^{\circ} \qquad (2.2)$$
$$D = 2.1 + 25 \log_{10} \phi \text{ for } 2.27^{\circ} < \phi \leq 27^{\circ}$$

Note : For graphical determination of D see Figure 2.

2.5 Polarization discrimination

The value of P is equal to :

a) 3 dB when the interfering Terrestrial Service uses linear polarization and the Broadcasting-Satellite uses circular polarization or vice-versa.

b) 0 dB when the interfering Terrestrial Service and the Broadcasting-Satellite Service both use circular or both use linear polarization.

3. Power flux-density produced by a terrestrial station

The power flux-density F_p (in dBW/m^2) produced at any point on the edge of the service area by the terrestrial station is determined from the following formula :

$$Fp = E - A + 43 \qquad (3)$$

where E = the effective isotropic radiated power in dBW of the terrestrial station in the direction of the point on the edge of the service area concerned

and A = the total path loss in dB.

3.1 Evaluation of path loss A for a terrestrial station at a distance greater than 100 km from the edge of the Broadcasting-Satellite Service area

For path lengths greater than 100 km, A is given by :

$$A = 137.6 + 0.2324\, d_t + .0814\, d_m \qquad (4)$$

where d_t and d_m are the overland and oversea path lengths respectively, in km.

3.2 Evaluation of path loss A for a terrestrial station at a distance less than 100 km from the edge of the Broadcasting-Satellite Service area

For path lengths equal to or less than 100 km, A should be calculated using equations (4) and (5) and the lowest value obtained substituted in formula (3) to calculate the power flux-density produced at the point on the edge of the service area :

$$A = 109.5 + 20 \log (d_t + d_m) \qquad (5)$$

The variation of A for different path lengths and proportions of oversea path is shown in Figure 3.

3.3 Distance beyond which the method need not be applied

The method need not be applied and consultation is not necessary when the distance between the terrestrial station and the Broadcasting-Satellite Service area is greater than :

a) 400 km in the case of all overland paths, or

b) 1200 km in the case of all oversea or mixed paths.

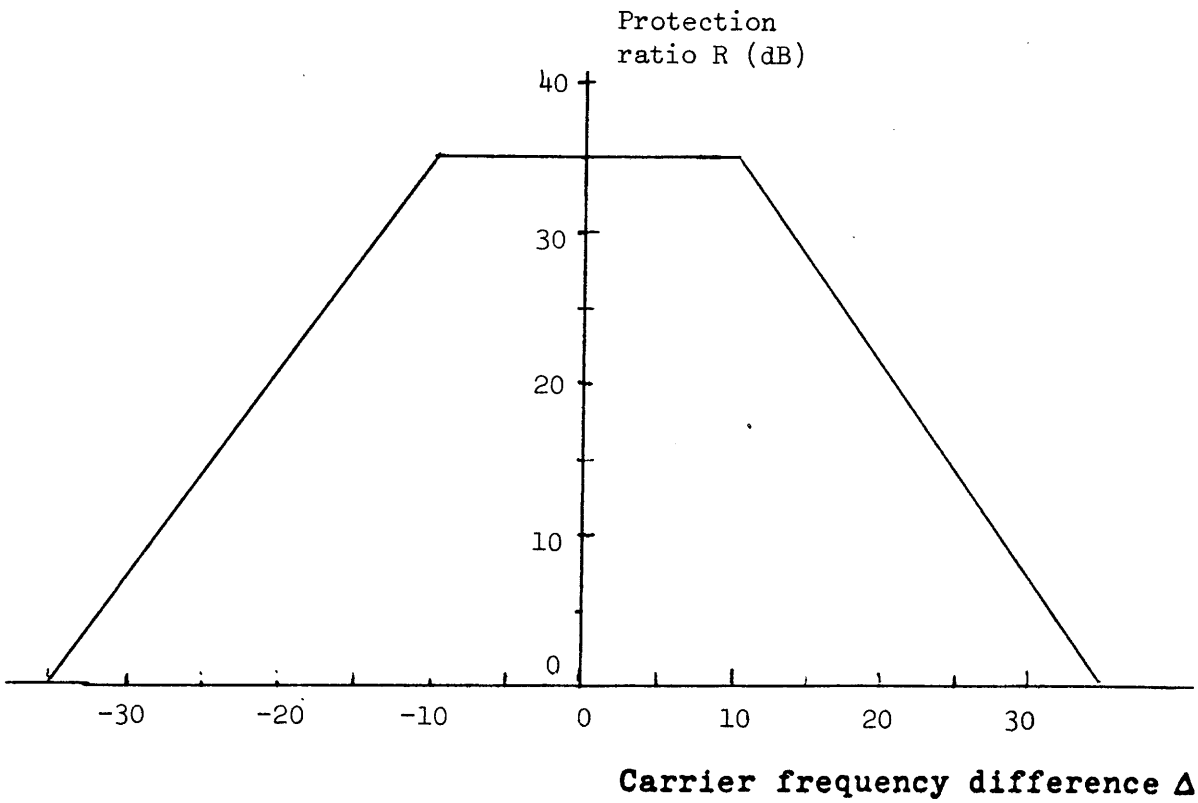
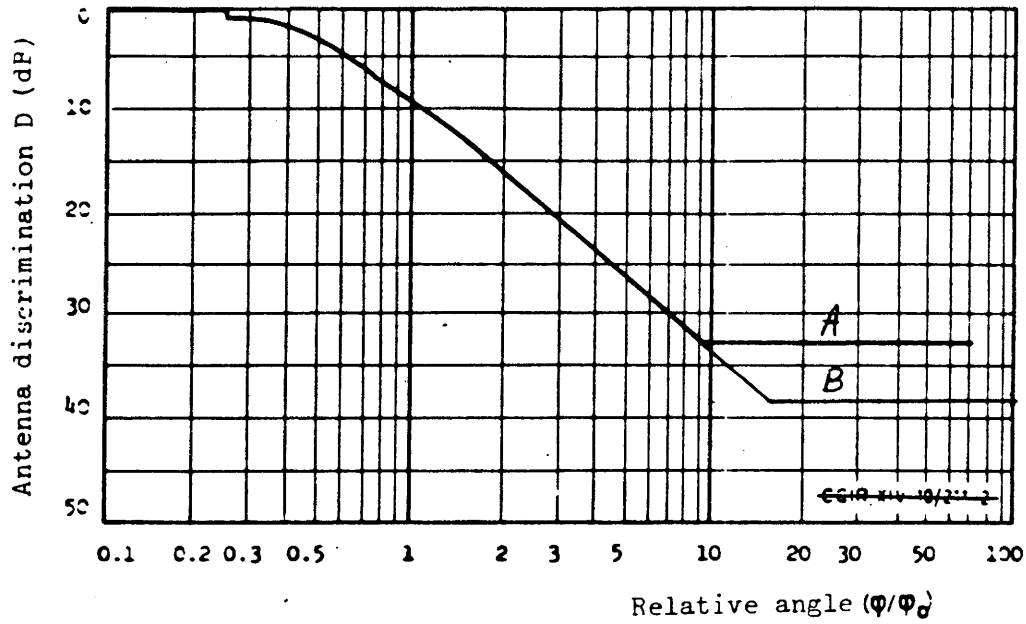


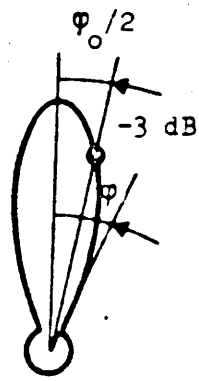
Figure 1 - Protection ratio (R) (dB) for a satellite broadcasting signal against a single entry of interference from Terrestrial Services (except for AM multichannel TV systems).



For service areas in Regions 1 and 3 Φ_o = 2° and Curve A applies

For service areas in Region 2 Φ_o = 1.8° and Curve B applies

Figure 2 - Variation of satellite broadcasting receiver antenna discrimination with satellite elevation angle.



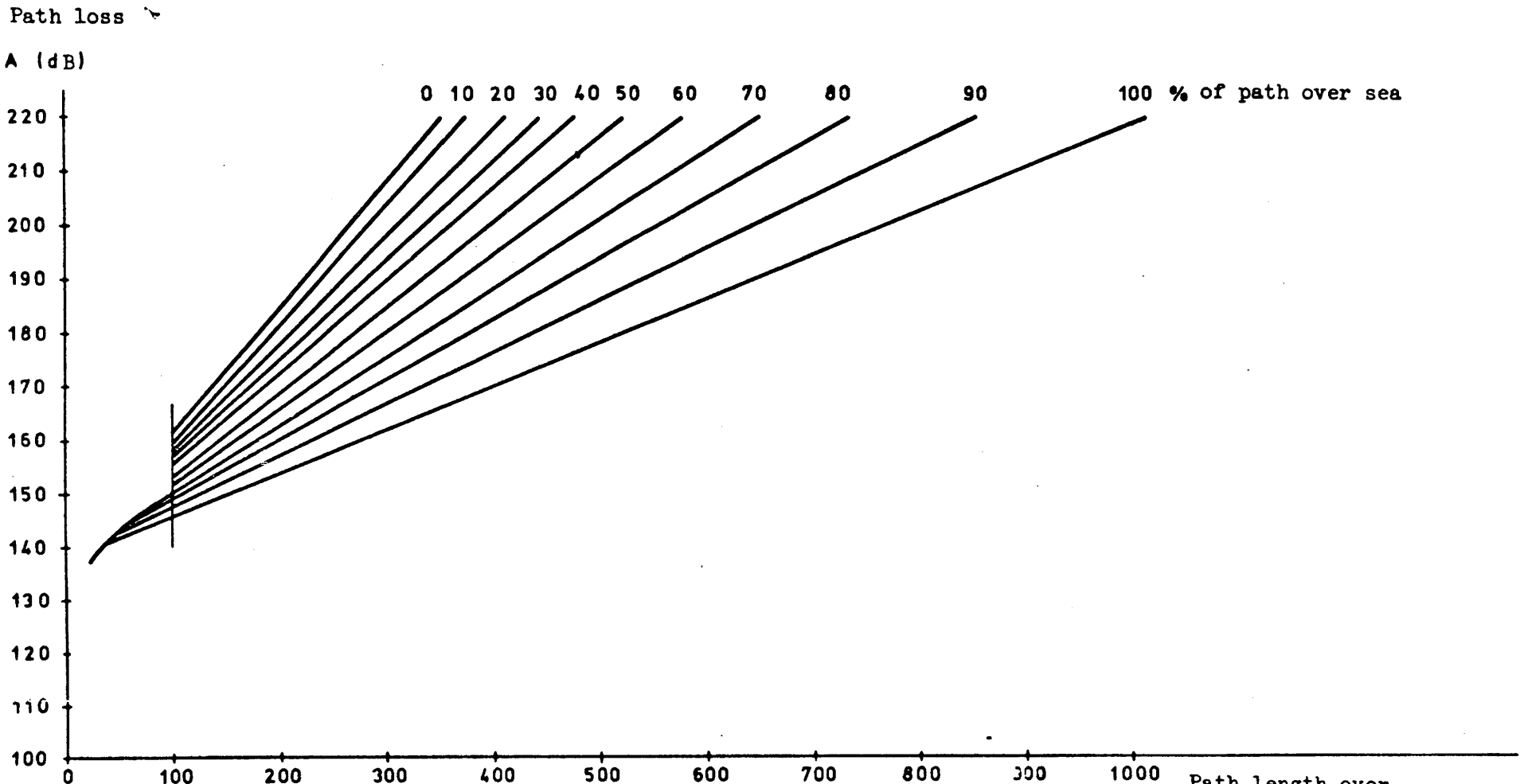


Figure 3 – Total Path Loss A Versus Total Path Length ($d_t + d_m$)

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 169-E
27 January 1977
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WORKING GROUP 4B

Sub-Group 4B1

CRITERIA FOR SHARING BETWEEN THE BROADCASTING-SATELLITE SERVICE AND TERRESTRIAL SERVICES

Sub-Group 4B1 has considered the documents allocated to it and cencentrated at its first meeting on Document No. 15 from the Federal Republic of Germany. This document provides a method for estimating the worst-case power flux-density produced by a terrestrial station of one administration at the frontier of another administration. This calculated value is then compared to the acceptable value to see whether consultation is necessary.

Sub-Group 4B1 accepted the technical concepts presented in Document No. 15. The document has since been modified to simplify the method and to up-date the values of several parameters. The new text has been approved by the Sub-Group and is presented to Working Group 4B for approval of its technical content.

The text appears as the Appendix to this document and is preceded by some explanatory notes. The values of many of the parameters used in the document have been drawn from the working documents of Committee 4 and its Working Groups and they may need modifying to comply with the final conclusions of the Conference.

M. GODDARD
Chairman, Sub-Group 4B1

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ARCHIVES U.I.T. GENÈVE

DETERMINATION OF THE NEED TO COORDINATE A PROPOSED TERRESTRIAL ASSIGNMENT WITH RESPECT TO THE BROADCASTING-SATELLITE SERVICE IN THE BAND 11.7-12.2 GHz (12.5 GHz REGION 1)

Explanatory note on the attached Appendix

It is proposed that the attached Appendix be appended to the Regulatory Provisions contained in the Final Acts (currently being prepared in Committee 6) to specify the technical calculations necessary to determine whether a proposed terrestrial assignment needs to be coordinated, with another administration, in respect of the Broadcasting-Satellite Service.

The basic concept of the procedure is that at the edge of the service area*) of a broadcasting satellite there is a maximum interfering power flux-density limit. If calculations indicate that the proposed terrestrial assignment will produce a power flux-density in excess of the acceptable limit at the edge of the service area, then it is necessary for the assignment to be coordinated with the appropriate administration.

The maximum acceptable power flux-density at the edge of the service area depends, in part, on the angular discrimination and hence the elevation angle of the broadcasting-satellite receivers within the service area. In order to simplify the calculation of the maximum acceptable power flux-density it is proposed that, associated with the plan, there should be stated, for each service area, the elevation angle to be protected. Clearly it would be logical for this to be the lowest angle of elevation within the service area.

In a small number of cases with large service areas in high latitudes the elevation angles within the service area may cover a large range, say 7°, or more. In these cases where the maximum elevation angle is lower than 19° it may be necessary to specify two or at the most three values of elevation angle to be protected. This would ensure that under these conditions the calculated interfering power flux-density was not over-pessimistic.

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*) Note : Reference is made throughout this document to the edge of service area. Committee 6 has not yet agreed on whether Protection shall be given to the edge of service area or to the frontier of the administration having the broadcasting satellite assignment and therefore some editorial changes may be necessary in the light of the conclusions of Committee 6.

Appendix : 1

A P P E N D I X

PROCEDURE FOR DETERMINING THE LIMITING INTERFERING POWER FLUX-DENSITY AT THE EDGE OF A BROADCASTING-SATELLITE SERVICE AREA AND FOR PREDICTING THE POWER FLUX-DENSITY PRODUCED AT THAT POINT BY A TERRESTRIAL STATION IN THE BAND 11.7-12.2 GHz (12.5 GHz REGION 1)

1. General

1.1 This Appendix describes a method of assessing the interference potential from terrestrial transmitters to broadcasting satellite receivers in the frequency range 11.7 - 12.2 GHz (12.5 GHz in Region 1).

1.2 The method is in two parts :

i) the calculation of the maximum permissible interfering power flux-density (pfd) at the edge of the Broadcasting-Satellite Service area concerned;

ii) the calculation of the likely pfd produced at any point on the edge of the service area by the terrestrial transmitter of another Administration.

1.3 The interference potential of the terrestrial transmitters must be considered case by case; the pfd produced by each terrestrial transmitter is compared to the limiting pfd at any point on the edge of the service area of another Administration. If, for a given transmitter, the value of the pfd produced is lower than the value of the limiting pfd at any point on the edge of the service area, it is considered that the interference produced to the Broadcasting-Satellite Service by this transmitter is lower than the permissible value and no coordination is required between Administrations before the terrestrial service is brought into use. Where this is not the case, coordination and further, more precise calculations derived from a mutually agreed basis are necessary.

1.4 It is emphasized that, should the calculation described in this Appendix indicate that the maximum permissible pfd is exceeded, it does not necessarily preclude the introduction of the terrestrial service since the calculations are necessarily based on worst case assumptions for :

a) the nature of the terrain of the interference path,

b) the off-beam discrimination of the broadcasting-satellite receivers,

c) the necessary protection ratios for broadcasting-satellite transmissions.

d) the type of reception in the Broadcasting-Satellite Service, that is, individual reception is assumed, this being more critical than community reception for the angles of elevation concerned.

2. Limit of power flux-density

2.1 General

The limiting power flux-density not to be exceeded at the edge of the service area in order to protect the Broadcasting-Satellite Service of another Administration is given by the formula :

$$F = Fo - R + D + P \qquad (1)$$

where F = the maximum permissible interfering power flux-density (in $dB(W/m^2)$) in the satellite broadcasting wanted bandwidth

Fo = the wanted power flux-density (in $dB(W/m^2)$) at the edge of the service area

R = the protection ratio (in dB) between the wanted and interfering signals

D = angular discrimination (in dB) provided by the antenna radiation pattern of the satellite broadcasting receiver.

P = polarization discrimination (in dB) between the wanted and interfering signals

2.2 Wanted power flux-density (Fo)

The value of Fo is equal to

a) -103 $dB(W/m^2)$ for service areas in Regions 1 and 3

b) -105 $dB(W/m^2)$ for service areas in Region 2

2.3 Protection ratio (R)

2.3.1 The single entry protection ratio against all types of terrestrial transmissions with the exception of a.m.-multichannel TV systems is equal to / _/ for carrier frequency differences between the wanted and interfering signals of up to ± 5 MHz, decreasing linearly from / _/ for carrier frequency differences between 5 MHz and / _ _/ and is equal to 0 dB for frequency differences in excess of / MHz_/ (see Figure 1).

2.3.2 The carrier frequency difference should be determined by reference to assignments in the broadcasting-satellite plan or, in the case of broadcasting satellites not contained within a plan, by reference to the description of the characteristics of the proposed or operational system. For a.m.-multichannel TV systems which produce peaks of high power flux-density spread over a wide range of their occupied bandwidth, protection ratio R is equal to / dB_/ and is independent of the carrier frequency difference.

2.3.3 A terrestrial signal should only be considered if its occupied bandwidth overlaps or is separated by less than 7 MHz from the occupied bandwidth of the broadcasting-satellite assignment.

2.4 Angular discrimination

2.4.1 Broadcasting-Satellite Service areas in Regions 1 and 3.

Where the angle of elevation for protection ϕ, either as specified in the Plan or as associated with the proposed or operational broadcasting-satellite system, for the Broadcasting-Satellite Service area concerned, is equal to or greater than 19°, then the value of (D) to be assumed in expression (1) is 33 dB. In cases where ϕ is less than 19° (D) should be derived from expression (2.1) below.

Note : If more than one value of ϕ is specified for a particular service area, then the appropriate value of ϕ should be used for each section of the edge of the service area under consideration.

$$\begin{aligned} &D = 0 \text{ for } 0 \leq \phi \leq 0.5 \\ &D = 3\phi^2 \text{ for } 0.5 \leq \phi \leq 1.41 \\ &D = 3 + 20 \log_{10} \phi \text{ for } 1.41 \leq \phi \; 2.52 \\ &D = 1 + 25 \log_{10} \phi \text{ for } 2.52 \leq \phi \; 19 \end{aligned} \qquad (2.1)$$

Note : For graphical determination of D see Figure 2.

2.4.2 Broadcasting-Satellite Service areas in Region 2

Where the angle of elevation for protection ϕ, either as specified in the Plan or as associated with the proposed or operational broadcasting satellite system, for the Broadcasting-Satellite Service area concerned, is equal to or greater than 27°, then the value of D to be assumed in expression (1) is 38 dB. In cases where ϕ is less than 27° (D) should be derived from expression (2.2) below.

Note : If more than one value of ϕ is specified for a particular service area, then the appropriate value of ϕ should be used for each section of the edge of the service area under consideration.

$$\begin{aligned} &D = 0 \text{ for } 0 \leq \phi \leq 0.36 \\ &D = 3.7\phi^2 \text{ for } 0.36 \leq \phi \leq 1.27 \\ &D = 3.9 + 20 \log_{10} \phi \text{ for } 1.27 \leq \phi \; 2.27 \\ &D = 2.1 + 25 \log_{10} \phi \text{ for } 2.27 \leq \phi \; 27 \end{aligned} \qquad (2.2)$$

Note : For graphical determination of D see Figure 2.

2.5 Polarization discrimination

The value of P is equal to :

a) 3 dB when the interfering Terrestrial Service uses linear polarization and the Broadcasting-Satellite uses circular polarization and vice-versa.

b) 0 dB when the interfering Terrestrial Service and the Broadcasting-Satellite Service both use circular or both use linear polarization.

3. Power flux-density produced by a terrestrial station

The power flux-density F_p produced at any point on the edge of the service area by the terrestrial station is determined from the following formula :

$$Fp = E - A + 43 \quad [dBW/m^2] \qquad (3)$$

where E = the effective isotropic radiated power in dBW of the terrestrial station in the direction of the point on the edge of the service area concerned

and A = the total path loss in dB.

3.1 Evaluation of path loss A for a terrestrial station at a distance greater than 100 km from the edge of the Broadcasting-Satellite Service area

For path lengths greater than 100 km, A is given by :

$$A = 137.6 + 0.225\, d_t + 0.074\, d_m + 0.0074\, (d_t + d_m) \qquad (4)$$

where d_t and d_m are the overland and oversea path lengths respectively, in km.

3.2 Evaluation of path loss A for a terrestrial station at a distance less than 100 km from the edge of the Broadcasting-Satellite Service area

For path lengths equal to or less than 100 km, A should be calculated using equations (4) and (5) and the lowest value obtained substituted in formula (3) to calculate the power flux-density produced at the point on the edge of the service area :

$$A = 109.5 + 20 \log (d_t + d_m) \qquad (5)$$

The variation of A for different path lengths and proportions of oversea path is shown in Figure 3.

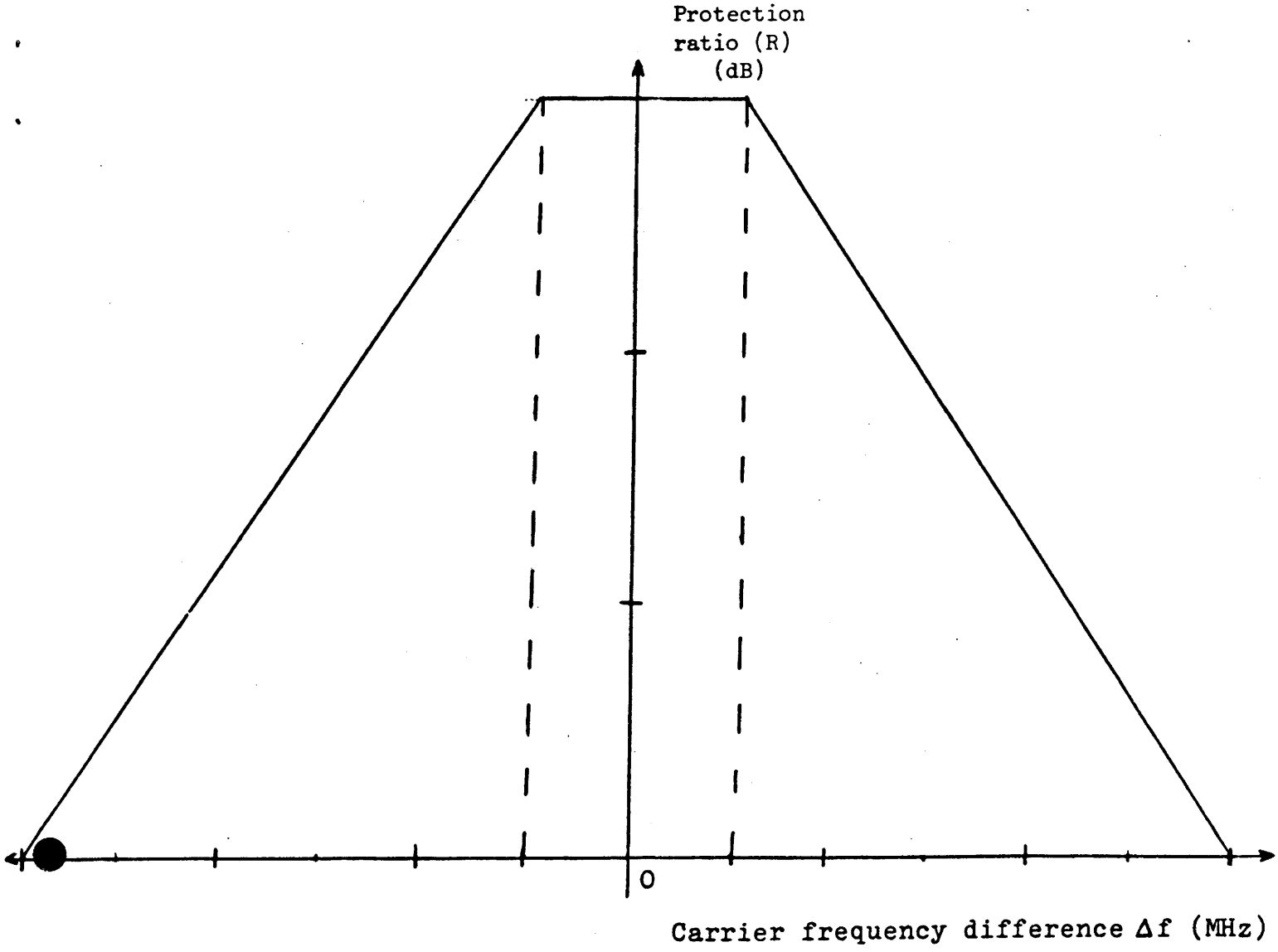
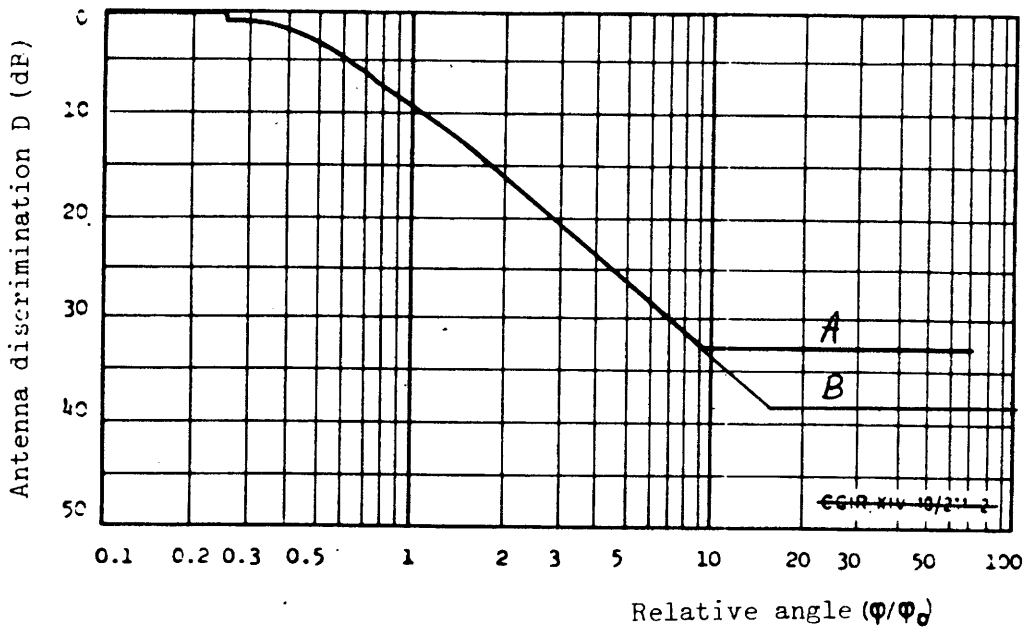


Figure 1 - Protection ratio (R) (dB) for a satellite broadcasting signal against a single entry of interference from Terrestrial Services (except for AM multichannel TV systems).

Note : The form of this figure is included by way of example. The single entry values of protection ratio will later be included to be consistent with those finally given in Section 2.3.1.



For service areas in Regions 1 and 3 $\phi_o = 2^\circ$ and Curve A applies

For service areas in Region 2 $\phi_o = 1.8^\circ$ and Curve B applies

Figure 2 - Variation of satellite broadcasting receiver antenna discrimination with satellite elevation angle.

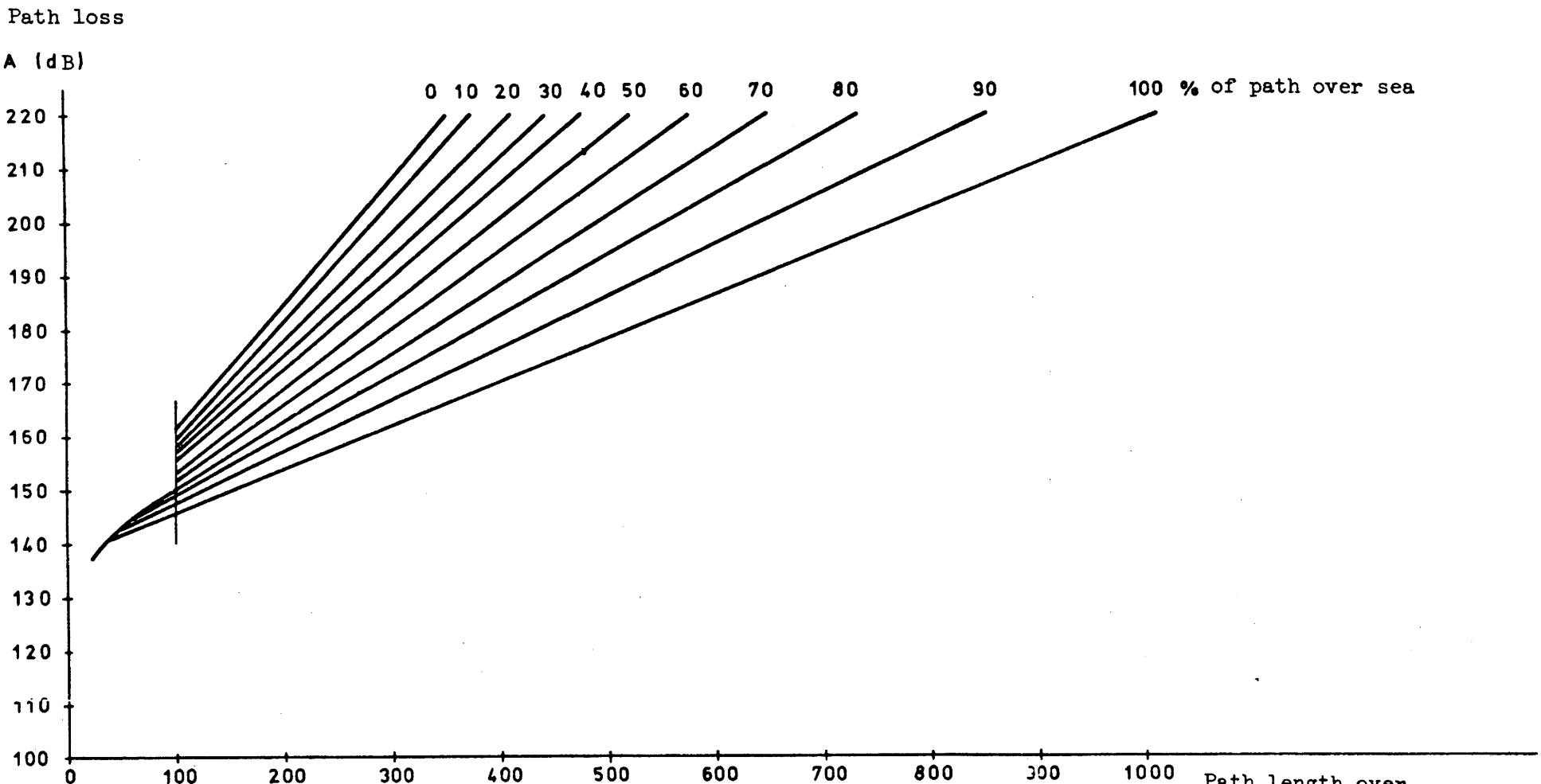


Figure 3 – Total Path Loss A Versus Total Path Length ($d_t + d_m$)

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 170-E
27 January 1977
Original : English

WORKING GROUP 5A

Report of Sub-Group 5A3

Using TDF computer facility we have split up the Regions 1 and 3 in three parts for the computer runs :

- first part : from 34°W to 20°E, covering 108 countries,
- second part : from 2°E to 80°E, covering 108 countries,
- third part : from 50°E to 160°W, covering 108 countries.

We received the first run computer output for the first part of orbit positions. We are preparing the second and third parts to be put into the computer and we hope the results will be ready by Friday morning.

Concerning the problems of Central Europe which are described in Document No. 138, a possible channel assignment has been examined by the computer for the first part of orbit positions as a whole.

Evaluation of this channel assignment gives the following results :

- negative margins appear for 28 countries out of 108 countries,
- the worst margin is -5.6 dB for only 1 case on co-channel (31 dB protection ratio),
- the average value of the margins is about +4.4 dB.

Referring to Document No. 138, the countries mentioned therein on adjacent orbit positions 16°W, 10°W have the following margins (worst channel) :

AUT	-3.4 dB	ALB	-1.5 dB
BEL	-2.6 dB	BUL	-2.8 dB
D	-5.2 dB	DDR	-3.5 dB
F	+0.3 dB	HNG	-2.9 dB
HOL	-2.9 dB	POL	-1.6 dB
I	-3.1 dB	ROU	-3.2 dB
LUX	-2.0 dB	TCH	-3.6 dB
SUI	-2.5 dB	YUG	-2.9 dB

On the basis of the results and of the observations of administrations forwarded to 5A3 by the Chairman of 5A, a second trial plan has been constructed and is being examined by TDF computer.

R. RYVOLA
Chairman of Sub-Group 5A3

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 171-E
27 January 1977
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Comoros (State of the)

TRANSFER OF RIGHT TO VOTE

The delegation of the State of the Comoros wishes to give to the delegation of Tanzania the mandate to exercise its right to vote at one or more meetings as specified in Number 371 of the ITU Convention.

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UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Addendum N° 2 au
Document N° 172-F/E/S
2 février 1977

COMMISSION 5

Note du Président de la Commission 5 (Planification)

ADDENDUM N° 2 A L'ANNEXE 3
à la
LISTE DES DEMANDES

Explication des numéros d'observation
inscrits dans la colonne 15
du formulaire de demande
(Réf. Document N° 103(Rév.1))

COMMITTEE 5

Note by the Chairman of Committee 5 (Planning)

ADDENDUM No. 2 TO ANNEX 3
to the
LIST OF REQUIREMENTS

Explanation of Remarks numbers
appearing in Column 15 of the
List of Requirements
(Ref. Document No. 103(Rev.1))

COMISIÓN 5

Nota del Presidente de la Comisión 5 (Planificación)

ADDÉNDUM N.° 2 AL ANEXO 3
a la
LISTA DE SOLICITUDES

Explicación de los números de las
Observaciones que aparecen en la
columna 15 de la Lista de solicitudes
(Ref. Documento N.° 103(Rev.1))

Pour des raisons d'économie, ce document n'a été tiré qu'en nombre restreint. Les participants sont donc priés de bien vouloir apporter à la conférence leurs documents avec eux, car il n'y aura que fort peu d'exemplaires supplémentaires disponibles.

ARCHIVES U.I.T. GENÈVE

Addendum N° 2 à l'Annexe 3 à la Liste des demandes

Explication des numéros d'observation inscrits dans la colonne 15 du formulaire de demande

Le préfixe "A" signifie que le renseignement émane d'une administration.
Le préfixe "B" signifie que le renseignement a été introduit par le Comité.

A210 SDN Demande officiellement à partager une même position orbitale avec l'Egypte. Désire que toutes les fréquences qui seront allouées se trouvent dans la même bande de 400 MHz, et qu'elles aient toutes une polarisation identique.

A211 CVA Position préférée, même position orbitale que Monaco.

A212 BRU Le Royaume-Uni demande que la même position orbitale soit assignée à Brunei et Singapour.

A213 ISL Il convient d'utiliser les données relatives aux faisceaux et non les points qui déterminent le polygone.

A214 BEL Note A030 doit être modifiée comme suit:

La longitude nominale sur l'orbite géostationnaire doit être indentique à celle de la France (F), des Pays-Bas (HOL), de la République Fédérale d'Allemagne(D), du Grand-Duché du Lexembourg(LUX), de la Suisse (SUI), de l'Autriche (AUT) et de l'Italie (I). Cette demande découle de la nécessité impérieuse pour la Belgique de se trouver sur la même position d'orbite que les Pays-Bas et la France.

Addemdum No. 2 to Annex 3 to the List of Requirements

Explanation of Remarks numbers appearing in Column 15 of the List of Requirements

The prefix "A" indicates that the information was received from the Administration.
The prefix "B" indicates that the information has been introduced by the Board.

A210 SDN Has also submitted officially a request to share the same orbital position as Egypt. Would like to have all the frequencies allocated in the same 400 MHz band, and of the same polarization.

A211 CVA Preferred position, same orbital position as Monaco.

A212 BRU United Kingdom requests that Brunei be given the same orbital position.

A213 ISL The beam data should be used instead of polygon points.

A214 BEL Note A030 must be modified as follows:

The nominal longitude on the geostationary orbit should be identical with that of France (F), the Netherlands (HOL), the Federal Republic of Germany (D), the Grand-Duchy of Luxembourg (LUX), Switzerland (SUI), Austria (AUT) and Italy (I). This request arises from the overriding necessity for Belgium to be in the same orbital position as the Netherlands and France.

Addéndum N.° 2 al Anexo 3 a la Lista de solicitudes

Explicación de los números de las Observaciones que aparecen en la columna 15 de la Lista de solicitudes

El prefijo "A" indica que la información proviene de una Administración.
El prefijo "B" indica que la información la ha agregado la Junta.

A210 SDN Ha sometido también oficialmente una petición para compartir la misma posición orbital con Egipto. Desearía que todas las frequencias que se adjudiquen estén en la misma banda de 400 MHz y tengan la misma polarización.

A211 CVA Posición preferida, la misma posición orbital que Mónaco.

A212 BRU El Reino Unido solicita que Brunei tenga la misma posición orbital que Singapour.

A213 ISL Deben utilizarse los datos del haz en lugar de los puntos del polígono.

A214 BEL La Nota A030 debe modificarse como sigue:

La longitud nominal en la órbita geoestacionaria debe ser idéntica a la de Francia (F), Países Bajos (HOL), República Federal de Alemania (D), Grand Ducado de Luxemburgo (LUX), Suiza (SUI), Austria (AUT) e Italia (I). Esa solicitud se debe a la imperiosa necesidad de Bélgica de hallarse en la misma posición orbital que los Países Bajos y Francia.

A214 BEL (suite)

- La polarisation des émissions à partir des satellites doit être identique à celle de la France (F) et à celle des Pays-Bas (HOL).

A215 G Le Royaume-Uni est disposé à modifier les limites de la colonne 13 conformément aux termes du Doc. N° DL/15, à condition que sa demande, concernant les mêmes positions orbitale et polarisation que l'Irlande, soit satisfaite.

A216 MCO Même position orbitale que CVA.

A217 AUT Une erreur de pointage de 0,1° a déjà été prise en considération.

A218 LUX Le Luxembourg désire utiliser la même position orbitale que les pays suivants (par ordre de priorité): F, BEL, D, HOL, SUI.

A219 NOR Comprend une erreur de pointage de ± 0,1°.

Afin de faciliter la planification, il convient d'utiliser les données modifiées relatives aux faisceaux et non les données calculées à partir des points qui déterminent le polygone car il en résulterait un faisceau plus large.

En outre, l'Administration de la Norvège est prête à accepter que l'un des quatre canaux du faisceau nordique (N° de série 0121 de l'IFRB) soit transféré à un faisceau national, dont les données sont contenues dans le N° de série 0120 de l'IFRB, s'il est nécessaire pour obtenir un plan approuvé.

A220 KEN Le Kenya souhaite partager les mêmes position orbitale, polarisation et gamme d'accord que la Tanzanie et l'Ouganda.

A214 BEL (cont.)

- The polarization of emissions from satellites must be identical with that of France (F) and the Netherlands (HOL).

A215 G The United Kingdom is prepared to modify the limits in Column 13 in accordance with the terms of Doc. No. DL/15 provided the requirement for the same orbital position and polarisation as Ireland is met.

A216 MCO Same orbital position as CVA.

A217 AUT A pointing error of 0.1° has already been taken into account.

A218 LUX Luxembourg wishes to use the same orbital position as the following countries (priority order): F, BEL, D, HOL, SUI.

A219 NOR Includes pointing error of ± 0.1°.

In order to facilitate planning the amended beam data should be used instead of data derived from the polygon points since these points will result in a wider beam.

In addition, the Norwegian Administration is prepared to accept that one channel in the Nordic beam (IFRB Serial No. 0121) be transferred to a national beam with data as contained in IFRB Serial No. 0120, if this proves necessary in order to obtain an agreed plan.

A220 KEN Kenya would like to share same orbital position, polarisation and tuning range with Tanzania and Uganda.

A214 BEL (cont.)

- La polarización de las emisiones a partir de los satélites debe ser idéntica a la de Francia (F) y a la de los Países Bajos (HOL).

A215 G El Reino Unido está dispuesto a modificar los límites en la columna 13, de acuerdo con los términos del Doc. N.° DL/15 siempre y cuando se satisfagan los requisitos de la misma posición orbital y la misma polarización de Irlanda.

A216 MCO La misma posición orbital que CVA.

A217 AUT Ya se ha tenido en cuenta un error de puntería de 0,1°.

A218 LUX Luxemburgo desea utilizar la misma posición orbital que los siguientes países (por orden de prioridad): F, BEL, D, HOL, SUI.

A219 NOR Comprende un error de puntería de ± 0,1°.

Con el fin de facilitar la planificación debieran utilizarse los datos del haz modificados, en lugar de los derivados de los puntos del polígono, puesto que éstos darán lugar a un haz más amplio.

Además, la Administración noruega está dispuesta a aceptar que uno de sus canales en el haz nórdico (N.° de orden 0121 de la IFRB) se transfiera a un haz nacional, con datos como los contenidos en el N.° de orden 0120 de la IFRB, si ello fuera necesario para obtener un plan convenido.

A220 KEN Kenya desea compartir la misma posición orbital, la misma polarización y la misma gama de sintonización con Tanzania y Uganda.

A221 F Position commune demandée avec BEL, HOL, LUX, SUI, D, I.

A222 I Même position orbitale que F, SUI, AUT.

A223 CYP Il convient d'assigner à Chypre et à la Grèce des canaux situés dans la même bande de 400 MHz.

Toutes différences avec les demandes exposées doivent être coordonnées avec la délégation de Chypre.

A224 MAU Désire partager une même position orbitale, une même polarisation et une même bande de 400 MHz avec REU.

A221 F Common position requested with BEL, HOL, LUX, SUI, D, I.

A222 I Same orbital position as F, SUI, AUT.

A223 CYP Cyprus and Greece to be assigned channels within the same 400 MHz band.

Any departures from the requirements stated to be coordinated with the Cyprus Delegation.

A224 MAU Would like to share the same orbital position, the same polarisation and same 400 MHz band as REU.

A221 F Posición común solicitada con BEL, HOL, LUX, SUI, D, I.

A222 I La misma posición orbital que F, SUI, AUT.

A223 CYP Chipre y Grecia desean que se les asignen canales en la misma banda de 400 MHz.

Nuestras modificaciones con respecto a las necesidades indicadas se coordinarán con la delegación de Chipre.

A224 MAU Quisiera compartir con REU la misma posición orbital, la misma polarización y la misma banda de 400 MHz.

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Addendum N° 1 au ✓
Document N° 172 F/E/S
2 février 1977

COMMISSION 5

Note du Président de la Commission 5 (Planification)

ADDENDUM N° 1 A L'ANNEXE 3

à la

LISTE DES DEMANDES

Explication des numéros d'observation
inscrits dans la colonne 15
du formulaire de demande
(Réf. Document N° 103(Rév.1))

COMMITTEE 5

Note by the Chairman of Committee 5 (Planning)

ADDENDUM No. 1 TO ANNEX 3

to the

LIST OF REQUIREMENTS

Explanation of Remarks numbers
appearing in Column 15 of the
List of Requirements
(Ref. Document No. 103(Rev.1))

COMISIÓN 5

Nota del Presidente de la Comisión 5 (Planificación)

ADDÉNDUM N.° 1 AL ANEXO 3

a la

LISTA DE SOLICITUDES

Explicación de los números de las
Observaciones que aparecen en la
columna 15 de la Lista de solicitudes
(Ref. Documento N.° 103(Rev.1))

Pour des raisons d'économie, ce document n'a été tiré qu'en nombre restreint. Les participants sont donc priés de bien vouloir apporter à la conférence leurs documents avec eux, car il n'y aura que fort peu d'exemplaires supplémentaires disponibles.

ARCHIVES U.I.T. GENÈVE

Addendum N° 1 à l'Annexe 3 à la Liste des demandes

Explication des numéros d'observation inscrits dans la colonne 15 du formulaire de demande

Le préfixe "A" signifie que le renseignement émane d'une administration.
Le préfixe "B" signifie que le renseignement a été introduit par le Comité.

A201 MRC Se réserve le droit de prendre option pour cette position orbitale (-28°W ou -34°W) dès que les résultats de ses calculs seront connus et vérifiés.

A202 POR Demande que, dans la mesure du possible, la position orbitale assignée aux stations spatiales des deux faisceaux demandés par son Administration soit maintenue, en partage avec les autres pays européens qui figurent dans le Document N° 36 en regard de cette même position orbitale.

A203 KOR Points du polygône à couvrir

Point Punto	Longitude Longitud	Latitude Latitud	Point Punto	Longitude Longitud	Latitude Latitud	Point Punto	Longitude Longitud	Latitude Latitud
1	124E40	37N57	5	127E12,7	38N15,6	8	128E21	38N36
2	125E42	37N40	6	127E27,7	38N18	9	131E51	37N22
3	126E16	37N46	7	127E54	38N17	10	128E45	34N30
4	126E35	37N45						

A204 BUL DDR HNG POL ROU TCH Désirent utiliser la même position orbitale, c'est-à-dire : 10°W

Addendum No. 1 to Annex 3 to the List of Requirements

Explanation of Remarks numbers appearing in Column 15 of the List of Requirements

The prefix "A" indicates that the information was received from the Administration.
The prefix "B" indicates that the information has been introduced by the Board.

A201 MRC Reserves the right to opt for this orbital position (28°W or 34°W) as soon as the results of its calculations are available and have been verified.

A202 POR Requests that as far as possible the orbital position assigned to the space stations of the two beams requested by its Administration should be maintained on a shared basis with the other European countries entered in Document No. 36 against the same orbital position.

A203 KOR Points of polygon to be covered

Point Punto	Longitude Longitud	Latitude Latitud	Point Punto	Longitude Longitud	Latitude Latitud	Point Punto	Longitude Longitud	Latitude Latitud
1	124E40	37N57	5	127E12,7	38N15,6	8	128E21	38N36
2	125E42	37N40	6	127E27,7	38N18	9	131E51	37N22
3	126E16	37N46	7	127E54	38N17	10	128E45	34N30
4	126E35	37N45						

A204 BUL DDR HNG POL ROU TCH Wish to use the same orbital position, namely: 10°W

Addéndum N.° 1 al Anexo 3 a la Lista de solicitudes

Explicación de los números de las Observaciones que aparecen en la columna 15 de la Lista de solicitudes

El prefijo "A" indica que la información proviene de una Administración.
El prefijo "B" indica que la información le ha agregado la Junta.

A201 MRC Se reserva el derecho de hacer valer una opción para esta posición orbital (-28°W ó -34°W) tan pronto como se conozcan y se hayan verificado los resultados de sus cálculos.

A202 POR solicita que, en la medida de lo posible, se mantenga la posición orbital asignada a las estaciones espaciales de los dos haces solicitados por su administración, en regimen de compartición con los otros países europeos que figuran en el Documento N.° 36 con relación a esta misma posición orbital.

A203 KOR Puntos del polígono a cubrir

Point Punto	Longitude Longitud	Latitude Latitud
11	126E17	33N01
12	125E04	34N05
13	125E13	34N40

A204 BUL DDR HNG POL ROU TCH desean utilizar la misma posición orbital, es decir: 10°W.

A205 AUS Ces demandes prévoient une capacité maximale de six canaux dans chacune des six zones de service. Les trois zones orientales seraient desservies à partir de la position orbitale 128°E et les trois zones occidentales à partir de la position orbitale 104°E. Il est envisagé de faire démarrer le service avec une seule position orbitale (128°E); les équipements de satellite seraient utilisés alors en partage par l'AUS, PNG et NZL, et le service, à ce stade, serait limité à une capacité maximale de trois canaux pour la zone de service de PNG et NZL, et les trois zones de service occidentales de l'Australie. Les trois zones orientales de l'Australie seraient limitées à une capacité maximale de six canaux par zone de service.

A un stade ultérieur, la position orbitale pour les trois zones occidentales de l'Australie serait déplacée de 128°E à 104°E, avec une capacité de six canaux par zone de service.

A205 AUS These requirements provide for an ultimate capacity of six channels in each of the six service areas. The three eastern areas would be served from orbital position 128°E, whereas the three western areas would be served from orbital position 104°E. It is envisaged that the service will commence using only one orbital position (128°E), and that the satellite facilities would be shared between AUS, PNG and NZL, the service at that stage being limited to a maximum capacity of three channels per service area in PNG, NZL and the three western service areas of Australia. The three eastern areas of Australia would be limited to the ultimate capacity of six channels per service area.

At a later stage the orbital position for the three western service areas of Australia would change from 128°E to 104°E with a capacity of six channels per service area.

A205 AUS En estas solicitudes se prevé una capacidad final de seis canales en cada una de las seis zonas de servicio. Las tres zonas orientales serían atendidas desde la posición orbital 128°E, mientras que las tres occidentales lo serían desde la posición orbital 104°E. Se prevé que el servicio comenzará utilizando solamente una posición orbital (128°E) y que las facilidades del satélite se compartirían entre AUS, PNG y NZL, limitándose el servicio en esa etapa a una capacidad máxima de tres canales por zona de servicio en PNG y NZL y en las tres zonas de servicio occidentales de Australia. Las tres zonas orientales de Australia se limitarían a la capacidad final de seis canales por zona de servicio.

En una etapa posterior, se modificaría la posición orbital para las tres zonas de servicio occidentales de Australia de 128°E a 104°E, con una capacidad de seis canales por zona de servicio.

A206 CHN a) Les 9 zones de service suivantes :

CHN 0154, 0155, 0156, 0157, 0183, 0184, 0185, 0186, 0188,

b) Les 11 zones de service suivantes :

CHN 0158, 0159, 0163, 0164, 0165, 0176, 0177, 0178, 0181, 0182, 0187,

c) Les 15 zones de service suivantes :

CHN 0160, 0161, 0162, 0166, 0167, 0168, 0169, 0170, 0171, 0172, 0173, 0174, 0175, 0179, 0180,

exigent le partage d'une position orbitale.

A206 CHN a) These 9 service areas:

b) These 11 service areas:

c) These 15 service areas:

require the sharing of one orbital position.

A206 CHN a) Las siguientes 9 zonas de servicio:

b) Las siguientes 11 zonas de servicio:

c) Las siguientes 15 zonas de servicio:

requieren la compartición de una posición orbital.

A207 KEN TGK UGA Aimeraient être groupées sur la même position orbitale. Par ailleurs, ils aimeraient avoir la même polarisation et la même gamme de fréquences pour les récepteurs.

A207 KEN TGK UGA Would like to be grouped together in the same orbital position. Furthermore, they would like to have the same polarisation and same frequency range for receivers.

A207 KEN TGK UGA Desearían estar agrupados en la misma posición orbital y además, tener la misma polarización y la misma gama de frecuencia para los receptores.

A208 TUN Polarisation et gammes récepteurs pour TUN differentes de celles des pays limitrophes.

A208 TUN Polarization and range of receivers for TUN differ from those of adjacent countries.

A208 TUN La polarización y las gamas receptoras para TUN deberán ser diferentes de las de los países limítrofes.

A209 TUN Nouveau contour polygône reduit

A209 TUN New polygon contour to be reduced

A209 TUN Nuevo contorno del polígono reducido

Point Punto	Longitude Longitud	Latitude Latitud	Point Punto	Longitude Longitud	Latitude Latitud	Point Punto	Longitude Longitud	Latitude Latitud	Point Punto	Longitude Longitud	Latitude Latitud
1	10°E	37°40N	3	-5°W	35°N	5	8°E	30°N	7	15°E	28°N
2	5°E	36°N	4	-5°W	30°N	6	10°E	29°N	8	15°E	30°N

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Document N° 172-F/E/S
27 janvier 1977

COMMISSION 5

Note du Président de la Commission 5 (Planification)

ANNEXE 3 REVISE

à la

LISTE DES DEMANDES

Explication des numéros d'observation
inscrits dans la colonne 15
du formulaire de demande
(Réf. Document N° 103(Rév.1))

COMMITTEE 5

Note by the Chairman of Committee 5 (Planning)

ANNEX 3 REVISED

to the

LIST OF REQUIREMENTS

Explanation of Remarks numbers
appearing in Column 15 of the
List of Requirements
(Rev. Document No. 103(Rev.1))

COMISIÓN 5

Nota del Presidente de la Comisión 5 (Planificación)

ANEXO 3 REVISADO

a la

LISTA DE SOLICITUDES

Explicación de los números de las
Observaciones que aparecen en la
columna 15 de la Lista de solicitudes
(Ref. Documento N.° 103(Rev.1))

Pour des raisons d'économie, ce document n'a été tiré qu'en nombre restreint. Les participants sont donc priés de bien vouloir apporter à la conférence leurs documents avec eux, car il n'y aura que fort peu d'exemplaires supplémentaires disponibles.

ARCHIVES U.I.T. GENÈVE

ANNEXE 3
à la
LISTE DES DEMANDES

Explication des numéros d'observation inscrits dans la colonne 15 du formulaire de demande

Le préfixe "A" signifie que le renseignement émane d'une administration.
Le préfixe "B" signifie que le renseignement a été introduit par le Comité.

A001 E Points de référence définissant les limites de la zone à desservir (exprimés en degrés et centièmes de degré) :

1 9,27W 42,87N 3 5,30W 35,90N 4 2,91W 35,32N 5 4,30E 39,80N 6 3,33E 42,30N 7 1,76W 43,38N 8 7,67W 43,78N
2 7,40W 37,18N 9 9,27W 42,87N

A002 CNR Points de référence définissant les limites de la zone à desservir (exprimés en degrés et centièmes de degré) :

1 18,00W 29,00N 2 18,33W 27,50N 3 13,58W 27,83N 4 13,05W 29,50N 5 18,00W 29,00N

A003 GRC La Grèce doit partager la même position orbitale que les pays d'Europe occidentale.

A004 GRC Points de référence de la Grèce délimitant les frontières d'une zone où le service sera assuré : (exprimés en degrés et en centièmes de degré).

1 19E34 39N84 2 20E51 37N68 3 24E01 34N68 4 29E65 36N10 5 27E07 37N70 6 26E51 39N00 7 26E60 41N51 8 26E35 41N67 9 24E50 41N55
10 22E92 41N33 11 21E01 40N83.

ANNEX 3
to the
LIST OF REQUIREMENTS

Explanation of Remarks numbers appearing in Column 15 of the List of Requirements

The prefix "A" indicates that the information was received from the Administration.
The prefix "B" indicates that the information has been introduced by the Board.

A001 E Reference points describing the boundaries of the service area (expressed in degrees and hundredths of a degree):

1 9,27W 42,87N 3 5,30W 35,90N 4 2,91W 35,32N 5 4,30E 39,80N 6 3,33E 42,30N 7 1,76W 43,38N 8 7,67W 43,78N
2 7,40W 37,18N 9 9,27W 42,87N

A002 CNR Reference points describing the boundaries of the service area (expressed in degrees and hundredths of a degree):

1 18,00W 29,00N 2 18,33W 27,50N 3 13,58W 27,83N 4 13,05W 29,50N 5 18,00W 29,00N

A003 GRC Greece to share the same orbital position with Western European Countries.

A004 GRC Greece reference points describing the boundaries of an area where Service shall be provided : (expressed in degrees and hundredths of a degree).

1 19E34 39N84 2 20E51 37N68 3 24E01 34N68 4 29E65 36N10 5 27E07 37N70 6 26E51 39N00 7 26E60 41N51 8 26E35 41N67 9 24E50 41N55
10 22E92 41N33 11 21E01 40N83.

ANEXO 3
a la
LISTA DE SOLICITUDES

Explicación de los números de las Observaciones que aparecen en la columna 15 de la Lista de solicitudes

El prefijo "A" indica que la información proviene de una Administración.
El prefijo "B" indica que la información la ha agregado la Junta.

A001 E Puntos de referencia que describen los límites de la zona de servicio (expresados en grados y centésimas de grado):

1 9,27W 42,87N 3 5,30W 35,90N 4 2,91W 35,32N 5 4,30E 39,80N 6 3,33E 42,30N 7 1,76W 43,38N 8 7,67W 43,78N
2 7,40W 37,18N 9 9,27W 42,87N

A002 CNR Puntos de referencia que describen los límites de la zona de servicio (expresados en grados y centésimas de grado):

1 18,00W 29,00N 2 18,33W 27,50N 3 13,58W 27,83N 4 13,05W 29,50N 5 18,00W 29,00N

A003 GRC **Grecia debe compartir la posición orbital con los países de Europa Occidental.**

A004 GRC **Puntos de referencia de Grecia en que se describen los límites de una zona en que habrá de prestarse servicio: (expresados en grados y centésimas de grado).**

1 19E34 39N84 2 20E51 37N68 3 24E01 34N68 4 29E65 36N10 5 27E07 37N70 6 26E51 39N00 7 26E60 41N51 8 26E35 41N67 9 24E50 41N55
10 22E92 41N33 11 21E01 40N83.

A005 FNL Points de référence définissant les limites de la zone à desservir couvrant la Finlande (exprimés en degrés et minutes) :

27E55 70N05 21E15 69N20 21E36 63N33 19E08 60N18 24E58 60N02 31E36 62N54 30E08 65N41 28E55 69N03
25E55 69N45 20E40 69N03 21E00 63N29 19E15 60N00 26E48 60N13 30E00 63N45 29E05 66N55 29E20 69N30
24E54 68N33 23E30 68N05 20E17 63N14 20E17 59N28 27E14 60N12 30E37 64N06 30E00 67N40
23E00 68N40 24E10 64N56 20E30 61N16 22E37 59N37 27E28 60N14 29E36 65N00 28E30 68N33

A005 FNL Reference points describing the boundaries of the service area covering Finland (expressed in degrees and minutes):

A005 FNL Puntos de referencia que describen los límites de la zona de servicio que engloba Finlandia (expresados en grados y minutos):

A006 FNL Points de référence définissant les limites de la zone à desservir couvrant le Danemark, la Finlande, la Norvège et la Suède (exprimés en degrés et minutes) :

28E55 69N03 29E36 65N00 27E14 60N12 19E21 57N57 12E00 54N40 04E45 5?N15 11E38 67N27 28E16 71N10.
28E30 68N33 30E37 64N06 26E48 60N13 19E00 57N26 08E20 55N00 04E24 61N41 15E00 6?N09 31E22 70N24
30E00 67N41 30E00 63N45 24E58 60N02 18E18 56N55 08E00 56N00 05E10 62N22 18E33 70N17 30E50 6?N47
29E05 66N55 31E36 62N54 22E37 59N37 16E24 56N12 06E33 58N01 10E23 64N50 23E58 71N10 30E56 6?N33
30E08 65N41 27E28 60N14 19E38 59N37 15E05 55N00 05E45 58N24 11E52 66N37 25E47 71N15 30E06 6?N41

A006 FNL Reference points describing the boundaries of the service area covering Denmark, Finland, Norway and Sweden (expressed in degrees and minutes):

A006 FNL Puntos de referencia que describen los límites de la zona de servicio que engloba Dinamarca, Finlandia, Noruega y Suecia (expresados en grados y minutos):

A007 MCO Longitude nominale. La position du satellite donnée dans le formulaire de demande est une première approximation. Notre administration serait désireuse que la position du satellite soit la même que celle qui sera attribuée à l'Administration de l'Etat de la Cité du Vatican.

A007 MCO Nominal longitude. The satellite position given in the Requirements form is a preliminary approximation. Our Administration would like the satellite position to be the same as the one assigned to the Administration of the Vatican City State.

A007 MCO Longitud nominal. La posición del satélite indicada en el formulario de solicitud constituye una primera aproximación. Nuestra administración desea que la posición del satélite sea la misma que la que se atribuya a la Administración del Estado de la Ciudad del Vaticano.

A008 MCO Longitude nominale. La position du satellite donnée dans le formulaire de demande est une première approximation.

A008 MCO Nominal longitude. The satellite position given in the Requirements form is a preliminary approximation.

A008 MCO Longitud nominal. La posición del satélite indicada en el formulario de solicitud es una primera aproximación.

Section elliptique. Notre Administration serait désireuse qu'un rapport de protection de 31 dB soit assuré à la limite de la zone demi-puissance (-3 dB) du faisceau.

Elliptical cross-section. Our Administration would like a protection ratio of 31 dB to be provided at the limit of the half-power (-3 dB) area of the beam.

Sección transversal elíptica. Nuestra Administración desea una relación de protección de 31 dB en el límite de la zona de los puntos de semipotencia (-3 dB) del haz.

A009 NOR Les satellites mentionnés pour les faisceaux NOR-1 et NOR-2 devraient avoir la même position orbitale nominale, qui serait la même que pour les satellites correspondants du Danemark, de la Finlande et de la Suède. La polarisation des émissions des stations spatiales en question devrait aussi être la même.

A009 NOR The satellites referred to for the beams NOR-1 and NOR-2 should have the same nominal orbital location, this being also the same as that of the corresponding satellites of Denmark, Finland and Sweden. The polarisation of emissions of the space stations in question should also be the same.

A009 NOR Los satélites de los haces NOR-1 y NOR-2 deben tener la misma ubicación orbital nominal, que será también idéntica a la de los satélites correspondientes de Dinamarca, Finlandia y Suecia. Las transmisiones de las estaciones espaciales de referencia deberán tener también la misma polarización.

A009 NOR (suite)

Les demandes pour NOR-2 ont été coordonnées avec le Danemark, la Finlande et la Suède. Les demandes analogues de ces pays, concernant un faisceau qui couvrirait également le territoire de la Norvège, ont reçu l'agrément de notre Administration.

En ce qui concerne la zone devant être desservie par les faisceaux NOR-1 et NOR-2, on trouvera ci-dessous une liste de coordonnées (en degrés et minutes) pour des points se trouvant tous à l'intérieur de la zone à desservir :

A009 NOR (cont.)

The requirements for NOR-2 have been coordinated with Denmark, Finland and Sweden. Equivalent requirements of these countries for a beam covering also the territory of Norway is agreeable to this Administration.

Concerning the area to be served by the beams NOR-1 and NOR-2, for ease of reference, the following co-ordinates (in degrees and minutes), all within the area to be served, are given:

A009 NOR (cont.)

Las solicitudes relativas a NOR-2 se han coordinado con Dinamarca, Finlandia y Suecia. Las solicitudes equivalentes de dichos países con relación a un haz que cubra también el territorio de Noruega son aceptables para esta Administración.

En lo concerniente a la zona a la que se desea dar servicio con los haces NOR-1 y NOR-2, para facilitar la referencia, se indican las coordenadas siguientes, (en grados y minutos), todas las cuales están situadas dentro de la zona de servicio:

Faisceau NOR 1 - Beam NOR-1 - Haz NOR-1

09E38	58N48	06E33	58N01	04E24	61N41	10E23	64N50	11E38	67N27	18E33	70N17	23E58	71N10	28E16	71N10
08E18	58N03	05E45	58N24	05E10	62N22	11E52	66N37	15E00	69N09	19E00	74N30	25E47	71N15	31E22	70N24
07E36	57N54	04E45	59N15												

Faisceau NOR-2 - Beam NOR-2 - Haz NOR-2

28E55	69N03	29E36	65N00	27E14	60N12	19E21	57N57	12E00	54N40	04E45	59N15	11E38	67N27	28E16	71N10
28E30	68N33	30E37	64N06	26E48	60N13	19E00	57N26	08E20	55N00	04E24	61N41	15E00	69N09	31E22	70N24
30E00	67N41	30E00	63N45	24E58	60N02	18E18	56N55	08E00	56N00	05E10	62N22	18E33	70N17	30E50	69N47
29E05	66N55	31E36	62N54	22E37	59N37	16E24	56N12	06E33	58N01	10E23	64N50	23E58	71N10	30E56	69N33
30E08	65N41	27E28	60N14	19E38	59N37	15E05	55N00	05E45	58N24	11E52	66N37	25E47	71N15	30E06	69N41

Par ailleurs, la zone de couverture requise est limitée par les frontières avec les pays voisins (Suède, Finlande et URSS).

Les valeurs indiquées dans les cases 08, 10, 11 et 12 du formulaire ne tiennent pas compte du fait que l'affaiblissement est plus grand lorsque l'angle de site est inférieur à 20°. Or, il est nécessaire pour nous que la valeur minimale acceptable de la densité surfacique de puissance soit dépassée également dans les zones où l'angle de site est compris entre 10° et 20°. Pour tenir compte de cette nécessité, les valeurs inscrites dans les cases 08, 10, 11 et 12 devront être modifiées au cours des travaux de planification, conformément aux décisions pertinentes de la conférence.

Otherwise, the required coverage area is limited by the border to the neighbouring countries (Sweden, Finland and USSR).

The values indicated in boxes 08, 10, 11 and 12 of the form do not take into account the higher attenuation values in cases where the angle of elevation is below 20°. Our requirement is, however, that the minimum acceptable power flux-density level be exceeded also in the areas where the angle of elevation is between 10° and 20°. To take this into account, the values contained in boxes 08, 10, 11 and 12 shall be modified during the planning work in accordance with the relevant decisions of the Conference.

Por lo demás, la zona de servicio que se requiere está limitada por la frontera de los países vecinos (Suecia, Finlandia y URSS).

En los valores indicados en las casillas 08, 10, 11 y 12 del formulario no se han tenido en cuenta los valores de atenuación más elevados que se alcanzan cuando el ángulo de elevación es inferior a 20 grados. No obstante, solicitamos que el nivel mínimo aceptable de la densidad de flujo de potencia se exceda también en las zonas con ángulos de elevación comprendidos entre 10 y 20 grados. A tal efecto, los valores de las casillas 08, 10, 11 y 12 deberán modificarse en el curso de los trabajos de planificación, de conformidad con las decisiones pertinentes de la Conferencia.

A010 DNK A titre de renseignements supplémentaires, nous donnons ci-dessous les coordonnées (en degrés et minutes) de 10 points situés le long du contour (± 50 km) de la zone à desservir :

N° No. N.°	Longitude Longitude Longitud	Latitude Latitude Latitud	Localité Position Localidad
1	10E35	57N45	Skagen
2	08E00	57N00	Skagerrak
3	08E00	56N00	Vesterhavet
4	08E20	55N00	Vesterhavet
5	10E00	54N50	Als
6	12E00	54N40	Syd-Falster
7	15E05	55N00	Dueodde
8	15E11	55N19	Christiansø
9	12E28	55N17	Stevns
10	12E37	56N02	Kronborg

A010 DNK Ten sets of co-ordinates (in degrees and minutes) along the contour (± 50 km) of the service area are given as further information:

A010 DNK Como información adicional, se indican 10 series de coordenadas (en grados y minutos) a lo largo del contorno (± 50 km) de la zona de servicio:

A011 DNK Cases 08, 10, 11 et 12. Les valeurs indiquées dans les cases 08, 10, 11 et 12 ne tiennent pas compte du fait que l'affaiblissement est plus grand lorsque l'angle de site de l'antenne de réception est inférieur à 20°.

Or, il est nécessaire pour nous qu'une valeur minimale acceptable de la densité surfacique de puissance soit dépassée également dans les zones où l'angle de site est supérieur à 10°.

Pour tenir compte de cette nécessité, les valeurs inscrites dans les cases 08, 10, 11 et 12 devront être modifiées au cours des travaux de planification, conformément aux décisions pertinentes de la conférence.

L'ellipse couvre les quatre pays nordiques (Danemark, Finlande, Norvège et Suède).

A titre de renseignements supplémentaires, nous donnons ci-dessous les coordonnées (en degrés et minutes) de 40 points situés le long du contour (± 50 km) de la zone à desservir :

A011 DNK Boxes 08, 10, 11 and 12. The values indicated in boxes 08, 10, 11 and 12 do not take into account the higher attenuation value in cases where the angle of elevation of the receiving antenna is below 20°.

Our requirement is, however, that a minimum acceptable power flux-density level be exceeded also in the areas where the angle of elevation is above 10°.

To take this into account the values contained in boxes 08, 10, 11 and 12 shall be modified during the planning in accordance with the relevant decisions of the Conference.

The ellipse is covering the four Nordic countries (Denmark, Finland, Norway and Sweden).

Forty co-ordinates (in degrees and minutes) along the contour (± 50 km) of the service area are given as further information:

A011 DNK Casillas 08, 10, 11 y 12. En los valores indicados en las casillas 08, 10, 11 y 12 no se tiene en cuenta el mayor valor de la atenuación cuando el ángulo de elevación de la antena receptora es inferior a 20°.

Sin embargo, solicitamos que se rebase también el nivel mínimo aceptable de la densidad de flujo de potencia en las zonas con un ángulo de elevación superior a 10°.

A tal efecto, en el curso de la planificación se modificarán los valores que figuran en las casillas 08, 10, 11 y 12, de acuerdo con las decisiones pertinentes de la Conferencia.

La elipse abarca los cuatro países nórdicos (Dinamarca, Finlandia, Noruega y Suecia).

Como información adicional, se indican 40 coordenadas (en grados y minutos) a lo largo del contorno (± 50 km) de la zona de servicio:

1	28E55	69N03	6	29E36	65N00	11	27E14	60N12	16	19E21	57N57	21	12E00	54N40	26	04E45	59N15	31	11E38	67M27	36	28E16	71N10
2	28E30	68N33	7	30E37	64N06	12	26E48	60N13	17	19E00	57N26	22	08E20	55N00	27	04E24	61N41	32	15E00	69N09	37	31E22	70N24
3	30E00	67N41	8	30E00	63N45	13	24E58	60N02	18	18E18	56N55	23	08E00	56N00	28	05E10	62N22	33	18E33	70N17	38	30E50	69N47
4	29E05	66N55	9	31E36	62N54	14	22E37	59N37	19	16E24	56N12	24	06E33	58N01	29	10E23	64N50	34	23E58	71N10	39	30E56	69N33
5	30E08	65N41	10	27E28	60N14	15	19E38	59N37	20	15E05	55N00	25	05E45	58N24	30	11E52	66N37	35	25E47	71N15	40	30E06	69N41

A012 DNK A titre de renseignements supplémentaires, nous donnons ci-dessous les coordonnées (en degrés et minutes) de 14 points situés le long du contour (± 50 km) de la zone à desservir :

A012 DNK Fourteen sets of co-ordinates (in degrees and minutes) along the contour (± 50 km) of the service area are given as further information:

A012 DNK Como información adicional, se indican 14 series de coordenadas (en grados y minutos) a lo largo del contorno (± 50 km) de la zona de servicio:

N° / No. / N.°	Longitude / Longitude / Longitud	Latitude / Latitude / Latitud	N° / No. / N.°	Longitude / Longitude / Longitud	Latitude / Latitude / Latitud	N° / No. / N.°	Longitude / Longitude / Longitud	Latitude / Latitude / Latitud	N° / No. / N.°	Longitude / Longitude / Longitud	Latitude / Latitude / Latitud	Localité / Position / Localidad
1	24W20	65N30	5	18W44	63N23	9	13W29	65N05	12	16W02	66N33	
2	24W03	64N51	6	16W39	63N48	10	13W36	65N31	13	22W58	66N28	
3	22W43	63N48	7	15W00	64N14	11	14W32	66N22	14	06W46	62N00	Torshavn
4	20W18	63N24	8	14W33	64N24							

Les demandes ont été coordonnées avec l'Administration de l'Islande. Elles se rapportent à une couverture commune de l'Islande et des îles Faeroe. L'ellipse a été conçue de manière à permettre la réception communautaire dans le sud du Groënland. On peut utiliser comme point de repère la localité de Julianehaab (46W00 60N42).

Case 04. Le nombre de canaux indiqué doit être compris comme le nombre total pour l'Islande et le Danemark.

A013 S Les satellites (N^{os} de série de l'I.F.R.B. 0138 et 0139) devraient avoir la même position orbitale nominale. Cette position, ainsi que la polarisation des émissions des stations spatiales, devraient être les mêmes que pour les satellites correspondants du Danemark, de la Finlande et de la Norvège.

La demande (N^{o} de série de l'I.F.R.B. 0139) a été coordonnée avec le Danemark, la Finlande et la Norvège. Les demandes analogues de ces pays, concernant un faisceau qui couvrirait également le territoire de la Suède, ont reçu l'agrément de notre administration.

The requirements have been co-ordinated with the Administration of Iceland. They concern a common coverage of Iceland and the Faeroe Islands. The ellipse has been so designed that it gives a possibility for community reception in the southern part of Greenland (Julianehaab (46W00 60N42) can be used as a check-point).

Box 04. The indicated number of channels is to be understood as the combined total number for Iceland and Denmark.

A013 S The satellites (I.F.R.B. Serial Nos. 0138 and 0139) should have the same nominal orbital position. This position as well as the polarisation of emissions of the space stations should coincide with the characteristics for the corresponding satellites of Denmark, Finland and Norway.

The requirement (I.F.R.B. Serial No. 0139) has been co-ordinated with Denmark, Finland and Norway. Equivalent requirements of these countries for a beam covering also the territory of Sweden is agreeable to this Administration.

Las solicitudes se han coordinado con la Administración de Islandia, con vistas a una cobertura común de Islandia y las Islas Feroe. La elipse se ha concebido de manera que ofrezca la posibilidad de recepción comunal en la parte meridional de Groenlandia (como punto de verificación puede utilizarse Julianehaab (46W00 60N42).

Casilla 04. Se entiende que el número indicado de canales es el número total combinado para Islandia y Dinamarca.

A013 S Los satélites (I.F.R.B. N.^{os}0138 y 0139) deben tener la misma ubicación orbital nominal. Esta ubicación, así como la polarización de las transmisiones de las estaciones espaciales, debe coincidir con las características de los satélites correspondientes de Dinamarca, Finlandia y Noruega.

La solicitud (I.F.R.B. N.° 0139) se ha coordinado con Dinamarca, Finlandia y Noruega. Las solicitudes equivalentes de dichos países con relación a un haz que cubra también el territorio de Suecia son aceptables para esta administración.

A013 S (suite)

Les valeurs indiquées dans les cases 08, 10, 11 et 12 du formulaire ne tiennent pas compte du fait que l'affaiblissement est plus grand lorsque l'angle de site de l'antenne de réception est inférieur à 20°. Or, il est nécessaire pour nous qu'une valeur minimale acceptable de la densité surfacique de puissance soit dépassée également dans les zones où l'angle de site est compris entre 10° et 20°. Pour tenir compte de cette nécessité, les valeurs inscrites dans les cases 08, 10, 11 et 12 devront être modifiées au cours des travaux de planification, conformément aux décisions pertinentes de la conférence.

A013 S (cont.)

The values indicated in boxes 08, 10, 11 and 12 of the form do not take into account the higher attenuation value in cases where the angle of elevation of the receiving antenna is below 20°. Our requirement is, however, that minimum acceptable power flux-density level be exceeded also in the areas where the angle of elevation is between 10° and 20°. To take this into account the values contained in boxes 08, 10, 11 and 12 shall be modified during the planning work in accordance with the relevant decisions of the Conference.

A013 S (cont.)

En los valores indicados en las casillas 08, 10, 11 y 12 del formulario no se han tenido en cuenta los valores de atenuación más elevados que se alcanzan cuando el ángulo de elevación de la antena receptora es inferior a 20°. No obstante, solicitamos que el nivel mínimo aceptable de la densidad de flujo de potencia se exceda también en las zonas con ángulos de elevación comprendidos entre 10° y 20°. A tal efecto, los valores de las casillas 08, 10, 11 y 12 deberán modificarse en el curso de los trabajos de planificación, de acuerdo con las precisiones pertinentes de la Conferencia.

A014 S Coordonnées (en degrés et minutes) de quelques points d'un polygone représentant approximativement la forme du territoire à desservir :

13E21	55N20	19E00	57N26	17E34	60N44
14E17	55N38	19E21	57N57	17E46	62N13
16E24	56N12	19E38	59N37	20E48	63N32
18E18	56N55	18E52	60N30	24E08	65N40

A014 S Co-ordinates (in degrees and minutes) of a polygon which approximately show the shape of the territory to be served:

24E00	66N48	20E04	69N03	14E20	65N07	12E14	61N01	11E00	58N32
23E40	67N56	18E08	68N32	12E09	63N35	11E50	59N50	12E26	56N18
23E05	68N18	16E44	67N55	11E58	63N16	10E58	58N53	12E48	55N22
20E45	69N02	14E31	66N08						

A014 S Coordenadas (en grados y minutos) de un polígono de forma aproximada a la de la zona de servicio:

A015 S Coordonnées (en degrés et minutes) de quelques points d'un polygone représentant approximativement la forme du territoire à desservir :

06E33	58N01	10E23	64N50	23E58	71N10
05E45	58N24	11E52	66N37	25E47	71N15
04E45	59N15	11E38	67N27	28E16	71N10
04E24	61N41	15E00	69N09	31E22	70N24
05E10	62N22	18E33	70N17	30E50	69N47

A015 S Co-ordinates (in degrees and minutes) of a polygon which approximately show the shape of the territory to be served:

30E56	69N33	29E05	66N55	31E36	62N54	22E37	59N37	16E24	56N12
30E06	69N41	30E08	65N41	27N28	60N14	19E38	59N37	15E05	55N00
28E55	69N03	29E36	65N00	27E14	60N12	19E21	57N57	12E00	54N40
28E30	68N33	30E37	64N06	26E48	60N13	19E00	57N26	08E20	55N00
30E00	67N41	30E00	63N45	24E58	60N02	18E18	56N55	08E00	56N00

A015 S Coordenadas (en grados y minutos) de un polígono de forma aproximada a la de la zona de servicio:

A016 DNK A titre de renseignements supplémentaires, nous donnons ci-dessous les coordonnées (en degrés et minutes) de 10 points situés le long du contour (± 50 km) de la zone à desservir :

N° No. N.°	Longitude Longitude Longitud	Latitude Latitude Latitud	Localité Position Localidad
1	70W40	77N48	Siorapaluk
2	70W12	77N25	Herbert Ø
3	70W00	76N47	Moriussaq
4	53W30	65N56	Ungussivik
5	52W04	64N05	Kangeq
6	49W20	61N38	Narssalik
7	44W35	60N00	Frederiksdal
8	51W20	71N06	Marmorilik
9	57W13	74N35	Kuvdlorssuaq
10	66W35	77N32	Qeqertat

A016 DNK Ten sets of co-ordinates (in degrees and minutes) along the contour (± 50 km) of the service area are given as further information:

A016 DNK Como información adicional, se indican 10 series de coordenadas (en grados y minutos) a lo largo del contorno (± 50 km) de la zona de servicio:

A017 DNK A titre de renseignements supplémentaires, nous donnons ci-dessous les coordonnées (en degrés et minutes) de 5 points situés le long du contour (± 50 km) de la zone à desservir :

N°	Longitude	Latitude	Localité
No.	Longitude	Latitude	Position
N.°	Longitud	Latitud	Localidad
1	22W00	70N29	Scoresbysund
2	22W23	70N27	Kap Hope

A018 KOR La densité surfacique de puissance dans notre zone de service est de -101 dBW/m^2 (réception individuelle).

A019 LUX Le Luxembourg désire utiliser la même position orbitale que les pays suivants (par ordre de priorité) : F, BEL, D, HOL et SUI.

Polygone : 008E2 53N3 009E3 50N9 008E1 48N2 004E2 46N3 003E0 48N6 04E3 50N8

A020 POR Case 04. Le nombre de canaux indiqué représente les besoins minimaux prévus pour ce faisceau et l'Administration portugaise se réserve le droit de présenter, au cours de la Conférence, des demandes de canaux supplémentaires si cela s'avère possible en face des résultats des travaux de la planification. Les satellites pour les deux faisceaux demandés par l'Administration portugaise (numéros de série de l'IFRB 133 et 134) devraient avoir la même position orbitale nominale. Les fréquences assignées et la polarisation des émissions des stations spatiales en question devraient aussi être les mêmes.

A017 DNK Five sets of co-ordinates (in degrees and minutes) along the contour (± 50 km) of the service area are given as further information:

N°	Longitude	Latitude	Localite
No.	Longitude	Latitude	Position
N.°	Longitud	Latitud	Localidad
3	39W05	65N34	Isortoq
4	37W10	65N34	Kulusuk

A018 KOR The power flux-density of our service area is -101 dBW/m^2 (individual reception).

A019 LUX Luxembourg wishes to use the same orbital position as the following countries (by order of priority) : F, BEL, D, HOL and SUI.

Polygon : 008E2 53N3 009E3 50N9 008E1 48N2 004E2 46N3 003E0 48N6 04E3 50N8

A020 POR Box 04. The number of channels shown constitutes the minimum requirement for this beam, and the Portuguese Administration reserves the right to submit requests for additional channels during the Conference, if the planning results make this possible. The satellites for the two beams requested by the Portuguese Administration (IFRB Serial Nos. 133 and 134) should have the same nominal orbital position. The frequencies assigned and the polarization of the space station emissions in question should also be the same.

A017 DNK Como información adicional, se indican 5 series de coordenadas (en grados y minutos) a lo largo del contorno (± 50 km) de la zona de servicio:

N°	Longitude	Latitude	Localité
No.	Longitude	Latitude	Position
N.°	Longitud	Latitud	Localidad
5	22W30	70N15	Kap Brewster

A018 KOR La densidad de flujo de potencia en nuestra zona de servicio es -101 dBW/m^2 (recepción individual).

A019 LUX Luxemburgo desea utilizar la misma posición orbital que los países siguientes (por orden de prioridad): F, BEL, D, HOL y SUI.

Polígono: 008E2 53N3 009E3 50N9 008E1 48N2 004E2 46N3 003E0 48N6 04E3 50N8

A020 POR Casilla 04. El número de canales indicado representa las necesidades mínimas previstas para este haz; la Administración portuguesa se reserva el derecho a presentar durante la Conferencia solicitudes de canales suplementarios, si los resultados de los trabajos de la planificación lo permiten. Los satélites para los dos haces solicitados por la Administración portuguese (números de serie de la IFRB 133 y 134) debieran tener la misma posición orbital nominal. También debieran ser iguales las frecuencias asignadas y la polarización de las emisiones de las estaciones espaciales de que se trata.

A021 Ce symbole n'a pas été utilisé.

A022 **ROU** Points de référence définis sant les limites de la zone à desservir (exprimés en degrés et minutes) :

1	20E15	46N09	3	21E21	44N52	5	25E23	43N37	7	29E35	44N49	9	29E32	45N25	12	28E06	46N58	15	24E26	47N58
2	20E47	45N29	4	22E50	43N52	6	28E34	43N45	8	29E41	45N09	10	28E20	45N20	13	27E18	47N44	16	23E12	48N07
												11	28E13	46N18	14	26N48	48N15	17	22E00	47N30

Points supplémentaires (vers l'intérieur du pays) :

18	27E17	44N08	19	25E14	47N53	20	21E11	46N18	21	21E28	45N07	22	22E14	44N29	23	22E45	44N32	24	23E03	44N03

A023 TCD Réserve de fréquences pour radiodiffusion par satellite. Emission des programmes à Ndjamena par station terrienne p.t.t. tchadiens. Réception des programmes dans des centres principaux de la province par stations terriennes p.t.t. tchadiens.
Phase 1 - extension radiodiffusion sonore programmation actuelle 1 voie son.
Phase 2 - extension radiodiffusion sonore programme prévu 1 voie.
Total 2 voies son.
Phase 3 - création radiodiffusion télévisée programme prévu :
1 voie vidéo son noir et blanc normalisation française L C.C.I.R. planning lié au planning communications p.t.t. tchadiens réseau intérieur
Phase 4 - création radiodiffusion télévisée :
1 voie vidéo son couleur normalisation française L C.C.I.R.
planning plan decennal
Fonctionnement à envisager : télévision scolaire 07h00 à 12h00; télévision nationale 19h00 à 21h00.

A024 TCH Le faisceau de l'antenne d'émission est déterminé tenant compte de la précision de pointage ± 0,1° et de l'ouverture de faisceau minimale de 0,6°.
L'arc orbital de service est déterminé pour l'élévation minimale exigée de 20°.

A021 This symbol has not been used.

A022 **ROU** Reference points describing the boundaries of the service area (expressed in degrees and minutes):

Additional points (towards the interior of the country):

A023 TCD Reservation of frequencies for satellite broadcasting. Transmission programmes at Ndjamena by Chad p.t.t. earth station. Reception of programmes at main provincial stations by Chad p.t.t. earth stations.
Phase 1 - extension of existing sound broadcasting programming - 1 sound channel.
Phase 2 - extension of planned sound broadcasting programme - 1 sound channel.
Total - 2 sound channels.
Phase 3 - establishment of planned television programme - 1 black-and-white video/sound channel, French standard L/C.C.I.R. planning connected with planning communications of Chad p.t.t. internal network.
Phase 4 - introduction television broadcasting - 1 colour video/sound channel, French standard L/C.C.I.R. planning - ten-year plan.
Proposed hours of operation: educational television 0700 to 1200 hours; national television 1900 to 2100 hours.

A024 TCH The transmitting antenna beam is based on a pointing accuracy of ± 0.1° and a minimum width of 0.6°.
The orbital service arc is based on the minimum required elevation of 20°.

A021 Este símbolo no se ha utilizado.

A022 **ROU** Puntos de referencia que describen los límites de la zona de servicio (expresados en grados y minutos):

Puntos suplementarios (hacia el interior del país):

A023 TCD Reserva de frecuencias para radiodifusión por satélite. Emisión de programas en Ndjamena por estación terrena de C. y T. de Chad. Recepción de programas en centros principales de la provincia por estaciones terrenas de C. y T. de Chad.
Fase 1 - extensión radiodifusión sonora programación actual 1 canal sonido.
Fase 2 - extension radiodifusión sonora programa previsto 1 canal.
Total 2 canales sonido.
Fase 3 - creación radiodifusión televisión programa previsto 1 canal video sonido blanco y negro norma francesa L/C.C.I.R. Planificación subordinada a planificación de comunicaciones de C. y T. de Chad red interior.
Fase 4 - creación radiodifusión televisión:
1 canal video sonido color norma francesa L/C.C.I.R. plan decenal.
Se estudiará el funcionamiento: televisión escolar de 0700 a 1200 horas; televisión nacional de 1900 a 2100 horas.

A024 TCH El haz de la antena transmisora se determina en función de la precisión de puntería ± 0,1° y la abertura mínima del haz de 0,6°.
El arco orbital de servicio se determina para la elevación mínima exigida de 20°.

A026 YUG L'Administration Yougoslave, en accord avec ses besoins, a rempli deux formulaires de demande en demandant dans chacun d'eux 5 (cinq) canaux, soit, en total 10 canaux pour la Yougoslavie.
Deux formulaires ont été remplis en tenant compte du fait que 5 canaux TV sont disponibles d'un satellite, soit deux faisceaux pour 10 couvertures égales de la Yougoslavie.

A027 IND Norme de télévision provisoire: B - PAL.

A028 ISL <u>Renseignements supplémentaires concernant l'angle de site de 0°</u>

Cette demande a été coordonnée avec l'Administration du Danemark. Elle concerne une couverture commune de l'Islande et des îles Faroë. L'ellipse a aussi été conçue de manière à permettre la réception communautaire dans le sud du Groënland. Le nombre de canaux indiqué (5) doit être compris comme le nombre total pour l'Islande et le Danemark.

A029 ISL Points de référence définissant les limites de la zone à desservir (exprimés en degrés et centièmes de degré) :

1 24,33W 65,50N 3 22,72W 63,80N 5 6,77W 62,01N 6 14,53W 66,37N 7 16,03W 66,55N 8 22,97W 66,47N 9 24,33W 65,50N
2 24,05W 64,85N 4 20,30W 63,40N

A030 BEL La longitude nominale du satellite sur l'orbite géostationnaire doit par priorité, être identique à celle de la France (F) et à celle des Pays-Bas (HOL) et si possible identique à celle de la République fédérale d'Allemagne (D) et à celle du Luxembourg (LUX).

A026 YUG In view of its requirements, the Yugoslav Administration has filled in two forms, requesting 5 (five) channels in each, or a total of 10 channels for Yugoslavia.
Two forms have been completed, in the light of the fact that 5 television channels are available for one satellite, so that two beams are needed for 10 equal coverages of Yugoslavia.

A027 IND Provisional television standard: B - PAL.

A028 ISL <u>Supplementary information for requirement at 0°</u>
This requirement has been coordinated with the Administration of Denmark. It concerns a common coverage of Iceland and the Faeroe Isles. The ellipse has also been so designated that it gives a possibility for community reception in the southern part of Greenland. The indicated number of channels (5) is to be understood as the combined total number for Iceland and Denmark.

A029 ISL Reference points describing the boundaries of the service area (expressed in degrees and hundredths of a degree):

A030 BEL The nominal longitude of the satellite on the goestationary orbit must, as a priority, be identical to that of France (F) and that of the Netherlands (HOL) and if possible identical to that of the Federal Republic of Germany (D) and that of Luxembourg (LUX).

A026 YUG La Administración de Yugoslavia, de acuerdo con sus necesidades, ha cumplimentado dos formularios de solicitud y pide en cada uno cinco (5) canales, lo que suma un total de 10 canales para Yugoslavia.
Se han rellenado dos formularios teniendo presente que se dispone de 5 canales TV de satélite y, por tanto, de dos haces para diez coberturas iguales de Yugoslavia.

A027 IND Norma de televisión provisional: B - PAL.

A028 ISL <u>Información adicional sobre la solicitud en 0°</u>

Esta solicitud se ha coordinado con la Administración de Dinamarca, a propósito de la cobertura común de Islandia y las Islas Feroe. La elipse se ha concebido de manera que ofrezca la posibilidad de recepción comunal en la parte meridional de Groenlandia. Se entiende que el número indicado de canales (5) es el número total combinado para Islandia y Dinamarca.

A029 ISL Puntos de referencia que describen los límites de la zona de servicio (expresados en grados y centésimas de grado):

A030 BEL - **La longitud nominal del satélite en la órbita de satélites geoestacionarios debe ser idéntica, por orden de prioridad, a la de Francia (F) y a la de los Países Bajos (HOL) y, de ser posible, a la de la República Federal de Alemania (D) y a la de Luxemburgo (LUX).**

A030 BEL (suite)

- La polarisation des émissions à partir des satellites doit être identique à celle de la France (F) et à celle des Pays-Bas (HOL).

A032 CAN Dans le formulaire qui constitue l'Annexe 2 à la lettre-circulaire de l'I.F.R.B. N° 358, on demande des renseignements détaillés concernant les besoins prévus pour le service de radiodiffusion par satellite; toutefois, le Canada ne peut donner, à l'heure actuelle, qu'une idée générale de ces besoins.

Comme indiqué dans l'introduction aux propositions canadiennes à la CAMR en 1977, les besoins du Canada en matière de radiodiffusion dépendent d'un certain nombre de facteurs propres à ce pays: grande étendue géographique, grande diversité culturelle d'une population très disséminée, existence de sociétés de radiodiffusion privées et publiques. Comme le montre la carte du Canada figurant à l'Annexe 4, le Canada a besoin de deux grandes zones de service. Chacune de ces zones pourrait comprendre une à quatre zones de couverture de faisceau d'antenne. Dans chacune de ces zones de couverture, plusieurs canaux de radiodiffusion seront nécessaires.

Il convient également de noter que les besoins du Canada sont très grands en ce qui concerne le service fixe par satellite dans la même bande de fréquences, et l'on reconnaît que le partage entre les deux services imposera certaines restrictions à chacun d'eux.

A030 BEL (cont.)

- The polarization of emissions from the satellites must be identical to that of France (F) and that of the Netherlands (HOL).

A032 CAN While the Requirements form attached to Annex 2 of I.F.R.B. Circular-letter No. 358 requests rather detailed information concerning perceived requirements for the broadcasting-satellite service, Canada is only able to furnish, at this point in time, a general indication of requirements.

As noted in the introduction to the Canadian proposals to the 1977 WARC, there are a number of somewhat unique factors which impact on Canadian broadcasting requirements such as a large geographical area, a widely distributed culturally diverse population, and the existence of private and publicly funded broadcasting. As indicated on the map of Canada appearing in Annex 4, it is foreseen that Canada would have a requirement for two large service zones. Each of these service zones could include from 1 to 4 service areas or antenna beam coverage patterns. Within each of these service areas, several programme channels would be required.

It is also noted that Canada has extensive requirements for the fixed-satellite service in the same frequency band, recognizing that sharing between these two services will impose some constraints on each service.

A030 BEL (Cont.)

- La polarización de las emisiones a partir de los satélites debe ser idéntica a la de Francia (F) y a la de los Países Bajos (HOL).

A032 CAN Si bien en el formulario de solicitud del Anexo 2 a la carta circular de la I.F.R.B. N.° 358 se solicita más bien información detallada sobre las necesidades del servicio de radiodifusión por satélite, Canada sólo puede proporcionar, por ahora, una indicación general de las mismas.

Como se señala en la introducción a las proposiciones canadienses para la CAMR de 1977, hay varios factores un tanto peculiares que repercuten en las necesidades de radiodifusión del Canadá, como la extension geográfica, una población sumamente dispersa y con grandes diversidades culturales y la existencia de empresas de radiodifusión privadas y públicas. Según se indica en el mapa de Canadá que figura en el Anexo 4, se prevé que Canadá formule solicitudes para dos grandes regiones de servicio, cada una de las cuales comprendería de 1 a 4 zonas de servicio o diagramas de radiación de la antena. En cada una de estas zonas de servicio se necesitarían varios canales radiofónicos.

También procede señalar que Canadá tiene grandes necesidades para el servicio fijo por satélite en la misma banda de frecuencias, aunque reconoce que la compartición entre ambos servicios impondrá a cada uno de ellos ciertos condicionamientos.

A033 I Pour la description du faisceau d'antenne à section elliptique (cases 10 et 11 du formulaire) on estime indispensable de disposer de deux chiffres décimaux pour les valeurs de la largeur à demi-puissance du faisceau en correspondance au grand axe et au petit axe de l'ellipse, du fait que les caractéristiques du faisceau d'antenne du satellite ont une grande influence sur la planification.

Sur la carte géographique figurant à l'Annexe 4, le territoire à desservir (case 03 du formulaire) est délimité en couleur rouge. Sur la même carte figure le polygone sur lequel on doit calculer le faisceau de l'antenne du satellite. Les sommets de ce polygone ont les coordonnées suivantes (indiquées en degrés et minutes):

A033 I For the description of the elliptical cross-section antenna beam (boxes 10 and 11 on the form), it is considered essential to have two decimal places for half-power beam width values corresponding to the major and minor axes of the ellipse, since the characteristics of the satellite antenna beam are important factors in planning.

On the geographical map appearing in Annex 4, the territory to be provided with service (box 03 of the form) is edged in red. The same map shows the polygon on which the satellite antenna beam is to be calculated. The peaks of this polygon have the following coordinates (shown in degrees and minutes):

A033 I Para describir el haz de la antena con sección elíptica (casillas 10 y 11 del formulario) se estima indispensable que los valores de la anchura en los puntos de semipotencia del haz referidos a los ejes mayor y menor de la elipse, tengan una aproximación de dos decimales, ya que las características del haz de la antena del satélite tienen una gran influencia en la planificación.

En el mapa que figura en el Anexo 4, la zona a la que se desea dar servicio (casilla 03 del formulario) está marcada en color rojo. En el mismo mapa figura el polígono sobre el que se debe calcular el haz de la antena del satélite. Los vértices de este polígono tienen las coordenadas siguientes (en grados y minutos):

12E12 47N06 08E20 46N26 06E36 45N05 15E09 36N39 18E38 40N00 13E43 46N32 08E14 39N05 12E36 35N26
11E12 46N59 06E48 45N50

A034 HVO Les pays en voie de développement, notamment la Haute-Volta ayant des difficultés pour identifier leurs besoins dans le domaine de la radiodiffusion par satellite, il serait souhaitable que l'U.I.T. prévoit pour ces pays des bandes de fréquences nécessaires pour des systèmes nationaux ou régionaux dans lesquels les télécommunications et la radiodiffusion pourraient être utilisées simultanément.

L'U.I.T. pourrait faire accélérer les études dans ce sens, en vue d'aider les pays les moins favorisés à étendre plus rapidement leur service de radiocommunications.

A034 HVO In view of the difficulties experienced by developing countries, including Upper Volta, in identifying their requirements for satellite broadcasting, it would be desirable for the I.T.U. to provide these countries with frequency bands for national or regional systems in which telecommunication and broadcasting services could be operated simultaneously.

The I.T.U. might speed up studies to this end, with a view to helping the least developed countries to expand their radiocommunication services more rapidly.

A034 HVO En vista de que los países en desarrollo, y concretamente Alto Volta, tienen dificultades para identificar sus necesidades en materia de radiodifusión por satélite, convendría que la U.I.T. previera para estos países las bandas de frecuencias necesarias para sistemas nacionales o regionales en los que podrían utilizar simultáneamente las telecomunicaciones y la radiodifusión.

La U.I.T. podría acelerar los estudios en ese sentido, con objeto de ayudar a los países más necesitados a ampliar más rápidamente su servicio de radiocomunicaciones.

A035 G Normes de télévision. Nous avons besoin de cinq canaux convenant à la radiodiffusion télévisuelle à modulation de fréquence avec sous-porteuse son, pour réception idividuelle.

A035 G Television standard. Five channels are required suitable for FM television broadcasting with sound sub-carrier, for individual reception.

A035 G Norma de televisión. Para la recepción individual de programas de televisión MF con subportadora de sonido se necesitan cinco canales.

A035 G (suite)

Toutefois, un ou plusieurs canaux peuvent être utilisés pour d'autres types d'émission (par exemple, émissions avec multiplexage du son); dans ce cas, les normes d'émission seraient telles que tout brouillage causé à d'autres émissions ne dépasserait pas le brouillage causé par la télévision à modulation de fréquence.

Horaire de fonctionnement. Pour la plus grande partie de l'année et pour l'avenir lointain, il n'est pas souhaitable d'imposer quelque restriction que ce soit à l'horaire d'émission. Pour faciliter l'exploitation avec l'énergie solaire, il est bon de prévoir une période d'interruption allant de 0100 à 0230 TMG. A défaut de cela, le début de la période d'interruption devrait être aussi tardif que possible mais il serait inacceptable que cette période d'interruption commence avant 24h00.

Section elliptique du faisceau d'antenne du satellite. Au cas où il ne serait pas possible d'assigner la longitude nominale préférée, il conviendrait d'avoir un faisceau donnant une couverture équivalente à partir de la position orbitale effectivement assignée. Notre Administration tient beaucoup à obtenir, dans le plan, la même position orbitale et la même polarisation que celles qui seront données à la République d'Irlande.

A036 G Coordonnées de la zone à desservir. Dans la carte figurant à l'Annexe 4, on a tracé un polygone convexe qui entoure la zone à desservir. Les coordonnées (en degrés et centièmes de degré) définissant le périmètre de ce polygone sont indiquées ci-après :

A035 G (cont.)

One or more channels may, however, be used for other types of broadcast transmission (e.g. multiplexed sound transmissions); in this event the transmission standards would be such that any interference to other transmissions would be no greater than that caused by FM television.

Hours of operation. For most of the year and in the long-term future any restriction on the hours of transmission is undesirable. To facilitate operation with solar power, a close-down confined within the period 0100-0230 GMT is desirable. Failing this, the commencement of the close-down should be as late as possible, but a close-down commencing before 2400 is unacceptable.

Elliptical cross-section of the satellite antenna beam. In the event that the preferred nominal longitude cannot be assigned, it is desired to have a beam characteristic giving equivalent coverage from the orbital position actually assigned. This Administration places importance on obtaining in the plan the same orbital position and polarisation as that given to the Republic of Ireland.

A036 G Co-ordinates of coverage area. In the map appearing in Annex 4, a convex polygon is indicated surrounding the area to be covered. The co-ordinates (in degrees and hundredths of a degree) defining this polygon are listed below:

A035 G (Cont.)

Sin embargo, pueden utilizarse uno o más canales para otros tipos de radiodifusión (por ejemplo, transmisiones radiofónicas por multiplaje); en este caso, se utilizarían normas de transmisión tales que la interferencia a otras transmisiones no sería superior a la causada por la televisión MF.

Horario de funcionamente. A la larga, toda restricción de las horas de funcionamiento durante la mayor parte del año sería improcedente. Para facilitar el funcionamiento con energía solar, conviene limitar el cierre al periodo comprendido entre las 0100 y las 0230 TMG. De no hacerlo así, el cierre se haría lo más tarde posible, pero sería inaceptable que comenzara antes de las 2400.

Sección transversal elíptica del haz de la antena del satélite. De no poder asignarse la longitud nominal preferida, convendría disponer de una característica del haz que proporcionara la cobertura equivalente a partir de la posición orbital efectivamente asignada. Para esta Administración es importante obtener en el plan la misma posición orbital y la misma polarización que la República de Irlanda.

A036 G Coordenadas de la zona de servicio. En el mapa que figura en el Anexo 4, se indica un polígono convexo que circunscribe la zona que se desea servir. A continuación figuran las coordenadas (en grados y centésimas de grado) que definen este polígono:

1	0,88W	60,85N	3	1,38E	51,15N	5	6,33W	49,90N	6	8,18W	54,47N	7	7,58W	57,61N	8	7,04W	58,23N	9	0,88W	60,85N
2	1,73E	52,48N	4	2,05W	49,17N															

A037 NHB Pour les Nouvelles-Hébrides, le Royaume-Uni de Grande-Bretagne et d'Irlande du Nord, au nom de la France et du Royaume-Uni, demande que la position orbitale du satellite et la polarisation soient les mêmes que pour la Nouvelle-Calédonie.

A038 SUI Faisceau d'antenne A

1) Nombre de canaux nécessaires - Nombre total de canaux nécessaires pour la Suisse : 5 canaux.

2) Etant donné que les émissions se font en Suisse dans les mêmes langues que pour les pays voisins D, AUT, I et F, il est nécessaire d'avoir une position orbitale commune pour les cinq pays.

3) Les cinq canaux à prévoir pour la Suisse devraient être exploités avec la même polarisation; il conviendrait d'éviter l'emploi de canaux adjacents.

4) Il est hautement souhaitable d'utiliser la même polarisation et d'éviter, pour les pays voisins D, AUT, I et F, le service dans des canaux par satellite adjacents à ceux de la Suisse.

5) Marge de propagation - Pour la Suisse, on considère comme nécessaire une marge de propagation de 3 dB (99 %).

6) La valeur à indiquer dans la case 12 pour l'orientation du grand axe du faisceau A est fondée sur la valeur de l'azimut du grand axe à la surface de la Terre : 99° dans le sens des aiguilles d'une montre à partir du nord (définition de l'UER).

7) Erreur de pointage - Les caractérisques du faisceau d'antenne du satellite englobent une erreur de pointage de 0,1°.

A037 NHB The United Kingdom of Great Britain and Northern Ireland, on behalf of France and the United Kingdom for the New Hebrides, requests that the satellite orbital position and polarisation should be the same as for New Caledonia.

A038 SUI Antenna beam A

1) Channel requirements - Total channel requirement for Switzerland: 5 channels.

2) In view of the fact that Switzerland broadcasts in the same language as its neighbours D, AUT, I and F, the use of a common orbital position for these five countries is required.

3) The five channels, attached to Switzerland should make use of the same polarisation and adjacent channeling should be avoided.

4) The use of the same polarisation as well as avoidance of adjacent channel service are highly desirable for the satellite channels of the neighbouring countries D, AUT, I and F, with respect to the Swiss channels.

5) Propagation margin - For Switzerland a propagation margin of 3 dB (99%) is considered as necessary.

6) The value for the orientation of the major axis of beam A, as indicated in box 12, is based on a value of 99° for the azimuth of the major axis on the surface of the Earth clockwise to north (as defined by the EBU).

7) Pointing error - The characteristics of the satellite antenna beam include a pointing error of 0.1°.

A037 NHB En nombre de Francia y del Reino Unido y por cuenta de Nuevas Hébridas, el Reino Unido de Gran Bretaña e Irlanda del Norte, solicita que la posición orbital del satélite y la polarización sean las mismas que para Nueva Caledonia.

A038 SUI Haz A

1) Número de canales - Número total de canales solicitados para Suiza: 5 canales

2) Teniendo en cuenta que Suiza transmite en el mismo idioma de los países vecinos D, AUT, I y F, se requiere el empleo de una posición orbital común para estos 5 países.

3) Para los 5 canales atribuidos a Suiza deberá utilizarse la misma polarización y evitarse la asignación de canales adyacentes.

4) Es muy conveniente que los canales de satélite de los países vecinos D, AUT, I y F tengan la misma polarización que los canales atribuidos a Suiza, así como evitar el servicio por canales adyacentes.

5) Margen de propagación - Para Suiza, se considera necesario un margen de propagación de 3 dB (99%).

6) El valor de la orientación del eje mayor del haz A que se indica en la casilla 12, está basado en un valor de 99° para el acimut del eje mayor en la superficie de la Tierra con relación al norte (según la definición de la UER).

7) Error de puntería: - En las características del haz de la antena del satélite se ha incluido un error de puntería de 0,1°.

A039 SUI Faisceau d'antenne A - Points de référence définissant les limites de la zone à desservir (exprimés en degrés et centièmes de degré) :

A039 SUI Antenna beam A - Reference points describing the boundaries of the service area (expressed in degrees and hundredths of a degree):

A039 SUI Haz A - Puntos de referencia que describen los límites de la zona de servicio (expresados en grados y centésimas de grado):

1	11,20E	49,40N	3	11,00E	45,40N	5	9,40E	44,30N	7	4,90E	44,90N	9	5,00E	47,40N	11	10,00E	49,70N	12	11,20E	49,40N
2	12,20E	48,60N	4	10,30E	44,80N	6	7,30E	43,90N	8	4,80E	45,60N	10	8,50E	49,60N						

A040 SUI Faisceau d'antenne B -

1) Nombre de canaux nécessaires - Nombre total de canaux nécessaires pour la Suisse : 5 canaux.

2) Etant donné que les émissions se font en Suisse dans les mêmes langues que pour les pays voisins D, AUT, I et F, il est nécessaire d'avoir une position orbitale commune pour les cinq pays.

3) Les cinq canaux à prévoir pour la Suisse devraient être exploités avec la même polarisation; il conviendrait d'éviter l'emploi de canaux adjacents.

4) Il est hautement souhaitable d'utiliser la même polarisation et d'éviter, pour les pays voisins D, AUT, I et F, le service dans des canaux par satellite adjacents à ceux de la Suisse.

5) Marge de propagation - Pour la Suisse on considère comme nécessaire une marge de propagation de 3 dB (99 %).

6) La valeur à indiquer dans la case 12 pour l'orientation du grand axe du faisceau B est fondée sur la valeur de l'azimut du grand axe à la surface de la Terre : 135° dans le sens des aiguilles d'une montre à partir du nord (définition de l'UER).

7) Erreur de pointage - Les caractéristiques du faisceau d'antenne du satellite englobent une erreur de pointage de 0,1°.

A040 SUI Antenna beam B

1) Channel requirements - Total channel requirements for Switzerland: 5 channels.

2) In view of the fact that Switzerland broadcasts in the same language as its neighbours D, AUT, I and F, the use of a common orbital position for these five countries is required.

3) The five channels, attached to Switzerland should make use of the same polarisation and adjacent channeling should be avoided.

4) The use of the same polarisation as well as avoidance of adjacent channel service are highly desirable for the satellite channels of the neighbouring countries D, AUT, I and F with respect to the Swiss channels.

5) Propagation margin - For Switzerland a propagation margin of 3 dB (99%) is considered as necessary.

6) The value for the orientation of the major axis of beam B, as indicated in box 12, is based on a value of 135° for the azimuth of the major axis on the surface of the Earth clockwise to north (as defined by the EBU).

7) Pointing error - The characteristics of the satellite antenna beam include a pointing error of 0.1°.

A040 SUI Haz B -

1) Número de canales - Número total de canales solicitados para Suiza : 5 canales.

2) Teniendo en cuenta que Suiza transmite en el mismo idioma que los países vecinos D, AUT, I y F, se requiere el empleo de una posición orbital común para estos 5 países.

3) Para los 5 canales atribuidos a Suiza deberá utilizarse la misma polarización y evitarse la asignación de canales adyacentes.

4) Es muy conveniente que los canales de satélite de los países vecinos D, AUT, I y F tengan la misma polarización que los canales atribuidos a Suiza, así como evitar el servicio por canales adyacentes.

5) Margen de propagación - Para Suiza, se considera necesario un margen de propagación de 3 dB (99%).

6) El valor de la orientación del eje mayor del haz B que se indica en la casilla 12 está basado en un valor de 135° para el acimut del eje mayor en la superficie de la Tierra con relación al norte (según la definición de la UER).

7) Error de puntería: - En las características del haz de la antena del satélite se ha incluido un error de puntería de 0,1°.

A041 SUI Faisceau d'antenne B - Point de référence définissant les limites de la zone à desservir (exprimés en degrés et centièmes de degré) :

1	8,33E	55,00N	4	5,91E	50,75N	7	6,00E	46,08N	10	16,05E	46,65N	12	17,08E	47,71N	15	13,53E	52,40N
2	7,00E	53,75N	5	6,17E	49,50N	8	6,83E	45,83N	11	16,52E	47,00N	13	17,17E	48,00N	16	11,25E	54,50N
3	5,83E	51,75N	6	6,33E	46,75N	9	9,00E	45,70N				14	16,92E	48,72N	17	10,00E	54,83N

A042 D La République fédérale d'Allemagne se réserve le droit de réexaminer la question du nombre de canaux et des critères techniques indiquées dans ses demandes, en fonction des demandes soumises par d'autres administrations.

A043 D Faisceau d'antenne A

1) Case 04 - Le nombre total de canaux demandés par la République fédérale d'Allemagne est de 5.

2) Case 12 - La valeur de l'orientation du grand axe, telle qu'indiquée dans la case 12, est fondée sur l'azimut du grand axe à la surface de la Terre: 145° par rapport au nord vrai.

3) a) Compte tenu des conditions climatiques sévères qui règnent dans les régions montagneuses, la République fédérale d'Allemagne demande une marge de propagation de 3 dB (valeur pour 99 %).

b) Tous les canaux dont a besoin la République fédérale d'Allemagne doivent avoir la même position orbitale, la même polarisation et ils doivent être séparés par au moins un canal.

c) Il est important d'adopter, pour la République fédérale d'Allemagne, et pour l'Autriche, la Suisse et la France, la même position orbitale et la même polarisation. Il ne devrait exister aucune assignation de canal adjacent pour les pays mentionnés ci-dessus.

A041 SUI Antenna beam B - Reference points describing the boundaries of the service area (expressed in degrees and hundredths of a degree):

1	8,33E	55,00N	4	5,91E	50,75N	7	6,00E	46,08N	10	16,05E	46,65N	12	17,08E	47,71N	15	13,53E	52,40N
2	7,00E	53,75N	5	6,17E	49,50N	8	6,83E	45,83N	11	16,52E	47,00N	13	17,17E	48,00N	16	11,25E	54,50N
3	5,83E	51,75N	6	6,33E	46,75N	9	9,00E	45,70N				14	16,92E	48,72N	17	10,00E	54,83N

A042 D The Federal Republic of Germany reserves the right to reconsider the number of channels and the technical criteria of its requirements in the light of the requirements submitted by other administrations.

A043 D Antenna beam A

1) Box 04 - Total channel requirement for the Federal Republic of Germany: 5 channels.

2) Box 12 - The value of orientation of the major axis as indicated in box 12 is based on the azimuth of the major axis on the surface of the Earth of 145° true north.

3) a) Due to the severe climatic conditions in mountainous areas the Federal Republic of Germany needs a propagation margin of 3 dB (99% value).

b) All channels required by the Federal Republic of Germany must have the same orbital position, the same polarisation and must be separated at least one channel from each other.

c) It is of great importance for the Federal Republic of Germany to have together with Austria, Switzerland and France the same orbital position and the same polarisation. There should be no adjacent channel assignments between the countries mentioned above.

A041 SUI Haz B - Puntos de referencia que describen los límites de la zona de servicio (expresados en grados y centésimas de grado):

1	8,33E	55,00N	4	5,91E	50,75N	7	6,00E	46,08N	10	16,05E	46,65N	12	17,08E	47,71N	15	13,53E	52,40N
2	7,00E	53,75N	5	6,17E	49,50N	8	6,83E	45,83N	11	16,52E	47,00N	13	17,17E	48,00N	16	11,25E	54,50N
3	5,83E	51,75N	6	6,33E	46,75N	9	9,00E	45,70N				14	16,92E	48,72N	17	10,00E	54,83N

A042 D La República Federal de Alemania se reserva el derecho a reconsiderar el número de canales y los criterios técnicos de sus solicitudes, a la luz de las que somentan otras administraciones.

A043 D Haz A

1) Casilla 04 - La República Federal de Alemania necesita en total 5 canales.

2) Casilla 12 - **El valor de orientación del eje mayor, indicado en la casilla 12, se basa en el acimut del eje mayor sobre la superficie de la Tierra de 145° con respecto al norte verdadero.**

3) a) Debido a las rigurosas condiciones climatológicas de las zonas montañosas, la República Federal de Alemania necesita un margen de propagación de 3 dB (valor 99%).

b) Todos los canales que precisa la República Federal de Alemania deben tener la misma posición orbital y la misma polarización y la separación entre ellos ser igual, como mínimo, a la anchura de un canal.

c) Para la República Federal de Alemania es sumamente importante tener la misma posición orbital y la misma polarización con Austria, Suiza y Francia. Entre los mencionados países no debe haber asignaciones en canales adyacentes.

A044 D Faisceau d'antenne A - Points de référence définissant les limites de la zone à desservir (exprimés en degrés et centièmes de degré) :

1	8,33E	55,00N	3	5,83E	51,75N	5	6,17E	49,50N	7	13,00E	47,42N	9	13,53E	52,40N	11	10,00E	54,83N		
2	7,00E	53,75N	4	5,91E	50,75N	6	7,75E	47,58N	8	13,83E	49,00N	10	11,25E	54,50N					

A045 D Faisceau d'antenne B

1) Case 04 - Le nombre total de canaux demandés par la République fédérale d'Allemagne est de 5.

2) Case 12 - La valeur de l'orientation du grand axe, telle qu'indiquée dans la case 12, est fondée sur l'azimut du grand axe à la surface de la Terre: 135° par rapport au nord vrai.

3) a) Compte tenu des conditions climatiques sévères qui règnent dans les régions montagneuses, la République fédérale d'Allemagne demande une marge de propagation de 3 dB (valeur pour 99 %).

b) Tous les canaux dont a besoin la République fédérale d'Allemagne doivent avoir la même position orbitale, la même polarisation et ils doivent être séparés par au moins un canal.

c) Il est important d'adopter, pour la République fédérale d'Allemagne, et pour l'Autriche, la Suisse et la France, la même position orbitale et la même polarisation. Il ne devrait exister aucune assignation de canal adjacent pour les pays mentionnés ci-dessus.

A046 D Faisceau d'antenne B - Points de référence définissant les limites de la zone à desservir (exprimés en degrés et centièmes de degré) :

1	8,33E	55,00N	4	5,91E	50,75N	7	6,00E	46,08N	10	16,05E	46,65N	12	17,08E	47,71N	14	16,92E	48,72N	16	11,25E	54,50N
2	7,00E	53,75N	5	6,17E	49,50N	8	6,83E	45,83N	11	16,52E	47,00N	13	17,17E	48,00N	15	13,53E	52,40N	17	10,00E	54,83N
3	5,83E	51,75N	6	6,33E	46,75N	9	9,00E	45,70N												

Ce besoin est fondé sur un accord avec l'Autriche et la Suisse; voir remarques A050 (pour l'Autriche) et A041 (pour la Suisse).

A044 D Antenna beam A - Reference points describing the boundaries of the service area (expressed in degrees and hundredths of a degree):

A045 D Antenna beam B

1) Box 04 - Total channel requirement for the Federal Republic of Germany: 5 channels.

2) Box 12 - The value of orientation of the major axis as indicated in box 12 is based on the azimuth of the major axis on the surface of the Earth of 135° true north.

3) a) Due to the severe climatic conditions in mountainous areas the Federal Republic of Germany needs a propagation margin of 3 dB (99% value).

b) All channels required by the Federal Republic of Germany must have the same orbital position, the same polarisation and must be separated at least one channel from each other.

c) It is of great importance for the Federal Republic of Germany to have together with Austria, Switzerland and France the same orbital position and the same polarisation. There should be no adjacent channel assignments between the countries mentioned above.

A046 D Antenna beam B - Reference points describing the boundaries of the service area (expressed in degrees and hundredths of a degree):

This requirement is based on an agreement with Austria and Switzerland, see Remarks A050 (for Austria) and A041 (for Switzerland).

A044 D Haz A - Puntos de referencia que describen los límites de la zona de servicio (expresados en grados y centésimas de grado):

A045 D Haz B

1) Casilla 04 - La República Federal de Alemania necesita en total 5 canales.

2) Casilla 12 - El valor de la orientación del eje mayor, indicado en la casilla 12, se basa en el acimut del eje mayor sobre la superficie de la Tierra de 135° con respecto al norte verdadero.

3) a) Debido a las rigurosas condiciones climatológicas de las zonas montañosas, la República Federal de Alemania necesita un margen de propagación de 3 dB (valor 99%).

b) Todos los canales que precisa la República Federal de Alemania deben tener la misma posición orbital, la misma polarización, y la separación entre ellos ser igual, como mínimo, a la anchura de un canal.

c) Para la República Federal de Alemania es sumamente importante tener la misma posición orbital y la misma polarización con Austria, Suiza y Francia. Entre los mencionados países no debe haber asignaciones en canales adyacentes.

A046 D Haz B - Puntos de referencia que describen los límites de la zona de servicio (expresados en grados y centésimas de grado):

Esta solicitud se basa en un acuerdo con Austria y Suiza. Véanse las observaciones A050 (con respecto a Austria) y A041 (con respecto a Suiza).

A047 AUT Case 04 - Note relative au nombre de canaux - Le nombre total de canaux dont l'Autriche a besoin est au moins de cinq.

Case 07 - Note relative à la longitude nominale préférée -

L'Administration de l'Autriche préférerait une longitude nominale de 10° Ouest. Cependant, pour permettre l'adoption d'une position orbitale commune entre BEL, D, F, HOL, I, LUX, SUI, et AUT, l'Administration autrichienne est disposée à accepter la valeur 15° Ouest.

Case 12 - L'orientation du grand axe, selon les calculs de l'UER, est de 105°.

Position orbitale commune :
Il est indispensable d'adopter une position orbitale commune avec la Suisse et la République fédérale d'Allemagne, pour les cinq canaux autrichiens.

Pour les émissions de l'Autriche, la Suisse et la République fédérale d'Allemagne, il est essentiel que le Plan prévoie le même type de polarisation, et qu'il n'y ait pas d'assignations de canaux adjacents.

D'après certaines mesures effectuées en Autriche, et pour tenir compte du climat pluvieux des Alpes, une marge de propagation de 3 dB pendant 99 % du mois le plus défavorable doit être adoptée pour les émissions autrichiennes.

A047 AUT Box 04 - Note on the number of channels. In any case the total channel requirement of Austria is five.

Box 07 - Note on the preferred nominal longitude.

The Austrian Administration would prefer a nominal longitude of 10° W. However, in order to allow for a common orbital position for BEL, D, F, HOL, I, LUX, SUI and AUT, the Austrian Administration is prepared to accept the value of 15° W.

Box 12 - The orientation of the major axis according to EBU calculations is 105°.

Common orbital position:
A common orbital position with Switzerland and the Federal Republic of Germany of the five Austrian channels is essential.

For the transmissions of Austria, Switzerland and the Federal Republic of Germany, it is of highest importance that in a plan the same polarisation and no adjacent channels are assigned.

In accordance with measurements carried out in Austria and in order to take account of the rain climate of the Alps a propagation margin of 3 dB for 99% of the worst month is necessary for the Austrian transmissions.

A047 AUT Casilla 04 - Nota sobre el número de canales. En todo caso, Austria necesita un total de 5 canales.

Casilla 07 - Nota sobre la longitud nominal preferida.

La Administración austriaca preferiría una longitud nominal de 10° oeste. Sin embargo, en previsión de una posición orbital común para BEL, D, F, HOL, I, LUX, SUI y AUT, la Administración austriaca está dispuesta a aceptar el valor de 15° Oeste.

Casilla 12 - La orientación del eje mayor según los cálculos de la UER es 105°.

Posición orbital común:
Es esencial que los 5 canales austriacos tengan una posición orbital común con Suiza y la República Federal de Alemania.

Para las transmisiones de Austria, Suiza y la República Federal de Alemania, es sumamente importante tener en el plan la misma polarización, y que no se hagan asignaciones a canales adyacentes.

De acuerdo con las mediciones efectuadas en Austria, y con el fin de tener en cuenta el clima lluvioso de los Alpes, para las transmisiones austriacas se necesita un margen de propagación de 3 dB durante el 99% del mes más desfavorable.

A048 AUT Points de référence définissant les limites de la zone à desservir par le faisceau d'antenne A (exprimés en degrés et minutes) :

A048 AUT Reference points describing the boundaries of the territory to be served by the antenna beam A (expressed in degrees and minutes):

A048 AUT Puntos de referencia que describen el territorio a que se desea dar servicio mediante el haz A (expresados en grados y minutos):

1A	17E10	48N00	3A	16E33	48N49	5A	11E00	49N48	7A	07E30	47N48	9A	14E34	46N22	11A	16E31	47N00	13A	17E10	48N00
2A	16E55	48N43	4A	15E01	49N01	6A	09E00	49N12	8A	08E00	46N24	10A	16E03	46N39	12A	17E04	47N42			

A049 AUT Case 04 - Note relative au nombre de canaux - Le nombre total de canaux dont l'Autriche a besoin est au moins de cinq.

Case 07 - Note relative à la longitude nominale préférée -

L'Administration de l'Autriche préfère une longitude nominale de 10° ouest. Cependant, pour permettre l'adoption d'une position orbitale commune entre BEL, D, F, HOL, I, LUX, SUI et AUT, l'Administration autrichienne est disposée à accepter la valeur de 15° ouest.

Case 10 - L'orientation du grand axe selon les calculs de l'UER est de 135°.

Position orbitale commune :

Il est indispensable d'adopter une position orbitale commune avec la Suisse et la République fédérale d'Allemagne pour les cinq canaux autrichiens.

Pour les émissions de l'Autriche, la Suisse et la République fédérale d'Allemagne, il est essentiel que le Plan prévoie le même type de polarisation, et qu'il n'y ait pas d'assignations de canaux adjacents.

D'après certaines mesures effectuées en Autriche, et pour tenir compte du climat pluvieux des Alpes, une marge de propagation de 3 dB pendant 99 % du mois le plus défavorable doit être adoptée pour les émissions autrichiennes.

A049 AUT Box 04 - Note on the number of channels. In any case the total channel requirement of Austria is five.

Box 07 - Note on the preferred nominal longitude.

The Austrian Administration would prefer a nominal longitude of 10° W. However, in order to allow for a common orbital position for BEL, D, F, HOL, I, LUX, SUI and AUT, the Austrian Administration is prepared to accept the value of 15° W.

Box 10 - The orientation of the major axis according to EBU calculations is 135°.

Common orbital position:

A common orbital position with Switzerland and the Federal Republic of Germany of the five Austrian channels is essential.

For the transmissions of Austria, Switzerland and the Federal Republic of Germany, it is of highest importance that in a plan the same polarisation and no adjacent channels are assigned.

In accordance with measurements carried out in Austria and in order to take account of the rain climate of the Alps a propagation margin of 3 dB for 99% of the worst month is necessary for the Austrian transmissions.

A049 AUT Casilla 04 - Nota sobre el número de canales - En todo caso, Austria necesita un total de 5 canales.

Casilla 07 - Nota sobre la longitud nominal preferida.

La Administración austriaca preferiría una longitud nominal de 10° oeste. Sin embargo, en previsión de una posición orbital común para BEL, D, F, HOL, I, LUX, SUI y AUT, la Administración austriaca está dispuesta a aceptar el valor de 15° oeste.

Casilla 10 - La orientación del eje mayor según los cálculos de la UER es 135°.

Posición orbital común:

Es esencial que los 5 canales austriacos tengan una posición orbital común con Suiza y la República Federal de Alemania.

Para las transmisiones de Austria, Suiza y la República Federal de Alemania, es sumamente importante tener en el plan la misma polarización, y que no se hagan asignaciones a canales adyacentes.

De acuerdo con las mediciones efectuadas en Austria, y con el fin de tener en cuenta el clima lluvioso de los Alpes para las transmisiones austriacas se necesita un margen de propagación de 3 dB durante el 99% del mes más desfavorable.

A050 AUT Points de référence définissant les limites de la zone à desservir par le faisceau d'antenne B (exprimés en degrés et minutes) :

A050 AUT Reference points describing the boundaries of the territory to be served by antenna beam B (expressed in degrees and minutes):

A050 AUT Puntos de referencia que describen el territorio a que se desea dar servicio mediante el haz B (expresados en grados y minutos):

1B	08E19	55N00	4B	05E54	50N45	7B	06E00	46N04	10B	16E03	46N39	12B	17E04	47N42	14B	16E55	48N43	16B	10E00	54N49
2B	07E00	53N45	5B	06E10	49N30	8B	06E49	45N49	11B	16E31	47N00	13B	17E10	48N00	15B	11E15	54N30	17B	08E19	55N00
3B	05E49	51N45	6B	06E19	46N45	9B	09E00	45N42												

A052 AUS Comme le prévoyait la lettre-circulaire de l'I.F.R.B. N° 358, l'Australie a éprouvé des difficultés à définir de façon exacte toutes les caractéristiques requises dans une seule demande. Les travaux de planification se poursuivent actuellement à cet égard et nous pensons qu'ils seront achevés prochainement. Afin de respecter la date du 15 octobre fixée pour la présentation des demandes à l'I.F.R.B., l'Australie juge nécessaire de soumettre deux séries de demandes, appelées respectivement A et B. Nous soulignons qu'aucune des deux séries de demandes n'a actuellement priorité sur l'autre. Lorsque notre travail de planification sera achevé, nous avons l'intention d'adopter soit la proposition A, soit la proposition B, et de retirer purement et simplement la demande que nous n'aurons pas retenue.

Pour ces raisons, nous prions l'I.F.R.B. de traiter les deux série de demandes de l'Australie, étant bien entendu que les propositions que nous ferons à la Conférence seront fondées sur une seule série de demandes et limitées à cette série.

A052 AUS As anticipated in I.F.R.B. Circular-letter No. 358, Australia has had difficulty in restricting the precise definition of the characteristics required to a single basic requirement. Planning work is continuing in this regard and is expected to be completed shortly. In order to meet the date of 15 October for communication of requirements to the I.F.R.B., Australia finds it necessary to submit two sets of requirements designated A and B, respectively. We stress that no priority is afforded either set of requirements at this stage. Upon completion of our planning, we intend to adopt either proposal A or proposal B and withdraw completely the requirement not adopted.

For these reasons, we request the I.F.R.B. to process both sets of Australian requirements on the clear understanding that Australia's submissions to the Conference will be based upon and limited to one set of requirements.

A052 AUS Conforme se preveía en la carta circular de la I.F.R.B. N.° 358, Australia ha tenido dificultades para limitar la definición precisa de las características necesarias a una sola solicitud básica. Continúa la labor de planificación en ese sentido y se espera terminarla en breve. A fin de respeta la fecha del 15 de octubre para comunicar sus necesidades a la I.F.R.B., Australia considera preciso someter dos series de solicitudes, denominadas A y B, respectivamente. Debemos señalar que, de momento, no se concede prioridad a ninguna de ellas. Una vez terminada nuestra planificación, pensamos adoptar la propuesta A o B, y retirar totalmente la solicitud no elegida.

Por estas razones, rogamos a la I.F.R.B. que tramite las dos solicitudes australianas, en la clara inteligencia de que las peticiones que someta Australia a la Conferencia se basarán exclusivamente en una de ellas.

A053 Ce symbole n'a pas été utilisé

A054 AFS Case 13 - Extrême limite de l'arc orbital de service : 16° E.

A055 ARG Interruption du service après 0400 TMG à cause de l'éclipse.

A056 F Réception individuelle. Position commune sur orbite demandée avec BEL, LUX, MCO, SUI, D, HOL et I.

A057 Ce symbole n'a pas été utilisé

A058 GDL MRT Réception individuelle - Position sur orbite commune avec GUF.

A059 GUF Réception individuelle - Position sur orbite commune avec GDL et MRT.

A060 MYT Réception individuelle. Position sur orbite commune avec REU.

A061 AFI Réception individuelle.

A062 NCL Réception individuelle. Position sur orbite commune avec NHB.

A063 OCE Réception individuelle.

A064 REU
Réception individuelle. Position commune avec MAU et MYT.

A065 WAL Réception individuelle. Même position sur l'orbite que pour NCL.

A066 CHN Norme de télévision provisoire : K.

A053 This symbol has not been used.

A054 AFS Box 13 - Orbital service arc outside limit: 16° E.

A055 ARG Interruption after 0400 hours GMT due to the eclipse.

A056 F Individual reception. Common orbital position requested with BEL, LUX, MCO, SUI, D, HOL and I.

A057 This symbol has not been used.

A058 GDL MRT Individual reception. Common orbital position with GUF.

A059 GUF Individual reception. Common orbital position with GDL and MRT.

A060 MYT Individual reception. Common orbital position with REU.

A061 AFI Individual reception.

A062 NCL Individual reception. Common orbital position with NHB.

A063 OCE Individual reception.

A064 REU Individual reception. Common position with MAU and MYT.

A065 WAL Individual reception. Same position on orbit as for NCL.

A066 CHN Provisional television standard: K.

A053 Este símbolo no se ha utilizado.

A054 AFS Casilla 13 - Límite máximo del arco orbital de servicio: 16° E.

A055 ARG Interrupción por eclipse después de 0400 TMG.

A056 F Recepción individual. Posición orbital solicitada común con BEL, LUX, MCO, SUI, D, HOL e I.

A057 Este símbolo no se ha utilizado.

A058 GDL MRT Recepción individual. Posición orbital común con GUF.

A059 GUF Recepción individual. Posición orbital común con GDL y MRT.

A060 MYT Recepción individual. Posición orbital común con REU.

A061 AFI Recepción individual

A062 NCL Recepción individual. Posición orbital común con NHB.

A063 OCE Recepción individual.

A064 REU
Recepción individual. Posición común con MAU y MYT.

A065 WAL
Recepción individual. La misma posición orbital que para NCL.

A066 CHN Norma de televisión provisional: K.

A067 CHN La même position orbitale du satellite et le même mode de polarisation sont nécessaires pour les zones de service faisant partie de chacun des groupes suivants :

Groupe (1) zones de service 3, 30, 31, 32.

Groupe (2) zones de service 4, 33, 35.

Groupe (3) zones de service 5, 10, 11, 12, 23, 29.

Groupe (4) zones de service 6, 24, 25, 28, 34.

Groupe (5) zones de service 7, 13, 14, 15.

Groupe (6) zones de service 8, 16, 17, 18, 19, 20.

Groupe (7) zones de service 9, 21, 22, 26, 27.

A068 NZL CKH CKN NIU SMO TKL - Etant donné que la lettre-circulaire de l'I.F.R.B. N° 358 ne fixe pas de délai précis au sujet des renseignements demandés, nous avons calculé l'estimation pour une période de quinze ans.

Nous pensons que, en indiquant des positions orbitales précises et des paramètres précis pour le faisceau de rayonnement du satellite dans chaque cas, nous risquerions de nous engager à accepter un résultat qui pourrait se révèler non optimal lorsqu'on prendrait en considération d'autres facteurs qui sont actuellement indépendants de notre volonté; pour cette raison, nous n'avons pas indiqué dans notre réponse les paramètres orbitaux ni les paramètres du faisceau. En revanche, nous avons donné des renseignements supplémentaires indiquant les zones à couvrir; ces indications, jointes à d'autres renseignements dont le Comité est seul à disposer, devraient permettre à l'I.F.R.B. de déterminer les paramètres optima pour les demandes présentées.

A067 CHN The same satellite position in orbit and the same mode of polarisation are required for the service areas in each of the following groups:

Group (1) service areas 3, 30, 31, 32.

Group (2) service areas 4, 33, 35.

Group (3) service areas 5, 10, 11, 12, 23, 29.

Group (4) service areas 6, 24, 25, 28, 34.

Group (5) service areas 7, 13, 14, 15.

Group (6) service areas 8, 16, 17, 18, 19, 20.

Group (7) service areas 9, 21, 22, 26, 27.

A068 NZL CKH CKN NIU SMO TKL In the absence of any specific time frame in the request for the data, the estimate is reckoned on a fifteen year period.

As we are of the opinion that by stating specific orbit positions and satellite beam parameters in each case, we could be committed to a result which may be less than optimum when other factors, presently outside our control, are considered, the orbital and beam parameters have not been included in the return. However, additional information indicating the areas to be covered has been included and this together with other information available only to the Board should enable optimum parameters to be derived by the I.F.R.B. for the requested items.

A067 CHN Para las zonas de servicio de cada uno de los grupos siguientes se solicitan la misma posición orbital de los satélites y el mismo modo de polarización:

Grupo (1) zonas de servicio 3, 30, 31, 32.

Grupo (2) zonas de servicio 4, 33, 35.

Grupo (3) zonas de servicio 5, 10, 11, 12, 23, 29.

Grupo (4) zonas de servicio 6, 24, 25, 28, 34.

Grupo (5) zonas de servicio 7, 13, 14, 15.

Grupo (6) zonas de servicio 8, 16, 17, 18, 19, 20.

Grupo (7) zonas de servicio 9, 21, 22, 26, 27.

A068 NZL CKH CKN NIU SMO TKL - A defecto de una indicación específica en el formulario recibido en cuanto al periodo de validez de la información, se ha estimado la misma para un periodo de 15 años.

Como opinamos que la indicación específica en cada caso de posiciones orbitales y de características del haz de la antena del satélite podría llevarnos necesariamente a un resultado que no fuera óptimo cuando se tuviesen en cuenta otros factores que actualmente desconocemos, no se han incluido, en el formulario cumplimentado, el arco orbital ni las características del haz. No obstante, se ha incluído la información adicional indicando las zonas a las que se desea dar servicio; esta información, junto con otra información de que sólo la Junta dispone, debiera permitir a la I.F.R.B. calcular los valores óptimos para los elementos solicitados.

A069 Ce symbole n'a pas été utilisé.

A070 Ce symbole n'a pas été utilisé.

A071 Ce symbole n'a pas été utilisé.

A072 TUR Case 04 - Le nombre de canaux indiqué correspond à nos besoins minima. Toutefois, notre administration se réserve le droit d'augmenter ce nombre de canaux requis, si cela se révèle nécessaire pour une répartition équitable des ressources disponibles pour la radiodiffusion par satellite.

Case 07 - La Turquie se réserve le droit de modifier la longitude nominale du satellite à l'intérieur de l'arc orbital de service, pour permettre le partage de la même position orbitale avec un ou plusieurs pays voisins, si cela devait se révèler nécessaire au cours des négociations qui auront lieu dans le cadre de la Conférence.

A073 ISL Points de référence définissant les limites de la zone à desservir (exprimés en degrés et centièmes de degré) :

1 24,33W 65,50N 3 22,72W 63,80N 5 18,73W 63,38N 7 15,00W 64,23N 9 13,48W 65,08N 11 14,53W 66,37N 13 22,97W 66,47N
2 24.05W 64,85N 4 20,30W 63,40N 6 16,65W 63,80N 8 14,55W 64,40N 10 13,60W 65,52N 12 16,03W 66,55N

A074 URS Points de référence définissant les limites de la zone à desservir "URS-1" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0059.

A075 URS Pour l'uniformisation des antennes, il est possible d'augmenter le petit axe jusqu'à 2°.

A076 URS Points de référence définissant les limites de la zone à desservir "URS-9" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0061.

A069 This symbol has not been used.

A070 This symbol has not been used.

A071 This symbol has not been used.

A072 TUR Box 04 - The number of channels indicated is our minimum requirement. Our Administration, however, reserves the right to increase the number of channels required if it is found necessary in view of the fair distribution of the resources available for satellite broadcasting.

Box 07 - Turkey reserves the right to modify the nominal longitude of the satellite within its orbital service arc to enable sharing of the same orbital position with one or more of the neighbouring countries as the needs arise during negotiations in the course of the Conference.

A073 ISL Reference points describing the boundaries of the service area (expressed in degrees and hundredths of a degree):

A074 URS Reference points describing the boundaries of the service area "URS-1" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0059.

A075 URS For the unification of the antennae, the increase of the minor axis up to 2° is possible.

A076 URS Reference points describing the boundaries of the service area "URS-9" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0061.

A069 Este símbolo no se ha utilizado.

A070 Este símbolo no se ha utilizado.

A071 Este símbolo no se ha utilizado.

A072 TUR Casilla 04 - El número de canales indicado constituye nuestra solicitud mínima. Sin embargo, nuestra Administración se reserva el derecho a aumentar el número de canales solicitados de considerarse necesario para distribuir equitativamente los recursos disponibles para la radiodifusión por satélite.

Casilla 07 - Turquía se reserva el derecho a modificar la longitud nominal del satélite dentro de su arco orbital de servicio, con vistas a la compartición de la misma posición orbital con uno o varios países vecinos, según las necesidades que puedan surgir en las negociaciones durante la Conferencia.

A073 ISL Puntos de referencia que describen los límites de la zona de servicio (expresados en grados y centésimas de grado):

A074 URS Puntos de referencia que describen los límites de la zona de servicio "URS-1" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0059.

A075 URS Para la unificación de las antenas es posible el aumento del eje menor hasta 2°.

A076 URS Puntos de referencia que describen los límites de la zona de servicio "URS-9" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0061.

A077 URS Points de référence définissant les limites de la zone à desservir "URS-10" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0064.

A078 URS Points de référence définissant les limites de la zone à desservir "URS-2" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0060.

A079 URS Points de référence définissant les limites de la zone à desservir "URS-11" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0065.

A080 URS Points de référence définissant les limites de la zone à desservir "URS-12" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0073.

A081 URS Points de référence définissant les limites de la zone à desservir "URS-4" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0067.

A082 URS Points de référence définissant les limites de la zone à desservir "URS-3" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0066.

A083 URS Points de référence définissant les limites de la zone à desservir "URS-14" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0071.

A084 URS Points de référence définissant les limites de la zone à desservir "URS-15" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0072.

A077 URS Reference points describing the boundaries of the service area "URS-10" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0064.

A078 URS Reference points describing the boundaries of the service area "URS-2" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0060.

A079 URS Reference points describing the boundaries of the service area "URS-11" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0065.

A080 URS Reference points describing the boundaries of the service area "URS-12" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0073.

A081 URS Reference points describing the boundaries of the service area "URS-4" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0067.

A082 URS Reference points describing the boundaries of the service area "URS-3" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0066.

A083 URS Reference points describing the boundaries of the service area "URS-14" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0071.

A084 URS Reference points describing the boundaries of the service area "URS-15" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0072.

A077 URS Puntos de referencia que describen los límites de la zona de servicio "URS-10" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0064.

A078 URS Puntos de referencia que describen los límites de la zona de servicio "URS-2" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0060.

A079 URS Puntos de referencia que describen los límites de la zona de servicio "URS-11" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0065.

A080 URS Puntos de referencia que describen los límites de la zona de servicio "URS-12" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0073.

A081 URS Puntos de referencia que describen los límites de la zona de servicio "URS-4" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0067.

A082 URS Puntos de referencia que describen los límites de la zona de servicio "URS-3" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0066.

A083 URS Puntos de referencia que describen los límites de la zona de servicio "URS-14" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0071.

A084 URS Puntos de referencia que describen los límites de la zona de servicio "URS-15" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0072.

A085 URS Points de référence définissant les limites de la zone à desservir "URS-16" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0069.

A086 URS Points de référence définissant les limites de la zone à desservir "URS-17" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0070.

A087 URS Points de référence définissant les limites de la zone à desservir "URS-5" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0074.

A088 URS Points de référence définissant les limites de la zone à desservir "URS-18" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0075.

A089 URS Points de référence définissant les limites de la zone à desservir "URS-19" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0076.

A090 URS Points de référence définissant les limites de la zone à desservir "URS-20" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0078.

A091 URS Points de référence définissant les limites de la zone à desservir "URS-6" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0077.

A092 URS Points de référence définissant les limites de la zone à desservir "URS-7" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0079.

A085 URS Reference points describing the boundaries of the service area "URS-16" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0069.

A086 URS Reference points describing the boundaries of the service area "URS-17" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0070.

A087 URS Reference points describing the boundaries of the service area "URS-5" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0074.

A088 URS Reference points describing the boundaries of the service area "URS-18" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0075.

A089 URS Reference points describing the boundaries of the service area "URS-19" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0076.

A090 URS Reference points describing the boundaries of the service area "URS-20" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0078.

A091 URS Reference points describing the boundaries of the service area "URS-6" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0077.

A092 URS Reference points describing the boundaries of the service area "URS-7" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0079.

A085 URS Puntos de referencia que describen los límites de la zona de servicio "URS-16" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0069.

A086 URS Puntos de referencia que describen los límites de la zona de servicio "URS-17" (expresados en grados y centésimas de grado) véase el Anexo 4, mapa N.° URS 0070.

A087 URS Puntos de referencia que describen los límites de la zona de servicio "URS-5" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0074.

A088 URS Puntos de referencia que describen los límites de la zona de servicio "URS-18" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0075.

A089 URS Puntos de referencia que describen los límites de la zona de servicio "URS-19" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0076.

A090 URS Puntos de referencia que describen los límites de la zona de servicio "URS-20" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0078.

A091 URS Puntos de referencia que describen los límites de la zona de servicio "URS-6" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0077.

A092 URS Puntos de referencia que describen los límites de la zona de servicio "URS-7" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0079.

A093 URS Points de référence définissant les limites de la zone à desservir "URS-8" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0080.

A094 URS Points de référence définissant les limites de la zone à desservir "URS-21" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0081.

A095 BLR Points de référence définissant les limites de la zone à desservir "BLR" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° BLR 0062.

A096 UKR Points de référence définissant les limites de la zone à desservir "UKR" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° UKR 0063.

A097 CHL Territoire à desservir : Chili continental, île de Pâques, île Juan Fernández et territoire antarctique.

A098 Ce symbole n'a pas été utilisé.

A099 Ce symbole n'a pas été utilisé.

A100 URS Pour l'uniformisation des antennes, il est possible d'augmenter le grand axe jusqu'à 2,7° et le petit axe jusqu'à 2°.

A101 URS Points de référence définissant les limites de la zone à desservir "URS-13" (exprimés en degrés et centièmes de degré) : voir l'Annexe 4, carte N° URS 0068.

A102 URS Pour l'uniformisation des antennes, il est possible d'augmenter le petit axe jusqu'à 2,7°.

A093 URS Reference points describing the boundaries of the service area "URS-8" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0080.

A094 URS Reference points describing the boundaries of the service area "URS-21" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0081.

A095 BLR Reference points describing the boundaries of the service area "BLR" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. BLR 0062.

A096 UKR Reference points describing the boundaries of the service area "UKR" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. UKR 0063.

A097 CHL Territory to be served: Continental Chile, Easter Island, Juan Fernandez Island and the Antarctic Territory.

A098 This symbol has not been used.

A099 This symbol has not been used.

A100 URS For the unification of the antennae, the increase of the major axis up to 2.7° and the minor axis up to 2° is possible.

A101 URS Reference points describing the boundaries of the service area "URS-13" (expressed in degrees and hundredths of a degree): see Annex 4, Map No. URS 0068.

A102 URS For the unification of the antennae, the increase of the minor axis up to 2.7° is possible.

A093 URS Puntos de referencia que describen los límites de la zona de servicio "URS-8" (expresados en grados y centésimas de grado): véase al Anexo 4, mapa N.° URS 0080.

A094 URS Puntos de referencia que describen los límites de la zona de servicio "URS-21" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0081.

A095 BLR Puntos de referencia que describen los límites de la zona de servicio "BLR" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° BLR 0062.

A096 UKR Puntos de referencia que describen los límites de la zona de servicio "UKR" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° UKR 0063.

A097 CHL Zonas a cubrir:
Chile Continental, Isla de Pascua, Isla Juan Fernández y Territorio Antártico.

A098 Este símbolo no se ha utilizado.

A099 Este símbolo no se ha utilizado.

A100 URS Con miras a la unificación de las antenas, se puede aumentar el eje mayor hasta 2,7° y el eje menor hasta 2°.

A101 URS Puntos de referencia que describen los límites de la zona de servicio "URS-13" (expresados en grados y centésimas de grado): véase el Anexo 4, mapa N.° URS 0068.

A102 URS Con miras a la unificación de las antenas, se puede aumentar el eje menor hasta 2,7°.

A103 IRL

1) 5 canaux, ou un nombre plus grand de canaux, en tenant compte du principe de légalité des droits de tous les pays.

2) On aura besoin de canaux convenant à la réception individuelle. Nous pensons qu'un ou plusieurs canaux pourraient être nécessaires pour d'autres types d'émission, par exemple des émissions avec multiplexage du son.

3) S'il n'est pas possible d'assigner la longitude nominale préférée, il faudra prévoir un faisceau dont les caractéristiques permettent d'obtenir une couverture équivalente à partir de la position orbitale effectivement assignée.

4) L'Irlande considère qu'il lui est indispensable de disposer de la même position orbitale et de la même polarisation que le Royaume-Uni.

5) Coordonnées de quelques points de la zone de couverture - La carte figurant à l'Annexe 4 représente un polygone convexe qui entoure la zone à desservir. On trouvera ci-dessous les coordonnées (en degrés et centièmes de degré) de quelques points définissant ce polygone :

A103 IRL

1) 5 channels or such larger number as would be practicable on the basis of equal rights of all countries.

2) Channels suitable for individual reception are required. It is envisaged that one or more channels may be required for other types of broadcast transmission, e.g. multiplexed sound transmission.

3) If the preferred nominal longitude cannot be assigned, a beam characteristic giving equivalent coverage from the orbital position actually assigned is required.

4) Ireland regards it as essential to have the same orbital position and the same polarisation as the United Kingdom.

5) Co-ordinates of coverage area - The map appearing in Annex 4 contains a convex polygon surrounding the area to be covered. The co-ordinates (in degrees and hundredths of a degree) defining this polygon are as follows:

A103 IRL

1) 5 canales o más, si fuera posible, sobre la base de igualdad de derechos de todos los países.

2) Se necesitan canales apropiados para la recepción individual. Se prevé la posibilidad de solicitar uno o más canales para otros tipos de radiodifusión, por ejemplo, transmisiones de sonido con multiplaje.

3) De no poder asignarse la longitud nominal preferida, se solicita una característica del haz que proporcione la cobertura equivalente desde la posición orbital realmente asignada.

4) Irlanda considera esencial tener la misma posición orbital y la misma polarización que el Reino Unido.

5) Coordenadas de la zona de servicio En el mapa que figura en el Anexo 4 figura la representación poligonal convexa de la zona a la que se desea dar servicio. Las coordenadas (en grados y centésimas de grado) que definen este polígono son las siguientes:

1 7,25W 55,42N 2 8,25W 55,25N 3 10,25W 54,25N 4 10,66W 51,83N 5 9,75W 51,25N 6 6,20W 52,20N 7 5,50W 54,25N

A104 FNL Le N° de série I.F.R.B. 0103 concerne les besoins relatifs à un faisceau couvrant le territoire de la Finlande; Le N° de série I.F.R.B. 0104 indique les besoins relatifs à un faisceau couvrant les territoires du Danemark, de la Finlande, de la Norvège et de la Suède.

Les satellites mentionnés dans les N°s de série I.F.R.B. 0103 et 0104 devraient avoir la même position orbitale nominale, qui serait aussi celle des satellites correspondants du Danemark, de la Norvège et de la Suède.

A104 FNL I.F.R.B. Serial No. 0103 contains the requirements for a beam covering Finland and I.F.R.B. Serial No. 0104 the requirements for a beam covering Denmark, Finland, Norway and Sweden.

The satellites referred to in I.F.R.B. Serial Nos. 0103 and 0104 should have the same nominal orbital location, this being also the same as that of the corresponding satellites of Denmark, Norway and Sweden. The same

A104 FNL I.F.R.B. N.° 0103 contiene las solicitudes correspondientes a un haz que cubre el territorio de Finlandia; I.F.R.B. N.° 0104 las solicitudes referentes a un haz que cubre los territorios de Dinamarca, Finlandia, Noruega y Suecia.

Los satélites a que se hace referencia en I.F.R.B. N.os 0103 y 0104 deben tener la misma posición orbital nominal, que es también la de los satélites correspondientes de Dinamarca, Noruega y Suecia.

A104 FNL (suite)

La même condition s'applique à la polarisation des émissions provenant des stations spatiales en question.

La demande contenue dans le N° de série I.F.R.B. 0104 a été coordonnée avec le Danemark, la Norvège et la Suède. Les demandes analogues présentées par ces pays pour un faisceau couvrant également le territoire de la Finlande, ont reçu l'agrément de notre Administration.

Les valeurs indiquées dans les cases 08, 10, 11 et 12 du formulaire ne tiennent pas compte du fait que l'affaiblissement augmente lorsque l'angle de site de l'antenne de réception est inférieur à 20°. Or, il est nécessaire pour nous que la valeur minimale acceptable de la densité surfacique de puissance soit dépassée également dans les zones où l'angle de site est supérieur à 10°. Pour tenir compte de cette nécessité, les valeurs inscrites dans les cases 08, 10, 11 et 12 devront être modifiées au cours des travaux de planification, conformément aux décisions pertinentes de la Conférence.

A105 HOL
Souhaite utiliser la même longitude nominale (case 07) que BEL et D. Ce souhait a priorité sur la valeur inscrite dans la case 07.

A106 PAK Ne concerne que la radiodiffusion sonore.

A107 TUN Groupement des pays d'Afrique du Nord sur la même position d'orbite.

A108 DNK Les demandes ont été coordonnées avec les Administrations de la Finlande, de la Norvège et de la Suède.

A104 FNL (cont.)

requirement applies also to the polarisation of emissions from the space stations in question.

The requirement contained in I.F.R.B. Serial No. 0104 has been co-ordinated with Denmark, Norway and Sweden. Equivalent requirements of these countries for a beam covering also the territory of Finland is agreeable to this Administration.

The values indicated in boxes 08, 10, 11 and 12 of the form do not take into account the higher attenuation value in cases where the angle of elevation of the receiving antenna is below 20°. Our requirement is, however, that minimum acceptable power flux-density level be exceeded also in the areas where the angle of elevation is over 10°. To take this into account, the values contained in boxes 08, 10, 11 and 12 shall be modified during the planning work in accordance with the relevant decisions of the Conference.

A105 HOL HOL wishes to use the same nominal longitude (box 07) as BEL and D. This wish prevails over the value indicated in box 07.

A106 PAK Concerns sound broadcasting only.

A107 TUN Grouping of the countries of North Africa on the same orbital position.

A108 DNK The requirements have been co-ordinated with the Administrations of Finland, Norway and Sweden.

A104 FNL (cont.)

Lo mismo se aplica a la polarización de las transmisiones de las estaciones espaciales de referencia.

La solicitud I.F.R.B. N.° 0104 ha sido coordinada con Dinamarca, Noruega y Suecia. Finlandia acepta las solicitudes equivalentes de estos países en relación con su haz que ilumine también el territorio finlandés.

En los valores indicados en las casillas 08, 10, 11 y 12 del formulario no se tiene en cuenta el valor de atenuación más elevado cuando el ángulo de elevación de la antena receptora es inferior a 20°. Sin embargo, solicitamos que el mínimo nivel aceptable de la densidad de flujo de potencia se exceda también en las zonas con ángulos de elevación superiores a 10°. A tal efecto, en los trabajos de planificación, habrá que modificar los valores que figuran en las casillas 08, 10, 11 y 12, de acuerdo con las decisiones pertinentes de la Conferencia.

A105 HOL HOL **desea utilizar la misma longitud nominal (casilla 07) que BEL y D. Este deseo prevalece sobre el valor indicado en la casilla 07.**

A106 PAK Concierne sólo a la radiodifusión sonora.

A107 TUN Agrupación de los países de África del Norte en la misma posición de órbita.

A108 DNK Las solicitudes se han coordinado con las Administraciones de Finlandia, Noruega y Suecia.

A108 DNK (suite)

Les demandes analogues présentées par la Finlande, la Norvège et la Suède, concernant un faisceau qui couvrirait également une partie du territoire du Danemark, ont reçu l'agrément de l'Administration danoise.

Les Administrations du Danemark, de la Finlande, de l'Islande, de la Norvège et de la Suède ont le désir commun de partager la même position orbitale, dans le cadre d'un plan de radiodiffusion par satellite.

Les Administrations désirent également que les canaux spécifiés dans le plan pour le Danemark, la Finlande, la Norvège et la Suède aient la même polarisation.

A109 DNK Les demandes ont été coordonnées avec l'Administration de l'Islande. Elles concernent une couverture commune de l'Islande et des îles Faroë. L'ellipse a été calculée de façon à permettre la réception communautaire dans le sud du Groënland (la localité de Julianehaab, 46W00, 60N70, peut être utilisée comme point de repère). Le nombre de canaux indiqué doit être compris comme le nombre total pour l'Islande et le Danemark.

A110 DNK Les demandes relatives au Groënland ont été limitées à deux zones se trouvant respectivement le long de la côte ouest et de la côte est, pour desservir la plus grande partie de la population.

A111 BGD Quatre canaux pour la télévision et un canal pour quinze voies multiplexées de radiodiffusion sonore

Horaire d'exploitation pour Radio Bangladesh : de 00h00 à 18h00 TMG

A108 DNK (cont.)

Equivalent requirements of Finland, Norway and Sweden for a beam covering also part of Denmark will be agreeable to the Danish Administration.

It is a co-ordinated wish of the Administrations of Denmark, Finland, Iceland, Norway and Sweden to share the same orbital position in a plan for satellite broadcasting.

It is furthermore a common wish that the channels for Denmark, Finland, Norway and Sweden in the plan be given the same polarisation.

A109 DNK The requirements have been coordinated with the Administration of Iceland. They concern a common coverage of Iceland and the Faeroe Islands. The ellipse has been so designed that it gives a possibility for community reception in the southern part of Greenland (Julianehaab (46W00 60N70) can be used as check-point). The indicated number of channels is to be understood as the combined total number for Iceland and Denmark.

A110 DNK The requirements for Greenland have been restricted to two areas along the west coast and the east coast respectively to cover the greater part of the population.

A111 BGD Four channels for television and one channel for fifteen multiplexed sound broadcasting channels.

Operation timing for Radio Bangladesh as from 0000 hours to 1800 hours GMT

A108 DNK (cont.)

Las solicitudes equivalentes de Finlandia, Noruega y Suecia con respecto a un haz que cubra también parte de Dinamarca, son igualmente acceptables para la Administración danesa.

Las Administraciones de Dinamarca, Finlandia, Islandia, Noruega y Suecia desean compartir la misma posición orbital en un plan de radiodifusión por satélite.

Existe además el deseo común de que los canales asignados en el Plan a Dinamarca, Finlandia, Noruega y Suecia tengan la misma polarización.

A109 DNK Las solicitudes se han coordinado con la Administración de Islandia, con vistas a la cobertura común de Islandia y las Islas Feroe. La elipse se ha concebido de manera que ofrezca la posibilidad de recepción comunal en la parte sur de Groenlandia (puede utilizarse como punto de comprobación (Julianehaab (46W00 60N70)). Se entiende que el número indicado de canales es el número combinado total para Islandia y Dinamarca.

A110 DNK Las solicitudes correspondientes a Groenlandia se han limitado a dos zonas representadas, respectivamente, por las costas occidental y oriental, con objeto de cubrir la mayor parte de la población.

A111 BGD Cuatro canales para la televisión y un canal para quince canales múltiplex de radiodifusión sonora.

Horario de explotación de radio Bangladesh: 0000 TMG - 1800 TMG

A112 CKH CKN NIU NZL Référence norme de télévision pour CKH, CKN et NIU. Cette question a délibérement été omise en raison de l'incertitude quant à la norme qui sera adoptée. Toutefois, on peut appliquer aux trois zones en question la norme qui a été choisie pour la Nouvelle-Zélande.

A113 JOR - nombre de canaux : cinq canaux de télévision ou quatre canaux de télévision plus seize canaux de radiodiffusion sonore

- demandons une position orbitale permettant au satellite de couvrir le Royaume Hachémite de Jordanie durant vingt et une heures chaque jour

- le satellite desservant la Jordanie et les pays arabes voisins sur une seule position orbitale synchrone.

A112 CKH CKN NIU NZL Re television standard for CKH, CKN and NIU. The standard was deliberately left out because of doubt as to the standard which will be adopted. However, the same standard applicable to NZL can be applied to the three areas in question.

A113 JOR - number of channels: five television channels or four television channels plus sixteen sound broadcasting channels

- request an orbital position for satellite to cover the Hashemite Kingdom of Jordan for twenty one hours daily

- satellite grouping Jordan and neighbouring Arab countries on one synchronized orbital position.

A112 CKH CKN NIU NZL Referencia norma televisión CKH, CKN y NIU. La norma se omitió deliberadamente por dudarse de la que se adoptará. Sin embargo, puede aplicarse a las tres zonas en cuestión la aplicable a NZL.

A113 JOR - número de canales: cinco canales de televisión o cuatro canales de televisión más 16 canales de radiodifusión sonora

- posición orbital del satélite para cubrir el Reino Hachemita de Jordania durante 21 horas diarias

- satélite que agrupe a Jordania y a los países árabes vecinos en una posición orbital sincronizada.

A114 MLA

1. Un faisceau pour couvrir la Malaisie occidentale (péninsule) et un autre pour couvrir la Malaisie orientale (Sabah/Sarawak).
2. De préférence, les deux faisceaux devront provenir du même satellite; en conséquence, une seule et même position orbitale est indiquée dans la case 7.
3. Les arcs de service sont déterminés comme suit :
   a) limite orientale : 15° à l'ouest du point le plus à l'ouest de la zone de service;
   b) limite occidentale : devra être telle que le satellite soit vu sous un angle de site d'au moins 20° depuis le point le plus à l'est de la zone de service
4. On trouvera ci-dessous les coordonnées des sommets du polygone qui entoure la zone de service, à ± 50 km des frontières du pays (voir également la carte jointe en Annexe 4) :
   pour la Malaisie occidentale (péninsule) :

P1 6,20N 102,60E P2 2,20N 105,40E P3 1,20N 103,80E P4 2,60N 101,30E P5 6,20N 98,80E P6 6,80N 99,80E

pour la Malaisie orientale (Sabah/Sarawak) :

P1 2,40N 109,00E P2 8,20N 117,50E P3 5,20N 119,50E P4 1,00N 113,60E P5 0,60N 110,20E

A115 SDN La superficie du pays est de 2,5 millions de kilomètres carrés; la couverture du pays sera donc assurée par trois faisceaux d'antenne au moins, d'où il résulte que les demandes sont répétées trois fois.

A114 MLA

1. One beam each to cover West (Pensinsular) Malaysia and East Malaysia (Sabah/Sarawak).
2. The two beams preferably shall be from same satellite, hence same orbital position is entered in B.l.a.
3. Service arcs determined as follows:
   a) Eastern limit is 15° west of western-most point of service area;
   b) Western limit to ensure at least 20 deg. elevation angle of satellite as seen at eastern-most point of service area.
4. As shown in attached map (see Annex 4) geographical co-ordinates of the summits of the polygon approximately contouring the area within ± 50 km from country border are given below:
   for West (Peninsular) Malaysia:

P1 6,20N 102,60E P2 2,20N 105,40E P3 1,20N 103,80E P4 2,60N 101,30E P5 6,20N 98,80E P6 6,80N 99,80E

for East Malaysia (Sabah/Sarawak):

P1 2,40N 109,00E P2 8,20N 117,50E P3 5,20N 119,50E P4 1,00N 113,60E P5 0,60N 110,20E

A115 SDN The country is 2.5 million square kilometers so that it will be covered by at least three antenna beams, meaning that the requirements are repeated three times.

A114 MLA

1. Dos haces para cubrir respectivamente las zonas de Malasia occidental (Peninsular) y de Malasia oriental (Sabah/Sarawak).
2. De preferencia, los dos haces deben proceder del mismo satélite, ya que se indica la misma posición orbital en B.l.a.
3. Los arcos de servicio se definen como sigue:
   a) Su límite oriental se halla a 15° al oeste del punto más occidental de la zona de servicio;
   b) Su límite occidental será el que corresponda a un ángulo de elevación del satélite de 20°, por lo menos, visto desde el punto más oriental de la zona de servicio.
4. A continuación se indican las coordenadas geográficas de los vértices del polígono (representado en el mapa adjunto en el Anexo 4) del contorno aproximado de la zona correspondiente a los límites del país, con aproximación de ± 50 km:
   Malasia occidental (Peninsular)

P1 6,20N 102,60E P2 2,20N 105,40E P3 1,20N 103,80E P4 2,60N 101,30E P5 6,20N 98,80E P6 6,80N 99,80E

Malasia oriental (Sabah/Sarawak)

P1 2,40N 109,00E P2 8,20N 117,50E P3 5,20N 119,50E P4 1,00N 113,60E P5 0,60N 110,20E

A115 SDN Como el país tiene una superficie de 2,5 millones de kilómetros cuadrados, para cubrirla se necesitarán tres haces de antena, como mínimo; por ello, las solicitudes se repiten tres veces.

A116 MTN Territoire à desservir : Huit coordonnées définissant le polygone contenant le territoire national numérotées 1 à 8 dans l'ordre longitude suivie de la latitude

A116 MTN Territory to be covered with service: eight coordinates defining the polygon containing the national territory, numbered 1 to 8 in order of longitude followed by latitude

A116 MTN Territorio al que se desea dar servicio: ocho coordenadas que definen el polígono que contiene el territorio nacional, numeradas 1 a 8, siguiendo la latitud a la longitud

1 17,12W 21,28N 2 15,49W 24,00N 3 12,00W 26,00N 4 08,40W 27,20N 5 04,51W 25,00N 6 05,20W 15,30N 7 12,05W 14,45N 8 16,32W 16,02N

Norme de télévision : Non définie encore.

Television standard not yet defined.

Norma de televisión: Pendiente de definición.

A117 ATN ATN souhaite utiliser la même position orbitale commune que pour les îles du Vent et les îles sous le Vent, dans la zone des Caraïbes.

A117 ATN ATN wishes to use the same common orbital position as the Leeward and Windward Islands in the Caribbean area.

A117 ATN ATN desea emplear la misma posición orbital común que las Islas de Sotavento y Barlovento, en la zona del Caribe.

A118 STP Territoire à desservir :

aa 0620E 0010S bb 0650E 0010S cc 0730E 0120N dd 0730E (0110N) ee 0710E (0110N) ff 0620E 0030N

A118 STP Territory to be provided with service:

A118 STP Territorio a que se desea dar servicio:

A119 MAU Des installations pour réception individuelle devront être mises en oeuvre à Maurice et dans les îles d'Agalega, de St. Brandon, Tromlin et Rodrigues.

A119 MAU Facilities for individual reception to be provided for Mauritius, Islands of Agalega, St. Brandon, Tromlin and Rodrigues.

A119 MAU Facilidades de recepción individual para Mauricio, Islas Agalega, St. Brandon, Tromlin y Rodrigues.

A120 MAU Même position orbitale que pour REU.

A120 MAU Common orbital position with REU.

A120 MAU Posición orbital común con REU.

A121 LBR L'Administration demande que des dispositions appropriées soient prises en vue de la mise en oeuvre éventuelle, dans l'avenir, d'un service de radiodiffusion libérien par satellite, et en vue de protéger ce service contre le brouillage qui pourrait être causé par les services de radiodiffusion par satellite d'autres pays.

A121 LBR Administration requests adequate provision for any possible future Liberian satellite broadcasting-service and protection of such service against interference from the satellite broadcasting-services of other countries.

A121 LBR Administración solicita que se prevea adecuadamente un eventual servicio liberiano de radiodifusión por satélite y su protección contra la interferencia causada por los servicios de radiodifusión por satélite de otros países.

A123 KEN Le Kenya n'a pas l'intention d'utiliser dans l'immédiat la totalité des cinq canaux qu'il demande. D'après les perspectives de développement du pays, cinq canaux seront néanmoins nécessaires, quatre pour la télévision, un pour la radiodiffusion sonore en 14 langues. Le Kenya souhaite que la position orbitale de son satellite soit telle que l'éclipse se produise après 01h00 (Heure locale) ou après 22h00 (TMG).

A123 KEN Kenya is not immediately going to use all the 5 channels requested; future developments in the country indicate that there will be requirements for 5 channels - 4 for television and 1 for sound broadcasting in 14 languages. Kenya would like that the satellite orbital position of her satellite be such that the ECLIPSE TIME occurs after 01h00 (local time) OR after 22h00 (G.M.T.).

A123 KEN Kenya no utilizará inmediatamente los 5 canales que ha solicitado; de las previsiones para el país se deduce que se requerirán 5 canales: 4 para televisión y 1 para radiodifusión sonora en 14 idiomas. Kenya desearía que la posición orbital del satélite fuese tal, que el PERIODO DE ECLIPSE se produjera después de la 0100 horas, hora local, o después de las 2200 horas TMG.

A124 ALG Demande A ALG-1 Coordonnées géographiques des polygones

1 04,32E 18,00N 2 12,71E 23,45N 3 10,32E 26,00N 4 10,32E 30,00N 5 08,32E 34,00N 6 09,42E 37,78N 7 02,32E 37,23N
8 03,00W 36,02N 9 02,28W 33,08N 10 05,68W 30,69N 11 09,56W 29,45N 12 09,57W 27,20N

A125 ALG Demande B ALG-2 Le polygone relatif à la demande B est constitué des points : 4.5.6.7.8.9.10.11. et 12.

A126 ALG Demande C ALG-3 Le polygone relatif à la demande C est constitué des points : 1.2.3.4. et 12.

A127 ALG Avant de formuler notre demande, mes services ont examiné avec beaucoup d'intérêt le rapport du groupe de travail mixte du C.C.I.R. et en particulier les considérations qui se dégagent en vue d'une utilisation équitable et rationnelle de l'orbite géostationnaire et du spectre des fréquences.

L'objectif de la Radiodiffusion Télévision Algérienne est en accord avec les demandes formulées par d'autres administrations figurant dans votre lettre circulaire N° 367 du 1/11/1976, et correspond à l'utilisation de cinq canaux, soit la diffusion de cinq programmes pour tout le territoire.

Toutefois nous avons éprouvé quelques difficultés pour exprimer nos besoins d'une façon définitive et c'est la raison pour laquelle nous vous transmettons deux séries de demandes, relatives respectivement à un faisceau unique et à deux faisceaux.

Actuellement aucune de ces deux demandes n'a priorité sur l'autre et nous demandons à votre Comité de bien vouloir les traiter pour les calculs préparatoires, étant entendu que nous fixerons notre choix définitif pendant la tenue de la conférence de Genève.

A124 ALG Requirement A ALG-1 Geographical coordinates of the polygons

1 04,32E 18,00N 2 12,71E 23,45N 3 10,32E 26,00N 4 10,32E 30,00N 5 08,32E 34,00N 6 09,42E 37,78N 7 02,32E 37,23N
8 03,00W 36,02N 9 02,28W 33,08N 10 05,68W 30,69N 11 09,56W 29,45N 12 09,57W 27,20N

A125 ALG Requirement B ALG-2 The polygon relating to requirement B is constituted of points 4,5,6,7,8,9,10,11 and 12.

A126 ALG Requirement C ALG-3 The polygon relating to requirement C is constituted of points 1,2,3,4 and 12.

A127 ALG Before preparing the requirement, our services examined with great interest the report of the C.C.I.R. Joint Working Party and in particular the considerations with regard to the equitable and rational use of the geostationary orbit and the frequency spectrum.

The objectives of Radiodiffusion Télévision Algérienne are in line with the requirements formulated by other administrations which appear in your circular-letter No. 367 dated 1 November 1976 and they correspond to the use of five channels, i.e. distribution of five programmes over the whole territory.

However, we have found some difficulty in expressing our requirements definitively, so that we are submitting two series, relating to a single beam and two beams respectively.

At the moment, neither of these requirements takes precedence over the other and we would ask the Board to include them both in the preparatory calculations on the understanding that we shall make our final choice at the conference in Geneva.

A124 ALG Solicitud A ALG-1 Coordenadas geográficas de los polígonos.

1 04,32E 18,00N 2 12,71E 23,45N 3 10,32E 26,00N 4 10,32E 30,00N 5 08,32E 34,00N 6 09,42E 37,78N 7 02,32E 37,23N
8 03,00W 36,02N 9 02,28W 33,08N 10 05,68W 30,69N 11 09,56W 29,45N 12 09,57W 27,20N

A125 ALG Solicitud B ALG-2 El polígono relativo a la solicitud B está constituido por los puntos: 4.5.6.7.8.9.10.11 y 12.

A126 ALG Solicitud C ALG-3 El polígono relativo a la solicitud C está constituido por los puntos 1.2.3.4 y 12.

A127 ALG Antes de formular la solicitud, nuestros servicios han examinado con el mayor interés el Informe del Grupo de trabajo mixto del C.C.I.R., y en particuparticular las consideraciones derivadas del mismo, con miras a una utilización equitativa y racional de la órbita de los satélites geoestacionarios y del espectro de frecuencias.

El objetivo de la Radiodifusión Télévisión Algérienne se conforma a las solicitudes formuladas por otras administraciones que figuran en su carta circular N.° 367, de 1.° de noviembre de 1976, y corresponde a la utilización de cinco canales, es decir, a la difusión de cinco programas para todo el territorio.

Sin embargo, hemos tenido algunas dificultades para expresar nuestras necesidades en forma definitiva, razón por la que le transmitimos dos series de solicitudes, relativas, respectivamente, a un haz único y a dos haces.

En la actualidad, ninguna de estas solicitudes tiene preferencia sobre la otra, y pedimos a la Junta que tenga a bien considerarlas para los cálculos preparatorios, en la inteligencia de que optaremos definitivamente durante la Conferencia de Ginebra.

A127 ALG (suite)

En ce qui concerne la position du satellite, nous avons notifié à la colonne 7 une longitude nominale qui constitue un optimum pour l'Algérie. Cette position pour l'orbite géostationnaire n'est pas définitive et pourra être modifiée pour tenir compte du désir des pays du Maghreb d'avoir une position orbitale commune.

Conformément aux avis du C.C.I.R., l'Algérie se réserve le droit d'utiliser, dans le futur, un canal pour la réception communautaire.

En outre, et si cela s'avère possible à la suite des conclusions de la conférence, notre administration se réserve le droit de présenter à Genève des demandes de canaux supplémentaires.

A127 ALG (cont.)

With respect to the satellite position, we have entered in column 7 a nominal longitude which constitutes an optimum for Algeria. This position for the geostationary orbit is not definitive and could be modified to allow for the Maghreb countries' desire for a common orbital position.

In keeping with CCIR Recommendations, Algeria reserves the right to use one channel for community reception in the future.

Furthermore, if the conclusions reached during the conference made it possible, our administration reserves the right to submit requests for supplementary channels in Geneva.

A127 ALG (cont.)

En cuanto a la posición del satélite, hemos notificado en la columna 7 una longitud nominal que es óptima para Argelia. Esta posición en la órbita de los satélites geoestacionarios no es definitiva, y podrá modificarse para tener en cuenta el deseo de los países del Magreb de tener una posición orbital común.

De conformidad con las Recomendaciones del CCIR, Argelia se reserva el derecho a utilizar, en el futuro, un canal para la recepción comunal.

Además, de revelarse posible como consecuencia de las conclusiones de la Conferencia, nuestra administración se reserva el derecho de presentar en Ginebra solicitudes de canales suplementarios.

A128 LIE Le Liechtenstein désirant émettre dans les mêmes langues que ses deux voisins SUI et AUT, il est souhaitable que ces trois pays utilisent une position orbitale commune.

Les cinq canaux attribués aux Liechtenstein devraient fonctionner avec la même polarisation et il conviendrait d'éviter l'emploi de voies adjacentes.

Les mêmes conditions (relatives à la polarisation et aux voies adjacentes) sont extrêmement souhaitables pour les voies par satellites des pays voisins par rapport à celles du Liechtenstein.

Marge de propagation - Une marge de propagation de 3 dB (99%) est considérée comme nécessaire pour le Liechtenstein.

Erreur de pointage - Les caractéristiques du faisceau d'une antenne de satellite tiennent compte d'une erreur de pointage de 0,1°.

Position géographique du faisceau de l'antenne

Longitude	9°29'- 9°38'E
Latitude	47°03'- 47°14'N

A128 LIE In view of the fact that Liechtenstein intends to broadcast in the same language as its neighbours SUI and AUT, the use of a common orbital position for these countries is desirable.

The five channels, attached to Liechtenstein should make use of the same polarisation and adjacent channeling should be avoided.

The use of the same polarisation as well as avoidance of adjacent channel service are highly desirable for the satellite channels of the neighbouring countries with respect to the Liechtenstein channels.

Propagation margin - For Liechtenstein, a propagation margin of 3 dB (99%) is considered as necessary.

Pointing error - The characteristics of the satellite antenna beam include a pointing error of 0.1°.

Geographical position of antenna beam

Longitude	9°29' - 9°38'E
Latitude	47°03' - 47°14'N

A128 LIE En vista de que Liechtenstein proyecta transmitir en el mismo idioma que SUI y AUT, países vecinos, es conveniente utilizar una posición orbital común para estos países.

Los cinco canales asignados a Liechtenstein deben hacer uso de la misma polarización y debe evitarse la disposición de canales adyacentes.

Para los canales de satélite de los países vecinos, con respecto a los canales de Liechtenstein, es muy conveniente utilizar la misma polarización y evitar el servicio de canales adyacentes.

Margen de propagación - Se considera necesario un margen de propagación de 3 dB (99%) para Liechtenstein.

Error de orientación - Las características del haz de la antena del satélite comprenden un error de orientación de 0,1°.

Posición geográfica del haz de la antena

Longitud	9°29' - 9°38'E
Latitud	47°03' - 47°14'N

A129 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A129 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A129 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 73E55 39N43 2 87E50 49N10 3 96E20 42N45 4 89E54 36N17 5 78E45 34N00

A130 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A130 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A130 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 92E10 26N50 2 78E53 31N15 3 78E45 34N00 4 89E54 36N17 5 97E40 33N10 6 99E09 29N22

A131 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A131 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A131 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 96E15 43N00 2 105E40 41N50 3 108E42 36N20 4 105E47 32N53 5 90E33 33N06 6 90E11 38N28

A132 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A132 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A132 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 105E30 23N15 2 101E15 21N15 3 97E45 23N55 4 97E40 33N10 5 102E18 33N47 6 109E50 31N44

A133 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A133 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A133 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 111E45 44N53 2 119E59 46N50 3 120E00 40N00 4 115E25 31N24 5 105E47 32N53 6 105E15 41N45

A134 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A134 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A134 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 115E25 30N24 2 113E57 25N27 3 109E50 21N23 4 105E30 23N15 5 103E53 27N19 6 111E00 33N15

A135 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 135E05 48N25 2 130E50 42N57 3 121E25 38N35 4 116E30 43N18 5 115E38 47N57 6 122E50 53N26

A135 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

1 135E05 48N25 2 130E50 42N57 3 121E25 38N35 4 116E30 43N18 5 115E38 47N57 6 122E50 53N26

A135 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 135E05 48N25 2 130E50 42N57 3 121E25 38N35 4 116E30 43N18 5 115E38 47N57 6 122E50 53N26

A136 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 117E45 38N23 2 114E57 36N13 3 114E00 29N10 4 113E57 25N27 5 121E24 27N07 6 122E50 37N07

A136 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

1 117E45 38N23 2 114E57 36N13 3 114E00 29N10 4 113E57 25N27 5 121E24 27N07 6 122E50 37N07

A136 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 117E45 38N23 2 114E57 36N13 3 114E00 29N10 4 113E57 25N27 5 121E24 27N07 6 122E50 37N07

A137 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 122E40 22N10 2 124E50 26N00 3 118E32 28N22 4 112E04 24N50 5 108E04 20N03 6 109E32 16N00 7 116E00 15N59

A137 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

1 122E40 22N10 2 124E50 26N00 3 118E32 28N22 4 112E04 24N50 5 108E04 20N03 6 109E32 16N00 7 116E00 15N59

A137 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 122E40 22N10 2 124E50 26N00 3 118E32 28N22 4 112E04 24N50 5 108E04 20N03 6 109E32 16N00 7 116E00 15N59

A138 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 120E00 40N00 2 116E30 43N18 3 114E30 41N55 4 113E50 36N20 5 114E57 36N13

A138 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

1 120E00 40N00 2 116E30 43N18 3 114E30 41N55 4 113E50 36N20 5 114E57 36N13

A138 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 120E00 40N00 2 116E30 43N18 3 114E30 41N55 4 113E50 36N20 5 114E57 36N13

A139 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 113E50 36N20 2 114E10 40N50 3 111E07 39N20 4 110E30 34N26

A139 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

1 113E50 36N20 2 114E10 40N50 3 111E07 39N20 4 110E30 34N26

A139 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 113E50 36N20 2 114E10 40N50 3 111E07 39N20 4 110E30 34N26

A140 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 116E47 41N55 2 119E59 46N50 3 111E27 44N53 4 105E15 41N40 5 108E03 37N48

A140 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

1 116E47 41N55 2 119E59 46N50 3 111E27 44N53 4 105E15 41N40 5 108E03 37N48

A140 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 116E47 41N55 2 119E59 46N50 3 111E27 44N53 4 105E15 41N40 5 108E03 37N48

A141 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A141 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A141 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 125E53 40N55 2 124E45 43N15 3 119E20 45N10 4 116E30 43N18 5 121E25 38N35

A142 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A142 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A142 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 131E03 43N30 2 120E07 47N40 3 119E20 45N10 4 121E00 42N15 5 125E53 40N55

A143 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A143 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A143 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 135E05 48N25 2 131E03 43N30 3 115E38 47N57 4 120E12 52N50 5 122E50 53N26

A144 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A144 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A144 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 117E45 38N23 2 114E57 36N13 3 114E58 34N46 4 119E43 35N06 5 122E50 37N07

A145 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A145 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A145 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 119E43 35N06 2 116E30 34N53 3 118E25 31N23 4 123E25 30N20

A146 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A146 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A146 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 116E30 34N53 2 115E00 32N57 3 116E19 29N45 4 118E20 29N30 5 119E40 31N07 6 118E47 32N45

A147 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A147 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A147 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 123E25 30N20 2 119E40 31N07 3 118E05 29N09 4 119E00 27N33 5 121E24 27N07

A148 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A148 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A148 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 115E50 24N34 2 113E57 25N27 3 114E00 29N10 4 115E30 29N50 5 118E20 29N30 6 118E32 28N22

A149 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A149 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A149 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 121E24 27N07 2 118E32 28N22 3 116E35 26N58 4 116E02 25N13 5 117E37 23N05

A150 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A150 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A150 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 124E50 26N00 2 119E45 19N05 3 117E37 23N05 4 123E03 26N47

A151 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A151 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A151 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 116E30 34N53 2 113E50 36N20 3 110E30 34N26 4 111E00 33N15 5 115E25 31N24

A152 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A152 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A152 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 111E00 33N15 2 108E27 30N17 3 114E00 29N10 4 116E19 29N45 5 115E25 31N24

A153 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 113E57 25N27 2 114E00 29N10 3 110E30 30N14 4 109E18 29N10 5 109E30 26N00 6 112E04 24N50

A153 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A153 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

A154 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 117E37 23N05 2 113E57 25N27 3 112E04 24N50 4 108E04 20N03 5 108E50 18N00

A154 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A154 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

A155 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 119E45 19N05 2 118E45 11N15 3 112E40 3N25 4 108E25 6N50 5 110E53 18N25 6 117E37 23N05

A155 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A155 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

A156 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 112E04 24N50 2 111E18 26N18 3 104E40 24N32 4 107E38 21N40 5 109E50 21N23

A156 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A156 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

A157 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 111E07 39N20 2 107E37 37N58 3 105E47 32N53 4 109E50 31N44

A157 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A157 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

A158 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

1 107E37 37N58 2 106E53 40N10 3 105E15 41N40 4 102E40 42N18 5 103E21 38N03 6 106E10 35N30

A158 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A158 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

A159 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A159 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A159 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 96E15 43N00 2 93E20 39N18 3 105E47 32N53 4 108E42 36N20 5 102E40 42N18

A160 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A160 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A160 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 101E00 32N50 2 90E33 33N06 3 90E11 38N28 4 93E20 39N18 5 101E59 37N50 6 102E50 35N43

A161 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A161 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes):

A161 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 109E18 29N10 2 102E00 26N04 3 97E40 33N10 4 102E18 33N47 5 109E50 31N44

A162 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A162 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes) :

A162 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 109E24 27N43 2 107E55 29N00 3 103E53 27N19 4 104E40 24N32 5 109E30 26N00

A163 CHN Coordonnées géographiques des sommets du polygone convexe approché de la zone de service utilisées pour le calcul des caractéristiques des faisceaux d'antennes (en degrés et minutes) :

A163 CHN Geographical co-ordinates of approximate convex polygon apexes of the service area used for calculation of antenna beam characteristics (in degrees and minutes) :

A163 CHN Coordenadas geográficas de los vértices del polígono convexo aproximado de la zona de servicio utilizadas para calcular las características del haz de la antena (en grados y minutos):

1 101E15 21N15 2 97E45 23N55 3 99E09 29N22 4 105E36 27N41 5 106E13 23N56

A164 IRQ Prière de réserver pour IRQ quatre canaux video et 16 canaux son dans cette bande.

A165 NIG On projette d'utiliser la norme de télévision B ou G pour la couleur.

Grâce à la position d'un satellite géostationnaire à 45° de longitude ouest, les éclipses de l'engin spatial pendant les périodes d'équinoxe se produiront dans les conditions suivantes :

entre 03h00 et 04h00 TMG.

L'angle de site dépendra de la position du satellite. Pour la position dont il est question au point 13, cet angle devra être de l'ordre de 35°.

A166 AUT Une erreur de pointage de 0,1° a déjà été prise en considération. En coordination avec D et SUI.

A167 IRL Les remarques qui figurent dans la Note A103 s'appliquent toujours. Il est en outre important que les canaux attribués à l'Irlande se trouvent dans la même gamme de 400 MHz que ceux attribués au Royaume-Uni (symbole du pays : G).

A168 SNG Tous les canaux requis par notre Administration doivent utiliser la même position orbitale et la même polarisation. Il ne devrait pas y avoir d'assignation de canaux adjacents.

Le faisceau de l'antenne d'émission est fondé sur une largeur de bande minimale de 0,6°. Si la longitude nominale préférée du satellite ne peut être assignée, il faut prévoir une couverture équivalente depuis la position orbitale assignée.

A164 IRQ Please reserve four video channels and 16 sound channels in this band for IRQ.

A165 NIG Television standard B or G with colour is envisaged.

A geostationary satellite placed at 45°W longitude will ensure that eclipses of the satellite during the equinox periods will occur as follows:

between 0300 - 0400 hours GMT.

The elevation angle will depend on the position of the satellite. For the position mentioned in 13, the elevation angle should be of the order of 35°.

A166 AUT A pointing error of 0.1° has already been taken into account. Coordinated with D and SUI.

A167 IRL The remarks under Note A103 still apply. It is also important that the channels allocated to Ireland should be within the same 400 MHz range as those allocated to the United Kingdom (country symbol G).

A168 SNG All channels required by our Administration should make use of the same orbital position and the same polarization. There should be no adjacent channel assignments.

The transmitting antenna beam is based on a minimum beamwidth of 0.6°. If the preferred nominal longitude of the satellite cannot be assigned the equivalent coverage from the orbital position assigned is required.

A164 IRQ Se ruega reservar cuatro canales de video y 16 canales de sonido en esta banda para IRQ.

A165 NIG Está prevista la norma de televisión B o G, en color.

Mediante un satélite geoestacionario colocado a 45° de longitud Oeste, se logrará que los eclipses del satélite durante las épocas de equinoccio se produzcan en los siguientes periodos:

entre las 0300 y las 0400 horas TMG.

El ángulo de elevación dependerá de la posición del satélite. Para la posición mencionada en el punto 13, será del orden de 35°.

A166 AUT Ya se ha tenido en cuenta un error de orientación de 0,1°. Coordinación con D y SUI.

A167 IRL Siguen siendo aplicables las observaciones de la Observación A103. Es igualmente importante que los canales atribuidos a Irlanda se encuentren en la misma gama de 400 MHz que los atribuidos al Reino Unido (símbolo de país G).

A168 SNG Todos los canales requeridos por una administración deben utilizar la misma posición orbital y la misma polarización. No debe haber asignaciones en el canal adyacente.

El haz de la antena transmisora se basa en una abertura mínima de 0,6°. Si la longitud nominal preferida del satélite no puede asignarse, se necesita la cobertura equivalente desde la posición orbital asignada.

A168 SNG (suite)

Points de référence définissant les limites de la zone à desservir (exprimés en degrés et centièmes de degrés) :

1 105E90 01N37 2 104E57 03N00

Cette demande a été coordonné entre MLA et INS.

A169 B L'Administration brésilienne aimerait faire remarquer que les besoins présentés ici sont calculés en tenant compte des renseignements disponibles actuellement.

L'Administration brésilienne se réserve le droit de modifier ces besoins en tout moment de l'avenir si elle le désire.

Nous aimerions souligner que la confirmation de ces besoins n'équivaut, à ce point de la Conférence, à aucune intention de l'Administration brésilienne d'approuver un plan "a priori" pour la Région 2.

Note : Une révision des données figurant dans les cases 10-11-12 (de 0194 à 0206) relatives à ces besoins sera peut-être proposée au cours des prochains jours.

A170 TUN 1. Faisceau(x) commun(s) supplémentaire(s).

2. Faisceaux : Le nombre de faisceaux est inférieur ou égal au total des faisceaux demandés pour la couverture nationale du Maroc, Mauritanie, Algérie, Tunisie, Lybie.

3. Polygone : Le polygone sera déterminé à partir des polygones nationaux déterminés à la fois par le : Maroc, Mauritanie, Algérie, Tunisie et Lybie.

A171 NIG 1. On envisage la norme de télévision B ou G avec couleur.

2. Un satellite géostationnaire placé à 045° de longitude ouest aura pour conséquence que les éclipses du satellite au cours des périodes équinoxiales se produiront comme suit :

A168 SNG (cont.)

Reference points describing the boundaries of the service area (expressed in degrees and hundredths of a degree):

3 102E30 02N48 4 101E92 00N78

This requirement has been coordinated and agreed with MLA and INS.

A169 B The Brazilian Administration would like to remark that the requirements herewith presented were derived taking into consideration information available at the present time.

The Brazilian Administration reserves the right of changing these requirements at any time in the future if it so desires.

We would like to point out that confirming these requirements does not demonstrate at this point of the Conference any intention of the Brazilian Administration to agree with any a priori plan for Region 2.

Note : A revision of the data contained in boxes 10-11-12 (0194 through 0206) of these requirements may be proposed in the next few days.

A170 TUN 1. Additional common beam(s).

2. Beams : The number of beams is lower than or equal to the total number of beams requested for the national coverage of : Morocco, Mauritania, Algeria, Tunisia, Libya. 3. Polygons : The polygon will be determined on the basis of the national polygons determined by : Morocco, Mauritania, Algeria, Tunisia and Libya.

A171 NIG 1. Television Standard B or G with colour is envisaged.

2. A geostationary satellite placed at 045°W longitude will ensure that eclipses of the satellite during the equinox periods will occur as follows :

A168 SNG (cont.)

Puntos de referencia que describen el territorio a que se desea dar servicio (expresados en grados y centésimas de grado):

5 103E45 00S33 6 105E60 00N51

Esta solicitud se ha coordinado entre MLA y INS.

A169 B La Administración brasileña desea señalar que las solicitudes sometidas con la presente se han determinado teniendo en cuenta la información disponible actualmente.

La Administración brasileña se reserva el derecho a modificar tales solicitudes en el futuro.

Deseamos señalar que la confirmación de estas solicitudes no significa, en esta fase de la Conferencia, que la Administración brasileña esté de acuerdo con ninguna planificación a priori para la Región 2.

Nota: En los próximos días puede proponerse la revisión de los datos que figuran en las casillas 10, 11 y 12 (0194 a 0206).

A170 TUN 1. Haz o haces comunes suplementarios.

2. Haces: El número de haces es inferior o igual al total de haces solicitados para la cobertura nacional de Marruecos, Mauritania, Argelia, Túnez y Libia.

3. Polígono: El polígono se determinará a partir de los polígonos nacionales fijados al mismo tiempo para Marruecos Mauritania, Argelia, Túnez y Libia.

A171 NIG 1. Se prevé la norma de televisión B o G, en color.

2. Un satélite geoestacionario situado a 0,45° longitud W hará que los eclipses del satélite durante los periodos del equinoccio se produzcan como sigue:

A171 NIG (suite)

a) point extrême occidental du Nigéria - début - 0200 h TMG
b) point extrême oriental du Nigéria - début - 0300 h TMG

3. On trouvera en annexe une carte du Nigéria permettant de déterminer la section elliptique du faisceau d'antenne du satellite desservant le Nigéria.

4. L'angle de site dépendra de la position du satellite. Pour la position mentionnée au 13, l'angle de site devrait être de l'ordre de 35°. Voir IFRB pour vérification s.v.p.

A172 AUS Un service avec réception communautaire, le segment spatial étant partagé avec NZL et PNG. Conserver AUS-1 et AUS-2 comme variantes.

Joindre AUS-3 à AUS-2.

A173 BHR La polarisation de signaux provenant des satellites doit être la même que pour les pays suivants : Emirats arabes unis (EAU), Qatar (QAT), Koweït (KWT).

A174 SUI 1. Selon les considérations futures quant au programme, l'Administration suisse se réserve le droit de déplacer les coordonnées géographiques d'intersection de l'axe du faisceau de l'antenne avec la Terre d'une centaine de kilomètres vers l'ouest. Une telle modification doit être fondée sur des accords bilatéraux entre la Suisse et les pays voisins intéressés.

2. En coordination avec AUT, D.

A175 HOL ATN Le faisceau I comprend : Aruba, Bonaire et Curaçao.

A176 HOL ATN Le faisceau II comprend : Saba, St. Eustatius et St. Maarteu.

A177 BDI Coordonnées géographiques du polygone.

A171 NIG (cont.)

a) Western-most point of Nigeria - starts : 0200 hrs GMT
b) Eastern-most point of Nigeria - starts : 0300 hrs GMT

3. A map of Nigeria is attached for the purpose of determining the Elliptical cross-section of the satellite antenna beam covering Nigeria.

4. The elevation angle will depend on the position of the satellite. For the position mentioned in 13, the elevation angle should be of the order of 35°. IFRB to check please.

A172 AUS A community reception service, the space sector being shared with NZL and PNG. Retain AUS-1 and AUS-2 as alternative proposals.

Include AUS-3 with AUS-2.

A173 BHR The polarization from satellites must be identical with that of the following countries : United Arab Emirates (UAE), Qatar (QAT), Kuwait (KWT).

A174 SUI 1. Depending on future programme considerations, the Swiss Administration reserve the right to shift the geographical coordinates of intersection of antenna beam axis with the earth in the order of 100 km towards West. Such a change must be based on bilateral agreements between Switzerland and the neighbouring countries involved.

2. Coordinated with AUT, D.

A175 HOL ATN Beam I consists of : Aruba, Bonaire and Curaçao

A176 HOL ATN Beam II consists of : Saba, St. Eustatius and St. Maarteu.

A177 BDI Geographical coordinates of the polygon.

A171 NIG (cont.)

a) Punto más occidental de Nigeria - comienzo: 0200 horas TMG
b) Punto más oriental de Nigeria - comienzo: 0300 horas TMG

3. Se adjunta un mapa de Nigeria, con el fin de determinar el haz de la antena del satélite de sección transversal elíptica que cubre Nigeria.

4. El ángulo de elevación dependerá de la posición del satélite. Para la mencionada en 13, el ángulo de elevación debe ser del orden de 35°. Se ruega a la IFRB que lo compruebe.

A172 AUS Servicio de recepción comunal, compartiéndose el sector espacial con NZL y PNG. Se mantienen como proposiciones alternativas AUS-1 y AUS-2.

Se incluye AUS-3 con AUS-2.

A173 BHR La polarización desde los satélites debe ser exacta a la de los siguientes países: Emiratos Árabes Unidos (UAE), Qatar (QAT), Kuwait (KWT).

A174 SUI 1. Según las consideraciones del programa futuro, la Administración suiza se reserva el derecho a efectuar un cambio de las coordenadas geográficas de intersección del eje del haz de la antena con la Tierra del orden de 100 km hacia el Oeste. Tal modificación ha de basarse en acuerdos bilaterales entre Suiza y los países vecinos interesados.

2. Coordinación con AUT, D.

A175 HOL ATN El haz I comprende: Aruba, Bonaire y Curaçao

A176 HOL ATN El haz II comprende: Saba, St. Eustatius y St. Maarteu.

A177 BDI Coordenadas geográficas del polígono.

1 29,08E 04,82S 2 30,23E 04,82S 3 31,24E 02,93S 4 30,81E 01,96S 5 28,65E 02,29S

A178 CYP GRC a: Chypre doit occuper sur l'orbite des satellites géostationnaires, la même position orbitale que la Grèce.

b: La même polarisation doit être assignée à Chypre et à la Grèce, sans canaux adjacents.

A179 SDN Nous souhaitons nous réserver le droit d'accroître le nombre des faisceaux desservant notre pays de 4 à 5 s'il s'avère que les besoins en puissance ou en p.i.r.e. sont supérieurs aux puissances réalisables dans l'avenir ou si c'est une solution coûteuse.

Il convient de noter que les faisceaux proposés ci-dessus le sont en fonction des trois régions climatiques du Soudan (0230 Région climatique 1; 0231 Région climatique 3; 0232 Région climatique 5).

La position orbitale choisie pour le satellite est de 15° ouest.

La visée, les caractéristiques de l'antenne et leur orientation ne sont pas fournies. Nous souhaitons que la forme des faisceaux soit dessinée par l'ordinateur de l'IFRB.

A180 PNG Cette demande a été coordonnée avec NZL et AUS.

A181 EQA Coordonnées géographiques du polygone.

1 78°W 2°N 2 75°W 0° 3 79°W 5°S 4 90°W 4,5°S 5 93,5°W 2°S 6 84°W 2°N

A182 EQA Coordonnées géographiques du polygone.

1 78°W 2°N 2 75°W 0° 3 77°W 2,5°S 4 79°W 5°S 5 81°W 4,5°S 6 81,5°W 1°S

A183 UAE La polarisation des satellites doit être identique à celle des pays suivants : BHR, QAT, KWT.

A178 CYP GRC a : Cyprus to have on the geostationary orbit the same orbital position as Greece.

b : Cyprus and Greece to be assigned the same polarization and no adjacent channels.

A179 SDN We would like to reserve our right to increase the number of beams covering our country to 4 or 5 if it turned out that the power or e.i.r.p. requirements are beyond powers which are feasible in the future or if it is an expensive alternative.

It is to be noted that the above suggested beams are according to the three different rain climatic regions existing in the Sudan (0230 climatic Region 1; 0231 climatic Region 3; 0232 climatic Region 5).

The chosen satellite orbital position is 15° W.

The boresight, antenna characteristics, and their orientation are not supplied. It is hoped that the IFRB computer will kindly plot the beam shapes.

A180 PNG This requirement has been coordinated with NZL and AUS.

A181 EQA Geographical coordinates of the polygon

A182 EQA Geographical coordinates of the polygon

A183 UAE The polarization from satellites must be identical with that of the following countries : BHR, QAT, KWT.

A178 CYP GRC **a: Chipre debe tener en la órbita de los satétiles geoestacionarios la misma posición orbital que Grecia.**

b: A Chipre y a Grecia ha de asignárseles la misma polarización, sin canales adyacentes.

A179 SDN **Sudán se reserva el derecho a aumentar el número de haces que cubren su país de 4 a 5, si la potencia o la p.i.r.e. necesarias exceden de las factibles en el futuro, o la alternativa es onerosa.**

Debe señalarse que los haces sugeridos anteriormente se conforman a las tres regiones **hidrometeorológicas distintas que existen en Sudán (Región climática 1, 0230; Región climática 3, 0271; Región climática 5, 0232).**

La posición orbital del satélite elegida es 15°W.

No se comunican la línea de mira, las características de la antena ni su orientación. Esperamos que la IFRB tenga a bien realizar las configuraciones del haz por medio del computador.

A180 PNG **Esta solicitud se ha coordinado con NZL y AUS.**

A181 EQA **Coordenadas geográficas del polígono.**

A182 EQA **Coordenadas geográficas del polígono.**

A184 E AND La zone à desservir est identique à celle qui est indiquée sur la carte AND 0238 de l'Addendum N° 1 au Document N° 16 (Addendum N° 1 à la lettre-circulaire N° 367 de l'IFRB) de la Conférence, page 22.

A184 E AND The area for which a service is required is identical to the area shown on map AND 0238 of Addendum No. 1 to Document No. 16 (Addendum No. 1 to IFRB Circular-letter No. 367) of the Conference, page 22.

A184 E AND La zona a la que se desea dar servicio es idéntica a la que viene indicada en el mapa AND 0238 del Addéndum N.° 1 al Documento N.° 16 (Addéndum N.° 1 a la Carta circular de la IFRB N.° 367) de la Conferencia, página 22.

A185 E AND La zone à desservir est identique à celle qui est indiquée sur la carte E0129 du Document N° 16 (lettre-circulaire N° 367 de l'IFRB) de la Conférence.

A185 E AND The area for which a service is required is identical to the area shown on map E0129 of Document No. 16 (IFRB Circular-letter No. 367) of the Conference.

A185 E AND La zona a la que se desea dar servicio es idéntica a la que viene indicada en el mapa E0129 del Documento N.° 16 (Carta circular de la IFRB N.° 367) de la Conferencia.

A186 LBY Coordonnées géographiques du polygone

A186 LBY Geographical coordinates of the polygon

A186 LBY Coordenadas geográficas del polígono

1 9°E 30,30°N 2 9,30°E 25°N 3 12°E 23,30°N 4 25°E 10°N 5 25°E 32°N 6 20,30°E 33,30°N 7 19°E 30,50°N 8 12°E 34°N

A187 ALG Sous réserve que les délégations du Maroc, de Mauritanie, Tunisie et Lybie adoptent la même position orbitale : 20° W.

Dans le cas contraire, l'Algérie retiendra la position orbitale de 25° W.

A187 ALG Provided the delegations of Morocco, Mauritania, Tunisia and Libya adopt the same orbital position, 20° W.

Otherwise Algeria will retain orbital position 25° W.

A187 ALG A condición de que las Delegaciones de Marruecos, Mauritania, Túnez y Libia adopten la misma posición orbital: 20°W.

En caso contrario, Argelia mantendrá la posición orbital de 25°W.

A188 MTN Colonne 7 changée; valeur nouvelle 20° W.

Réserve. A la condition que les pays (Maroc, Algérie, Tunisie, Lybie) soient sur la même position. Autrement la délégation de Mauritanie se réserve la possibilité de revenir sur la position initiale 30° W.

A188 MTN Column 7 changed; new value 20°W.

Reservation. On condition that Morocco, Algeria, Tunisia and Libya have the same position. Otherwise the Mauritanian Delegation reserves the right to revert to the initial position 30°W.

A188 MTN Modificación de la columna 7; nuevo valor: 20°W .

Reserva. A condición de que Marruecos, Argelia, Túnez y Libia se encuentren en la misma posición. En otro caso, la Delegación de Mauritania se reserva la posibilidad de volver a la posición inicial de 30°W.

Points de contrôle 2ème faisceau

Check points 2nd beam MTN

Puntos de control segundo haz

1 5W60 20N00 2 12W0° 23N45 3 08W40 27N20 4 04W51 25N00

A189 MRC Colonne 7 : changer valeur nouvelle 20° W.

Réserve.: A la condition que les pays MTN, ALG, TUN, LYB soient sur la même position. Autrement la délégation du Royaume du Maroc se réserve le droit de revenir sur la position orbitale 30° W (longitude nominale du satellite).

A189 MRC Column 7. New Value 20°W.

Reservation. On condition that MTN, ALG, TUN and LYB have the same position. Otherwise the Delegation of the Kingdom of Morocco reserves the right to revert to orbital position 30°W (nominal longitude of satellite).

A189 MRC Columna 7. Modificación; nuevo valor: 20°0

Reserva. A condición de que los países MTN, ALG, TUN y LYB se encuentren en la misma posición; de no ser así, la Delegación del Reino de Marruecos se reserva el derecho a volver a la posición orbital 30°W (longitud nominal del satélite).

A190 CNR Cases 4 et 7. L'Administration espagnole déclare que les inscriptions correspondant aux îles Canaries doivent avoir la même position orbitale, les mêmes canaux et la même polarisation que le reste du territoire espagnol.

A191 CLM Points de contrôle

1 82W 13N 2 72W 12N 3 70W 4N 4 70W 4,5S 5 78W 3N

A192 DNK FNL NOR S Cette demande a été coordonnée entre DNK, FNL, NOR et S.

A193 FNL La délégation suédoise accepte l'extension de la couverture vers la Suède. Comprend une erreur de pointage de ± 0,1°.

A194 DNK La couverture intentionnelle de l'Islande est acceptée par la présente.

A195 S Les valeurs de faisceaux données tiennent compte d'une erreur de pointage de ± 0,1°.

A196 PNG Coordination effectuée avec NZL et AUS.

A197 KRE Points de référence définissant les limites de la zone à desservir par le faisceau d'antenne A (exprimés en degrés et minutes) :

1 124,15E 39,50N 2 126,55E 41,48N 3 130,00E 43,00N 4 130,40E 42,15N 5 128,05E 38,25N 6 126,30E 37,45N

A198 TUN Cette demande a été coordonné entre TUN, ALG, LBY, MRC et MRT.

A199 NZL Service de réception communautaire, dont le secteur spatial est utilisé en partage avec AUS et PNG.

A200 HVO Une erreur de pointage de 0,1° a déjà été prise en considération.

A190 CNR Boxes 4 and 7. The Spanish Administration states that the entries made for the Canary Islands must indicate the same orbital position, the same channels and the same polarization as the rest of the territory of Spain.

A191 CLM Test points

A192 DNK FNL NOR S This requirement has been coordinated between DNK, FNL, NOR and S.

A193 FNL The Swedish delegation accepts the extended coverage towards Sweden. Includes pointing error of ±0.1°.

A194 DNK Consent of international coverage of Iceland is hereby given.

A195 S The beam values given include a pointing error of ±0.1°.

A196 PNG Coordination with NZL and AUS.

A197 KRE Reference points describing the boundaries of the territory to be served by the antenna beam A (expressed in degrees and minutes) :

A198 TUN This requirement has been coordinated between TUN, ALG, LBY, MRC and MRT.

A199 NZL A community reception service, the space sector being shared with AUS and PNG.

A200 HVO A pointing error of 0.1° has already been taken into account.

A190 CNR Casillas 4 y 7.- La Administración española manifiesta que las inscripciones correspondientes a las Islas Canarias deben tener la misma posición orbital, los mismos canales y la misma polarización que el resto del territorio español.

A191 CLM Puntos de control

A192 DNK FNL NOR S Esta solicitud se ha coordinado entre DNK, FNL, NOR y S

A193 FNL La Delegación sueca acepta la ampliación de la cobertura hacia Suecia. Comprende un error de orientación de ± 0,1°.

A194 DNK Se da la conformidad a la cobertura proyectada de Islandia.

A195 S Los valores del haz indicados comprenden un error de orientación de ± 0,1°.

A196 PNG Coordinación efectuada con NZL y AUS.

A197 KRE Puntos de referencia que describen el territorio a que se desea dar servicio mediante el haz A (expresados en grados y minutos):

A198 TUN Esta solicitud se ha coordinado entre TUN, ALG, LBY, MRC y MRT.

A199 NZL Un servicio de recepción comunal, compartiéndose el sector espacial con AUS y PNG.

A200 HVO Ya se ha tenido en cuenta un error de orientación de 0,1°.

B002 AUS Proposition australienne A1, numérotée de 1 à 6 par l'I.F.R.B., sur la base de la case 08, de W à E.

B003 AUS Proposition australienne B1, numérotée de 1 à 6 par l'I.F.R.B., sur la base de la case 08, de W à E.

B004 NPL Aucune information n'a été reçue concernant la norme de télévision, ni dans la case 05 ni au titre des renseignements supplémentaires.

B006 NGR Aucune information n'a été reçue concernant la norme de télévision (case 05) et l'horaire d'exploitation (case 06), ni dans les cases correspondantes ni au titre des renseignements supplémentaires.

B007 OMA Les renseignements reçus, concernant la section elliptique, le grand axe et le petit axe (cases 10, 11 et 12), font actuellement l'objet d'une vérification avec l'administration notificatrice.

B009 PAK Les renseignements reçus, concernant l'orientation du grand axe (case 12), font actuellement l'objet d'une vérification avec l'administration notificatrice.

B002 AUS Australian proposal A1 numbered by the I.F.R.B. from 1 to 6, on the basis of box 08, from W to E.

B003 AUS Australian proposal B1 numbered by the I.F.R.B. from 1 to 6, on the basis of box 08, from W to E.

B004 NPL No information was received on the television standard, neither in box 05 nor under the supplementary information.

B006 NGR No information was received on the television standard (box 05) and on the hours of operation (box 06), neither in the relevant boxes nor under supplementary information.

B007 OMA The information received concerning the elliptical cross-section, the major axis and the minor axis (boxes 10, 11 and 12) is being verified with the notifying Administration.

B009 PAK The information received concerning the orientation of the major axis (box 12) is being verified with the notifying Administration.

B002 AUS Proposición australiana A1, numerada de 1 a 6 por la I.F.R.B., sobre la base de la casilla 08, de W a E.

B003 AUS Proposición australiana B1, numerada de 1 a 6 por la I.F.R.B., sobre la base de la casilla 08, de W a E.

B004 NPL No se ha recibido información sobre la norma de televisión ni en la casilla 05 ni a título de información adicional.

B006 NGR No se ha recibido información sobre la norma de televisión (casilla 05) y el horario de funcionamiento (casilla 06), ni en las casillas correspondientes, ni a título de información adicional.

B007 OMA La información recibida sobre la sección transversal elíptica, eje mayor y eje menor (casillas 10, 11 y 12) se está verificando con la Administración notificante.

B009 PAK La información recibida sobre la orientación del eje mayor (casilla 12) se está verificando con la Administración notificante.

B010 BOL Les renseignements concernant l'horaire d'exploitation (case 06) et la longitude nominale du satellite (case 07) semblent être incompatibles. Ils sont actuellement vérifiés par l'administration notificatrice.

B011 B Les renseignements fournis pour l'orientation du grand axe (case 12) ont été convertis par l'I.F.R.B.; ils sont donnés sous réserve de vérification par l'administration notificatrice.

B012 B En plus des cartes publiées dans l'Annexe 4 à la présente lettre-circulaire, sous le symbole B, des renseignements supplémentaires ont été reçus sous la forme d'une carte géographique (Fig.1) qui est reproduite à la fin de la présente Annexe 3.

B013 B En plus des cartes publiées dans l'Annexe 4 à la présente lettre-circulaire, sous le symbole B, des renseignements supplémentaires ont été reçus sous la forme d'une carte géographique (Fig.2) qui est reproduite à la fin de la présente Annexe 3.

B014 B En plus des cartes publiées dans l'Annexe 4 à la présente lettre-circulaire, sous le symbole B, des renseignements supplémentaires ont été reçus sous la forme d'une carte géographique (Fig.3) qui est reproduite à la fin de la présente Annexe 3.

B015 CUB La carte a été reçue alors que l'Annexe 4 se trouvait déjà à l'impression; elles est reproduite à la fin de l'Annexe 4, à la suite de la carte reçue de YUG.

B016 PNG La carte a été reçue alors que l'Annexe 4 se trouvait déjà à l'impression; elle est reproduite à la fin de l'Annexe 4, à la suite des cartes reçues de YUG et de CUB.

B017 - Les renseignements contenus dans les colonnes 7, 8 et 9 ou 7, 8, 10, 11 et 12, selon le cas, ont été calculés par l'I.F.R.B.

B010 BOL The information given on the hours of operation (box 06) and the nominal longitude of the satellite (box 07) appear to be incompatible and are being verified by the notifying Administration.

B011 B The information given for the orientation of the major axis (box 12) has been converted by the I.F.R.B. and is subject to verification by the notifying Administration.

B012 B In addition to the maps published in Annex 4 to the present Circular-letter under the symbol B, supplementary information was received in the form of a map (marked Fig. 1) which is reproduced at the end of the present Annex 3.

B013 B In addition to the maps published in Annex 4 to the present Circular-letter under the symbol B, supplementary information was received in the form of a map (marked Fig. 2) which is reproduced at the end of the present Annex 3.

B014 B In addition to the maps published in Annex 4 to the present Circular-letter under the symbol B, supplementary information was received in the form of a map (marked Fig. 3) which is reproduced at the end of the present Annex 3.

B015 CUB The map was received after Annex 4 was in print and is reproduced at the end of Annex 4 following the map received from YUG.

B016 PNG The map was received after Annex 4 was in print and is reproduced at the end of Annex 4 following the maps received from YUG and CUB.

B017 - The information contained in Columns 7, 8 and 9 or 7, 8, 10, 11 and 12, as the case may be, have been calculated by the I.F.R.B.

B010 BOL La información facilitada sobre el horario de funcionamiento (casilla 06) y la longitud nominal del satélite (casilla 07) parecen incompatibles, y la Administración notificante las está comprobando.

B011 B La información facilitada sobre la orientación del eje mayor (casilla 12) ha sido convertida por la I.F.R.B., y la Administración notificante la está comprobando.

B012 B Como complemento de los mapas publicados en el Anexo 4 a la presente carta circular, bajo el símbolo B, se ha recibido un mapa (Fig. 1), que se reproduce al final del presente Anexo 3.

B013 B Como complemento de los mapas publicados en el Anexo 4 a la presente carta circular, bajo el símbolo B, se ha recibido un mapa (Fig. 2), que se reproduce al final del presente Anexo 3.

B014 B Como complemento de los mapas publicados en el Anexo 4 a la presente carta circular, bajo el símbolo B, se ha recibido un mapa (Fig. 3), que se reproduce al final del presente Anexo 3.

B015 CUB El mapa se recibió después de imprimirse el Anexo 4, por lo que se reproduce al final del mismo, a continuación del mapa recibido de YUG.

B016 PNG El mapa se recibió después de imprimirse el Anexo 4, por lo que se reproduce al final del mismo, a continuación de los mapas recibidos de YUG y CUB.

B017 - La información contenida en las columnas 7, 8 y 9 ó 7, 8, 10, 11 y 12, según el caso, ha sido calculada por la I.F.R.B.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 173-E
28 January 1977
Original : English

COMMITTEE 4
COMMITTEE 5

Australia

THE INTERDEPENDENCE OF RECEIVER DESIGN, CHANNEL GROUPING AND SHARING CRITERIA

In the opinion of the Australian Administration there has been insufficient consideration given to the requirements of receiver design for the Broadcasting-Satellite Service in relation to channel grouping for the preparation of plans and the development of sharing criteria between the Broadcasting-Satellite Service and Terrestrial Services.

Plans prepared with channel groupings of the form ABCD etc. distribute the channels used in any particular area across the band, and thereby permit the use of a single transmitting antenna per service area. Current designs for receivers provide for initial broadband amplification of all the channels intended to be received. These amplifiers would therefore pass other unwanted signals within the passband, and these signals may be sufficiently strong to cause overload.

Sharing criteria, on the other hand, are being prepared on the basis of intermediate frequency selectivity, which ignores the possibility of overload in the initial stages of amplification.

The Australian Administration considers that these interrelated features of receiver design, channel grouping, and sharing criteria should be studied together before further progress is made in the preparation of plans and sharing criteria, and further that the CCIR be requested to study the issues raised.

For reasons of economy, this document is printed in a limited number. Participants are therefore kindly asked to bring their copies to the conference since only a few additional copies can be made available.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document N° 174(Rév.1)-F/E/S
31 janvier 1977

GROUPE DE TRAVAIL 6A

Annexe révisée au Document N° 174.

WORKING GROUP 6A

Revised Annex to Document No. 174.

GRUPO DE TRABAJO 6A

Anexo revisado al Documento N.° 174.

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ANNEX

/ Article 4 /

PROCEDURE FOR MODIFICATIONS TO THE /PLAN/

4.1 When a / Contracting Member / / Member / / Administration / intends to make a modification to the / Plan /, i.e. either

- to change the characteristics of any of its frequency assignments to a space station* in the Broadcasting-Satellite Service shown in the / Plan /, or for which the procedures in this / Article / have been successfully applied, whether or not the station has been brought into use, or

- to include in the / Plan / a new frequency assignment to a space station in the Broadcasting-Satellite Service, or

- to cancel a frequency assignment to a space station in the Broadcasting-Satellite Service,

the following procedure shall be applied before any notification of the frequency assignment is made to the International Frequency Registration Board (see / Article 5 / of / this Agreement / / these Final Acts /).

4.2 In the remainder of the present / Article /, the term "frequency assignment in accordance with the / Agreement / / Final Acts /" means any frequency assignment appearing in the / Plan / or for which the procedure of this / Article / has been successfully applied.

4.3 Proposed changes to a frequency assignment in accordance with the / Agreement / / Final Acts / or the inclusion in the / Plan / of a new frequency assignment

4.3.1 Any Administration proposing a change in the characteristics of a frequency assignment in accordance with the / Agreement / / Final Acts / or the inclusion of a new frequency assignment in the / Plan / shall seek the agreement of those Administrations :

- having a frequency assignment to a space station in the Broadcasting-Satellite Service in the same channel or an adjacent channel in accordance with the / Plan /, or in respect of which, modifications to the / Plan / have been published by the Board in accordance with the provision of this / Article /; or

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* The expression "frequency assignment to a space station" wherever it appears in this / Article /, shall be understood to refer to a frequency assignment associated with a given orbital position.

- having no frequency assignment in the Broadcasting-Satellite Service in the channel concerned but in whose territory the power flux-density value exceeds the prescribed limit as a result of the proposed modification; or

- having a frequency assignment in the band 11.7 - 12.2 GHz to a space station in the Fixed-Satellite Service recorded in the Master Register or for which the information prescribed in No. /639AC*/ /639AL*/ of the Radio Regulations (Geneva, 1976) has been published;

/- having a frequency assignment in the band 11.7 - 12.2 GHz to a space station in the Fixed-Satellite Service recorded in the Master Register, or which has been coordinated or is being coordinated under the provisions of No. 639AJ of the Radio Regulations;/

which are considered to be affected. A frequency assignment is considered to be affected when the limits shown in /Appendix A/ are exceeded.

4.3.2 An Administration intending to make a modification to the /Plan/ shall send to the Board /not earlier than three years, but not later than 18 months, before the date on which the assignment is to be brought into use/ the relevant information listed in /Appendix B/.

4.3.2.1 Where as a result of the intended modification the limits defined in /Appendix A/ are not exceeded, this fact shall be indicated when submitting to the Board the information required by 4.3.2. The Board shall then publish this information in a special section of its weekly circular.

4.3.2.2 In all other cases the Administration shall notify the Board of the names of the Administrations whose agreement it considers should be sought in order to arrive at the agreement in 4.3.1 as well as of those with whom agreement has already been reached.

4.3.3 The Board shall determine on the basis of /Appendix A/ the Administrations whose frequency assignments are considered to be affected within the meaning of 4.3.1. The Board shall include the names of those Administrations with the information received under 4.3.2.2 and shall publish the complete information in a special section of its weekly circular. The results of these calculations shall be sent immediately by the Board to the Administration proposing the modification to the /Plan/.

4.3.4 The Board shall send a telegram to the Administrations listed in the special section of the weekly circular drawing their attention to the information it contains and shall also send them the results of its calculations.

4.3.5 Any Administration which considers that it should have been included in the list of Administrations whose services are considered to be affected may, giving the technical basis for so doing, request the Board to include its name. The Board shall study this request on the basis of /Appendix A/ and, where appropriate, add the name of the Administration to the list and in any case send a copy of the request with an appropriate recommendation to the Administration proposing the modification to the /Plan/.

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* or the corresponding number of the Radio Regulations currently in force.

Note: Appendix A contains the p.f.d limits
Appendix B lists the basic characteristics of the frequency assignments.

4.3.6 Any change in a frequency assignment in accordance with the /Agreement/ /Final Acts/ or any inclusion in the /Plan/ of a new frequency assignment which would have the effect of exceeding the limits specified in /Appendix A/ shall be subject to the agreement of all affected Administrations.

4.3.7 Either the Administration seeking agreement, or the Administration with which agreement is sought, may request any additional information of a technical character it considers necessary. The Board shall be informed of such requests.

4.3.8 Comments from Administrations on the information published pursuant to 4.3.3 should be sent either directly to the Administration proposing the modification or through the Board. In any event the Board shall be informed that comments have been made.

4.3.9 An Administration which has not notified its comments either to the Administration seeking agreement or to the Board within a period of 120 days following the date of the weekly circular referred to in 4.3.2.1 or 4.3.3 shall be understood to have agreed to the proposed change. This time limit may be extended by 80 days in the case of an Administration which has requested additional information in response to 4.3.7 or of an Administration which has requested the assistance of the Board in conformity with 4.3.16. In the latter case the Board shall inform the Administrations concerned of this request.

4.3.10 If in seeking agreement an Administration makes changes in its initial proposal, it shall again apply the provisions of 4.3.2 and the consequent procedure with respect to any other Administration whose services might be affected due to changes made to the initial proposal.

4.3.11 If no comments have been received on expiry of the periods specified in 4.3.9 or if agreement has been reached with the Administrations which have made comments and with which agreement is necessary, the Administration proposing the modification may continue with the appropriate procedure and shall inform the Board indicating the final characteristics of the frequency assignment together with the names of the Administrations with which agreement has been reached.

/4.3.12 When the proposed modification to the/Plan/involves developing countries Administrations shall seek all practicable solutions conducive to economical development of the broadcasting-satellite system of these countries./

4.3.13 The Board shall publish in a special section of its weekly circular the information received under 4.3.11 together with the names of any Administrations with which the provisions of this /Article/ have been successfully applied. The frequency assignment concerned shall enjoy the same status as those appearing in the /Plan/ and will be considered as a frequency assignment in accordance with the /Agreement/ /Final Acts/.

4.3.14 When an Administration proposing to change the characteristics of a frequency assignment or to make a new frequency assignment receives notice of disagreement from an Administration whose agreement it has sought, it should first endeavour to solve the problem by exploring all possible means of meeting its requirement. If the problem still cannot be solved by such means, the Administration whose agreement has been sought should endeavour to overcome the difficulties as far as possible, and shall state the technical reasons for any disagreement if the Administration seeking the agreement requests it to do so.

4.3.15 If no agreement is reached between the Administrations concerned, the Board shall make any study that may be requested by these Administrations; the Board shall inform them of the result of the study and shall make such recommendations it may be able to offer for the solution of the problem.

4.3.16 Any Administration may at any stage in the procedure described, or before applying it, request the assistance of the Board particularly in seeking the agreement of another administration.

/ 4.3.17 If after application of the procedure described in this / Article / the Administrations concerned have been unable to reach agreement, they may resort to the procedure described in Article 50 of the Convention. Administrations may also agree to apply the Optional Additional Protocol to the Convention. /

4.3.18 The relevant provisions of / Article 5 / of this / Agreement / / these Final Acts / shall be applied when frequency assignments are notified to the Board.

4.4 Cancellation of frequency assignments

When a frequency assignment in accordance with the / Agreement / / Final Acts / is released, whether or not as a result of a modification, the Administration concerned shall immediately so inform the Board. The Board shall publish this information in a special section of its weekly circular.

4.5 Master copy of the / Plan /

4.5.1 The Board shall maintain an up-to-date master copy of the / Plan / taking account of the application of the procedure specified in this / Article. / The Board shall prepare a document listing the amendments to be made to the / Plan / as a result of modifications made in accordance with the procedure in this / Article /.

4.5.2 The Secretary-General shall be informed by the Board of modifications made to the / Plan / and shall publish an up-to-date version of the / Plan / in an appropriate form as and when the circumstances justify / and in any case every three years /.

/ Article 5 /

NOTIFICATION, EXAMINATION AND RECORDING IN THE MASTER REGISTER OF FREQUENCY ASSIGNMENTS TO SPACE STATIONS IN THE BROADCASTING-SATELLITE SERVICE

5.1 Notification

5.1.1 Whenever an Administration intends to bring into use a frequency assigment to a space station in the Broadcasting-Satellite Service it shall notify this frequency assignment to the Board. The notifying Administration shall apply for this purpose the following provisions.

5.1.2 For any notification under paragraph 5.1.1 an individual notice for each frequency assignment shall be drawn up as prescribed in / Appendix 1A[3] /, the various Sections of which specify 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.

5.1.3 Each notice must reach the Board not earlier than three years before the date on which the frequency assignment is to be brought into use. The notice must reach the Board in any case not later than ninety days[1] before this date.

5.1.4 Any frequency assignment, the notice of which reaches the Board after the applicable period specified in paragraph 5.1.3 shall, where it is to be recorded, bear a remark in the Master Register to indicate that it is not in conformity with paragraph 5.1.3.

5.1.5 Any notice made under paragraph 5.1.1 which does not contain the characteristics specified in / Appendix 1A[3] / shall be returned by the Board immediately by airmail to the notifying Administration with the reasons therefore.

5.1.6 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 of the Radio Regulations*, which shall contain the particulars of all such notices received since the publication of the previous circular.

5.1.7 The Circular shall constitute the acknowledgement to the notifying Administration of the receipt of a complete notice.

5.1.3.1 [1] The notifying Administration shall take this limit into account when deciding, where appropriate, to initiate the co-ordination procedure(s).

Note: /Appendix 1A/ in paragraph 5.1.2 corresponds with / Appendix B / in / Article 4 / paragraph 4.3.2.

3) These characteristics and the / Appendix / are to be established by the Conference.

* or the corresponding number of the Radio Regulations currently into force.

5.1.8 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.

5.2 Examination and recording

5.2.1 The Board shall examine each notice:

a) with respect to its conformity with the Convention and the relevant provisions of the Radio Regulations and / Appendix .. /[1] (with the exception of those relating to conformity with the / Plan /);

b) with respect to its conformity with the / Plan /.

5.2.2 Where the Board reaches a favourable finding with respect to 5.2.1, the frequency assignment of a / Contracting Member / / Member / / Administration / shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d of the Master Register. In relations between / Contracting Members / / Members / / Administrations / all frequency assignments brought into use in conformity with the / Agreement / / Final Acts / and recorded in the Master Register shall be considered to have the same status irrespective of the dates entered in Column 2d for such frequency assignments.

5.2.3 Where the Board reaches an unfavourable finding with respect to paragraph 5.2.1, 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 a satisfactory solution of the problem.

5.2.4 Where the notifying Administration resubmits the notice and the Finding of the Board becomes favorable with respect to 5.2.1, the notice shall be treated as in 5.2.2.

/ 5.2.5 If the notifying Administration resubmits the notice without modification and insists that the notice should be reconsidered, if the Board's Finding with respect to 5.2.1 remains unfavourable, the notification should be returned to the notifying Administration in accordance with 5.2.3. /

/ 5.2.5 If the notiying Administration resubmits the notice without modification and insists that the notice should be reconsidered, if the Board's Finding with respect to 5.2.1 remains unfavourable, the frequency assignment is recorded in the Master Register on the understanding that the notifying Administration has undertaken upon receipt of advice of harmful interference to eliminate this harmful interference. The recording will bear a remark in the Master Register to indicate that is recorded for information purposes only. /

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1) This /Appendix/ relates to the sharing criteria

5.2.6 If the use of a frequency assignment not in conformity with the / Agreement / / Final Acts / causes harmful interference to the reception of the emissions effectuated by a space station in the Broadcasting-Satellite Service _ using a frequency assignment in conformity with the / Agreement / / Final Acts /, _ / or to stations of other countries which are, in conformity with this / Agreement / / Final Acts / /, recorded in the Master Register, the Administration having jurisdiction over the interfering station on being advised accordingly shall take immediate measures to eliminate the interference.

5.3 Recording of frequency assignments notified before being brought into use

5.3.1 If a frequency assignment notified in advance of bringing into use has received a favouable finding by the Board with respect to the provisions of paragraph 5.2.1, it shall be entered provisionally in the Master Register with a special symbol in the Remarks Column indicating the provisional nature of that entry.

5.3.2 If, within 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.

5.3.3 If the Board does not receive this confirmation within the period referred to above, the entry concerned shall be cancelled. The Board shall advise the administration concerned before taking such action.

5.4 Recording in the Master Register

5.4.1 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 unfavourable finding shall be inserted in the Remarks Column. /

5.4.2 The date in Column 2c shall be the date of putting into use notified by the administration concerned. It is given for information only.

5.5 / Review of Findings /

5.5.1 / 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. /

5.5.2 / The Board, in the light of all the data at its disposal shall review the matter, and shall render and appropriate finding, informing the notifying administration prior either to the promulgation of its finding or to any recording action. /

5.6 Cancellation of Entries in the Master Register

5.6.1 In case of permanent discontinuance of the use of any recorded frequency assignment, the notifying administration shall inform the Board within ninety days of such discontinuance, whereupon the entry shall be removed from the Master Register.

5.6.2 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.

5.6.3 If, in connection with an inquiry by the Board under the terms of the preceding paragraph, the notifying administration has failed to supply the Board within forty-five 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.

Miscellaneous provisions

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.

The Board shall thereupon prepare and forward to the administration concerned a report containing its findings and recommendations for the solution of the problem.

2. 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 ninety 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.

3. If it is requested by any administration, particularly by an administration of a country in need of special assistance, and if the circumstances appear to warrant, the Board, using such means at its disposal as are appropriate in the circumstances, shall render its assistance for the computation necessary to the verification of the limits set in Appendices /......./.

4. 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, the Recommendation the C.C.I.R., the state of the radio art and the development of new transmission techniques.

5. 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 of the Radio Regulations.

6. In case a Member of the Union avails itself of the provisions of Article 50 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.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 174-E
28 January 1977
Original: English

WORKING GROUP 6A

REPORT OF SUB-WORKING GROUP 6A1

The terms of reference of the Sub-Working Group:

- "To provide a set of procedures covering the co-ordination, notification and registration of broadcasting-satellite stations appearing in an a priori Plan (or Plans) and procedures to allow subsequent modifications to such a Plan (or Plans)".

The Group accepted the proposal to base its work initially on the detailed procedural steps, that would be required in relation to an a priori Plan set out in the Annex to Document No. 11 (Italy) taking account also of the relative detailed proposals in Document No. 18 (Japan). It was made clear that this approach should in no way inhibit the expression of views by other delegations participating in the work of the Group.

From the initial general discussion of the procedures and of the principles involved it was decided to set up a small drafting group to facilitate the work of the main Sub-Group. But the interest of delegations in the detailed procedures was such that it was necessary to conduct the discussions in the style of full Sub-Group meetings.

The discussions in the 6A1 Drafting Group covered both questions of principle and procedure and the results of these discussions are reflected in the terms of the procedures set out in the Annex to this Report.

The main points to be drawn to the attention of Working Group 6A are that:

1) There are references in square brackets to the terms / Contracting Member /, / Administration /, / Agreement /, / Article /, / Plan / and / Appendix /. The appropriate terms to appear in the procedures will be determined in the light of the decisions taken elsewhere;

2) Paragraph 4.3.1, third inset, line 3 includes in square brackets the references to Nos. 639AC and 639AL of the Radio Regulations. The problem was one of endeavouring to arrange a practical basis on which an Administration proposing a change might take account of the Fixed-Satellite Services. The proposal to take account of the Fixed-Satellite Service for which information had been published in advance (any time up to five years) did not meet the concern of the United States delegation. This question is therefore referred to Working Group 6A for further examination;

3) Paragraph 4.3.5 contains phrases in square brackets in lines 2 and 3. The second phrase has the effet of referring to "the services" affected;

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4) Paragraph 4.3.6 appears in square brackets because the Sub-Working Group were not able to reach a preference either

   a) make clear, in the terms of paragraph 4.3.6 at this point in the procedure, that proposing Administrations must have the agreement of those Administrations affected under the terms of paragraph 4.3.1 before the Administration proposing the modification may proceed any further with its proposed modification; or

   b) that paragraph 4.3.1 should be amplified to make clear that Administrations seeking the agreement of the other Administrations concerned must also have that agreement before implementing the proposed change;

5) Paragraph 4.3.9 contains references to alternative periods expressed in terms of days about which the Group were unable to reach agreement;

6) Paragraph 4.3.12 is included in square brackets to enable wider consideration to be given to the question whether this paragraph which is of a general character should be included in a detailed procedure;

7) Paragraph 4.3.17 is in square brackets pending further consideration of paragraphs 4.3.6 and 5.2.5;

8) Paragraph 5.2.5. There are two versions of this paragraph:

   The first is related to the philosophy that modifications to the / Plan / should not be made without the agreement of those Administrations concerned vide / 4.3.6 /;

   The second version of 5.2.5 allows for a type of insistence procedure;

9) Paragraph 5.2.6 which also contains a few words in square brackets but which will need to take account of the discussions on paragraph 5.2.5.

I wish to place on record my sincere appreciation of the helpful and constructive way in which the delegates attending the meetings of Sub-Working Group 6A1 contributed to the work which has been achieved.

It is recognised that the outcome of the work of Sub-Working Group 6A1 has been developed in relation to an a priori Plan and that consequently it will be necessary, if other than an a priori Plan emerges, to ensure that the procedures detailed in the Annex satisfactorily cover such a situation.

Annex: 1

A. O. CARTER
Chairman of Sub-Working Group 6A1

ANNEX

/ Article 4 /

PROCEDURE FOR MODIFICATIONS TO THE /PLAN/

4.1 When a / Contracting Member / / Administration / intends to make a modification to the / Plan /, i.e. either

- to change the characteristics of any of its frequency assignments to a space station* in the Broadcasting-Satellite Service shown in the / Plan /, or for which the procedures in this / Article / have been successfully applied, whether or not the station has been brought into use, or

- to include in the / Plan / a new frequency assignment to a space station in its Broadcasting-Satellite Service, or

- to cancel a frequency assignment to a space station in its Broadcasting-Satellite Service,

the following procedure shall be applied before any notification of the frequency assignment is made to the International Frequency Registration Board (see / Article 5 / of this / Agreement /).

4.2 In the remainder of the present / Article /, the term "frequency assignment in accordance with the / Agreement /" means any frequency assignment appearing in the / Plan / or for which the procedure of this / Article / has been successfully applied.

4.3 Proposed changes to a frequency assignment in accordance with the / Agreement / or the inclusion in the / Plan / of a new frequency assignment

4.3.1 Any Administration proposing a change in the characteristics of a frequency assignment in accordance with the / Agreement / or the inclusion of a new frequency assignment in the / Plan / shall seek the agreement of those Administrations:

- having a frequency assignment to a space station in the Broadcasting-Satellite Service in the same channel or an adjacent channel in accordance with the / Plan /, or in respect of which, modifications to the / Plan / have been published by the Board in accordance with the provision of this / Article /; or

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* The expression "frequency assignment to a space station" wherever it appears in this / Article /, shall be understood to refer to a frequency assignment associated with a given orbital position.

- having no frequency assignment for the Broadcasting-Satellite Service in the channel concerned but having or intending to have terrestrial services in the frequency band 11.7 - 12.5 GHz in Region 1 and 11.7 - 12.2 GHz in Regions 2 and 3; or

- having a frequency assignment in the band 11.7 - 12.2 GHz to a space station in the Fixed-Satellite Service recorded in the Master Register or for which the information prescribed in No. /639AC*/ /639AL*/ of the Radio Regulations (Geneva, 1976) has been published;

which are considered to be affected. A frequency assignment is considered to be affected when the limits shown in / Appendix A / are exceeded.

4.3.2 An Administration intending to make a modification to the / Plan / shall send to the Board the relevant information listed in / Appendix B /.

4.3.2.1 Where as a result of the intended modification the limits defined in / Appendix A / are not exceeded, this fact shall be indicated when submitting to the Board the information required by 4.3.2. The Board shall then publish this information in a special section of its weekly circular.

4.3.2.2 In all other cases the Administration shall notify the Board of the names of the Administrations whose agreement it considers should be sought in order to arrive at the agreement in 4.3.1 as well as of those with whom agreement has already been reached.

4.3.3 The Board shall determine on the basis of / Appendix A / the Administrations whose frequency assignments are considered to be affected within the meaning of 4.3.1. The Board shall include the names of those Administrations with the information received under 4.3.2.2 and shall publish the complete information in a special section of its weekly circular. The results of these calculations shall be sent immediately by the Board to the Administration proposing the modification to the / Plan /.

4.3.4 The Board shall send a telegram to the Administrations listed in the special section of the weekly circular drawing their attention to the information it contains and shall also send them the results of its calculations.

4.3.5 Any Administration which considers that it should have been included in the list of Administration / whose services are / considered to be affected may, giving the technical basis for so doing, request the Board to include its name. The Board shall study this request on the basis of / Appendix A / and, where appropriate, add the name of the Administration to the list and in any case send a copy of the request with an appropriate recommendation to the Administration proposing the modification to the / Plan /.

/4.3.6 Any intended change in a frequency assignment in accordance with the / Agreement / or inclusion in the / Plan / of a new frequency assignment that would degrade the protection of the services concerned in 4.3.1 beyond the limits set in / Appendix A / must be subject to the agreement of all affected Administrations./

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* or the corresponding number of the Radio Regulations currently in force.

Note: Appendix A contains the p.f.d limits
Appendix B lists the basic characteristics of the frequency assignments.

4.3.7 Either the Administration seeking agreement, or the Administration with which agreement is sought, may request any additional information it considers necessary. The Board shall be informed of such requests.

4.3.8 Comments from Administrations on the information published pursuant to 4.3.3 should be sent either directly to the Administration proposing the modification or through the Board. In any event the Board shall be informed that comments have been made.

4.3.9 An Administration which has not notified its comments either to the Administration seeking agreement or to the Board within a period of / 120 days / / 150 days / following the date of the weekly circular referred to in 4.3.2.1 or 4.3.3 shall be understood to have agreed to the proposed change. This time limit may be extended by / 60 days / / 80 days / in the case of an Administration which has requested additional information in response to 4.3.7 or of an Administration which has requested the assistance of the Board in conformity with 4.3.16. In the latter case the Board shall inform the Administrations concerned of this request.

4.3.10 If in seeking agreement an Administration makes changes in its initial proposal, it shall again apply the provisions of 4.3.2 and the consequent procedure with respect to any other Administration whose services might be affected due to changes made to the initial proposal.

4.3.11 If no comments have been received on expiry of the periods specified in 4.3.9 or if agreement has been reached with the Administrations which have made comments and with which agreement is necessary, the Administration proposing the modification may continue with the appropriate procedure and shall inform the Board indicating the final characteristics of the frequency assignment together with the names the Administrations with which agreement has been reached.

/ 4.3.12 When the proposed modification to the / Plan / involves developing countries Administrations shall seek all practicable solutions conducive to economical development of the broadcasting-satellite system of these countries. /

4.3.13 The Board shall publish in a special section of its weekly circular the information received under 4.3.11 together with the names of any Administrations with which the provisions of this / Article / have been successfully applied. The frequency assignment concerned shall enjoy the same status as those appearing in the / Plan / and will be considered as a frequency assignment in accordance with the / Agreement /.

4.3.14 When an Administration proposing to change the characteristics of a frequency assignment or to make a new frequency assignment receives notice of disagreement from an Administration whose agreement it has sought, it should first endeavour to solve the problem by exploring all possible means of meeting its requirement. If the problem still cannot be solved by such means, the Administration whose agreement has been sought should endeavour to overcome the difficulties as far as possible, and should state the technical reasons for any disagreement if the Administration seeking the agreement requests it to do so.

4.3.15 If no agreement is reached between the Administrations concerned, the Board shall make any study that may be requested by these Administrations; the Board shall inform them of the result of the study and shall make such recommendations it may be able to offer for the solution of the problem.

4.3.16 Any Administration may at any stage in the procedure described, or before applying it, request the assistance of the Board particularly in seeking the agreement of another administration.

/ 4.3.17 If after application of the procedure described in this / Article / the Administrations concerned have been unable to reach agreement, they may resort to the procedure described in Article 50 of the Convention. Administrations may also agree to apply the Optional Additional Protocol to the Convention. /

4.3.18 The relevant provisions of / Article 5 / of this / Agreement / shall be applied when frequency assignments are notified to the Board.

4.4 Cancellation of frequency assignments

When a frequency assignment in accordance with the / Agreement / is released, whether or not as a result of a modification, the Administration concerned shall immediately so inform the Board. The Board shall publish this information in a special section of its weekly circular.

4.5 Master copy of the / Plan /

4.5.1 The Board shall maintain an up-to-date master copy of the / Plan / taking account of the application of the procedure specified in this / Article / The Board shall prepare a document listing the amendments to be made to the / Plan / as a result of modifications made in accordance with the procedure in this / Article /.

4.5.2 The Secretary-General shall be informed by the Board of modifications made to the / Plan / and shall publish an up-to-date version of the / Plan / in an appropriate form as and when the circumstances justify / and in any case every three years /.

/ Article 5 /

NOTIFICATION, EXAMINATION AND RECORDING IN THE MASTER REGISTER OF FREQUENCY ASSIGNMENTS TO SPACE STATIONS IN THE BROADCASTING-SATELLITE SERVICE

5.1 Notification

5.1.1 Whenever an Administration intends to bring into use a frequency assigment to a space station in the Broadcasting-Satellite Service it shall notify this frequency assignment to the Board. The notifying Administration shall apply for this purpose the following provisions.

5.1.2 For any notification under paragraph 5.1.1 an individual notice for each frequency assignment shall be drawn up as prescribed in / Appendix 1A[3] /, the various Sections of which specify 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.

5.1.3 Each notice must reach the Board not earlier than three years before the date on which the frequency assignment is to be brought into use. The notice must reach the Board in any case not later than ninety days[1] before this date.

5.1.4 Any frequency assignment, the notice of which reaches the Board after the applicable period specified in paragraph 5.1.3 shall, where it is to be recorded, bear a remark in the Master Register to indicate that it is not in conformity with paragraph 5.1.3.

5.1.5 Any notice made under paragraph 5.1.1 which does not contain the characteristics specified in / Appendix 1A[3] / shall be returned by the Board immediately by airmail to the notifying Administration with the reasons therefore.

5.1.6 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 of the Radio Regulations*, which shall contain the particulars of all such notices received since the publication of the previous circular.

5.1.7 The Circular shall constitute the acknowledgement to the notifying Administration of the receipt of a complete notice.

5.1.3.1 [1] The notifying Administration shall take this limit into account when deciding, where appropriate, to initiate the co-ordination procedure(s).

Note: / Appendix 1A / in paragraph 5.1.2 corresponds with / Appendix B / in / Article 4 / paragraph 4.3.2.

3) These characteristics and the / Appendix / are to be established by the Conference.

* or the corresponding number of the Radio Regulations currently into force.

5.1.8 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.

5.2 Examination and recording

5.2.1 The Board shall examine each notice:

a) with respect to its conformity with the Convention and the relevant provisions of the Radio Regulations and / Appendix .. /[1] (with the exception of those relating to conformity with the / Plan /);

b) with respect to its conformity with the / Plan /.

5.2.2 Where the Board reaches a favourable finding with respect to 5.2.1, the frequency assignment of / a Contracting Member / / Administration / shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d of the Master Register. In relations between / Contracting Members / / Administrations / all frequency assignments brought into use in conformity with the / Agreement / and recorded in the Master Register shall be considered to have the same status irrespective of the dates entered in Column 2d for such frequency assignments.

5.2.3 Where the Board reaches an unfavourable finding with respect to paragraph 5.2.1, 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 a satisfactory solution of the problem.

5.2.4 Where the notifying Administration resubmits the notice and the Finding of the Board becomes favorable with respect to 5.2.1, the notice shall be treated as in 5.2.2.

/ 5.2.5 If the notifying Administration resubmits the notice without modification and insists that the notice should be reconsidered, if the Board's Finding with respect to 5.2.1 remains unfavourable, the notification should be returned to the notifying Administration in accordance with 5.2.3. /

/ 5.2.5 If the notiying Administration resubmits the notice without modification and insists that the notice should be reconsidered, if the Board's Finding with respect to 5.2.1 remains unfavourable, the frequency assignment is recorded in the Master Register on the understanding that the notifying Administration has undertaken upon receipt of advice of harmful interference to eliminate this harmful interference. The recording will bear a remark in the Master Register to indicate that is recorded for information purposes only. /

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1) This /Appendix/ relates to the sharing criteria

5.2.6 If the use of a frequency assignment not in conformity with the / Agreement / causes harmful interference to the reception of the emissions effectuated by a space station in the Broadcasting-Satellite Service using a frequency assignment in conformity with the / Agreement /, /or to stations of other countries which are, in conformity with this / Agreement / /, recorded in the Master Register, the Administration having jurisdiction over the interfering station on being advised accordingly shall take immediate measures to eliminate the interference.

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Document No. 175-E
31 January 1977

PLENARY MEETING

B.2

2nd SERIES OF TEXTS SUBMITTED BY THE EDITORIAL COMMITTEE TO THE PLENARY MEETING

The following texts are submitted to the Plenary Meeting for first reading :

Source	Document No.	Title
C.4	128	Recommendation No. AA

Miss M. HUET
Chairman of the
Editorial Committee

Annex : 1 page

RECOMMENDATION No. AA

to the CCIR relating to Out-of-Band Spurious Emissions

The World Broadcasting-Satellite Administrative Radio Conference, Geneva, 1977,

considering

a) that space stations operating in the broadcasting-satellite service at high power levels are likely to cause interference to services in adjacent and in harmonically related frequency bands due to spurious emissions;

b) that, in planning of the broadcasting-satellite service, account must be taken of the need to reduce interference to services operating in the adjacent bands to acceptable levels at the lower and upper edges of the bands 11.7-12.2 GHz in Regions 2 and 3 and 11.7-12.5 GHz in Region 1, and to the radio astronomy service which has an exclusive allocation at 23.6-24 GHz in all three Regions.

invites the CCIR

to continue, as a matter of urgency, its studies of the technical and operational aspects of spurious emissions from broadcasting satellites and draw up a report on this subject at the special joint meeting of CCIR study groups to be held in preparation for the 1979 World Administrative Radio Conference.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 176-E
3 February 1977
Original : English

WORKING GROUP 6B

SECOND REPORT OF SUB-WORKING GROUP 6B1

1. The Sub-Working Group has prepared the text contained in the Annex to provide procedures for the implementation of stations in the Fixed-Satellite Service in the band 11.7 - 12.2 GHz in Region 2 in cases where broadcasting satellite stations are involved.

2. The Annex is largely based on procedures contained in Article 9A of the Radio Regulations. The most significant change is the substitution of a power flux-density limit, in lieu of Appendix 29, to determine the need for initiating the coordination procedure.

3. It is intended that the Annex would apply only with respect to broadcasting-satellite stations which are contained in the / Plan /. The implementation of stations in the Fixed-Satellite Service with respect to broadcasting-satellite stations which may not be in the / Plan /, and with respect to other classes of stations will still be treated in accordance with Article 9A of the Radio Regulations.

4. In the preparation of the Annex it has been understood that only geostationary satellites would be utilized for space services in the band in question. It would be desirable if that restriction could be stated in an appropriate section of the Final Acts.

5. In order to complete the text in the Annex, several items of technical information are needed from Committee 4, as follows :

a) Appendix 1 to the Annex is to establish the maximum power flux-density for purposes of initiating coordination. Such information is contained in Document No. 188 which is under review in Committee 4.

b) Appendix 1A and Appendix 1B to the Radio Regulations need to be reviewed to ascertain that they provide for all the information needed to carry out the coordination process. It is understood that Committee 4 has undertaken a similar review in response to Document No. 194.

Annex : 1

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ANNEX

ARTICLE /_7

PRELIMINARY PROCEDURES, NOTIFICATION AND RECORDING IN THE MASTER INTERNATIONAL FREQUENCY REGISTER OF FREQUENCY ASSIGNMENTS TO STATIONS IN THE FIXED-SATELLITE SERVICE IN THE FREQUENCY BAND 11.7 - 12.2 GHz (IN REGION 2) IN CASES WHERE BROADCASTING-SATELLITE STATIONS ARE INVOLVED[1)]

SECTION I - PROCEDURE FOR THE ADVANCE PUBLICATION OF INFORMATION ON PLANNED FIXED-SATELLITE SYSTEMS

1.1 An administration which intends to establish a fixed-satellite system shall, prior to the procedure in accordance with paragraph 2.1 where applicable, send to the International Frequency Registration Board not earlier than five years before the date of bringing into service each satellite network of the planned system, the information listed in Appendix 1B to the Radio Regulations /_2)_7

1.2 Any amendments to the information sent concerning a planned satellite system in accordance with paragraph 1.1 shall also be sent to the Board as soon as they become available.

1.3 The Board shall publish the information sent under paragraphs 1.1 and 1.2 in a special section of its weekly circular and shall also, when the weekly circular contains such information, so advise all administrations by circular telegram.

1.4 If, after studying the information published under paragraph 1.3, any administration is of the opinion that interference, which may be unacceptable, may be caused to its frequency assignments contained within the Broadcasting-Satellite /_Plan_7, it shall within ninety days after the date of the weekly circular publishing the information listed in Appendix 1B to the Radio Regulations, send its comments to the administration concerned. A copy of these comments shall also be sent to the Board. If no such comments are received from an administration within the period mentioned above, it may be assumed that that administration has no basic objections to the planned fixed-satellite network(s) of that system on which details have been published.

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1) These provisions do not replace the procedures prescribed in Article 9A of the Radio Regulations in cases where stations other than those of the Broadcasting-Satellite Service as contained in the /_Plan_7 are involved.

/_2) Committee 4 to advise if any additional information is needed_7

1.5 An administration receiving comments sent in accordance with paragraph 1.4 shall endeavour to resolve any difficulties that may arise without considering the possibility of adjustment to broadcasting-satellite systems of other administrations. If no such means can be found, the administration concerned is then free to apply to other administrations concerned to solve these difficulties, provided that any modification which may result to the /Plan/ are in accordance with Article /Article 4 (Document No. 187)/.

1.6 In their attempts to resolve the difficulties mentioned above, administrations may seek the assistance of the Board.

1.7 In complying with the provisions of paragraphs 1.5 and 1.6, an administration responsible for a planned fixed-satellite system shall, if necessary, defer its commencement of the coordination procedure of paragraph 2.1 or where this is not applicable, the sending of its notices to the Board, until one hundred and fifty days after the date of the weekly circular containing the information listed in Appendix 1B to the Radio Regulations on the relevant satellite network. However, in respect of those administrations with whom difficulties have been resolved or who have responded favourably, the coordination procedure, where applicable, may be commenced prior to the expiry of the one hundred and fifty days mentioned above.

1.8 An administration on behalf of which details of planned fixed-satellite networks in its system have been published, in accordance with the provisions of paragraphs 1.1 to 1.3, shall periodically inform the Board whether or not comments have been received and of the progress made, with other administrations, in resolving any difficulties. The Board shall publish this information in a special section of its weekly circular and shall also, when the weekly circular contains such information, so inform all administrations by circular telegram.

SECTION II - COORDINATION PROCEDURES TO BE APPLIED IN APPROPRIATE CASES

2.1 Before an administration notifies to the Board or brings into use any new or modified frequency assignment to a space station in the Fixed-Satellite Service, it shall seek the agreement of any other administration having an assignment to a broadcasting-satellite station appearing in the /Plan/, if

- any portion of the occupied bandwidth proposed for the space station in the Fixed-Satellite Service falls within the occupied bandwidth of a broadcasting-satellite assignment, and

- the power flux density which would be produced by the proposed fixed-satellite assignment exceeds the value specified in Appendix /1/[/*/].

For this purpose, the administration seeking agreement shall send to any other such administration the information listed in Appendix 1A to the Radio Regulations /1)/.

2.2 No additional agreement is necessary when an administration proposes to change the characteristics of an existing assignment in such a way as will, in respect of the Broadcasting-Satellite Service of another administration, meet the requirements of paragraph 2.1 above, or, where this assignment has previously been the subject of agreement, and will not cause any interference potential over that previously agreed.

2.3 An administration seeking coordination under paragraph 2.1 shall at the same time send to the Board a copy of the request for coordination with the information listed in Appendix 1A to the Radio Regulations and the name(s) of the administration(s) with which coordination is sought. The Board shall determine on the basis of Appendix 1 whose frequency assignments in the [Plan] are considered to be affected. The Board shall include the names of those administrations with the information received from the administration seeking agreement and shall publish this information in a special section of its weekly circular, together with a reference to the weekly circular in which details of the satellite system were published in accordance with Section I of this Article. When the weekly circular contains such information, the Board shall so inform all administrations by circular telegram.

2.4 An administration believing that it should have been included in the procedure under paragraph 2.1 shall have the right to request that it be brought into the procedure.

2.5 An administration with which coordination is sought under paragraph 2.1 shall acknowledge receipt of the coordination data immediately by telegram. If no acknowledgement is received within thirty days after the date of the weekly circular publishing the information under paragraph 2.3, the administration seeking coordination shall dispatch a telegram requesting acknowledgement, to which the receiving administration shall reply within a further period of thirty days. Upon receipt of the coordination data, an administration shall, having regard to the proposed date of bringing into use of the assignment for which agreement was requested, promptly examine the matter with regard to interference[2] which would be caused to the service rendered by its stations in respect of which coordination is sought under paragraph 2.1, and shall, within ninety days from the date of the relevant weekly circular, notify of its agreement. If the administration with which coordination is sought does not agree, it shall, within the same period, send to the administration seeking coordination the technical details upon which its disagreement is based, and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem. A copy of these comments shall also be sent to the Board.

[* to be provided by Committee 4]

[1) Committee 4 to advise if any additional information is needed]

2) The criteria to be employed in evaluating interference levels shall be based upon the technical information contained in [the Final Acts] or upon relevant CCIR Recommendations and shall be agreed between the administrations concerned.

2.6 An administration seeking coordination may request the Board to endeavour to effect coordination in those cases where :

a) an administration with which coordination is sought under paragraph 2.1 fails to acknowledge receipt, under paragraph 2.5, within sixty days after the date of the weekly circular publishing the information relating to the request for coordination;

b) an administration has acknowledged receipt under paragraph 2.5, but fails to give a decision within ninety days from the date of the relevant weekly circular;

c) there is disagreement between the administration seeking coordination and an administration with which coordination is sought as to the acceptable level of interference;

d) coordination 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 endeavour to effect such coordination.

2.7 Either the administration seeking coordination or an administration with which coordination is sought, or the Board, may request additional information which they may require to assess the level of interference to the services concerned.

2.8 Where the Board receives a request under paragraph 2.6 a), it shall forthwith send a telegram to the administration concerned requesting immediate acknowledgement.

2.9 Where the Board receives an acknowledgement following its action under paragraph 2.8, or where the Board receives a request under paragraph 2.6 b), it shall forthwith send a telegram to the administration concerned requesting an early decision in the matter.

2.10 Where the Board receives a request under paragraph 2.6 d), it shall endeavour to effect coordination in accordance with the provisions of paragraph 2.1, as appropriate. The Board shall also, where appropriate, act in accordance with paragraph 2.3. Where the Board receives no acknowledgement to its request for coordination within the periods specified in paragraph 2.5, it shall act in accordance with paragraph 2.8.

2.11 Where an administration fails to reply within thirty days of dispatch of the Board's telegram requesting an acknowledgement sent under paragraph 2.8, or fails to give a decision in the matter within thirty days of dispatch of the Board's telegram of request under paragraph 2.9, it shall be deemed that the administration with which coordination was sought has undertaken :

a) that no complaint will be made in respect of any harmful interference which may be caused to the services rendered by its broadcasting-satellite stations by the use of the assignment for which coordination was requested;

b) that its broadcasting-satellite stations will not cause harmful interference to the use of the assignment for which coordination was requested.

2.12 Where necessary, as part of the procedure under paragraph 2.6, the Board shall assess the level of interference. In any case, the Board shall inform the administrations concerned of the results obtained.

2.13 In the event of continuing disagreement between one administration seeking to effect coordination and one with which coordination has been sought, provided that the assistance of the Board has been requested, the administration seeking coordination may, after one hundred and fifty days from the date of the request for coordination, taking into consideration the provisions of paragraph 3.4, send its notice concerning the proposed assignment to the Board. In those circumstances the notifying administration shall undertake not to bring into use the frequency assignment until the condition in paragraph 4.11.2 can be fulfilled. But the administrations concerned may explore the possibility of reaching an agreement on the use of the proposed frequency assignment for a specified period.

SECTION III - NOTIFICATION OF FREQUENCY ASSIGNMENTS

3.1 Any frequency assignment to a space station in the Fixed-Satellite Service shall be notified to the Board :

a) if the use of the frequency concerned is capable of causing harmful interference to an assignment for a broadcasting-satellite station in the /Plan/[1] of another administration; or

b) if it is desired to obtain international recognition of the use of the frequency.

3.2 Similar notice shall be given for any frequency to be used for reception by an earth station where one or more of the conditions specified in paragraph 3.1 are applicable.

3.3 For any notification under paragraph 3.1 /or 3.2/, an individual notice for each frequency assignment shall be drawn up as prescribed in Appendix 1A to the Radio Regulations, the various Sections of which specify the basic characteristics to be furnished according to the case together with such further data as it may consider appropriate. /*/

3.4 Each notice must reach the Board not earlier than three years before the date on which the assignment is to be brought into use. The notice must reach the Board in any case not later than ninety days[2] before this date.

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1) Attention of administrations is specifically drawn to the application of paragraph 2.1 above.

/* Committee 4 to advise if any additional information is needed/

2) The notifying administration shall take this limit into account when deciding, where appropriate, to initiate the coordination procedure(s).

3.5 Any frequency assignment to an earth or space station, the notice of which reaches the Board after the applicable period specified in paragraph 3.4, shall, where it is to be recorded, bear a mark in the Master Register to indicate that it is not in conformity with paragraph 3.4.

SECTION IV - PROCEDURE FOR THE EXAMINATION OF NOTICES AND THE RECORDING OF FREQUENCY ASSIGNMENTS IN THE MASTER REGISTER

4.1 Any notice which does not contain at least those basic characteristics specified in Appendix 1A to the Radio Regulations shall be returned by the Board immediately, by airmail, to the notifying administration with the reasons therefor.

4.2 Upon receipt of a complete notice, the Board shall include the particulars thereof, with the date of receipt, in its weekly circular, which shall contain the particulars of all such notices received since the publication of the previous circular.

4.3 The circular shall constitute the acknowledgement to the notifying administration of the receipt of a complete notice.

4.4 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.

4.5 The Board shall examine each notice :

4.5.1 a) with respect to its conformity with the Convention, the relevant provisions of the Radio Regulations and the provisions of the /Final Acts/ (with the exception of those relating to the coordination procedures and the probability of harmful interference);

4.5.2 b) where appropriate, with respect to its conformity with the provisions of paragraph 2.1, relating to the coordination of the use of the frequency assignment with the other administrations concerned having an assignment to a broadcasting-satellite station appearing in the /Plan/;

4.5.3 c) where appropriate, with respect to the probability of harmful interference to the service rendered by a broadcasting-satellite station for which a frequency assignment appears in the /Plan/.

4.6 Depending upon the findings of the Board subsequent to the examination prescribed in paragraphs 4.5.1, 4.5.2 and 4.5.3, as appropriate, further action shall be as follows :

4.7 Finding favourable with respect to paragraph 4.5.1 in cases where the provisions of paragraph 4.5.2 are not applicable.

4.7.1 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.

4.8 Finding unfavourable with respect to paragraph 4.5.1.

4.8.1 Where the notice includes a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115 of the Radio Regulations and the finding is favourable with respect to paragraphs 4.5.2 and 4.5.3, as appropriate, 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.

4.8.2 Where the notice includes a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115 of the Radio Regulations and the finding is unfavourable with respect to paragraphs 4.5.2 or 4.5.3, as appropriate, the notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding. In those circumstances the notifying administration shall undertake not to bring into use the frequency assignment until the condition in paragraph 4.8.1 can be fulfilled. The agreement of the administrations affected can also be obtained in accordance with this Article for a specified period. In that event the Board shall be notified of the agreement and the frequency assignment shall be recorded in the Master Register with a note indicating that the frequency assignment is valid only for the period specified. The notifying administration using the frequency assignment over a specified period may not use those circumstances subsequently for a continued use of the frequency beyond the period specified if it does not obtain the agreement of the administration(s) concerned. The date of receipt by the Board of the original notice shall be entered in Column 2d.

4.8.3 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 of the Radio Regulations, 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.

4.8.4 If the notifying administration resubmits the notice unchanged, it shall be treated in accordance with the provisions of paragraph 4.8.3. 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 of the Radio Regulations, it shall be treated in accordance with the provisions of paragraph 4.8.1 or 4.8.2, as appropriate. If it is resubmitted with modifications which, after re-examination, result in a favourable finding by the Board with respect to paragraph 4.5.1, it shall be treated as a new notice.

4.9 Finding favourable with respect to paragraph 4.5.1 in cases where the provisions of paragraph 4.5.2 are applicable.

4.9.1 Where the Board finds that the coordination procedures mentioned in paragraph 4.5.2 have been successfully completed with all administrations whose assignments to broadcasting-satellite stations appearing in the /Plan/ 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.

4.9.2 Where the Board finds that the coordination procedure mentioned in paragraph 4.5.2 has not been applied, and the notifying administration requests the Board to effect the required coordination, the Board shall take appropriate action 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 paragraph 4.9.1. If the Board's efforts are unsuccessful, the notice shall be examined by the Board with respect to the provisions of paragraph 4.5.3.

4.9.3 Where the Board finds that the coordination procedure mentioned in paragraph 4.5.2 has not been applied, and the notifying administration does not request the Board to effect the required coordination, 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.

4.9.4 Where the notifying administration resubmits the notice and the Board finds that the coordination procedure mentioned in paragraph 4.5.2 have been successfully completed with all administrations whose assignments to broadcasting-satellite stations appearing in the /Plan/ 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.

4.9.5 Where the notifying administration resubmits the notice with a request that the Board effect the required coordination under paragraph 2.1, it shall be treated in accordance with the provisions of paragraph 4.9.2. 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.

4.9.6 Where the notifying administration resubmits the notice and states it has been unsuccessful in effecting the coordination, the Board shall inform the administrations concerned thereof. The notice shall be examined by the Board with respect to the provisions of paragraph 4.5.3, as appropriate. 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.

4.10 Finding favourable with respect to paragraphs 4.5.1 and 4.5.3.

4.10.1 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.

4.11 Finding favourable with respect to paragraph 4.5.1, but unfavourable with respect to paragraph 4.5.3.

4.11.1 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.

4.11.2 Should the notifying administration resubmit the notice with modifications which result, after re-examination, in a favourable finding by the Board with respect to paragraph 4.5.3, 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.

4.11.3 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 paragraph 4.11.2 to be applied, and should that administration insist upon reconsideration of the notice, but should the Board's finding remain unchanged, the notification should again be returned to the notifying administration in accordance with paragraph 4.11.1. In those circumstances, the notifying administration shall undertake not to bring into use the proposed frequency assignment until the condition in paragraph 4.11.2 can be fulfilled. The agreement of the administrations affected can also be obtained in accordance with this Article for a specified period. In that event the Board shall be notified of the agreement and the frequency assignment shall be recorded in the Master Register with a note in the Remarks Column indicating that the assignment is valid only for the specified period. The notifying administration using the frequency assignment over a specified period may not use those circumstances subsequently for a continued use of the frequency beyond the period specified if it does not obtain the agreement of the administration(s) concerned. The date of receipt by the Board of the original notice shall be entered in Column 2d.

4.12 Change in the basic characteristics of assignments already recorded in the Master Register.

4.12.1 A notice of a change in the basic characteristics of an assignment in the Fixed-Satellite Service already recorded, as specified in Appendix 1A of the Radio Regulations (except the name of the station or the name of the locality in which it is situated) shall be examined by the Board according to paragraph 4.5.1 and, where appropriate, paragraphs 4.5.2 and 4.5.3, and the provisions of paragraphs 4.7 to 4.11.3 inclusive shall apply. Where the change should be recorded, the original assignment shall be amended according to the notice.

4.12.2 However, in the case of a change in the characteristics of an assignment which is in conformity with paragraph 4.5.1, should the Board reach a favourable finding with respect to paragraphs 4.5.2 and 4.5.3, where appropriate, or find that the changes do not increase the probability of harmful interference to assignments to broadcasting-satellite stations appearing in the /Plan/, the amended assignment shall retain the original date in Column 2d. The date of receipt by the Board of the notice relating to the change shall be entered in the Remarks Column.

4.12.3 In applying the provisions 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.

4.13 Recording of frequency assignments in the Fixed-Satellite Service notified before being brought into use.

4.13.1 If a frequency assignment notified in advance of bringing into use has received a favourable finding by the Board with respect to paragraph 4.5.1 and, where appropriate, paragraphs 4.5.2 and 4.5.3, it shall be entered provisionally in the Master Register with a special symbol in the Remarks Column indicating the provisional nature of that entry.

4.13.2 If, within 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.

4.13.3 If the Board does not receive this confirmation within the period referred to in paragraph 4.13.2, the entry concerned shall be cancelled. The Board shall advise the administration concerned before taking such action.

SECTION V - RECORDING OF FINDINGS IN THE MASTER REGISTER

5. 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 unfavourable finding shall be inserted in the Remarks Column.

SECTION VI - CATEGORIES OF FREQUENCY ASSIGNMENTS

6.1 The date in Column 2c shall be the date of putting into use notified by the administration concerned. It is given for information only.

6.2 If harmful interference is actually caused to the reception of any broadcasting-satellite station whose frequency assignment appears in the /Plan/, by the use of a frequency assignment to a space radiocommunication station subsequently recorded in the Master Register in accordance with the provisions of paragraph 4.11.3, the station using the latter frequency assignment must, upon receipt of advice thereof, immediately eliminate this harmful interference.

6.3 If harmful interference to the reception of any broadcasting-satellite station whose assignment is in accordance with the /Plan/, is actually caused by the use of a frequency assignment which is not in conformity with paragraph 4.5.1, the station using the latter frequency assignment must, upon receipt of advice thereof, immediately eliminate this harmful interference.

SECTION VII - REVIEW OF FINDINGS

7.1 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.

7.2 The Board, in the light of all the data at its disposal shall review the matter, taking into account paragraph 4.5.1 and, where appropriate, paragraphs 4.5.2 and 4.5.3, and shall render an appropriate finding, informing the notifying administration prior either to the promulgation of its finding or to any recording action.

7.3 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.

7.4 If the finding with regard to the probability of harmful interference remains unfavourable, no change shall be made in the original entry.

SECTION VIII - MODIFICATION, CANCELLATION AND REVIEW OF ENTRIES IN THE MASTER REGISTER

8.1 Where the use of a recorded assignment to a station in the Fixed-Satellite Service is suspended for a period of eighteen months, the notifying administration shall, within this eighteen-month period, inform the Board of the date on which such use was suspended and of the date on which the assignment is to be brought back into regular use.

8.2 Whenever it appears to the Board, whether or not as a result of action under paragraph 8.1, that a recorded assignment to a space station in the Fixed-Satellite Service has not been in regular use for more than eighteen months, the Board shall inquire of the notifying administration as to when the assignment is to be brought back into regular use.

8.3 If no reply is received within six months of action by the Board under paragraph 8.2, or if the reply does not confirm that the assignment to a space station in the Fixed-Satellite Service is to be brought back into regular use within this six-month limit, a mark shall be applied against the entry in the Master Register.

8.4 In case of permanent discontinuance of the use of any recorded frequency assignment, the notifying administration shall inform the Board within ninety days of such discontinuance, whereupon the entry shall be removed from the Master Register.

8.5 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.

8.6 If, in connection with an inquiry by the Board under paragraph 8.5 the notifying administration has failed to supply the Board within forty-five 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 IX - STUDIES AND RECOMMENDATIONS

9.1 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 provisions or of harmful interference.

9.2 The Board shall thereupon prepare and forward to the administration concerned a report containing its findings and recommendations for the solution of the problem.

9.3 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 ninety 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 X - MISCELLANEOUS PROVISIONS

10.1 If it is requested by any administration, particularly by an administration of a country in need of special assistance, and if the circumstances appear to warrant, the Board, using such means at its disposal as are appropriate in the circumstances, shall render the following assistance :

a) computation necessary in the application of Appendix [1];

b) any other assistance of a technical nature for completion of the procedures in this Article.

10.2 The technical standards of the Board shall be based upon the relevant provisions of the /Final Acts/ the Radio Regulations and the Appendices thereto, the decisions of Administrative Conferences of the Union, as appropriate, the Recommendations of the CCIR, the state of the radio art and the development of new transmission techniques without lowering the technical standards in these provisions.

10.3 The Board shall promulgate to administrations its findings and reasons therefor, together with all changes made to the Master Register, through its weekly circular.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 2 to
Document No. 177-E
2 February 1977

COMMITTEE 5
COMMITTEE 6
PLENARY MEETING

Fourth Report of Committee 4

Page 9

Paragraph 3 should read :

The term C/I refers to the predetection ratio of interfered-with and interfering radio frequency powers within a bandwidth equal to and coinciding with the predetection bandwidth of the protected signal in the interfered-with earth station. The value given shall be exceeded for all but 20 % of the worst month for the FSS, and for all but 1 % of the worst month for the BS and the BSS.

Paragraph 4 should read :

The term N refers to the post-detection noise power at a point of 0 dBm0 relative test tone level in any voice channel of an FDM/FM telephony system. The value given shall not be exceeded for more than 20 % of the worst month.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 1 to
Document No. 177-E
1 February 1977
Original : English

COMMITTEE 5
COMMITTEE 6
PLENARY MEETING

Fourth Report of Committee 4

(Technical parameters for planning)

§ 2.3 shall read as follows :

As a reference pattern for the co-polar and cross-polar components of receiving antennae in Region 2, the curves of Figure 3 should be used :

- Curve A (individual reception co-polar component);
- Curve B (both types of reception cross-polar component).

Page 6

§ 2.4, second line should read :

"Recommendation of the CCIR ..... ".

Page 6

§ 26 second line should read :

"..... the level of the depolarized component, A_d relative to the level of the co-polar component should be taken as :"

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 177-E
28 January 1977
Original : English
French

COMMITTEE 5
COMMITTEE 6
PLENARY MEETING

FOURTH REPORT OF COMMITTEE 4

(TECHNICAL PARAMETERS FOR PLANNING)

Subjects :
- Antenna reference patterns
- Type of modulation
- Protection requirements for sharing between services in the 12 GHz bands
- Limitation of output power in the satellite transmitter
- Effects of propagation on cross-polarization
- Reference antenna diameter for a fixed-satellite earth station for calculating interference from satellites in the broadcasting service
- Emission of harmonics of fundamental frequency

Following the data furnished in Documents Nos. 108(Rev.1) and Corrigenda 1 and 2, 122 and 159, the Committee 4 presents herewith for use by Committee 5 its fourth report on technical parameters for planning which are specified in the Annex.

This Report includes also the results of the revision of paragraphs 2 and 11 of Document No. 108 as decided by the Plenary Meeting at 25 January 1977.

All decisions concerning the above matters have been adopted unanimously by Committee 4.

Attention of the Committee 6 is drawn on the necessity to take appropriate provisions for limiting the output power at the satellite transmitter in accordance with paragraph 2.5 of the Annex.

F. KRÁLÍK
Chairman of Committee 4

Annex : 1

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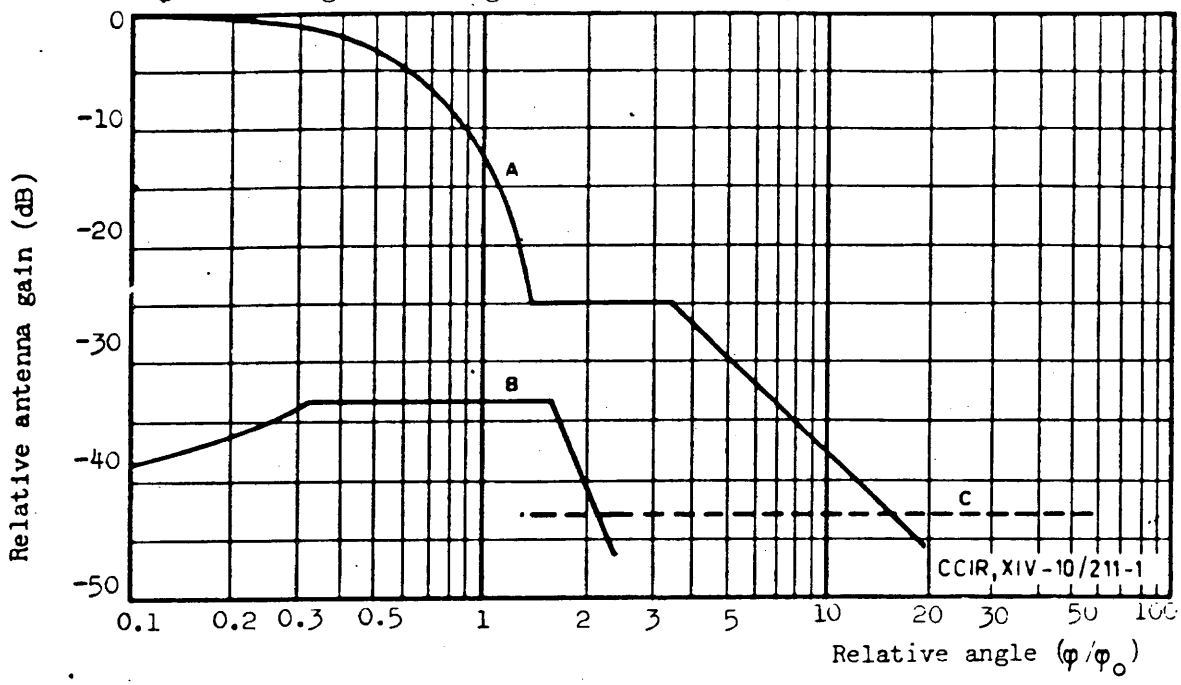
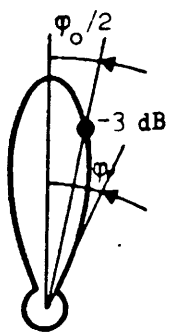
A N N E X

2. Antenna reference patterns

2.1 For the purpose of planning the Broadcasting-Satellite Service during this Conference, reference patterns for the co-polar and cross-polar components of satellite transmitting antennae given in Figure 1 shall be used.





Relative antenna gain (dB)

A : Co-polar component

$-12\left(\frac{\varphi}{\varphi_o}\right)^2$ for $0 \leq \varphi \leq 1.44\varphi_o$

-25 for $1.44\varphi_o < \varphi \leq 3.16\varphi_o$

$-\left[12.5+25 \log_{10}\left(\frac{\varphi}{\varphi_o}\right)\right]$ for $3.16\varphi_o < \varphi$

after intersection with curve C : as curve C

B : Cross-polar component

$-\left(40+40 \log_{10}\left|\frac{\varphi}{\varphi_o} - 1\right|\right)$ for $0 \leq \varphi \leq 0.33\varphi_o$

-33 for $0.33\varphi < \varphi \leq 1.67\varphi_o$

$-\left(40+40 \log_{10}\left|\frac{\varphi}{\varphi_o} - 1\right|\right)$ for $1.67\varphi_o < \varphi$

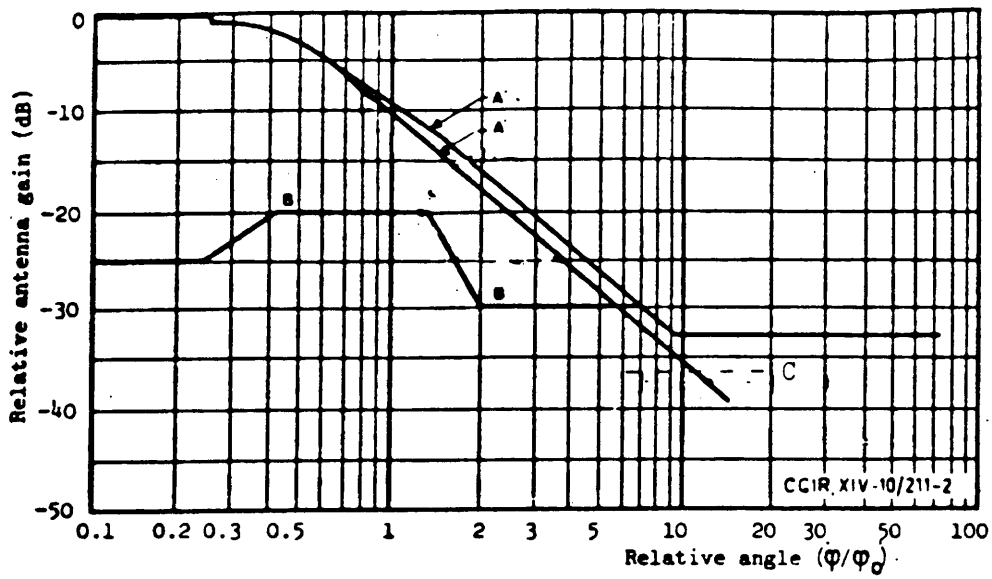
after intersection with curve C : as curve C

C : Minus the on-axis gain

Figure 1 - Reference patterns for co-polar and cross-polar components for satellite transmitting antenna

"2.2 As reference patterns for the co-polar and cross-polar components of receiving antennae, the following curves of Figure 2 should be used :

- curve A (individual reception, co-polar component) in Regions 1 and 3,
- curve A' (community reception, co-polar component) in all Regions,
- curve B (both types of reception, cross-polar component) in Regions 1 and 3,
- curve C (minus the on-axis gain) in all Regions."



Relative antenna gain (dB)

Co-polar component

A : individual reception without sidelobe suppression

0 for $0 \leq \varphi \leq 0.25\varphi_0$

$-12\left(\frac{\varphi}{\varphi_0}\right)^2$ for $0.25\varphi_0 < \varphi \leq 0.707\varphi_0$

$-\left[9.0 + 20\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right]$ for $0.707\,\varphi_0 < \varphi \leq 1.26\varphi_0$

$-\left[8.5 + 25\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right]$ for $1.26\varphi_0 < \varphi \leq 9.55\varphi_0$

-33 dB for $9.55\,\phi_0 < \phi$

A' : community reception without sidelobe suppression

0 for $0 \leq \varphi/\varphi_0 \leq 0.25$

$-12(\varphi/\varphi_0)^2$ for $0.25 < \varphi/\varphi_0 \leq 0.86$

$-\left[10.5 + 25\log_{10}(\varphi/\varphi_0)\right]$ for $0.86 < \varphi/\varphi_0$

until intersection with curve C : then as curve C

B : Cross-polar component (both types of reception)

-25 for $0 \leq \varphi \leq 0.25\varphi_0$

$-\left(30 + 40\log_{10}\left|\frac{\varphi}{\varphi_0} - 1\right|\right)$ for $0.25\varphi_0 \leq \varphi \leq 0.44\varphi_0$

-20 for $0.44\varphi_0 \leq \varphi \leq 1.4\varphi_0$

$-\left(30 + 25\log_{10}\left|\frac{\varphi}{\varphi_0} - 1\right|\right)$ for $1.4\varphi_0 < \varphi \leq 2\varphi_0$

- 30 until intersection with co-polar component curve; then as for co-polar component

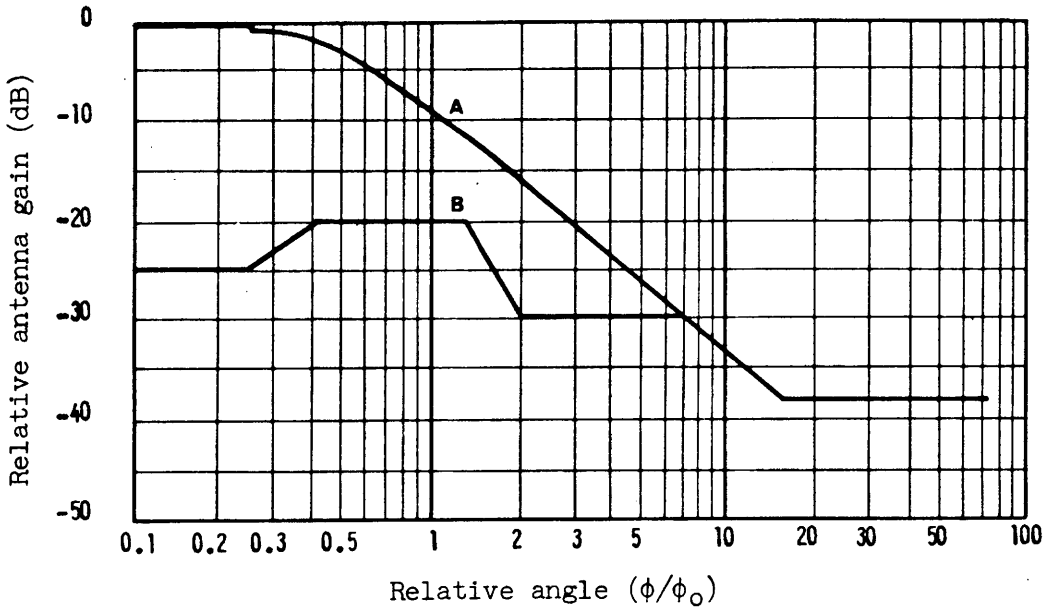
C : Minus the on-axis gain

Note : for values of ϕ_0 see Section [5] of Document No. 108(Rev.1) [].

Figure 2 - Reference patterns for co-polar and cross-polar components for receiving antenna"

"2.3 As a reference pattern for the co-polar and cross-polar components antennae for individual reception in Region 2, the curves of Figure 3 should be used :

- curve A (co-polar component),
- curve B (cross-polar component)."



Relative antenna gain (dB)

Co-polar component

A : individual reception without sidelobe suppression

0 for $0 \leq \varphi \leq 0.25\varphi_0$

$-12\left(\frac{\varphi}{\varphi_0}\right)^2$ for $0.25\varphi_0 < \varphi \leq 0.707\varphi_0$

$-\left[9.0 + 20\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right]$ for $0.707\varphi_0 < \varphi \leq 1.26\varphi_0$

$-\left[8.5 + 25\log_{10}\left(\frac{\varphi}{\varphi_0}\right)\right]$ for $1.26\varphi_0 < \varphi \leq 15.14\phi_0$

-38 dB for $\phi > 15.14\phi_0$

B : Cross-polar component

-25 for $0 \leq \varphi \leq 0.25\varphi_0$

$-\left(30 + 40\log_{10}\left|\frac{\varphi}{\varphi_0} - 1\right|\right)$ for $0.25\varphi_0 \leq \varphi \leq 0.44\varphi_0$

-20 for $0.44\varphi_0 < \varphi \leq 1.4\varphi_0$

$-\left(30 + 25\log_{10}\left|\frac{\varphi}{\varphi_0} - 1\right|\right)$ for $1.4\varphi_0 < \varphi \leq 2\varphi_0$

- 30 until intersection with co-polar component curve; then as for co-polar component

Figure 3 - Reference patterns for co-polar and cross-polar components for receiving antennae for individual reception in Region 2

2.4 For planning purposes subsequent to this Conference, the latest Recommendation of the CCIT should be used. To this end, the CCIR is requested to continue studies on this subject.

25 Limitation of output power in the satellite transmitter

1. It is considered that it should be possible to prevent the output power of a satellite transmitter rising by more than 0.25 dB relative to its nominal value throughout the life of the satellite.

26 Effects of propagation on cross-polarization

1. In planning the Broadcasting-Satellite Service, for emissions applying circular polarization, the relative of the depolarized component, A_d, should be taken as relative to the level of the co-polar component :

- 27 dB for rain-climatic zones 1 and 2,
- 30 dB for rain-climatic zones 3, 4 and 5.

2. The CCIR is urgently requested to pursue its studies in this matter and to submit appropriate data to the WARC 1979.

27 Reference antenna diameter for a fixed-satellite earth station for calculating interference from satellites in the Broadcasting Service

1. For antennae larger than 100 λ (2.5 m) in the Fixed-Satellite Service, the gain of the sidelobes is given by the equation $32 - 25 \log \theta$ where θ is the angle from the boresight (CCIR Recommendation 465), and the sidelobe gain is independent of antenna diameter.

2. However, for the case of transmitting earth stations, the amount of interference radiated into the uplink of other satellite systems would be inversely proportional to the antenna diameter squared. In this case the interference decreases as the antenna diameter is increased. Since the 11.7 - 12.2 GHz band is only assigned in the space-to-earth direction, this point is not of direct concern.

3. In view of the above, it does not appear appropriate for antenna diameters greater than 100 λ to identify a minimum antenna diameter for receiving earth stations in the Fixed-Satellite Service sharing the band 11.7 - 12.2 GHz. It may be useful to consider a 4.5 m antenna, having an efficiency of 60 % and an on-axis-gain of 53 dB, as typical for the purposes of planning the sharing of this band; however, it should be noted that consideration is being given by Administrations in Region 2 to the use of antennae having diameters ranging from 3 m to 10 m.

"11. Type of modulation

For the purpose of planning the Broadcasting-Satellite Service, the signal should be assumed to consist of a video signal with an associated frequency-modulation sound carrier, both modulating in frequency a carrier in the 12 GHz band, a pre-emphasis characteristic in accordance with CCIR Recommendation 405 being used.

This does not prohibit the use of other characteristics of the Broadcasting-Satellite Service (e.g. modulation with sound channels multiplexed within the bandwidth of a television channel, digital modulation of sound and television signals, or other pre-emphasis characteristics) provided that the use of such characteristics does not cause greater interference than that caused by the system considered in the plan."

28 Protection requirements for sharing between services in the 12 GHz Band

1. For purposes of planning the Broadcasting-Satellite Service during this Conference, sharing between the different services using the 12 GHz band should be based on the protection requirements listed in the table :

Protected[1] service	Protected signal	Interfering[1] Service	Interfering signal	Protection requirements[3]	
				Total acceptable[2]	Single entry
BSS	TV/FM	BSS, FSS, FS, BS	TV/FM	C/I = 30 dB[4]	C/I = 35 dB[4]
FSS	FDM/FM	BSS	TV/FM	N = 500 pWOp	N = 300 pWOp
FSS	TV/FM	BSS, FSS	TV/FM	C/I = 32 dB[5]	C/I = 37 dB[5]
FSS	4Ø - PSK	BSS, FSS	TV/FM	C/I = 30 dB	C/I = 35 dB
FSS	FDM/FM	FSS	FDM/FM	N = 1000 pWOp	N = 400 pWOp
FS	FDM/FM	BSS	TV/FM	N = 1000 pWOp	-125 dBW/m^2/4 kHz[6]
BS	TV/VSB	BSS	TV/FM	50 dB	not applicable

Notes : 1) BSS = Broadcasting-Satellite Service
FSS = Fixed-Satellite Service
BS = Broadcasting Service
FS = Fixed Service

2) Values in dB are protection ratios for sum of interfering signals. Values in pWOp are for interference noise in the worst telephone channels caused by sum of interfering signals.

3) These limits include both up-path and down-path contributions

4) For BSS satellites located at the interfaces of Region 1/3 and Region 2, the C/I ratios should be one dB higher.

5) See CCIR Recommendation 483.

6) This value may be suitably modified for tropical regions to take into account rain attenuation. Polarization discrimination can also be taken into account.

2. The values given as "total acceptable" are those necessary to protect the protected signal. The "single entry" values are those which should be used as a guide for planning purposes. The total interference from all sources must be calculated since the single entry criteria being satisfied for each source may not guarantee that the total interference meets the above protection requirements. One entry is defined as the aggregate of emissions of any one station entering any receiver in the protected Service within the channel to be protected.

3. The term C/I refers to the predetection ratio of interfered-with and interfering radio frequency powers within a bandwidth equal to and coinciding with the predetection bandwidth of the protected signal in the interfered-with earth station. The value given shall be exceeded for all but 20 % of the worst month.

4. The term N refers to the post-detection noise power at a point of 0 dBm0 relative test tone level in any voice channel of an FDM/FM telephony system. The value given shall not be exceeded for more than 20 % of the worst month for the FSS, and for all but 1 % of the worst month for the BS and the BSS.

5. The specified values of protection ratio (i.e., the carrier-to-interference power ratio corresponding to a specified picture quality) are applicable, for planning purposes, to television signals of any of the several television standards.

6. For BSS systems with FM/TV as the protected signal, the protection ratios are given for particular reference conditions. Most important of these are :

1) frequency deviation of the protected signal (12 MHz peak-to-peak)

2) quality of service protected (grade 4.5)*)

3) co-channel carriers (no carrier-frequency offset).

7. If system design is based on conditions other than 1) and 2) above, the FM-TV protection ratio is given by :

$$PR = 12.5 - 20 \log (Dv/12) - Q + 1.1\ Q^2$$

where Dv = nominal peak-to-peak frequency deviation
Q = the impairment grade, concerning the interference only.

8. When carriers are offset in frequency, condition 3) does not apply and the adjacent channel protection ratios should be adjusted with the frequency offset as shown in the figure. For example, at a frequency offset of 20 MHz, the total acceptable protection ratio against interference to an FM/TV signal from another FM/TV signal is 13 dB. The corresponding single-entry value is 18 dB.

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*) Quality grade on a 5-point impairment scale as defined in CCIR Recommendation 500.

Carrier-frequency offset $\Delta f = (f_{int.} - f_{prot.})$ (MHz)

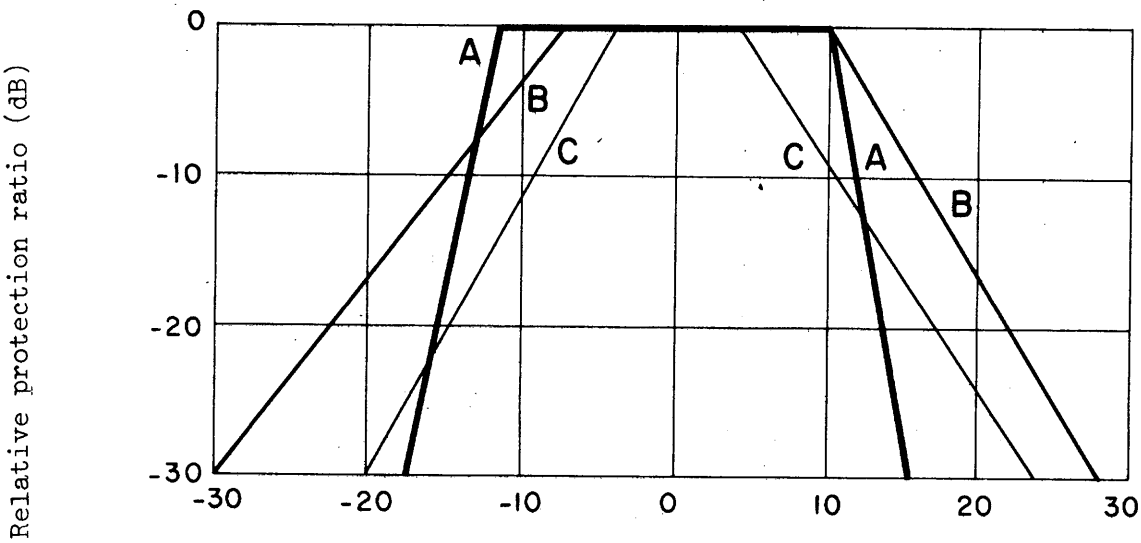

Figure 1 - Reference case protection ratios relative to co-channel values

A. TV/VSB-protected, TV/FM interfering

B. TV/FM-protected, TV/FM interfering

C. TV/FM-protected, TV/VSB interfering

29. Emission of harmonics of fundamental frequency

Attention will also need to be given to the control of emission at harmonics of the fundamental frequency. The JWP Report, in Section 7.4.2, makes particular reference to the concerns of the radio astronomy service which has an exclusive allocation at 23.6 - 24.0 GHz.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 178-E
28 January 1977
Original : French

WORKING GROUPS OF
COMMITTEE 5

Note by the Chairman of Committee 5

At its fourth meeting, held on 28 January 1977, Committee 5 took the following decision :

All changes of requirements relating to :

- options where alternative solutions have been mentioned in the same requirements;
- minor beam adjustments; or
- restrictions with regard to groupings in orbital positions

should be handed to the IFRB (Box 4000) not later than 31 January 1977 at 1800 hours.

After that date, only changes which result from negotiations between delegations through the intermediary of the Conciliation Group and which are designed to improve the plan will be considered.

A. PETTI
Chairman
Committee 5 (Planning)

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 179-E
29 January 1977
Original : English

WORKING GROUP 5A

Iceland and Sweden

PROPOSAL FOR FURTHER WORK OF SUB-GROUP 5A2

The present terms of reference for Sub-Group 5A2 require the group to produce a plan for the Broadcasting-Satellite Service in the 12 GHz frequency band for Regions 1 and 3, attempting to meet all the requirements submitted by Administrations and taking into account the needs of countries not represented at the Conference. A first trial is unlikely to be completely satisfactory, but it will provide the basis for further work.

It is proposed that the planning work of Working Group 5A should proceed from the first plan produced by the Sub-Group 5A2 on the principle that requirements for channel and orbit assignments causing harmful interference to other assignments shall be reduced in order to arrive at an acceptable plan.

The second phase of activity of Sub-Group 5A2 should consequently be to identify all cases of harmful interference, i.e., the cases of a negative protection ratio margin and to list both the interfering and the interferred-with assignments.

The countries concerned should thereafter be requested to discuss ways of reducing the interference and the proposed modifications submitted through the Conciliation Group. If no agreement can be reached within a set time limit the interfering assignment will have to be modified based on decision in Working Group 5A, the underlying assumption being the equal right of all countries to a minimum number of assignments.

For countries not present at the Conference, it would be appropriate for the Sub-Group 5A2 to propose the necessary adjustments.

During the course of negotiations between countries, the Sub-Group 5A2 should be prepared to suggest and to analyze possible solutions to the problems. Such solutions could include :

- changing orbit position
- reconsidering the demand for a common orbit position
- adjusting the position of the beam centre
- using the optimum beam concept, i.e., with a ΔG other than 3 dB
- reducing the coverage area
- increasing the e.i.r.p. for the affected assignment
- accepting a small negative protection margin at one or more test points. (A reduction of the protection ratio from 30 to 26 dB is not likely to degrade the quality of reception by more than from approximately 4.5 to approximately 4).

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 180-E
29 January 1977
Original : English

WORKING GROUP 4B

Sub-Working Group 4B2

INTERFERENCE WITHIN AND BETWEEN SPACE SERVICES USING THE GEOSTATIONARY SATELLITE ORBIT IN THE FREQUENCY BAND 11.7 - 12.2 GHz

The Sub-Working Group, considering relevant documents and taking into consideration the views of the delegates present, has reached the following conclusions :

1. The frequency band 11.7 - 12.2 GHz is shared coequally by the Broadcasting-Satellite Service and, in Region 2, the Fixed-Satellite Service. However, this Conference may conclude that the utilization of this band by the Broadcasting-Satellite Service is to be established on the basis of two different approaches : Regions 1 and 3 to adopt an a priori Plan, hereinafter referred to as "the Plan", while Region 2 may not adopt an a priori plan at this time. As a consequence, the following interference interfaces would exist for which interference and sharing criteria must be adopted so as to result in an equitable availability of this band to all administrations and to both services :

a) between networks in the Broadcasting-Satellite Service which are not part of a Plan (BSS ⟷ BSS);

b) between networks of the Fixed-Satellite Service and those of the Broadcasting-Satellite Service which are not part of a Plan (FSS ⟷ BSS);

c) between networks of the Fixed-Satellite Service and those of the Broadcasting-Satellite Service which are part of a Plan (FSS ⟷ BSSP);

d) between networks of the Broadcasting-Satellite Service which are not part of a Plan and those which are (BSS ⟷ BSSP).

2. Networks of these services which are not organized in a Plan shall determine their mutual interference so as to meet the applicable primary interference criteria; i.e., maximum permissible noise power in a telephone channel where the interfered-with network uses FDM/FM telephony, and minimum permissible carrier-to-interference ratio where the interfered-with network uses analogue FM/TV or digital transmissions. Relevant information regarding primary interference criteria is given in /Document No. 111(Rev.3)/; (BSS ⟷ BSS, FSS ⟷ BSS).

3. Networks of these services which are elements of a Plan shall be afforded the necessary interference protection through the provisions of the Plan itself observing, to the extent possible, the interference criteria laid down in /Document No. 111(Rev.3)/; (BSSP ⟷ BSSP).

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4. Networks of these services, one of which is an element of the Plan, the other of which is not, shall determine their mutual interference as follows :

a) Interference from a network in the Fixed-Satellite Service, or from a network in the broadcasting-satellite network which is not part of a Plan, into a network of the Broadcasting-Satellite Service which is part of a Plan. The level of interference shall be determined as a carrier-to-interference ratio at the input of a receiver of the reference receiving earth station located at each of the test points associated with a given coverage area of the Plan. The level of interference so determined shall meet the relevant primary interference criteria as laid down in /Document No. 111(Rev.3)/ for each service area of the Plan.

In applying this procedure, it will usually be possible to identify, by inspection, which of the service areas of the Plan are likely to receive the greatest amount of interference, and to confine detailed calculations to those service areas. Thus coordination of those networks which are not part of the Plan is with the Plan as a whole; (BSS → BSSP, FSS → BSSP).

b) Interference from networks in the Broadcasting-Satellite Service which are part of a Plan, into networks of the Fixed-Satellite Service, or of the Broadcasting-Satellite Service whose elements are not organized in a Plan. The level of interference may be determined, for service areas of Region 2 whose minimum hodocentric*) angular separation from the closest coverage area of the Plan is no less than 4.8°, on the basis of the assumption of a maximum interfering power flux-density of -123 dBW/m^2/27 MHz originating at any space station which is an element of the Plan.

Alternatively, for those same service areas, and necessarily for service areas whose minimum hodocentric angular separation from the closest coverage area of the Plan is less than 4.8°, the level of interference shall be determined on the basis of the highest power flux-density in those service areas as generated by any space station which is an element of the Plan, within those parts of the 11.7 - 12.2 GHz band within which service is to be provided to those service areas.

In making the required calculations it may be necessary to consider that, in bandwidths which are smaller than 27 MHz, the entire interfering power may be concentrated, uniformly as obtained by means of a low frequency triangular dispersal waveform, within a frequency band of 650 kHz, centred in the associated 27 MHz wide channel.

In applying this procedure, it will usually be possible to identify, by inspection, which of the space stations of the Plan are likely to produce the highest interfering power flux-densities.

The interfering power flux-densities so determined shall be used to calculate the resultant interference so as to meet the relevant primary interference criteria laid down in /Document No. 111(Rev.3)/. /Document No. 168(Rev. ..)/ offers further guidance for the case of

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*) As measured from a point on the geostationary satellite orbit.

interference from broadcasting satellites which are part of a Plan into networks of the Fixed-Satellite Service; (BSSP → BSS, BSSP → FSS).

5. The equations which shall be used to assess interference in terms which may be compared with the interference criteria are the following :

a) Interference into broadcasting-satellite receiving earth stations comprising elements of a Plan (→ BSSP; Regions 1 and 3) :

$$C/I = 98 - P' - G'(\phi'/\phi'_o) - G(\phi/\phi_o) + P \text{ dB} \qquad (1)$$

where

P' = maximum available power at the input to the interfering space station transmit antenna, in a 27 MHz band of the Plan, in dBW;

$G'(\phi'/\phi'_o)$ = maximum transmit antenna gain of the interfering space station in the direction of a test point in the relevant service area of the Plan, in dBi;

ϕ' = hodocentric angular spacing between the above test point and the interfering space station main beam axis, in degrees;

ϕ'_o = half power beamwidth of the interfering space station transmit antenna, in degrees;

$G(\phi/\phi_o)$ = maximum receive antenna gain of a broadcasting satellite receive earth station located at the test point in the direction of the interfering space station, in dBi;

ϕ = topocentric angular spacing between the two space stations in question, in degrees;

ϕ_o = half power beamwidth of the broadcasting-satellite receiving earth station, in degrees (here 2^o);

P = net polarization discrimination, in dB, obtained from the polarization characteristics of the interfering space station transmit antenna, the interfered-with broadcasting-satellite receive earth station antenna, and the relevant residual medium polarization isolation for 99 % of any month. This value will, in most practical cases, be small especially when either ϕ or ϕ' or both are large.

Note : $G'(\phi'/\phi'_o)$ may be determined from actually measured antenna patterns where they are available.

b) Interference into broadcasting-satellite receiving earth stations not part of a Plan (→ BSS; Region 2) :

$$C/I = -66 - PFD' - G(\phi/\phi_o) + P \text{ dB} \qquad (2)(a)$$

$$\text{or} = 97 - P' - G'(\phi'/\phi'_o) - G(\phi/\phi_o) + P \text{ dB} \qquad (b)$$

where

PFD' = maximum interfering power flux-density in the direction of a test point in the relevant service area of the interfered-with broadcasting-satellite network, in dBW/m^2/27 MHz;

with all other parameters as defined above, except that $\phi_o = 1.8^\circ$;

c) Interference into Fixed-Satellite Service receiving earth stations (→ FSS; Region 2) :

$$C/I = 11 + P_r - PFD' + 25 \log \phi + P \text{ dB} \qquad (3)(a)$$

$$\text{or} = 174 + P_r - P' - G'(\phi'/\phi_o') + 25 \log \phi + P \text{ dB} \qquad (b)$$

where

P_r = level of desired signal at the input to the receiver of the interfered-with network's earth station, exceeded for all but 20 % of the time, in dBW;

with all other parameters as defined above.

Note that, where the interfered-with network uses FDM/FM telephony, the carrier to interference ratio (C/I) so determined is the basis on which the interference noise power in a telephone channel is calculated (refer to CCIR Report 388-... for this calculation).

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 181-E
31 January 1977
Original : English

COMMITTEES 4, 5, 6

Australia

SOVEREIGNTY OF THE GEOSTATIONARY ORBIT

During the discussions in this Conference, proposals and views have been presented in regard to the planning and use of the geostationary satellite orbit.

However, some countries are seeking recognition of national sovereignty in relation to the use of the geostationary satellite orbit.

This Satellite-Broadcasting Conference is governed by Article 7 of the International Telecommunication Convention which states, inter alia :

"Only items included in their agenda may be discussed by such conferences. The decisions of such conferences must in all circumstances be in conformity with the provisions of the Convention."

The question of sovereignty of the geostationary orbit is not included in the agenda for this Conference and the subject may not therefore be discussed.

The status of the geostationary orbit is measurably connected with the definition and/or delimitation of Outer Space and it cannot be considered in isolation. Article 2 of the United Nations "Treaty on Principles Governing the Activities of States in the Exploration of Outer Space including the Moon and other Celestial Bodies", of 1967, states :

"Outer space, including the Moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means."

In Resolution No. 3234, XXIX, the United Nations General Assembly requested the Legal Sub-Committee of the United Nations Committee on the Peaceful Uses of Outer Space (UNCPOUS) to consider this matter and it is still under consideration. The appropriate fora for discussion and debate on matters relating to the definition and/or delimitation of Outer Space, including the question of the geostationary orbit are thus the Legal and/or Scientific and Technical Sub-Committees of UNCPOUS.

Concerning the use of the geostationary orbit by the Broadcasting-Satellite Service, the attention of delegates is drawn to :

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Article 33, paragraph 131, International Telecommunication Convention :

"In using frequency bands for space radio services, Members shall bear in mind that radio frequencies and the geostationary satellite orbit are limited natural resources, that they must be used efficiently and economically so that countries or groups of countries may have equitable access to both in conformity with the provisions of the Radio Regulations according to their needs and the technical facilities at their disposal."

Resolution No. Spa2 - 1, and also to the Final Acts of the World Administrative Radio Conference, Space Telecommunications, 1971,

....

"considering

that all countries have equal rights in the use of both the radio frequencies allocated to various space radiocommunication services and the geostationary satellite orbit for these services;"

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 182-E
31 January 1977
Original : French

COMMITTEE 4

SUMMARY RECORD

OF THE

FIFTH MEETING OF COMMITTEE 4

(TECHNICAL)

Friday, 21 January 1977, at 0900 hrs

Chairman : Mr. F. KRÁLÍK (Czechoslovakia)

Subject discussed	Documents Nos.
1. Approval of documents	82, 86(Rev.1), 94, 97 102, 106, 107, 109, 112

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1. Approval of documents (Documents Nos. 82, 86(Rev.1), 94, 97, 102, 106, 107, 109 and 112)

Document No. 82 - Summary record of the first meeting of Committee 4 (Technical)

Document No. 82 was approved.

Document No. 86(Rev.1)

The Director of the CCIR pointed out that the word "above" in the fifth line of paragraph 2 of the English text should be replaced by "about".

Document No. 86(Rev.1) was approved, with that change.

Document No. 94 - Summary record of the second meeting of Committee 4 (Technical)

The delegate of the United Kingdom, referring to his delegation's statement (page 2 of the document), requested that the words "had no bearing on the case" in the fifth line should be replaced by the words "had no direct relationship with the case".

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He further expressed the wish that the reference to his delegation's proposal in the statement by the United States delegate (page 3 of the document) might be redrafted.

To meet that request, the delegate of the United States of America proposed that the first paragraph on page 3 should be amended to read as follows : "The delegate of the United States of America remarked that the United Kingdom proposal for protecting the Broadcasting-Satellite Service was based on the assumption that an a priori plan would be adopted throughout the world in which the Terrestrial Services in all the Regions should be planned round the broadcasting satellites. Some justification for that view could be found in Nos. 405BA and 405BB of the Radio Regulations so far as the Terrestrial Services were concerned, but a closer reading of No. 405BB showed that the space services in Region 2 were to have co-equal status. Furthermore, the United Kingdom proposals failed to allow for the possibility that such a plan might not be adopted, in particular, by Region 2."

It was so decided.

Turning back to page 2 of the document, the delegate of the USSR noted that the phrase "his delegation's proposals" and "his Administration's proposals" had been used indiscriminately. For the sake of uniformity, it would be preferable to refer only to proposals by Administrations.

It was so decided.

Document No. 94, as amended, was approved.

Document No. 97 - Difference between the e.i.r.p. directed towards the edge of the coverage area and that on the axis of the beam

The Chairman of Working Group 4A, presenting the document, said that the words "be not greater than 3 dB" in the third line should read "be 3 dB".

The delegate of Switzerland, supported by the delegates of France and Mali, said that he would prefer the text to read "be - 3 dB."

The delegate of the Federal Republic of Germany, supported by the delegate of Benin, suggested that the problem might be resolved by inserting the words "the absolute value of the" both in the title and in the text of the document.

The delegate of the USSR, supported by the delegate of India, observed that it was difficult to lay down the value of 3 dB so long as precise definitions were not available, in particular as regards the coverage area. He therefore proposed that the text of the document should remain unchanged for the time being.

The delegate of the United Kingdom said he agreed with the USSR delegate and suggested that Working Group 4A should prepare a new text in accordance with the definitions drawn up by the group set up for that purpose and should then submit that text to the Committee for consideration.

It was so decided.

Document No. 102 - The use of energy dispersal in planning for the Broadcasting-Satellite Service

The Chairman of Working Group 4B said that his Group had approved the above-mentioned document with the following amendments :

- in the English version of paragraph 1, to delete the word "the" before "sharing" in the first line and to replace the word "broadcast" by "broadcasting" in the second line;

- to delete paragraph 5 and Figure 2, which should be inserted in Document No. 90, and to renumber paragraphs 6, 7 and 8 accordingly;

- in former paragraph 7, to delete the words "in Regions 1 and 3";

- in the fourth line of that paragraph, after "22 dB", to insert a phrase in parentheses, reading "(corresponding to a peak-to-peak deviation of 600 kHz)";

- to add after that new phrase in parentheses an asterisk referring to the following footnote :

  "The estimated cost of the component in the simple double diode clamping circuit needed at the Earth station receiver to remove this amount of energy is in the order of US $ 0.40."

The delegate of India said he realized that the energy dispersal method had some advantages in planning, especially in solving band-sharing problems. It was necessary, however, to take into account the situation of certain countries, such as India, which did not intend, at least for the time being, to use terrestrial service or other systems in the band in which broadcasting-satellite systems operated. For those countries, adoption of the energy dispersal technique should be optional, in view of the cost of installing the necessary equipment. It would therefore be advisable to add at the end of former paragraph 7 of Document No. 102 a sentence reading as follows : "However, the introduction of energy dispersal should be optional for those areas/countries that either do not have or plan to have terrestrial systems operating in this band or foresee any sharing difficulties".

That proposal was supported by the delegate of Iran.

The delegate of the USSR pointed out that, under its terms of reference, Committee 4 should concern itself exclusively with technical matters - in the case at issue, with the results of the use of energy dispersal. The Committee was not, however, competent to deal with implementation procedures. It would therefore be better not to amend former paragraph 7 of Document No. 102, but to have the Indian delegate's statement reflected in the summary record and to ask the Chairman of Committee 6 to examine the question.

The delegate of the United Kingdom said he fully agreed with the USSR delegate. He also pointed out, with the concurrence of the delegate of Australia, that in the event that countries which were not now contemplating the use of energy dispersal decided to do so at a later date, it would be more difficult for them to fit out broadcasting circuits with the necessary equipment.

The delegate of Canada said he also agreed that it was for Committee 6 to deal with implementation questions and suggested that the Chairman of Committee 4 should send a note to the Chairman of Committee 6, drawing his attention to the summary record of the current meeting and more particularly to the Indian delegate's statement.

It was so decided.

The delegate of Turkey said that his administration reserved its position with respect to definitive commitments which might arise from the recommendation formulated in paragraph 7.

The delegate of France, referring to paragraph 4 and Figure 1, concerning the use of energy dispersal to reduce interference, said he did not consider that Figure 1 convincingly proved the efficiency of energy dispersal in reducing interference effects. In the case of a frequency deviation other than zero between carriers, energy dispersal might even have a negative effect in reducing interference.

The delegate of the United States of America, speaking on behalf of the Chairman of Working Group 4B, explained that Figure 1 had originally been intended to include another curve showing the effects of the use of energy dispersal in terrestrial services to reduce interference. In view of the decision not to include that curve, Figure 1 was incomplete and it would therefore be best to delete it, as well as paragraph 4.

That proposal was supported by the delegates of Ethiopia, Sudan, Canada, the USSR, Benin and Australia.

The delegate of France said that the reasons why the Committee recommended the energy dispersal technique should be stated more explicitly in former paragraph 7. It should be specified whether that method related solely to reduction of power flux-density or whether it could also serve to reduce interference and, if so, to what extent.

The delegate of the United States of America pointed out that the effects of the energy dispersal technique on reduction of interference depended largely on the characteristics of the systems used.

The delegate of the USSR pointed out that Document No. 102 was based on Document No. 90, Annex 4 to which showed that energy dispersal could have effective results, provided it did not exceed a value of 600 kHz. The French delegation's reservations at that stage were surprising in view of the fact that it had participated in drafting Document No. 90.

The delegate of France explained that the data in the Annex to Document No. 90 related only to the effect of energy dispersal on the receiver. The document made no reference to interference, but merely concluded that, to the extent that it had no adverse effects on conventional receivers, an energy dispersal equal to or below 600 kHz might be acceptable.

In recommending the use of that method, Committee 4 was assuming no responsibility. It was therefore desirable for it to justify its position, so that countries might have a clear idea of the advantages that adoption of the method might offer in relation to planning.

The delegate of Switzerland pointed out that the main justification of the use of energy dispersal was stated in paragraph 2.3 of Document No. 90. It might be wise to cite that paragraph in Document No. 102.

The delegate of France supported that suggestion.

The delegate of Australia reminded the Committee that the maximum value for energy dispersal fixed in the original proposal had been 1 MHz and that it had finally been decided to adopt the value of 600 kHz for technical and financial reasons. In view of the very great advantages of the energy dispersal method for large-capacity (e.g. 1 800 channel) systems, it was desirable to recommend its use within the limits fixed in Document No. 102. He therefore suggested that paragraph 7 of the document should not be subject to any amendments other than those originally read out by the Chairman of Working Group 4B.

The delegate of New Zealand supported that suggestion.

The Chairman proposed that Document No. 102 should be approved with the amendments read out by the Chairman of Working Group 4B, including the deletion of paragraph 4 and Figure 1, on the understanding that he would send the Chairman of Committee 6 a note drawing attention to the statement made by the Indian delegate.

It was so decided.

Document No. 102, as amended, was approved.

Document No. 106 - Characteristics of broadcasting-satellite receiving systems for community reception

Document No. 106 was approved.

Document No. 107 - Out-of-band spurious emissions - draft Recommendation

The Chairman of Working Group 4B said that his Group had approved the document subject to amending the title to read : "Draft Recommendation to the CCIR regarding out-of-band spurious emissions". The Group had also agreed that when the Editorial Committee came to examine the document it should specify the source of the Recommendation, for instance, by inserting the words "The Broadcasting Satellite Conference" before "Recommends".

Document No. 107, as amended, was approved.

Document No. 109 - Up-link considerations for the Broadcasting-Satellite Service

The Chairman of Working Group 4B said that the Group had approved the document with the following changes :

- in the title, to insert the words "thermal noise" after "Up-link";
- in the English text, to insert the words "carrier-to-noise ratio" before "C/N" and to delete the word "ratio" after "C/N";
- in the fifth line, to replace the words "of the time" by "of the worst month";
- to delete the last sentence of the document.

Document No. 109, as amended, was approved.

Document No. 112 - Choice of polarization to be used in planning for the Broadcasting-Satellite Service

The delegate of the USSR suggested that, since the conclusions set out in the document might not represent a satisfactory reply to Committee 5, the Chairman of Committee 4 should consult with the Chairman of that Committee, on the understanding that Committee 4 would re-examine Document No. 112 in the light of the results of that consultation.

It was so decided.

The meeting rose at 1045 hours.

Co-Secretaries :

J. RUTKOWSKI/M. AHMAD

The Chairman :

F. KRÁLÍK

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 183-E
31 January 1977
Original : English

COMMITTEE 5

SUMMARY RECORD

OF THE

THIRD MEETING OF COMMITTEE 5

Friday, 21 January 1977, at 0910 hrs

Chairman : Mr. A. PETTI (Italy)

Subjects discussed :	Document No.
1. Progress made by Working Group 5A	
2. Report of Working Group 5B	110
3. Service areas for planning	
4. Timetable of the work of Committee 5	
5. Appointment of representatives from Africa and Asia to assist the Chairman of Working Group 5A	

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1. Progress made by Working Group 5A

The Chairman of Working Group 5A said that the Group had tried to divide the planning principles in its terms of reference into two categories, those which had to be agreed upon before experts could begin to construct a sample Plan for the Working Group's consideration and those which could best be discussed after the sample Plan had been prepared. In the first category of principles, it had been agreed that studies in the Working Group should be begun on the basis of unified planning standards for Regions 1 and 3, of Resolution No. Spa2 - 1 and of No. 428A of the Radio Regulations, especially where a country intended to include the territory of another country or countries in its service area, subject to the agreement of that country or countries, deposited with the IFRB by 20 January for publication. With regard to countries not represented at the Conference, it had been agreed that, side by side with soliciting their requirements by correspondence, provision should be made for including in the Plan spare beams with an appropriate number of channels to determine possible interference in accommodating future requirements.

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It had also been agreed to base planning on individual reception, without precluding the possibility of meeting any requirements involving community reception only. The Plan would, of course, have to be based on the requirements submitted, but technical difficulties involving protection ratios and quality would have to be overcome; two Sub-Groups had therefore been set up, 5A2 to consider the position from the point of view of fully meeting all requirements and 5A3 to work at another level, i.e. the readily available channels and build up to the full requirements; Sub-Group 5A4 might also be set up to work from an intermediate starting point. Where orbital positions were concerned, the experts were working on the basis of eight very strict guidelines with a view to meeting the operational requirements of countries, but with a slight latitude to adjust the required positions to improve the interference situation. Finally, the Working Group suggested the establishment of a conciliation group, composed of the Chairman of the Coordination Committee of the Conference, the Chairman and Vice-Chairman of Committee 5, the Chairman of Working Group 5A and the Chairman of the Sub-Group requesting conciliation, to seek the permission of administrations to adjust their requirements where that was absolutely necessary.

In reply to questions by the delegates of Ireland, Chile and Senegal, concerning the need for Sub-Groups to consult administrations about adjustments of orbital positions, the Chairman of Working Group 5A read out the eight detailed guidelines unanimously adopted by the Working Group and explained that there might be some confusion between the preferred orbital arcs that had been indicated to the IFRB by administrations as an essential part of their submission of requirements and to the nominal orbital positions which most administrations had included in their submissions. The Sub-Groups would be asked to calculate the relevant orbital positions for circulation to all delegations.

The delegate of Italy endorsed that statement.

In reply to the delegates of Thailand and Zaire, the representative of the IFRB explained that the Board in its preparatory work for the Conference had chosen certain orbital arcs to determine the satellite beam axis and had communicated them to administrations, for resubmission with or without change. Thus, the arcs could be considered as selected by administrations, not by the IFRB, and could be changed by administrations at will.

In reply to the delegate of Indonesia, the Chairman of Working Group 5A said that the important question of assigning an orbital position for the Broadcasting-Satellite Service in accordance with the preassignment for the Fixed-Satellite Service in Indonesia would be studied in the Working Group when the first sample Plan had been completed.

The Committee approved the planning principles described by the Chairman of Working Group 5A, except that relating to No. 428A of the Radio Regulations, which would be dealt with under agenda item 3.

2. Report of Working Group 5B (Document No. 110)

The Chairman of Working Group 5B said that the Group had held three meetings and had set up three drafting groups, one of which had already submitted the draft planning principles set out in Document No. 110. The

second group was concerned with the implementation of the principles approved by the Working Group for interregional sharing and was beginning to elaborate the details of orbital division applied to the Fixed-Satellite and Broadcasting-Satellite Services. The third drafting group was dealing with the efficiency of the use of the geostationary orbit and the frequency spectrums. The principles in Document No. 110 had also been referred to Working Group 5A because of their interest to that body.

The delegate of the USSR, supported by the delegates of Italy and the United Kingdom, said he was surprised at the general character of the considerations set out in Document No. 110, which could hardly be regarded as planning principles for Region 2. Moreover, the document seemed to encroach upon the terms of reference of Working Group 5C.

The Chairman of Working Group 5B pointed out that the Working Group had not set up a Sub-Group, but a small drafting group, to prepare a paper for Working Group 5C on interregional sharing. Moreover, Document No. 110 did not represent the final report of Working Group 5B, but only a set of principles which had to serve as a basis for the Plan for Region 2.

The delegate of Senegal observed that Document No. 110 gave no idea at all of the nature or form of the Plan that the Working Group intended to prepare.

The Chairman of Working Group 5B said that suggestions concerning the nature of the Plan had varied between an a priori plan and an evolutionary plan, with many intermediate gradations. He would submit that the principles in the document would cover any eventuality.

The delegates of Chile and Bolivia said they could support the principles set out in Document No. 110, especially since they were intended for "guidance in development of a plan".

The Chairmen of Working Groups 5A and 5C said they thought it would be unwise and time-consuming for both Working Groups 5A and 5B to discuss interregional sharing and then to submit their conclusions to Working Group 5C.

The delegate of the USSR endorsed those views and expressed the opinion that Committee 5 should instruct Working Group 5B to prepare actual planning principles, rather than general considerations.

The delegate of Cuba agreed that the Committee should give Working Group 5B some guidance on the type of plan it should prepare, taking into account the special situation of Region 2 with regard to sharing between the Broadcasting-Satellite and Fixed-Satellite Services.

The delegate of China said that Document No. 110 concerned the type of Plan that the Conference would prepare. Most countries agreed that that Plan should be world-wide and based on the equal rights of all countries to frequency assignments and orbital positions in the Broadcasting-Satellite Service; yet certain countries in Region 2 were trying to perpetuate the inequality that their technical superiority had brought about. The 1975 LF/MF Broadcasting Agreement had clearly shown that the 12 GHz band was not

yet widely used, so that an opportunity was now being offered for really equal sharing, but evolutionary planning was tantamount to no planning at all and would result in a return to the first-come-first-served situation. So-called flexibility was merely an excuse for evading the problem of establishing an a priori plan based on the equal rights of all countries.

The delegate of the United Kingdom, supported by the delegate of the USSR, said he was particularly concerned by principle 2 of Document No. 110, which seemed to be based on a fundamental misconception. The geostationary orbit was shared, not by Regions, but by the services to which the band in question was allocated, and a characteristic peculiar to the Broadcasting-Satellite Service was that it should be possible for every country to receive broadcasts or to establish such a service in the future. The service orbit must therefore be planned as a single entity and must have a fairly rigid framework; those considerations did not, however, apply to the Fixed-Satellite Service in Region 2 and it was certainly premature to try to establish sharing between the two services before the Broadcasting-Satellite Plan had been drawn up in greater detail and before Committee 4 had considered some of the relevant technical criteria.

The delegate of the United States of America said that Working Group 5B had regarded principle 2 as a basic prerequisite for beginning the planning procedure, since it was the first step towards obtaining some idea of the range of orbital arcs that could be considered for Region 2.

The delegate of Italy remarked that the orbital position of a space station had to be determined solely for the purpose of ensuring the operation of the service and of avoiding interference.

The delegate of the United States of America said that the problem of sharing between Fixed Broadcasting-Satellite Services was a difficult one which, precisely because of the global nature of those services, had to be taken into consideration in the planning process. He did not see how planning could be undertaken in the absence of a solution of interregional problems. Any a priori plan would have to take into account from the outset any limitations that might be placed upon it by the need for sharing.

The Chairman proposed that the Committee should take note of the report of Working Group 5B and should invite the Working Group to report as early as possible on its implementation of the principles set forth therein. Further, the Committee should refer all interregional questions to Working Group 5C.

The delegate of the USSR suggested that Working Group 5B should be invited to take into account the views expressed at the present meeting, particularly with regard to paragraph 2 of Document No. 110.

With that addition, the Chairman's proposal was adopted.

3. Service areas for planning

The Chairman invited the Committee to consider the principles relating to service areas adopted by Working Group 5A, as reported orally by that Working Group's Chairman.

The principle that the service area for planning should be determined in accordance with No. 428A of the Radio Regulations was approved.

The principle with regard to countries not represented at the Conference was approved.

The delegate of Luxembourg, referring to the principle adopted by the Working Group with regard to countries intending to include in their coverage the territory of another country or countries, suggested that, where Government negotiations were in progress, the requirements of both the Governments concerned should be taken into consideration for planning purposes.

The delegate of Italy agreed with that suggestion, provided each of the Administrations concerned provisionally consented to the requirements put forward by the other.

The delegate of Belgium supported the Italian delegate's view.

The delegate of Luxembourg did not think that Administrations were in a position to prejudge decisions taken at Government level.

The Chairman of Working Group 5A said that the proposal formulated by the delegate of Italy was acceptable from the Working Group's point of view. However, a deadline would have to be set for the conclusion of such negotiations. He envisaged that there would be two stages of agreement. In the first stage it would be assumed, purely for the purpose of starting planning and without prejudice to the outcome of the negotiations, that agreement between the negotiating parties had already been reached. In the second stage, when the negotiations were concluded, the plan would be either confirmed or modified.

After further discussion in which the delegates of Italy and Luxembourg, the Chairman of Working Group 5A, and the delegates of Sweden, Belgium and the USSR took part, the Chairman suggested that, in addition to the principle put forward by the Chairman of Working Group 5A in his oral presentation, the Committee might adopt a text reading roughly as follows, subject to subsequent minor drafting changes :

"... However, if negotiations between Governments are in progress, the requirements submitted are provisionally taken into consideration without prejudging the outcome of the negotiations, provided no objection is raised by the delegations of the countries concerned."

It was so decided.

The delegate of India requested a clarification of the situation with regard to unintentional spillover in the case of countries not represented at the Conference.

The Chairman said that the provision just adopted only covered the case of intentional spillover.

The delegate of Ireland said that his Administration had revised its requirements on the basis of the deadline set at the previous meeting. If that deadline was changed, he reserved the right to revise his delegation's position.

The delegate of Mauritania proposed that a date should be set beyond which bilateral negotiations in progress could no longer be taken into account.

After a brief discussion in which the delegates of Italy, India and the USSR took part, the Chairman of Working Group 5A said that Friday, 28 January was the latest possible date for announcing the results of agreements on extension of coverage.

That date was approved.

4. Appointment of representatives from Africa and Asia to assist the Chairman of Working Group 5A

The delegate of Senegal proposed that Mr. Harbi (Algeria) and Mr. Arasteh (Iran) should assist the Chairman of Working Group 5A as the representatives of the African and Asian countries respectively, and should also participate in the work of the conciliation group.

It was so decided.

The meeting rose at 1210 hours.

The Secretary : The Chairman :

D. KANE A. PETTI

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 184-E
31 January 1977
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COMMITTEE 7

SUMMARY RECORD

OF THE

THIRD MEETING OF COMMITTEE 7

(Re-arrangement of the Radio Regulations)

Monday, 24 January 1977, at 1000 and at 1410 hrs

Chairman : Mr. J.J. HERNÁNDEZ-G. (Mexico)

Subjects discussed :	Documents Nos.
1. Draft report of Working Group 7A1 (Annex 2) (continued)	RR6(Rev.1)
2. Draft report of Committee 7 to the Plenary meeting	DT/RR1
3. Approval of summary record of the first meeting of Committee 7	118

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1. Draft report of Working Group 7A1 (Annex 2) (continued)
(Document No. RR6(Rev.1))

The Chairman invited the Committee to continue its consideration of Annex 2 in the Report of Working Group 7A1 (Document No. RR6(Rev.1)). The text of the draft resolution contained therein already incorporated some amendments agreed at the previous meeting.

The delegate of France said that he would transmit direct to the Secretariat some purely drafting improvements for the revised French text of the draft resolution.

First paragraph of the preamble

The delegate of the USSR, supported by the delegate of Spain, said that to give effect to the proposal he had made at the second meeting, the quotation marks should be removed from the heading of the draft resolution and the full title of the Experts' Report should be inserted in the first preambular paragraph, sub-paragraph a).

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It was so agreed.

The first paragraph of the preamble, as amended, was approved.

Second paragraph of the preamble

Sub-paragraph a)

The delegate of Norway, speaking on behalf of the delegations of Denmark and his own, proposed the addition of the words "which the Group of Experts was not authorized to do" after the words "redundant provisions".

The delegate of the Federal Republic of Germany expressed doubts about the joint amendment which might imply that the Experts had not been authorized to effect some further refinement in the re-arrangement of the Radio Regulations. In any event the time alloted for such a task had been inadequate.

The delegate of the United States of America said that the joint amendment was acceptable provided it were made clear that the 1979 WARC was entitled to consider further refinement of the re-arrangement and that it was deletion of superfluous or redundant provisions that the Experts were not authorized to carry out.

The delegate of Denmark emphasized the importance of indicating the exact terms of reference given to the Group of Experts and the lack of time which had prevented them from achieving an orderly and logical re-arrangement. He was concerned to learn that some delegations appeared to think that the 1979 WARC was authorized to go beyond what the Experts had been empowered to do.

The delegate of the USSR said that as the Experts had confined themselves to separating out certain provisions in the interests of logic without excluding any provisions, it would suffice to suppress the words "and the deletion of the superfluous or redundant provisions". The reference to "harmonization" at the beginning of sub-paragraph a) presupposed possible further refinement in the re-arrangement of the Radio Regulations.

The delegate of Norway explained that the purpose of the joint amendment was to indicate clearly to any reader why parts of the Experts' recommendations concerning re-arrangement might look odd and repetitive. The deletion suggested by the USSR delegation was unacceptable because the final phrase of sub-paragraph a) together with the joint amendment showed what kind of harmonization the 1979 WARC could undertake.

The delegate of the United Kingdom said that the USSR suggestion was unacceptable because the purpose of sub-paragraph a) was to provide an interpretation of the terms of reference of the 1979 WARC so as to enable that Conference to suppress, modify or add to the Radio Regulations. In that connection he drew special attention to the last sentence in point 15.5 of the Experts' Report from which it was clear that the Experts recognized that the WARC would take the necessary action where certain provisions were obviously superfluous or redundant, whereas for want of time, they themselves had been unable to refine, and for want of authority, to delete provisions. Accordingly, he proposed that the joint amendment be re-worded to read : "which the Group of Experts was unable to do".

The delegates of Singapore, Norway and the United States supported the United Kingdom wording which was couched in more flexible and general terms than the joint amendment.

The delegate of Spain said that mention of "superfluous" provisions might give rise to controversy and criticism but agreed that reference was required to the need for removing repetitions.

The delegate of Australia observed that sub-paragraph a) should be divided into two parts to make it absolutely clear what the Group of Experts had been authorized to do.

The delegate of the USSR, agreeing with the previous speaker said that sub-paragraph a) as it stood attempted to deal with two separate topics and was consequently both imprecise and confusing.

The delegate of the United Kingdom proposed the insertion of a comma after the words "Radio Regulations" which, together with his amended wording for the joint amendment ought to make the meaning clear and meet the objections raised during the discussion.

The delegate of Denmark said that the United Kingdom proposal represented a reasonable compromise : the word "unable" was anodyne enough to meet the problems caused by controversial issues concerning the competence of administrative conferences.

The United Kingdom proposal was approved.

Sub-paragraph a), as amended, was approved.

Sub-paragraph b)

Approved.

Sub-paragraph c)

The delegate of the USSR proposed the insertion of the words "and the Additional Radio Regulations" after the words "Radio Regulations".

The Chairman observed that such a modification should be acceptable seeing that the 1979 WARC would have the final say about the re-arrangement.

Sub-paragraph c), as amended, was approved.

Operative paragraph 1)

The delegate of the USSR considered that the opening phrase of operative paragraph 1) was too broad in scope because some proposals concerning re-arrangement had not even been discussed by the Experts and would have to be taken up at the 1979 WARC. Pursuant to the provisions of item 2.4 of its agenda (Document No. 1), the Broadcasting Satellite Conference could not go further than consider the results of the Experts' work and make recommendations to administrations "on the use of the proposed structure in the presentation of their proposals" to

the 1979 WARC. The word "endorsed" in the second line of operative paragraph 1) was too strong.

The delegate of the Ukrainian Soviet Socialist Republic suggested that the USSR delegate's point would be met by inserting the words "in principle" after the word "endorsed".

The delegate of the United Kingdom said that operative paragraph 1) had been framed in general terms to outline what action might be taken on the Experts' report but the Ukrainian suggestion was acceptable.

Operative paragraph 1) was approved with the insertion of the words "in principle" after the word "endorsed".

Operative paragraph 2)

In reply to a comment by the delegate of the USSR about the wording of operative paragraph 2) being too vague, the Chairman pointed out that its purpose was to give the Secretary-General instructions as to the content of the publication to be prepared by September 1977.

The delegate of the United Kingdom said it was important to maintain the phrase "so published" otherwise the Secretary-General might be precluded from republishing some of the material from the Radio Regulations or Additional Radio Regulations at some future date.

The Deputy Secretary-General confirmed that the loose-leaf edition of the Radio Regulations and Additional Radio Regulations was the legal instrument for coordination up to and beyond 1976 until such time as new Radio Regulations came into force. Therefore, further copies might have to be re-issued before 1979. Hence the phrase "so published" was appropriate and deletion of the word "so" could place a restriction on the Secretary-General which in any event the Broadcasting Satellite Conference was not competent to impose.

The delegate of Venezuela stressed the importance of giving the Secretary-General clear instructions as to what should be included in the publication of September 1977.

The Chairman suggested that the Committee might proceed with the examination of operative paragraph 3) and then decide whether any modification was needed to render operative paragraph 2) more explicit.

It was so agreed.

Operative paragraph 3)

The delegate of Norway, speaking on behalf of the delegation of Denmark and his own, proposed the insertion of a new operative paragraph 3), reading :

"to urge the CCITT

3) to complete the studies regarding charging, accounting and operational provisions for the Maritime Mobile Service, and to recommend, if possible, which parts could be included in the Radio Regulations by the 1979 WARC;"

The purpose of the joint amendment was to fill the gap in the draft resolution which had not mentioned the CCITT studies undertaken in pursuance of Resolution No. Mar2 - 22.

The delegate of the United Kingdom, supported by the delegates of the Netherlands and Singapore, favoured the joint amendment which clarified the position in so far as CCITT's work was concerned and stressed the urgent need for completing its studies.

The delegate of the United States of America said it was important to indicate that CCITT's studies would be examined under Agenda item 2.8 of the 1979 WARC and not under its Agenda item 2.6.

Accordingly he proposed the following alternative wording :

"to urge the CCITT to complete as soon as possible the studies being carried out in accordance with Resolution No. Mar2 - 22 and Resolution No. Mar2 - 23 and to distribute the results to Administrations to enable them to prepare proposals for the 1979 WARC under Agenda item 2.8 of that Conference".

The delegate of the USSR said that in principle such wording was acceptable.

The delegate of Denmark observed that for the time being any results emerging from CCITT studies would have to be regarded as proposals and they could only become recommendations at a later stage.

The Deputy Secretary-General said that the word "retained" would be preferable to the word "included" in the joint amendment since it was for administrations to propose which provisions were to be deleted or transferred to another part of the Radio Regulations. Under the terms of Agenda item 2.8 of the 1979 WARC, administrations would be using the CCITT studies as a basis for formulating their proposals. That matter was not within the competence of the Broadcasting Satellite Conference nor was it for CCITT's Plenary Assembly to make recommendations on the subject.

The delegate of Venezuela, supported by the delegate of the USSR, said that a detailed reference to CCITT studies would be outside the terms of reference of Committee 7 and the present Conference because those studies had been initiated as a result of decisions reached by the 1974 World Maritime Administrative Radio Conference.

The delegate of the United States of America said a distinction must be made between the Experts' work on re-arrangement and the requirements set out in the recommendation contained in Resolution No. Mar2 - 23 concerning CCITT's work on accounting. Nothing in Committee 7's draft resolution should go beyond that recommendation or it might appear to by-pass administrations and encroach on their rights.

The delegates of the United Kingdom and Singapore favoured the United States text.

The delegate of Denmark, drawing attention to point 16 in the Experts' Report, said that some explanation must be given in the draft resolution of why the Experts had made no recommendation on Articles 38 to 40A and the Additional Radio Regulations.

The representative of the CCITT gave details of the stage reached in the CCITT's studies and indicated that some guidance on questions of lay-out and position would be useful to the Joint Working Party.

The Chairman said that it was undesirable to be too specific in the Committee's draft resolution lest that raised problems of competence as between CCITT and the Broadcasting Satellite Conference.

The meeting was suspended at 12 noon and was resumed at 1410 hours.

The delegate of Norway suggested the insertion of the words "on that basis" between the words "proposals" and "for the 1979 WARC" in the text proposed by the United States delegation.

That amendment was accepted.

The United States text, as amended, was approved.

The delegate of France, referring to old paragraph 3 under "resolves", which, as a result of the insertion of the United States text had become new paragraph 4, proposed that the words "and that the Radio Regulations contained in the 1976 loose-leaf edition should not be so used" should be deleted to avoid any misunderstanding.

The delegate of Spain supported that proposal and suggested further that the word "exclusively" might be inserted between the words "used" and "as".

The delegates of the United Kingdom and Singapore opposed the latter suggestion.

The delegate of Norway, supported by the delegates of the United States and Venezuela, suggested that the Committee should accept the French delegate's proposal to delete the last part of the paragraph but should not insert the word "exclusively".

It was so decided.

The delegate of the USSR wondered whether, in addition to references to resolves 1 and 2, the paragraph should not also contain a reference to new resolves 3.

The delegate of the United Kingdom observed that while the documents mentioned under resolves 1 and 2 were clearly subject to the authority of the Conference, that was not true of the CCITT studies mentioned under resolves 3. A reference to resolves 1 and 2 was therefore sufficient.

The delegates of the Federal Republic of Germany, Spain and Norway also agreed with the view expressed by the United Kingdom delegate.

New paragraph 4 under "resolves", as amended by the delegate of France, was approved.

New paragraph 5 under "resolves" was approved.

The delegate of Norway, speaking also on behalf of the delegate of Denmark, proposed that the order of the last two paragraphs under "resolves" should be reversed, so that the request to the 1979 WARC might appear in last position.

The delegate of the United Kingdom said that the suggestion was acceptable.

It was so decided.

The resolution as a whole, as amended, was approved.

2. Draft report of Committee 7 to the Plenary Meeting (Document No. DT/RR1)

The Chairman invited the Committee to consider the text of its draft report to the Plenary Meeting. The words "and was chaired by Mr. R.E. Shrum, United States of America" should be added at the end of paragraph 3, and the sub-paragraph in square brackets at the end of paragraph 5 should be left in abeyance pending the discussion of the next item on the Committee's agenda.

Subject to that reservation and with the amendment to paragraph 3 indicated by the Chairman, the main text of the draft report was approved.

Annex 1

Referring to the last sentence of Section 1 (Introduction), the delegate of the German Democratic Republic suggested that the Administrative Council's attention might also be drawn to changes affecting items 2.1 to 2.3 of the agenda of the WARC-1979.

The delegate of the United Kingdom suggested that the Secretary-General could ask the Administrative Council "to take account of the re-numbering of Articles referred to in the agenda of the WARC-1979".

The delegate of Norway supported that suggestion.

It was so decided.

The delegate of the Federal Republic of Germany suggested that, in the interests of clarity, the brackets in the second sentence of Section 1 should be deleted.

The delegate of the United Kingdom supported that proposal and suggested further that the word "liable" in the same sentence should be replaced by the word "likely".

The delegate of Norway suggested the replacement of the word "submitted" in the same sentence by the word "indicated".

Those suggestions were accepted.

Section 1 of Annex 1, as amended, was approved.

Section 2 was approved without change.

The Chairman said that sub-section E of Section 3 should be left in abeyance pending the discussion of the next item on the Committee's agenda.

The delegate of France suggested the addition of the words "titles only" in brackets at the end of the last line of sub-sectioh E (Appendices, Resolutions and Recommendations).

After a brief discussion in which the delegates of the USSR, the Federal Republic of Germany and the United Kingdom, the Deputy Secretary-General and the delegate of France took part, it was decided to leave the last line of sub-section E without change.

Section 3 was approved with the exception of sub-section E.

Section 4 was approved.

Annex 2

Paragraph a)

The United Kingdom delegate suggested that paragraph a) should refer to the fact that another aim of the edition was to serve as a basic reference document for the 1979 WARC itself, but did not press the suggestion when the Chairman said that paragraph a) drew attention to Resolution No. A, which might be considered as covering the United Kingdom delegate's point.

Paragraph a) was approved.

Paragraph b)

The Chairman recalled the discussion which had taken place at the Committee's second meeting in connection with point 3, paragraph f) of the first draft report of Working Group 7A (Document No. RR5) when the Chinese delegation had requested the inclusion in the clean copy of the Re-Arrangement of the Radio Regulations of pages 1 - 9 of the Group of Experts' Report. In his view a possible solution, to avoid the expense of re-editing pages 1 - 9 and the complications involved, would be for mention to be made of the Chinese delegation's point in Committee 7's report to the Plenary.

After a discussion in which the delegations of the United Kingdom, Spain and China and the Deputy Secretary-General took part, the Chairman proposed that the paragraph in square brackets after paragraph 5 of the Committee's draft report (Document No. DT/RR1) should be deleted and the following paragraph inserted :

"The Committee took note of the reservation expressed by the Experts from the People's Republic of China who participated in the work of the Group, which is reproduced in paragraph 4.2 of the Report of the Group of Experts."

That proposal was supported by the delegate of Spain and was unanimously adopted.

The Chairman said that in consequence of that decision the text of point 3, paragraph f) of Document No. RR5 would remain unchanged.

The delegate of the Federal Republic of Germany proposed the deletion of the words "including a revised version of Note 1 of Annex 1 to Appendix 4", since the text would not be self-contained if it included a reference to Appendix 4.

It was so agreed.

The delegate of the United Kingdom proposed that the words "as approved" in the last line of paragraph b) should be altered to "as endorsed" and the delegate of the USSR proposed that the phrase should read "as endorsed in principle".

It was so agreed.

Paragraph b), as amended, was approved.

Paragraph c)

The delegate of Venezuela pointed out that paragraph c) should include a reference to the CCITT in view of the revised text of Resolution No. A which had just been approved.

It was agreed that paragraph c) should be approved, subject to re-drafting of the text by the Secretariat in the formal language customary in such cases, which would be along the lines of "to instruct the Secretary-General to bring Resolution No. A to the notice of the Administrations, the Administrative Council, the CCITT and the WARC of 1979".

The draft report of Committee 7 to the plenary meeting (Document No. DT/RR1) as a whole, subject to the re-drafting of Annex 2, paragraph c) by the Secretariat, was approved.

3. Approval of Summary Record of the first Meeting of Committee 7 (Document No. 118)

The Deputy Secretary-General said that in the first line of page 5, the word "legal" should be inserted before the word "documents".

The delegate of the USSR said that his first intervention on page 6 should be amended as follows : In 6) "No. 470J" should be changed to "No. 470 VG".

The second line of his intervention should be amended to read :

".....acceptable in general to his Administration with certain corrections. At that meeting, the delegate of the USSR wished to have the following amendments considered ....".

The second USSR intervention near the bottom of page 6 should be amended by the insertion of the words "in general" after the word "acceptable" in the third line, and the deletion, in the fifth line of the words "which concerned simple errors or oversights" and their replacement by the words "which in his view would not give rise to a lengthy discussion".

Document No. 118, as amended, was approved.

The Chairman requested and was accorded permission to approve the Summary Records of the Committee's second and third meetings on the Committee's behalf, subject to the usual procedure for the submission by delegations of written amendments.

With the customary exchange of courtesies, he declared the work of Committee 7 completed.

The meeting rose at 1645 hours.

The Secretary :
A. ZACCAGNINI

The Chairman :
J.J. HERNÁNDEZ-G.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Corrigendum No. 1 to
Document No. 185-E
1 February 1977
Original : English

COMMITTEE 6

The following paragraphs of the annex to Document No. 185 (First report of W.G. 6B) have been amended as follows, to take account of the outcome of the work of the small Ad Hoc Group convened by Working Group 6B at its fourth meeting

1.11 In the event of continuing disagreement between one administration seeking to effect coordination and one with which coordination has been sought, provided that the assistance of the Board has been requested, the administrations concerned may explore the possibility of reaching an agreement on the use of the proposed frequency assignment for a specified period.

3.15 If the finding is unfavourable with respect to paragraph 3.9 or 3.10, as appropriate, the notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding. In those circumstances the notifying administration shall undertake not to bring into use the frequency assignment until the coordination in paragraph 3.14 can be fulfilled. But the administrations concerned may explore the possibility of reaching an agreement on the use of the proposed frequency assignment for a specified period.

3.32 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 paragraph 3.31 to be applied and should that administration insist upon reconsideration of the notice, but should the Board's finding remain unchanged, the notification should again be returned to the notifying administration in accordance with paragraph 3.30. In those circumstances, the notifying administration shall undertake not to bring into use the proposed frequency assignment until the coordination in paragraph 3.31 can be fulfilled. But the administrations concerned may explore the possibility of reaching an agreement on the use of the frequency assignment for a specified period. In that event the IFRB shall be notified of the agreement and the frequency assignment shall be recorded in the Master Register with a note indicating that the assignment is valid only for the specified period.

F.S. URBANY
Chairman of Working Group 6B

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 185-E
1 February 1977
Original : English

COMMITTEE 6

First Report of Working Group 6B

The Working Group herewith submits the results of its work to date concerning "Procedures for coordination, notification and registration for stations of Terrestrial Services in the bands 11.7-12.2 GHz (in Regions 2 and 3) and 11.7-12.5 GHz (in Region 1) in cases where broadcasting-satellite stations are involved" which are set out in the Annex to this Report. The Working Group based its considerations upon the Report of Sub-Working Group 6B-2, K. OLMS, Chairman, as contained in Conference Document No. 141.

The main points to be drawn to the attention of Committee 6 are that :

1. It was agreed that requirements for consultation between a country wishing to introduce a terrestrial station and a country with a planned or operational Broadcasting-Satellite Service should be based upon a power flux-density value. The value of such power flux-density and the method for its calculation are to be inserted upon completion of relevant work in Committee 4. The Working Group however was unable to agree as to whether the power flux-density produced by the terrestrial station should be measured at the other countries "edge of service area" or "frontier".

2. It was agreed that the procedures, in so far as practicable, should appear in a self-contained document. Accordingly relevant provisions of Article 9 of the Radio Regulations are incorporated in the Annex.

3. There are references in square brackets to the terms / contracting / and / the Plan /. The appropriate terms to appear in the procedures will be determined in the light of decisions taken elsewhere.

4. At the time this Report was prepared the text of paragraph 3.32 in the Annex had not been agreed but had been referred to an ad hoc group in the hope of reaching an acceptable text with respect to circumstances under which an assignment is to be recorded in the Master Register. Resolution of this matter will have a consequential effect on paragraph 1.11 now in square brackets.

The details of the procedures are outlined in the Annex.

F.S. URBANY
Chairman of Working Group 6B

Annex : 1

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A N N E X

COORDINATION, NOTIFICATION AND RECORDING IN THE MASTER INTERNATIONAL FREQUENCY REGISTER OF FREQUENCY ASSIGNMENTS TO TERRESTRIAL STATIONS IN THE FREQUENCY BAND 11.7 - 12.2 GHz (IN REGIONS 2 AND 3) AND 11.7 - 12.5 GHz (IN REGION 1) IN CASE WHERE BROADCASTING-SATELLITE STATIONS ARE INVOLVED[1)]

Section I. Coordination procedure to be applied

1.0 Before a /~contracting~/ Administration notifies to the Board a frequency assignment to a terrestrial transmitting station, it shall initiate coordination with any other Administration for which an assignment to a broadcasting-satellite station appears in the /~Plan~/ if

- the occupied bandwidths of the two transmissions overlap or are separated by less than /~---~/ MHz and
- the PFD which would be produced by the proposed terrestrial transmitting station exceeds

  the value derived in accordance with Appendix /~X~/

  at one or more points of /~the frontier~/ /~the edge of service area of the Broadcasting-Satellite Service station~/ /~for that Administration~/.

1.1 For the purpose of effecting the coordination, the administration responsible for the terrestrial station shall send to the administrations concerned by the fastest possible means, 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 bring the station into use.

1.2 An administration with which coordination is sought shall acknowledge receipt of the coordination data immediately by telegram. If no acknowledgement is received within fifteen days of dispatch, the administration seeking coordination may dispatch a telegram requesting acknowledgement of receipt of the coordination data, to which the receiving administration shall reply. Upon receipt of the coordination data an administration shall promptly examine the

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1) These procedures do not dispense from applying the procedures prescribed for terrestrial stations in Article 9 of the Radio Regulations in the case where stations other than those of the Broadcasting-Satellite Service are involved.

matter with regard to interference[1] with which coordination is sought which would be caused to its assignments in accordance with the / Plan / / * / and shall, within an overall period of sixty days from dispatch of the coordination data, either notify the administration requesting coordination 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.

1.3 No coordination is required when an administration proposes to change the characteristics of an existing assignment in such a way as not to increase the level of interference to the service to be rendered by the broadcasting-satellite stations of other administrations, in accordance with the / Plan /.

1.4 An administration seeking coordination may request the Board to endeavour to effect coordination, in those cases where :

a) an administration with which coordination is sought fails to acknowledge receipt under paragraph 1.2 within thirty days of dispatch of the coordination data;

b) an administration which has acknowledged receipt under paragraph 1.2 but fails to give a decision within ninety days of dispatch of the coordination data;

c) there is disagreement between the administration seeking coordination and an administration with which coordination is sought as to the acceptable level of interference; or

d) coordination 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 endeavour to effect such coordination.

1.5 Either the administration seeking coordination or an administration with which coordination is sought, or the Board, may request additional information which they may require to assess the level of interference to the services concerned.

1.6 Where the Board receives a request under paragraph 1.4 a), it shall forthwith send a telegram to the administration concerned requesting immediate acknowledgement.

1.7 Where the Board receives an acknowledgement following its action under paragraph 1.6 or where the Board receives a request under paragraph 1.4 b), it shall forthwith send a telegram to the administration concerned requesting an early decision in the matter.

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1) The criteria to be employed in evaluating interference levels shall be based upon relevant CCIR Recommendations or, in the absence of such Recommendations, shall be agreed between the administrations concerned.

/ * Note to Editorial Committee : the phrase "assignments in accordance with the / Plan /" should be covered in the Section on definitions and should be consistent with paragraph 4.2 of Document No. 174. /

1.8 Where the Board receives a request under paragraph 1.4 d), it shall endeavour to effect coordination in accordance with the provisions of paragraph 1.1. Where the Board receives no acknowledgement of its request for coordination within the period specified in paragraph 1.2, it shall act in accordance with paragraph 1.6.

1.9 Where an administration fails to reply within thirty days of dispatch of the Board's telegram sent under paragraph 1.6 requesting an acknowledgement, or fails to give a decision in the matter within sixty days of dispatch of the Board's telegram of request sent under paragraph 1.7, it shall be deemed that the administration with which coordination was sought has undertaken that no complaint will be made in respect of any harmful interference which may be caused by the terrestrial station being coordinated to the service rendered by its earth station.

1.10 Where necessary, as part of the procedure under paragraph 1.4, the Board shall assess the level of interference. In any case, the Board shall inform the administrations concerned of the results obtained.

/1.11 In the event of continuing disagreement between one administration seeking to effect coordination and one with which coordination has been sought, provided that the assistance of the Board has been requested, the administration seeking coordination may, after sixty days from the date of the request for the assistance of the Board, taking into consideration the provisions of paragraph 2.3, send its notice concerning the proposed assignment to the Board./

1.12 / Where the Board receives information from an administration in accordance with the provisions of paragraph / .../, it shall consider as notifications under this Section, only that information relating to assignments to existing terrestrial stations or to those to be brought into use within the time limits defined in paragraph 2.3./

Section II. Notification of frequency assignments

2.1 Any frequency assignment to a fixed, land or broadcasting station shall be notified to the International Frequency Registration Board if the use of the frequency concerned is capable of causing harmful interference to the service rendered by a broadcasting-satellite station of another administration, or if it is desired to obtain international recognition of the use of the frequency.[1)]

2.2 For this notification, an individual notice for each frequency assignment shall be drawn up as prescribed in Section A of Appendix 1 to the Radio Regulations, which specify 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 that Appendix, together with such further data as it may consider appropriate.

2.3 Whenever practicable, each notice should reach the Board before the date on which the assignment is brought into use. The notice made in accordance with paragraph 2.2 must reach the Board not earlier than three years and not later than ninety days before the date on which the assignment is to be brought into use.

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1) The attention of administrations is specifically drawn to the application of the provisions of paragraph 1 above.

2.4 Any frequency assignment, the notice of which reaches the Board less than ninety days before it is brought into use, shall, where it is to be recorded, bear a remark in the Master Register to indicate that it is not in conformity with paragraph 2.3.

Section III. Procedure for the examination of notices and the recording of frequency assignments in the Master Register

3.1 Whatever the means of communication, including telegraph, by which a notice is transmitted to the Board, it shall be considered complete if it contains at least those appropriate basic characteristics specified in Section A of Appendix 1 to the Radio Regulations.

3.2 Complete notices shall be considered by the Board in the order of their receipt.

3.3 Any notice which is incomplete shall be returned by the Board immediately, by airmail, to the notifying administration with the reasons therefor.

3.4 Upon receipt of a complete notice, the Board shall include the particulars thereof, with the date of receipt, in its weekly circular; / * / this circular shall contain the particulars of all such notices received since the publication of the previous circular.

3.5 The circular shall constitute the acknowledgement to the notifying administration of the receipt of a complete notice.

3.6 Complete notices shall be considered by the Board in the order specified in paragraph 3.2. The Board cannot 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.

3.7 The Board shall examine each notice :

3.8 a) with respect to its conformity with the Convention the relevant provisions of the Radio Regulations and the provisions of the Final Acts (with the exception of those relating to the coordination procedure and the probability of harmful interference);

3.9 b) with respect to its conformity with the provisions of paragraph 1.0 relating to coordination of the use of the frequency assignment with the other administrations concerned;

3.10 c) where appropriate, with respect to the probability of harmful interference to a broadcasting-satellite station existing in the / Plan /.

/ * Note to the Editorial Committee : Provisions in the Section on definitions should be made to define "weekly circular" consistent with No. 497 of the Radio Regulations. /

3.11 Depending upon the findings of the Board subsequent to the examination prescribed in paragraphs 3.8, 3.9 and 3.10, further action shall be as follows :

3.12 Finding unfavourable with respect to paragraph 3.8.

3.13 Where the notice includes a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115 of the Radio Regulations, it shall be examined immediately with respect to paragraphs 3.9 and 3.10.

3.14 If the finding is favourable with respect to paragraph 3.9 or 3.10, as appropriate, 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.

3.15 If the finding is unfavourable with respect to paragraph 3.9 or 3.10, as appropriate, the notice shall be returned immediately by airmail to the notifying administration with the reasons of the Board for this finding. Should the administration insist upon reconsideration of the notice, the assignment shall be recorded in the Master Register. However, this recording is made under the condition that the notifying administration undertakes to cease immediately the emission as soon as harmful interference is reported.

3.16 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 of the Radio Regulations, 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.

3.17 If the notifying administration resubmits the notice unchanged, it shall be treated in accordance with the provisions of paragraph 3.16.

3.18 If the notifying administration resubmits the notice with a specific reference to the fact that the station will be operated in accordance with the provisions of No. 115 of the Radio Regulations, it shall be treated in accordance with the provisions of paragraphs 3.13 and 3.14 or 3.15, as appropriate.

3.19 If the notifying administration resubmits the notice with modifications which, after re-examination, result in a favourable finding by the Board with respect to paragraph 3.8, the notice shall be treated under the provisions of paragraphs 3.20 to 3.32. However, in any subsequent recording of the assignment, the date of receipt by the Board of the resubmitted notice shall be entered in Column 2d.

3.20 Finding favourable with respect to paragraph 3.8.

3.21 Where the Board finds that the coordination procedure mentioned in paragraph 3.9 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.

3.22 Where the Board finds that the coordination procedure mentioned in paragraph 3.9 has not been applied, and the notifying administration requests the Board to effect the required coordination, 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 paragraph 3.21. If the Board's efforts are unsuccessful, the notice shall be examined by the Board with respect to the provisions of paragraph 3.10.

3.23 Where the Board finds that the coordination procedure mentioned in paragraph 3.9 has not been applied, and the notifying administration does not request the Board to effect the required coordination, 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.

3.24 Where the notifying administration resubmits the notice and the Board finds that the coordination procedure mentioned in paragraph 3.9 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 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.

3.25 Where the notifying administration resubmits the notice with a request that the Board effect the required coordination, it shall be treated in accordance with the provisions of paragraph 3.22. 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.

3.26 Where the notifying administration resubmits the notice and states it has been unsuccessful in effecting the coordination, it shall be examined by the Board with respect to the provisions of paragraph 3.10. 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.

3.27 Finding favourable with respect to paragraphs 3.8 and 3.10.

3.28 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.

3.29 Finding favourable with respect to paragraph 3.8 but unfavourable with respect to paragraph 3.10.

3.30 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.

3.31 Should the notifying administration resubmit the notice with modifications which result, after re-examination, in a favourable finding by the Board with respect to paragraph 3.10, 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.

3.32 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 paragraph 3.31 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 recording is made under the condition that the notifying administration undertakes to cease immediately the emission as soon as harmful interference is reported.

3.33 Change in the Basic Characteristics of Assignments already recorded in the Master Register.

3.34 A notice of a change in the basic characteristics of an assignment already recorded, as specified in Appendix 1 to the Radio Regulations (except those entered in Columns 3 and 4a of the Master Register), shall be examined by the Board according to paragraphs 3.8 and 3.9 and, where appropriate, paragraph 3.10 and the provisions of paragraphs 3.12 to 3.32 inclusive applied. Where the change should be recorded, the original assignment shall be amended according to the notice.

3.35 However, in the case of a change in the basic characterisitcs of an assignment which is in conformity with paragraph 3.8, should the Board reach a favourable finding with respect to paragraph 3.9 and, where its provisions are applicable, with respect to paragraph 3.10, 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.

3.36 In applying the provisions 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.

3.37 Recording of frequency assignments notified before being brought into use.

3.38 If a frequency assignment notified in advance of bringing into use has received a favourable finding by the Board with respect to paragraphs 3.8 and 3.9 and, where appropriate, with respect to paragraph 3.10, it shall be entered provisionally in the Master Register with a special symbol in the Remarks Column indicating the provisional nature of that entry.

3.39 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 bringing 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.

4. If use by a terrestrial station of an assignment, which is not in conformity with the foregoing, causes harmful interference to the reception of emissions from a space station in the Broadcasting-Satellite Service using an assignment in conformity with the / plan /, the administration having jurisdiction over the terrestrial station, on being advised accordingly, shall take immediate measures to eliminate the interference.

APPENDIX / X /

(See Document No. 169 to be agreed within Committee 4)

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 186-E
31 January 1977
Original : Spanish

COMMITTEE 5

Argentina, Cuba, Mexico, Paraguay, Venezuela

CHANGES TO BE MADE IN DOCUMENT DL/22(Rev.1)

a) Replace the title by :

PROVISIONS WHICH WILL GOVERN THE BROADCASTING-SATELLITE SERVICE IN REGION 2 UNTIL A DETAILED PLAN WITH THE RELEVANT SPECIFICATIONS HAS BEEN DRAWN UP

b) The introductory paragraph should be amended to read :

In accordance with the principles set forth in Document No. 110, the following transitional provisions applying to the drafting of a detailed plan and the specifications which will govern the planning of the Broadcasting-Satellite Service in frequency band 11.7 to 12.2 GHz are proposed for Region 2.

c) The passage in brackets in paragraph 1 is deleted.

d) Paragraph 2 is unchanged.

e) The whole of paragraph 3 is deleted.

f) Paragraph 4 is unchanged.

g) Paragraph 6 is unchanged.

h) Paragraph 7 is replaced by the following paragraph :

All Administrations in Region 2 shall submit their Broadcasting-Satellite Service requirements to the IFRB not more than one year before the start of the Regional Conference responsible for planning this service in Region 2. "Requirements" are understood to mean the number and boundaries of service areas and the number of channels requested for each of them. Six months before the deadline for submitting requirements, the IFRB shall remind Administrations of the need to submit them by means of a Circular-letter and/or telegram.

i) Paragraph 8 will be adopted with the first set of passages in square brackets, so that it will read :

A Regional Administrative Radio Conference shall be held not later than 1982 for the purpose of carrying out detailed planning for the Broadcasting-Satellite and Fixed-Satellite Services, as set forth in the following paragraph.

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j) Add a paragraph reading :

The said Regional Administrative Radio Conference shall draw up a detailed plan for the orbit-spectrum available for the Broadcasting-Satellite Services in the 12 GHz band. The plan shall provide for the detailed assignment of the orbital positions and frequency channels available.

This Conference shall establish a procedure ensuring that the Broadcasting-Satellite Service requirements submitted by the various Administrations are met in a balanced manner satisfactory to all the countries concerned. It should be laid down as a matter of principle that each Administration in the Region should be guaranteed a minimum number of channels for the operation of the Broadcasting-Satellite Service (4). Above this minimum, the special characteristics of the countries (size, time-tables, language differences, etc.) shall be taken into account.

Planning shall be based on individual reception, but each Administration may use the reception system which meets its requirements best, namely : individual, community, or both together. Planning shall also be based on circular polarization. Account shall also be taken of the specifications approved at the World Administrative Conference (Geneva, 1977) or of those provided by the CCIR in the case of parameters covered by that body's studies and research.

When planning the Broadcasting-Satellite Service, it shall be borne in mind that the system should be designed with a view to having uniform technical characteristics throughout the world, so as to reduce to a minimum technical differences and incompatibilities with the systems of other Regions.

The Conference will be empowered to plan the space services to which this frequency band is allocated.

k) Point 9 will read as follows, on the basis of the version in the first set of square brackets :

No systems existing or planned prior to the implementation of any detailed plan such as referred to above shall cause interference to any systems operating in accordance with such a plan.

l) Point 10 will be replaced by the following paragraph :

No existing or previously planned system shall be recognized in the drawing up of the detailed plan for the broadcasting-satellite system in the 11.7 to 12.2 GHz band in Region 2. Consequently, the installation or planning of a system by an Administration prior to the drawing up of the said plan shall not confer upon that system any rights or recognition. Resolution Spa2 - 3 shall therefore be abolished and replaced by another resolution in conformity with the provisions of this document.

Document DL/22 will thus be arranged as follows :

a, b, c, d, i, j, h, l, k, f, g.

Document DL/22 should be used as a basis for drawing up the relevant Resolutions and the draft terms of reference of the Regional Conference.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 187-E
1 February 1977
Original : English

COMMITTEE 6

Report of Working Group 6A

In accordance with its terms of reference Working Group 6A has held three meetings and has produced the Annex to the present document (concerning the Broadcasting-Satellite Service) which provides procedures relating to the implementation of an a priori plan and procedures for subsequent modification.

The document takes the form of two Articles and has been based mainly on proposals contained in Document No. 11 (Italy) and Document No. 18 (Japan). Initially, a Drafting Group considered the matter, covering questions of both principle and procedure. Sub-Working Group 6A1 then considered the matter and produced its conclusions in Document No. 174.

Working Group 6A has considered this document and also held one short meeting to consider Document No. 174(Rev.1) and wishes to draw the attention of Committee 6 to the following matters :

1. The procedures are incomplete in that Appendix A and Appendix B referred to in Article 4 are not available at this time being dependent on the output of Committee 4. Additionally, the characteristics and the contents of Appendix 1A referred to in Article 5 (e.g. 5.1.2 and 5.1.5) are also yet to be established by the Conference.

2. The base upon which Articles 4 and 5 are dependent is contained in Article 3 of Document No. 11 (Italy). Article 3 is being considered by Working Group 6D and should be considered in conjunction with the Annex of this document.

3. Square brackets have been retained in the following instances :

3.1 [Administration] [Member] [Contracting Member] - It was considered more appropriate to resolve this matter in either Working Group 6D or Committee 6.

3.2 [Article] and [Agreement] - It was considered that Working Group 6D or the Editorial Committee would resolve these questions when the final format is determined.

3.3 [Plan] - These square brackets are reliant on clarification of the output of Committee 5.

3.4 Some Region 2 delegations have proposed an alternate third inset to paragraph 4.3.1 combined with a subsequential addition to paragraph 4.3.2 relating to the timing of advance submissions. This matter is yet to be considered in detail.

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3.5 The inclusion or otherwise of paragraph 4.3.12 was considered worthy of consideration by a wider section of delegates such as Committee 6.

3.6 At the third meeting of the Working Group a consensus of opinion considered paragraphs 4.3.17 and 5.2.5 to be appropriate in substance but recognized that some drafting changes may be necessary. These two paragraphs are a compromise arrived at by a small Ad Hoc Group. Due to the limited time available to study the compromise, a number of delegations requested time to study the implications, reserving the right to raise related matters of substance, should this be necessary.

3.7 Consideration of paragraph 4.5.2 resulted in a variation of opinion on the timing of the publication of up-dated versions of the Plan or Plans. The matter was deferred until the format of the Plan or Plans became more apparent.

4. Sections 5.3, 5.4, 5.5, 5.6 and the miscellaneous provisions were available to the Working Group only at the commencement of the third meeting and have not been studied in detail by the Working Group. Further study was considered necessary in relation to all sections, either in part or in full.

5. The Working Group noted that the title of Article 5 may require the addition of some words relating to both the Plan and the related frequency band and should be reconsidered as the final format becomes more apparent.

6. The Working Group also wishes to draw the attention of Committee 6 to the desirable inclusion in the Master Register of the assignments listed in the Plan. Possibilities are that the date of these assignments to be entered in the Master Register could be either the date of signing of the Final Acts or the date of coming into force of the Agreement.

Although the basic format for procedures for the Broadcasting-Satellite Service is contained in this document, a number of matters which are dependent upon decisions in other areas of the Conference are required to complete the procedural process. However, it is considered advisable to bring the procedures to the attention of Committee 6 at this time.

A. D'ARCEY
Chairman of Working Group 6A

Annex : 1

ANNEX

/ Article 4 /

PROCEDURE FOR MODIFICATIONS TO THE /PLAN/

4.1 When a / Contracting Member / / Member / / Administration / intends to make a modification to the / Plan /, i.e. either

- to change the characteristics of any of its frequency assignments to a space station* in the Broadcasting-Satellite Service shown in the / Plan /, or for which the procedures in this / Article / have been successfully applied, whether or not the station has been brought into use, or

- to include in the / Plan / a new frequency assignment to a space station in the Broadcasting-Satellite Service, or

- to cancel a frequency assignment to a space station in the Broadcasting-Satellite Service,

the following procedure shall be applied before any notification of the frequency assignment is made to the International Frequency Registration Board (see / Article 5 / of / this Agreement / / these Final Acts /).

4.2 In the remainder of the present / Article /, the term "frequency assignment in accordance with the / Agreement / / Final Acts /" means any frequency assignment appearing in the / Plan / or for which the procedure of this / Article / has been successfully applied.

4.3 Proposed changes to a frequency assignment in accordance with the / Agreement / / Final Acts / or the inclusion in the / Plan / of a new frequency assignment

4.3.1 Any Administration proposing a change in the characteristics of a frequency assignment in accordance with the / Agreement / / Final Acts / or the inclusion of a new frequency assignment in the / Plan / shall seek the agreement of those Administrations :

- having a frequency assignment to a space station in the Broadcasting-Satellite Service in the same channel or an adjacent channel in accordance with the / Plan /, or in respect of which, modifications to the / Plan / have been published by the Board in accordance with the provision of this / Article /; or

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* The expression "frequency assignment to a space station" wherever it appears in this / Article /, shall be understood to refer to a frequency assignment associated with a given orbital position.

- having no frequency assignment in the Broadcasting-Satellite Service in the channel concerned but in whose territory the power flux-density value exceeds the prescribed limit as a result of the proposed modification; or

- having a frequency assignment in the band 11.7 - 12.2 GHz to a space station in the Fixed-Satellite Service recorded in the Master Register or for which the information prescribed in No. /639AC*/ /639AL*/ of the Radio Regulations (Geneva, 1976) has been published;

/- having a frequency assignment in the band 11.7 - 12.2 GHz to a space station in the Fixed-Satellite Service recorded in the Master Register, or which has been coordinated or is being coordinated under the provisions of No. 639AJ of the Radio Regulations;/

which are considered to be affected. A frequency assignment is considered to be affected when the limits shown in /Appendix A/ are exceeded.

4.3.2 An Administration intending to make a modification to the /Plan/ shall send to the Board /not earlier than three years, but not later than 18 months, before the date on which the assignment is to be brought into use/ the relevant information listed in /Appendix B/.

4.3.2.1 Where as a result of the intended modification the limits defined in /Appendix A/ are not exceeded, this fact shall be indicated when submitting to the Board the information required by 4.3.2. The Board shall then publish this information in a special section of its weekly circular.

4.3.2.2 In all other cases the Administration shall notify the Board of the names of the Administrations whose agreement it considers should be sought in order to arrive at the agreement in 4.3.1 as well as of those with whom agreement has already been reached.

4.3.3 The Board shall determine on the basis of /Appendix A/ the Administrations whose frequency assignments are considered to be affected within the meaning of 4.3.1. The Board shall include the names of those Administrations with the information received under 4.3.2.2 and shall publish the complete information in a special section of its weekly circular. The results of these calculations shall be sent immediately by the Board to the Administration proposing the modification to the /Plan/.

4.3.4 The Board shall send a telegram to the Administrations listed in the special section of the weekly circular drawing their attention to the information it contains and shall also send them the results of its calculations.

4.3.5 Any Administration which considers that it should have been included in the list of Administrations whose services are considered to be affected may, giving the technical basis for so doing, request the Board to include its name. The Board shall study this request on the basis of /Appendix A/ and, where appropriate, add the name of the Administration to the list and in any case send a copy of the request with an appropriate recommendation to the Administration proposing the modification to the /Plan/.

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* or the corresponding number of the Radio Regulations currently in force.

Note: Appendix A contains the p.f.d limits
Appendix B lists the basic characteristics of the frequency assignments.

4.3.6 Any change in a frequency assignment in accordance with the /Agreement/ /Final Acts/ or any inclusion in the /Plan/ of a new frequency assignment which would have the effect of exceeding the limits specified in /Appendix A/ shall be subject to the agreement of all affected Administrations.

4.3.7 Either the Administration seeking agreement, or the Administration with which agreement is sought, may request any additional information of a technical character it considers necessary. The Board shall be informed of such requests.

4.3.8 Comments from Administrations on the information published pursuant to 4.3.3 should be sent either directly to the Administration proposing the modification or through the Board. In any event the Board shall be informed that comments have been made.

4.3.9 An Administration which has not notified its comments either to the Administration seeking agreement or to the Board within a period of 120 days following the date of the weekly circular referred to in 4.3.2.1 or 4.3.3 shall be understood to have agreed to the proposed change. This time limit may be extended by 80 days in the case of an Administration which has requested additional information in response to 4.3.7 or of an Administration which has requested the assistance of the Board in conformity with 4.3.16. In the latter case the Board shall inform the Administrations concerned of this request.

4.3.10 If in seeking agreement an Administration makes changes in its initial proposal, it shall again apply the provisions of 4.3.2 and the consequent procedure with respect to any other Administration whose services might be affected due to changes made to the initial proposal.

4.3.11 If no comments have been received on expiry of the periods specified in 4.3.9 or if agreement has been reached with the Administrations which have made comments and with which agreement is necessary, the Administration proposing the modification may continue with the appropriate procedure and shall inform the Board indicating the final characteristics of the frequency assignment together with the names of the Administrations with which agreement has been reached.

/4.3.12 When the proposed modification to the/Plan/involves developing countries Administrations shall seek all practicable solutions conducive to economical development of the broadcasting-satellite system of these countries./

4.3.13 The Board shall publish in a special section of its weekly circular the information received under 4.3.11 together with the names of any Administrations with which the provisions of this /Article/ have been successfully applied. The frequency assignment concerned shall enjoy the same status as those appearing in the /Plan/ and will be considered as a frequency assignment in accordance with the /Agreement/ /Final Acts/.

4.3.14 When an Administration proposing to change the characteristics of a frequency assignment or to make a new frequency assignment receives notice of disagreement from an Administration whose agreement it has sought, it should first endeavour to solve the problem by exploring all possible means of meeting its requirement. If the problem still cannot be solved by such means, the Administration whose agreement has been sought should endeavour to overcome the difficulties as far as possible, and shall state the technical reasons for any disagreement if the Administration seeking the agreement requests it to do so.

4.3.15 If no agreement is reached between the Administrations concerned, the Board shall make any study that may be requested by these Administrations; the Board shall inform them of the result of the study and shall make such recommendations it may be able to offer for the solution of the problem.

4.3.16 Any Administration may at any stage in the procedure described, or before applying it, request the assistance of the Board particularly in seeking the agreement of another administration.

4.3.17 The agreement of the affected Administration can also be obtained in accordance with this article, for a specified period.

4.3.18 The relevant provisions of / Article 5 / of this / Agreement / / these Final Acts / shall be applied when frequency assignments are notified to the Board.

4.4 Cancellation of frequency assignments

When a frequency assignment in accordance with the / Agreement / / Final Acts / is released, whether or not as a result of a modification, the Administration concerned shall immediately so inform the Board. The Board shall publish this information in a special section of its weekly circular.

4.5 Master copy of the / Plan /

4.5.1 The Board shall maintain an up-to-date master copy of the / Plan / taking account of the application of the procedure specified in this / Article / The Board shall prepare a document listing the amendments to be made to the / Plan / as a result of modifications made in accordance with the procedure in this / Article /.

4.5.2 The Secretary-General shall be informed by the Board of modifications made to the / Plan / and shall publish an up-to-date version of the / Plan / in an appropriate form as and when the circumstances justify / and in any case every three years /.

/ Article 5 /

NOTIFICATION, EXAMINATION AND RECORDING IN THE MASTER REGISTER OF FREQUENCY ASSIGNMENTS TO SPACE STATIONS IN THE BROADCASTING-SATELLITE SERVICE

5.1 Notification

5.1.1 Whenever an Administration intends to bring into use a frequency assigment to a space station in the Broadcasting-Satellite Service it shall notify this frequency assignment to the Board. The notifying Administration shall apply for this purpose the following provisions.

5.1.2 For any notification under paragraph 5.1.1 an individual notice for each frequency assignment shall be drawn up as prescribed in / Appendix 1A[3)] /, the various Sections of which specify 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.

5.1.3 Each notice must reach the Board not earlier than three years before the date on which the frequency assignment is to be brought into use. The notice must reach the Board in any case not later than ninety days[1] before this date.

5.1.4 Any frequency assignment, the notice of which reaches the Board after the applicable period specified in paragraph 5.1.3 shall, where it is to be recorded, bear a remark in the Master Register to indicate that it is not in conformity with paragraph 5.1.3.

5.1.5 Any notice made under paragraph 5.1.1 which does not contain the characteristics specified in / Appendix 1A[3)] / shall be returned by the Board immediately by airmail to the notifying Administration with the reasons therefore.

5.1.6 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 of the Radio Regulations*, which shall contain the particulars of all such notices received since the publication of the previous circular.

5.1.7 The Circular shall constitute the acknowledgement to the notifying Administration of the receipt of a complete notice.

5.1.3.1 [1] The notifying Administration shall take this limit into account when deciding, where appropriate, to initiate the co-ordination procedure(s).

Note: / Appendix 1A / in paragraph 5.1.2 corresponds with / Appendix B / in / Article 4 / paragraph 4.3.2.

3) These characteristics and the / Appendix / are to be established by the Conference.

* or the corresponding number of the Radio Regulations currently into force.

5.1.8 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.

5.2 Examination and recording

5.2.1 The Board shall examine each notice:

a) with respect to its conformity with the Convention and the relevant provisions of the Radio Regulations and / Appendix .. /[1] (with the exception of those relating to conformity with the / Plan /);

b) with respect to its conformity with the / Plan /.

5.2.2 Where the Board reaches a favourable finding with respect to 5.2.1, the frequency assignment of a / Contracting Member / / Member / / Administration / shall be recorded in the Master Register. The date of receipt by the Board of the notice shall be entered in Column 2d of the Master Register. In relations between / Contracting Members / / Members / / Administrations / all frequency assignments brought into use in conformity with the / Agreement / / Final Acts / and recorded in the Master Register shall be considered to have the same status irrespective of the dates entered in Column 2d for such frequency assignments.

5.2.3 Where the Board reaches an unfavourable finding with respect to paragraph 5.2.1, 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 a satisfactory solution of the problem.

5.2.4 Where the notifying Administration resubmits the notice and the Finding of the Board becomes favorable with respect to 5.2.1, the notice shall be treated as in 5.2.2.

5.2.5 If the notifying Administration resubmits the notice without modification and insists that the notice should be reconsidered, if the Board's Finding with respect to 5.2.1 remains unfavourable, the notification should be returned to the notifying Administration in accordance with 5.2.3. In this case, the notifying Administration undertakes not to bring into use the frequency assignment until the condition specified in paragraph 5.2.4 is fulfilled. The agreement of the affected Administrations can also be obtained in accordance with Article 4 for a specified period, in which case that period shall be noted in the Master Register.

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1) This/Appendix/relates to the sharing criteria

/ 5.3 Recording of frequency assignments notified before being brought into use /

/ 5.3.1 If a frequency assignment notified in advance of bringing into use has received a favouable finding by the Board with respect to the provisions of paragraph 5.2.1, it shall be entered provisionally in the Master Register with a special symbol in the Remarks Column indicating the provisional nature of that entry. /

/ 5.3.2 If, within 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. /

/ 5.3.3 If the Board does not receive this confirmation within the period referred to above, the entry concerned shall be cancelled. The Board shall advise the administration concerned before taking such action. /

5.4 Recording in the Master Register /

5.4.1 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 unfavourable finding shall be inserted in the Remarks Column. /

5.4.2 The date in Column 2c shall be the date of putting into use notified by the administration concerned. It is given for information only.

/ 5.5 Review of Findings /

/ 5.5.1 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. /

/ 5.5.2 The Board, in the light of all the data at its disposal shall review the matter, and shall render and appropriate finding, informing the notifying administration prior either to the promulgation of its finding or to any recording action. /

5.6 Cancellation of Entries in the Master Register

5.6.1 In case of permanent discontinuance of the use of any recorded frequency assignment, the notifying administration shall inform the Board within ninety days of such discontinuance, whereupon the entry shall be removed from the Master Register.

5.6.2 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.

5.6.3 If, in connection with an inquiry by the Board under the terms of the preceding paragraph, the notifying administration has failed to supply the Board within forty-five 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.

/ Miscellaneous provisions /

/ 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. /

/ The Board shall thereupon prepare and forward to the administration concerned a report containing its findings and recommendations for the solution of the problem. /

/ 2. 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 ninety 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. /

/ 3. If it is requested by any administration, particularly by an administration of a country in need of special assistance, and if the circumstances appear to warrant, the Board, using such means at its disposal as are appropriate in the circumstances, shall render its assistance for the computation necessary to the verification of the limits set in Appendices / ..... /. /

/ 4. 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, the Recommendation the C.C.I.R., the state of the radio art and the development of new transmission techniques. /

/ 5. 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 of the Radio Regulations. /

/ 6. In case a Member of the Union avails itself of the provisions of Article 50 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. /

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 183(Rev.2)-E
3 February 1977
Original : English

COMMITTEE 4

Drafting Group 4B

INTERREGIONAL SHARING CRITERIA

1. A drafting group of Working Group 4B has studied the problems of sharing between the space services serving Region 2 administrations and the services in Regions 1 and 3. It has attempted to provide criteria to adequately protect Broadcasting-Satellite Services operating in accordance with a plan and Region 2 space services. The protection of terrestrial services in Regions 1 and 3 from Region 2 Broadcasting-Satellite Services has also been covered.

2. The drafting group recommends that :

2.1 To protect the Broadcasting-Satellite Service in Regions 1 and 3

A power flux-density limit in accordance with Figure 1 from space services of Region 2 onto the service areas of Regions 1 and 3 broadcasting-satellite assignments in the Plan, should be adopted as the value above which coordination with affected Regions 1 and 3 administrations would be initiated.

The primary criteria to be applied in the coordination is a co-channel carrier-to-interference power ratio (C/I) not less than 36 dB for channels allocated to the affected administrations in the Plan. For cases in which there exists a carrier-frequency offset, the reduction of the required C/I as indicated in Document No. 111(Rev.3) shall apply.

The level of interference shall be determined at the input of a receiver of the reference receiving earth station located at each of the test points associated with a given service area of the Plan. The level of interference so determined shall meet the relevant primary interference criteria as laid down in / Document No. 111(Rev.3) / for each service area of the Plan.

2.2 To protect Regions 1 and 3 Terrestrial Services

There should be a pfd limit on the Broadcasting-Satellite Service serving Region 2 to protect the Terrestrial Services of Regions 1 and 3. This limit may be exceeded with the agreement of the administrations concerned, that is, those in whose territory the pfd would be exceeded. The limits would be :

- 134 dBW/m^2/5 MHz
for angles of arrival < 10°
/ - 111 / dBW/m^2/5 MHz
for angles of arrival > 15°
with linear interpolation
between 10° and 15°

For territories of administrations in the western part of Region 1 (west of longitude 30°E) and for the Broadcasting Service in Region 3.

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- 125 dBW/m^2/4 kHz for circular polarization all angles of arrival	For territories of administrations in the eastern part of Region 1 (east of longitude 140° E) and for the Fixed Service in Region 3.

2.3 To protect space services in Region 2

A power flux-density (pfd) limit of / - 134 / dBW/m^2/27 MHz from broadcasting satellites of Region 1 onto the territories of Region 2 administrations lying to the south of latitude / 23° N / should be adopted as the value above which coordination with the affected Region 2 administrations would be initiated. For territories of Region 2 north of latitude / 24° N /, the pfd limit should be / - 123 / dBW/m^2/27 MHz.

These pfd limits should apply only under the following special conditions :

a) when the channels assigned to the Region 1 broadcasting satellite lie in the band 11.7-12.2 GHz;

b) when the orbital position assigned to the Region 1 broadcasting satellite is to the west of / 10° E / longitude.

The primary criteria to be applied in the coordination are the interference protection requirements listed for the Fixed-Satellite Service in Section 2 of / Document No. 111(Rev.3) /. For types of signal not listed in this document, the required protection shall not exceed that specified for the most interference-sensitive signal listed for the Fixed-Satellite Service.

3. In addition it is recommended that :

3.1 No broadcasting satellite serving an area in Region 1 using a frequency in the range 11.7-12.2 GHz should occupy a nominal orbit position further west than / 37° W./ or further east than / 140° E /.

3.2 The modification procedure in the Agreement should prevent any satellite from changing its nominal orbit position in a westerly direction. A change of up to 1° in an easterly direction should be permitted provided that it is taken together with the 8 dB reduction in e.i.r.p. corresponding to broadcasting satellites intended for community reception. This restriction would only need to apply to broadcasting satellites serving Region 1 with nominal orbit positions west of 10° E.

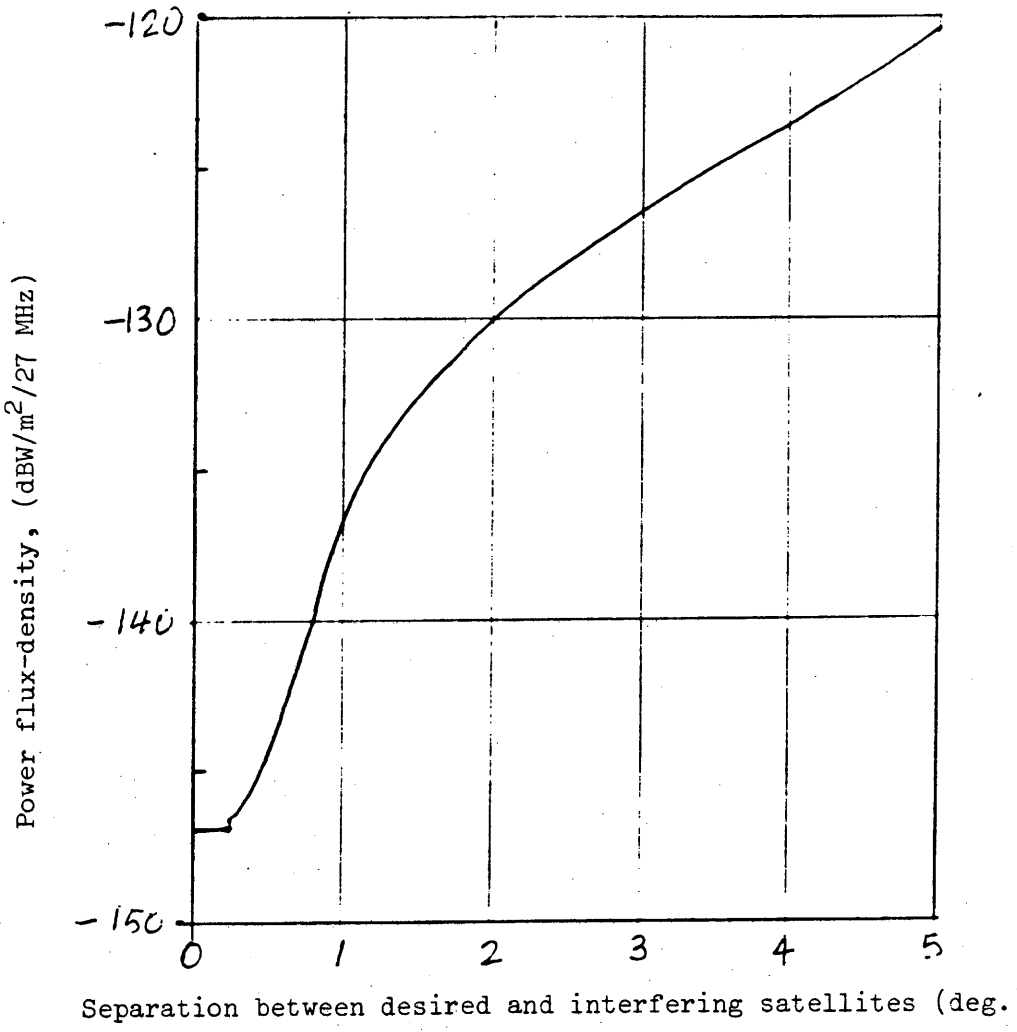

Figure 1 - Maximum power flux-density from Region 2 space stations into service areas of Regions 1 or 3 broadcasting satellites for purposes of initiating coordination

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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1 February 1977
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COMMITTEE 4

Drafting Group 4B

INTERREGIONAL SHARING CRITERIA

1. A drafting group of Working Group 4B has studied the problems of sharing between the space services serving Region 2 administrations and the services in Regions 1 and 3. It has attempted to provide criteria to adequately protect Broadcasting-Satellite Services operating in accordance with a plan and Region 2 space services. The protection of terrestrial services in Regions 1 and 3 from Region 2 Broadcasting-Satellite Services has also been covered.

2. The drafting group recommends that :

2.1 To protect the Broadcasting-Satellite Service in Regions 1 and 3

A power flux-density limit in accordance with Figure 1 from space services of Region 2 onto the service areas of Regions 1 and 3 broadcasting-satellite assignments in the Plan, should be adopted as the value above which coordination with affected Regions 1 and 3 administrations would be initiated.

The primary criteria to be applied in the coordination is a co-channel carrier-to-interference power ratio (C/I) not less than 36 dB for channels allocated to the affected administrations in the Plan. For cases in which there exists a carrier-frequency offset, the reduction of the required C/I as indicated in Document No. 111(Rev.3) shall apply.

The level of interference shall be determined at the input of a receiver of the reference receiving earth station located at each of the test points associated with a given service area of the Plan. The level of interference so determined shall meet the relevant primary interference criteria as laid down in / Document No. 111(Rev.3) / for each service area of the Plan.

2.2 To protect Regions 1 and 3 Terrestrial Services

There should be a pfd limit on the Broadcasting-Satellite Service serving Region 2 to protect the Terrestrial Services of Regions 1 and 3. This limit may be exceeded with the agreement of the administrations concerned, that is, those in whose territory the pfd would be exceeded. The limits would be :

- 134 dBW/m^2/5 MHz for angles of arrival < 10°.	For territories of administrations in Region 1 except for the USSR
- 99 dBW/m^2/5 MHz for angles of arrival > 15° with linear interpolation between 10° and 15°	

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- 125 dBW/m^2/4 kHz for all angles of arrival	For the USSR and for the Fixed Service in Region 3.

2.3 To protect space services in Region 2

There should be a limit on the pfd produced in any part of Region 2 by a broadcasting satellite serving a Region 1 or Region 3 administration. This limit should be -134 dBW/m^2 and should only apply in the frequency range 11.7 - 12.2 GHz. Additionally, it should only apply to broadcasting satellites with nominal orbit positions west of 10° W.

3. In addition it is recommended that :

3.1 No broadcasting satellite serving an area in Region 1 using a frequency in the range 11.7 - 12.2 GHz should occupy a nominal orbit position further west than / 34° W / or further east than / 140° E /.

3.2 The modification procedure in the Agreement should prevent any satellite from changing its nominal orbit position. This restriction would only need to apply to broadcasting satellites serving Region 2 with nominal orbit positions west of 10° W.

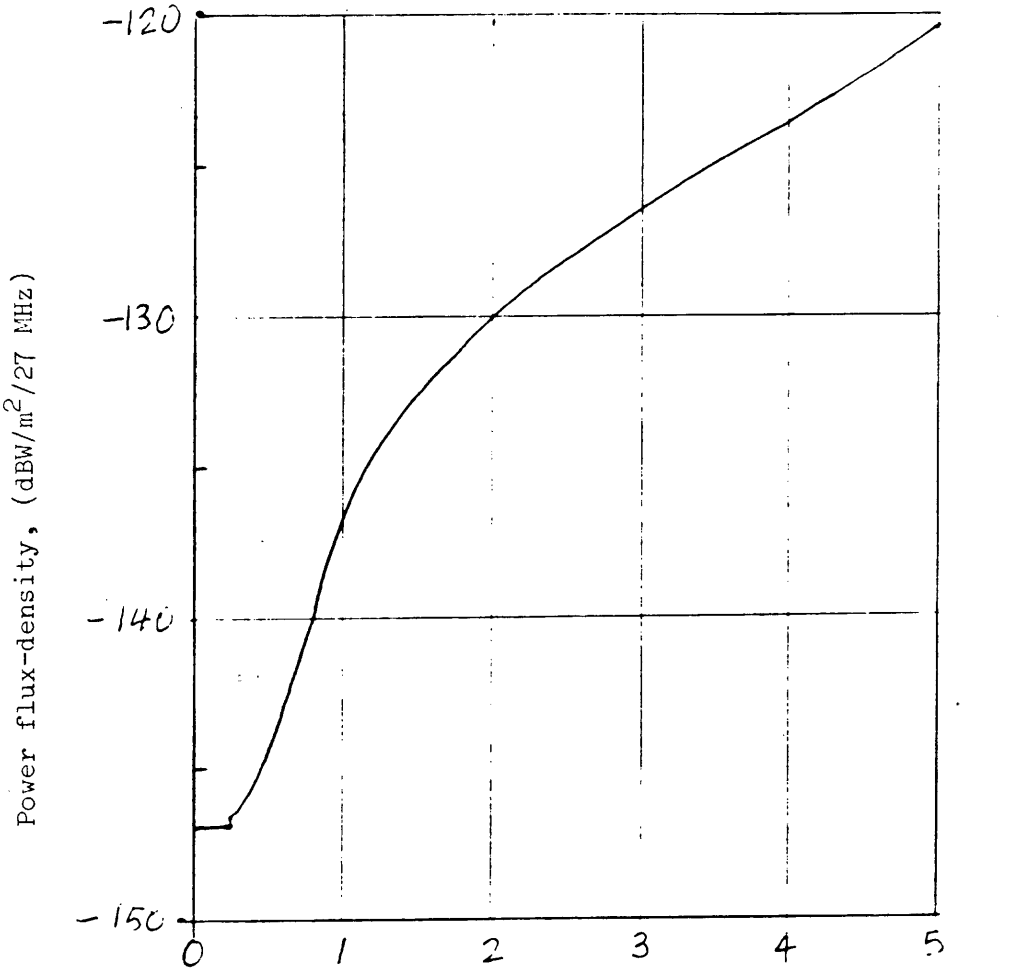

Figure 1 - Maximum power flux-density from Region 2 space stations into service areas of Regions 1 or 3 broadcasting satellites for purposes of initiating coordination

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

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COMMITTEE 4

Drafting Group 4B

INTERREGIONAL SHARING CRITERIA

1. A drafting group of Working Group 4B has studied the problems of sharing between the space services serving Region 2 administrations and the services in Regions 1 and 3. It has attempted to provide criteria to adequately protect Broadcasting-Satellite Services operating in accordance with a plan and Region 2 space services. The protection of terrestrial services in Regions 1 and 3 from Region 2 Broadcasting-Satellite Services has also been covered.

2. The drafting group recommends that :

2.1 To protect the Broadcasting-Satellite Service in Regions 1 and 3

A power flux-density limit in accordance with Figure 1 from space services of Region 2 onto the service areas of Regions 1 and 3 broadcasting-satellite assignments in the Plan, should be adopted as the value above which coordination with affected Regions 1 and 3 administrations would be initiated.

The primary criteria to be applied in the coordination is a co-channel carrier-to-interference power ratio (C/I) not less than 36 dB for channels allocated to the affected administrations in the Plan. For cases in which there exists a carrier-frequency offset, the reduction of the required C/I as indicated in Document No. 111(Rev.3) shall apply.

The level of interference shall be determined at the input of a receiver of the reference receiving earth station located at each of the test points associated with a given service area of the Plan. The level of interference so determined shall meet the relevant primary interference criteria as laid down in / Document No. 111(Rev.3) / for each service area of the Plan.

2.2 To protect Regions 1 and 3 Terrestrial Services

There should be a pfd limit on the Broadcasting-Satellite Service serving Region 2 to protect the Terrestrial Services of Regions 1 and 3. This limit may be exceeded with the agreement of the administrations concerned, that is, those in whose territory the pfd would be exceeded. The limits would be :

- 134 dBW/m^2/5 MHz
for angles of arrival < 10°
- 99 dBW/m^2/5 MHz
for angles of arrival > 15°
with linear interpolation
between 10° and 15°

For territories of administrations in Region 1 in the zone bounded by lines A and B, Appendix 24, Radio Regulations

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- 125 dBW/m^2/4 kHz for all angles of arrival	For territories of administrations in Region 1 outside of the area defined above and throughout Region 3.

2.3 To protect space services in Region 2

There should be a limit on the pfd produced in any part of Region 2 by a broadcasting satellite serving a Region 1 or Region 3 administration. This limit should be -138 dBW/m^2 and should only apply in the frequency range 11.7 - 12.2 GHz. Additionally, it should only apply to broadcasting satellites with nominal orbit positions west of 10° W.

3. In addition it is recommended that :

3.1 No broadcasting satellite serving an area in Regions 1 or 3 using a frequency in the range 11.7 - 12.2 GHz should occupy a nominal orbit position further west than / 34° W / or further east than / /.

3.2 The modification procedure in the Agreement should prevent any satellite from changing its nominal orbit position. This restriction would only need to apply to satellites with nominal orbit positions west of 10° W or east of / /.

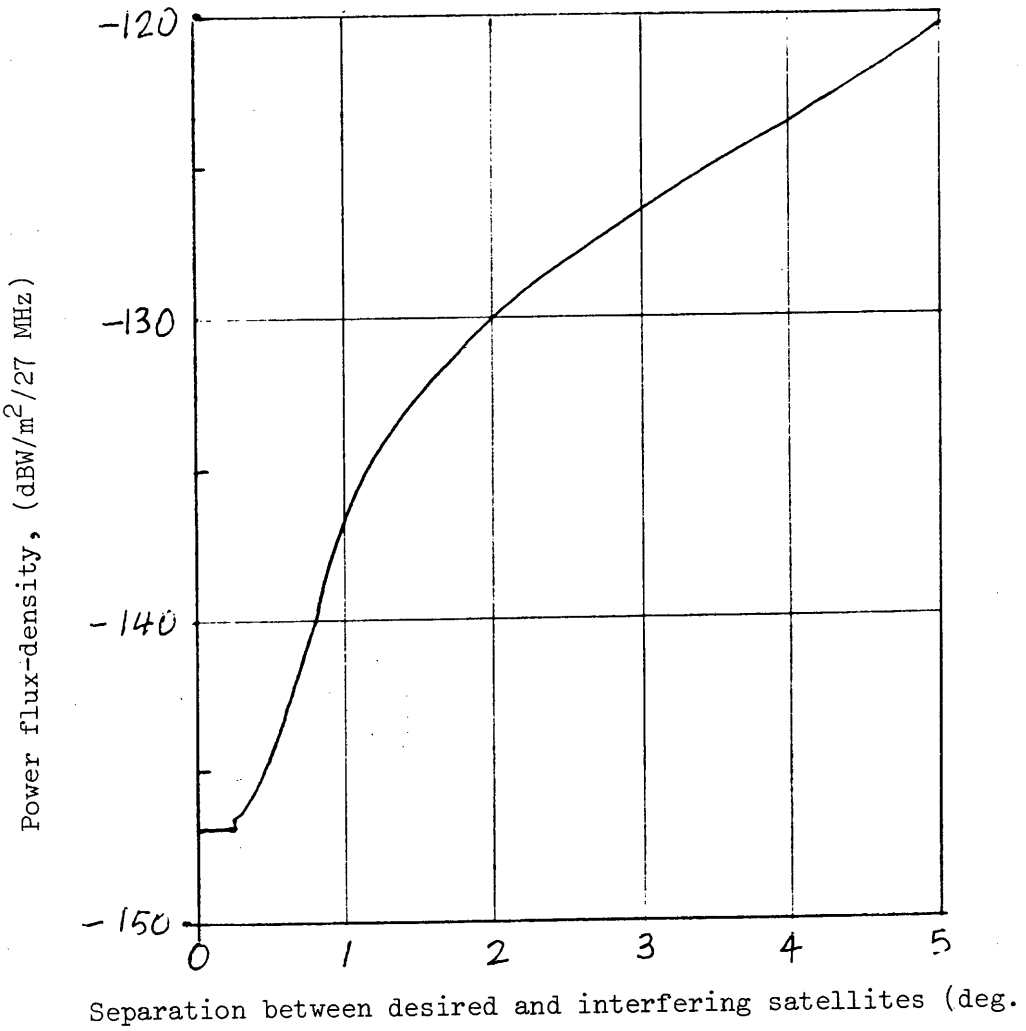

Figure 1 - Maximum power flux-density from Region 2 space stations into service areas of Regions 1 or 3 broadcasting satellites for purposes of initiating coordination

UNION INTERNATIONALE DES TELECOMMUNICATIONS

CONFERENCE DE RADIODIFFUSION PAR SATELLITE

(Genève, 1977)

Addendum N° 1 au
Document N° 189-F/E/S
1er février 1977

COMMISSION 5

BESOINS MINIMAUX

1. Il est rappelé aux délégations que, selon une décision du Sous-Groupe 5A1, les coordonnées du polygone de leurs zones de service feront l'objet d'une diffusion aux participants à la Conférence, et il appartiendra aux délégations de confirmer ces coordonnées. Il n'est donc pas nécessaire de confirmer les indications relatives aux faisceaux; par contre, les délégations devront retourner le formulaire indiquant les besoins de leurs administrations, en même temps que la confirmation ou la modification des coordonnées du polygone.

2. Par "besoins minimaux", comme indiqué dans le Document N° 189, paragraphe 3, on entend une confirmation des demandes présentées précédemment, ou une réduction de ces demandes.

A. PETTI
Président de la Commission 5

MINIMUM REQUIREMENTS

1. Delegations are reminded of the decision of 5A1, that coordinates of their service area polygon will be distributed for their confirmation. Thus it is not necessary to confirm the beam information but should return the form giving their requirements together with confirmation or correction of the polygon coordinates.

2. The minimum requirements mentioned in Document No. 189, paragraph 3, refers to a confirmation or reduction over those previously submitted.

A. PETTI
Chairman, Committee 5

SOLICITUDES MÍNIMAS

1. Se recuerda a las delegaciones la decisión del Subgrupo 5A1 de que se distribuirían para su confirmación las coordenadas del polígono de su zona de servicio. Por consiguiente, no es necesario confirmar la información relativa al haz, pero debería devolverse el formulario en que se han consignado sus solicitudes, junto con la confirmación o las correcciones de las coordenadas del polígono.

2. Las solicitudes mínimas mencionadas a que se hace referencia en el punto 3 del Documento N.° 189, corresponden a la confirmación o a la reducción de las solicitudes previamente sometidas.

El Presidente de la Comisión 5,

A. PETTI

Pour des raisons d'économie, ce document n'a été tiré qu'en nombre restreint. Les participants sont donc priés de bien vouloir apporter à la conférence leurs documents avec eux, car il n'y aura que fort peu d'exemplaires supplémentaires disponibles.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 189-E
31 January 1977
Original : English

COMMITTEE 5

Note by the Chairman of Committee 5 (Planning)

MINIMUM REQUIREMENTS

1. From a study of the results of the planning exercises accomplished to date, it is clearly necessary to have reductions in certain requirements or changes in technical characteristics which would permit the establishment of an acceptable draft Plan.

2. In order to correct certain material errors which have appeared in the List of Requirements as revised in Document No. 103(Rev.1) and in order to establish an agreed and equitable basis for planning work, each Delegation will receive a list of their requirements as at present contained in the Conference master file. The list is arranged in such a manner that each line of information concerning one beam is followed by two blank lines, the first suffixed with the symbol "ADM" (Administration) and the second with the symbol "IFB" (I.F.R.B.). The six test points relating to the beam are shown on one line immediately below and followed by two blank lines suffixed by the symbols "ADM" and "IFB" respectively.

3. Delegations are invited kindly to communicate the minimum requirements for their services by returning one copy of the list duly signed to Box "I.F.R.B. 4000" as soon as possible and by Tuesday, 1 February, at 1800 hours (6 p.m.) at the latest. The list may be collected by each Delegation from a special desk located next to the Document Distribution Service.

4. As from Tuesday, 1 February, at 1800 hours, the revised version of the List of Requirements will be prepared and distributed as Document No. 103(Rev.2).

A. PETTI
Chairman
Committee 5 (Planning)

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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31 January 1977
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COMMITTEE 6

Note from the Chairman of Committee 4

Document No. 169(Rev.1), together with Corrigendum No. 1, is transmitted herewith for necessary action.

F. KRÁLÍK
Chairman of Committee 4

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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COMMITTEE 5

Note from the Chairman of Committee 4

Document No. 157(Rev.2), on relation between the antenna beamwidth and the feasible output power from the satellite, is transmitted herewith to Committee 5 for information.

F. KRALIK
Chairman of Committee 4

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BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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COMMITTEE 6

Note from the Chairman of Committee 4

The attention of Committee 6 is invited to Document No. 161(Rev.1) which contains information concerning spurious emissions, power flux-density levels and planning considerations.

F. KRÁLÍK
Chairman of Committee 4

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 193-E
1 February 1977
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COMMITTEE 3

SUMMARY RECORD

OF THE

SECOND MEETING OF COMMITTEE 3

(BUDGET CONTROL)

Friday, 28 January 1977, at 0900 hrs

Chairman : Mr. V.A.D. RAYALU (India)

Subjects discussed :	Document No.
1. Approval of the summary record of the first meeting of Committee 3	74
2. Accounts of the Conference at 21 January 1977	126 and Add.1

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1. Approval of the summary record of the first meeting of Committee 3 (Document No. 74)

The summary record of the first meeting was approved.

2. Accounts of the Conference at 21 January 1977 (Document No. 126 and Add.1)

The Secretary of the Committee, presenting the document, said that the revised budget figure under item No. 11.101 (Salaries and related expenses) referred only to interpretation and was based on the old salary rates of 1 March 1976 because the new rates, which had entered into effect on 1 January 1977, were not yet known. A revised document would be prepared as soon as those figures were available. As would be seen from the section entitled "Transfer of credits", the Committee was asked to authorize the transfer of 110,000 Swiss francs from sub-head II to sub-head III; the purpose of the transfer was to cover expenditure in connection with the publication of a revised version of the possible re-arrangement of the Radio Regulations, which should have come under the budget of the Aeronautical Conference, 1977, but had become the responsibility of the present Conference by reason of the postponement of the Aeronautical Conference until 1978.

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The transfer of 110,000 Swiss francs from sub-head II to sub-head III was approved.

The Deputy Secretary-General, referring to item No. 11.121 of the Annex to Document No. 126 (Final Acts of the Conference), said that the estimated figure had been based on the assumption that the volume of the Final Acts would be approximately 250 pages. It now appeared likely that the length of the volume might be considerably greater, so that the estimated cost might have to be revised. The question arose whether or not a copy of the Final Acts should be distributed to every delegate registered at the Conference.

The Executive Secretary said that the number of delegations attending the Conference was 115 and that of delegates was approximately 650. Replying to a question by the Vice-Chairman, he said that at the end of the Broadcasting Conference, 1975, and of the Space Conference, 1971, one copy of the Final Acts had been distributed to each participant. In the case of the 1971 Space Conference, the printing in one of the languages had had to be entrusted to an outside firm, entailing heavy expense. It was hoped that the need for outside printing could be avoided at the present Conference.

The Secretary of the Committee said that employing an outside firm might increase the cost of printing of the Final Acts by as much as 30,000 or 40,000 Swiss francs.

The Deputy Secretary-General emphasized the difficulty of producing 700 copies of the Final Acts in the Union's workshops in the last hours of the Conference. A compromise solution might consist in handing a limited number of copies to each delegation at the end of the Conference and sending further copies by surface mail through the administrations at a later stage, so that each delegate eventually received one. He suggested that, for the present, the Committee might keep its Report flexible on that point.

The Vice-Chairman supported that suggestion.

The Chairman said that at the next meeting of the Steering Committee he would appeal to the Chairmen of the three major Committees to complete their work on time so as to avoid the need to employ an outside printer for the Final Acts.

Sub-head I of the Annex was approved.

Sub-head II was approved.

Sub-head III was approved.

Replying to a question by the Vice-Chairman, the Secretary of the Committee explained that the saving on the 1976 budget shown in the last line of the Annex was indeed a real one, but that the sum involved was no longer at the disposal of the Conference, having been returned to the reserve account of the Union.

Document No. 126 was approved.

Add.1 to Document No. 126 was approved.

The meeting rose at 1015 hours.

The Secretary :
J. SCHUWEY

The Chairman :
V.A.D. RAYALU

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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COMMITTEE 4

Note to the Chairman of Committee 4 from the Chairman of Committee 6

In the procedures which have been proposed for changes to a frequency assignment in the Plan or the inclusion in the Plan of a new frequency assignment (Document No. 174) one of the conditions requiring coordination procedures to be commenced is that the change would cause an increase in power flux-density in the service area of another or other administrations. The level of p.f.d. which should not be exceeded has not yet been included and I should appreciate this information being provided by your Committee. Similar information has already been documented in Document No. 169(Rev.1) for the Terrestrial Service vis-à-vis the Broadcasting-Satellite Service.

It is also necessary to have a list of all the technical information it is necessary for an administration to send to the IFRB when commencing coordination or notification procedures for a modification to the Plan. It would seem that these requirements would be similar to those in Appendix 1A of the Radio Regulations. An example of an additional piece of information which should be provided is whether or not "energy dispersal" is to be used.

I understand that the basic characteristics of frequency assignments in the Plan are to be provided by Committee 5.

R.J. BUNDLE
Chairman of Committee 6

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

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WORKING GROUP 5A

Report by Sub-Working Group 5A2 to Working Group 5A

PROPOSALS FOR IMPROVING THE PLANNING WORK FOR FINAL PLAN

Sub-Working Group 5A2 has discussed the problems concerning further planning work and feels that the following points may be considered useful in the further planning work which is going to be carried out by the new Sub-Working Group which is intended to construct the final Plan.

I may stress here that these are only suggestions for possible consideration by the relevant Administrations.

1. Region 1 - Europe

At the moment the grouping is as follows :

Western European group : D, AUT, SUI, HOL, BEL, F, I, LUX

Eastern European group : DDR, HNG, TCH, BUL, POL, ROU

Problems

a) There are too many countries in single groupings;

b) interference problems between countries within single groupings and also between the two groupings.

Possible solutions

1. splitting up the groups;

2. separate them by 18° in orbit;

3. reducing requirements;

or 4. keeping the groups and a spacing of 6° in orbit and accept the high negative margins for some countries.

2. Region 1 - African groupings

The groupings are as shown below :

North Africa : LBY, TUN, ALG, MRC, MTN

North West Africa : DAH, TGO, HVO, CTI, NGR

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West Africa : CPV, GMB, SRL, GUI, LBR, SEN

Central Africa : GAB, TCD, COG, CME, CAF

Problems

a) too many beam requirements by some countries in North African grouping;

b) choice of orbital positions - desire of some countries to stay in particular orbital positions;

c) interference from some mostly North African countries into surrounding groupings and vice versa.

Possible solutions

1. splitting up the groupings;

2. greater spacing in orbit;

3. reduce the requirements;

4. keeping the groups and accept high negative margins.

3. Region 3

In this Region we have : CHN, IND, INS, THA, CAMBODIA.

Problem

There is a planning problem arising from :

a) number of beams (channels);

b) orbital position requirements.

Possible solutions

1. a little more flexibility in orbital positions for some countries;

2. reduction in beam size for some countries;

3. possibilities of reducing number of channels from 5 to 4;

4. reduction in number of beams for one or two countries.

It is our considered opinion that the success of planning work depends on the support of all Administrations.

Charles AMIRA
Chairman of Sub-Working Group 5A2

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

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WORKING GROUP 6A

Report of Sub-Working Group 6A2

The terms of reference of the Sub-Working Group were :

- to provide a set of procedures covering the coordination, notification and registration of broadcasting-satellite stations to which an a priori Plan is not applicable, having regard to the production of the work of Sub-Working Group 6A1.

Recognizing that Regions 1 and 3 were well on their way to adopting an a priori Plan for their Broadcasting-Satellite Services, as evidenced by the work of Sub-Working Group 5A, the Group decided to centre its attention on the planning being done in Sub-Working Group 5B for Region 2. Bearing in mind the rapidly diminishing time in which Sub-Working Group 6A2 had to complete its work, it was decided to proceed on the basis of Document No. DL/22(Rev.1), which contained a set of planning principles for Region 2, realizing that this Document was still under consideration by Group 5B.

From a procedural aspect, paragraphs 7 and 10 of Document No. DL/22(Rev.1) appeared to be most appropriate for consideration by Sub-Working Group 6A2, realizing that other portions of that Document would be brought into the procedures through reference to various Appendices on sharing criteria, and other provisions of the Final Acts of the Conference.

The basis for the formulation of procedures by the Group was Resolution No. Spa2 - 3, as specified in paragraph 10 of Document No. DL/22(Rev.1), with modifications as necessary. Sub-Working Group 6A2 held three meetings and the results of these discussions are reflected in the procedures set forth in the Annex to this Report.

The main points to be drawn to the attention of Working Group 6A are :

1. There are references in square brackets to the terms [Agreement], [Final Acts], [Article], [Appendix A], [Appendix 1A]. The appropriate terms to appear in the procedures will be determined in the light of decisions taken elsewhere.

2. Paragraph 1.4 makes reference to "identified requirements filed with the IFRB in accordance with the [Agreement] [Final Acts]". One delegation expressed concern about the impact of these requirements with respect to the Regions 1 and 3 Plan. It was pointed out that this provision was merely to provide Region 2 with another planning tool in the development of its space systems. This delegation wished, however, to reserve its right to make further comment on this point if necessary.

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3. With further regard to paragraphs 1.4, 1.8 and 3.7 it was decided to modify the time limits in these paragraphs so as to better conform them with the coordination time limits specified in Document No. 187, procedures for broadcasting-satellite stations part of an a priori Plan. These time limits were modified so as to specify a total time period of 200 days (paragraphs 1.8 and 3.7), which brings them into line with the total period specified in Document No. 187 (120 days, plus 80 days).

4. In paragraph 4.2 there was an unresolved discussion relating to the notification of the receiving segment of a broadcasting-satellite system. The representative of the IFRB suggested some wording, which appears in square brackets, but there was not enough time to give the item the thorough discussion which it deserved.

5. The final item to be brought to the attention of Working Group 6A was paragraph 5.4. This paragraph considers the recording of an assignment in the Master Register even though an unfavourable finding has resulted from an examination by the Board with respect to probability of harmful interference. One delegation has reserved the right to address the question at a subsequent meeting of Working Group 6A or Committee 6.

I would like to express my sincere appreciation to the members of the Sub-Working Group 6A2 for their patience in their examination of this document under the severe time constraints under which we were operating.

It is recognized that the work of this Sub-Working Group was based on the incomplete output of Working Group 5B, and may be subject to re-examination if the final output of Committee 5 so requires.

E.R. JACOBS
Chairman of Sub-Working Group 6A2

Annex : 1

ANNEX

/ARTICLE/

Coordination, notification and recording in the Master International Frequency Register of Frequency Assignments[1] to Stations in the Broadcasting-Satellite Service in Region 2

1. Procedure for the advance publication of information on planned satellite systems

1.1 An administration (or one acting on behalf of a group of named administrations) which intends to establish a broadcasting-satellite system shall, prior to the coordination procedure in accordance with paragraph 2.1 where applicable, send to the International Frequency Registration Board not earlier than five years before the date of bringing into service each satellite network of the planned system, the information listed in Appendix /1B./

1.2 Any amendments to the information sent concerning a planned satellite system in accordance with paragraph 1.1 shall also be sent to the Board as soon as they become available.

1.3 The Board shall publish the information sent under paragraphs 1.1 and 1.2 in a special section of its weekly circular and shall also, when the weekly circular contains such information, so advise all administrations by circular telegram.

1.4 If, after studying the information published under paragraph 1.3 any administration is of the opinion that interference, which may be unacceptable, may be caused to its existing or planned space radiocommunication services /including identified requirements filed with the IFRB in accordance with the /Agreement/ /Final Acts//it shall within one hundred and twenty days after the date of the weekly circular publishing the information listed in Appendix /1B,/ send its comments to the administration concerned. A copy of these comments shall also be sent to the Board. If no such comments are received from an administration within the period mentioned above, it may be assumed that that administration has no basic objections to the planned satellite network(s) of that system on which details have been published.

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1) 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).

1.5 An administration receiving comments sent in accordance with paragraph 1.4 shall endeavour to resolve any difficulties that may arise.

1.6 In case of difficulties arising when any planned satellite network of a system is intended to use the geostationary satellite orbit :

1.6.1 the administration responsible for the planned system shall first explore all possible means of meeting its requirements, taking into account the characteristics of the geostationary satellite networks of other systems, and without considering the possibility of adjustment to systems of other administrations. If no such means can be found, the administration concerned is then free to apply to other administrations concerned to solve these difficulties;

1.6.2 an administration receiving a request under 1.6.1 above shall, in consultation with the requesting administration, explore all possible means of meeting the requirements of the requesting administration, for example, by relocating one or more of its own geostationary space stations involved, or by changing the emissions, frequency usage (including changes in frequency bands) or other technical or operational characteristics;

1.6.3 if after following the procedure outlined in 1.6.1 and 1.6.2 above there are unresolved difficulties, the administrations concerned shall together make every possible effort to resolve these difficulties by means of mutually acceptable adjustments, for example, to geostationary space station locations and to other characteristics of the systems involved in order to provide for the normal operation of both the planned and existing systems.

1.7 In their attempts to resolve the difficulties mentioned above administrations may seek the assistance of the Board.

1.8 In complying with the provisions of paragraphs 1.5 to 1.7 an administration responsible for a planned satellite system shall, if necessary, defer its commencement of the coordination procedure, or where this is not applicable, the sending of its notices to the Board, until two hundred days after the date of the weekly circular containing the information listed in Appendix /1B/ on the relevant satellite network. However, in respect of those administrations with whom difficulties have been resolved or who have responded favourably, the coordination procedure, where applicable, may be commenced prior to the expiry of the two hundred days mentioned above.

1.9 An administration on behalf of which details of planned satellite networks in its system have been published, in accordance with the provisions of paragraphs 1.1 to 1.3, shall periodically inform the Board whether or not comments have been received and of the progress made, with other administrations, in resolving any difficulties. The Board shall publish this information in a special section of its weekly circular and shall also, when the weekly circular contains such information, so inform all administrations by circular telegram.

2. Coordination procedure between stations in the Broadcasting-Satellite Service and space systems of other administrations

2.1 Before an administration in Region 2 notifies to the Board or brings into use any frequency assignment to a space station in the Broadcasting-Satellite Service or to an earth station that is to receive transmission from such a space station it shall effect coordination[1)] of the assignment with the administrations of any Region whose assignment for a space station on a geostationary satellite or for an earth station that communicates with a space station on a geostationary satellite is recorded in the Master Register, or has been coordinated or is being coordinated under the provisions of this paragraph or No. 639AJ of the Radio Regulations. For this purpose, the administration requesting coordination shall send to any other such administration the information listed in Appendix / 1A /.

2.2 No coordination under paragraph 2.1 is required :

2.2.1 when the use of a new frequency assignment will not produce in the service area of another administration a power flux-density above the level calculated in accordance with / Appendix A /;

2.2.2 when an administration proposes to change the characteristics of an existing assignment in such a way as will, in respect of any service of another administration, meet the requirements of sub-paragraph 2.2.1 above, or, where this assignment has previously been coordinated, will not exceed the conditions agreed during coordination.

2.3 An administration initiating the coordination procedure referred to in paragraph 2.1 shall at the same time send to the Board a copy of the request for coordination, with the information listed in Appendix / 1A / and the name(s) of the administration(s) with which coordination is sought. The Board shall publish this information in a special section of its weekly circular, together with a reference to the weekly circular in which details of the satellite system were published in accordance with paragraph 1 of this / Article /. When the weekly circular contains such information, the Board shall so inform all administrations by circular telegram.

2.4 An administration believing that it should have been included in the coordination procedure under paragraph 2.1 shall have the right to request that it be brought into the coordination procedure.

2.5 An administration with which coordination is sought under paragraph 2.1 shall acknowledge receipt of the coordination data immediately by telegram. If no acknowledgement is received within thirty days after the date of the weekly circular publishing the information under paragraph 2.3, the administration seeking coordination shall dispatch a telegram requesting acknowledgement, to

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1) The technical data to be used in effecting coordination and the criteria to be employed in evaluating interference levels shall be based upon the technical information contained in the / Agreement / / Final Acts / or upon relevant CCIR Recommendations and shall be agreed between the Administrations concerned.

which the receiving administration shall reply within a further period of thirty days. Upon receipt of the coordination data, an administration shall, having regard to the proposed date of bringing into use of the assignment for which coordination was requested, promptly examine the matter with regard to interference 1) which would be caused to the service rendered by its stations in respect of which coordination is sought under paragraph 2.1; and shall, within ninety days from the date of the relevant weekly circular, notify the administration requesting coordination of its agreement. If the administration with which coordination is sought does not agree, it shall, within the same period, send to the administration seeking coordination the technical details upon which its disagreement is based, and make such suggestions as it may be able to offer with a view to a satisfactory solution of the problem. A copy of these comments shall also be sent to the Board.

2.6 An administration seeking coordination may request the Board to endeavour to effect coordination in those cases where :

2.6.1 an administration with which coordination is sought under paragraph 2.1 fails to acknowledge receipt, under paragraph 2.5, within sixty days after the date of the weekly circular publishing the information relating to the request for coordination;

2.6.2 an administration has acknowledged receipt under paragraph 2.5, but fails to give a decision within ninety days from the date of the relevant weekly circular;

2.6.3 there is disagreement between the administration seeking coordination and an administration with which coordination is sought as to the acceptable level of interference;

2.6.4 coordination 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 endeavour to effect such coordination.

2.7 Either the administration seeking coordination or an administration with which coordination is sought, or the Board, may request additional information which they may require to assess the level of interference to the services concerned.

2.8 Where the Board receives a request under sub-paragraph 2.6.1 it shall forthwith send a telegram to the administration concerned requesting immediate acknowledgement.

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1) The technical data to be used in effecting coordination and the criteria to be employed in evaluating interference levels shall be based upon the technical information contained in the / Agreement / / Final Acts / or upon relevant CCIR Recommendations and shall be agreed between the Administrations concerned.

2.9 Where the Board receives an acknowledgement following its action under paragraph 2.8, or where the Board receives a request under sub-paragraph 2.6.2, it shall forthwith send a telegram to the administration concerned requesting an early decision in the matter.

2.10 Where the Board receives a request under sub-paragraph 2.6.4, it shall endeavour to effect coordination in accordance with the provisions of paragraph 2.1. The Board shall also, where appropriate, act in accordance with paragraph 2.3. Where the Board receives no acknowledgement to its request for coordination within the period specified in paragraph 2.5, it shall act in accordance with paragraph 2.8.

2.11 Where an administration fails to reply within thirty days of dispatch of the Board's telegram requesting an acknowledgement sent under paragraph 2.8, or fails to give a decision in the matter within thirty days of dispatch of the Board's telegram of request under paragraph 2.9, it shall be deemed that the administration with which coordination was sought has undertaken :

2.11.1 that no complaint will be made in respect of any harmful interference which may be caused to the services rendered by its space or terrestrial radiocommunication stations by the use of the assignment for which coordination was requested;

2.11.2 that its space or terrestrial radiocommunication stations will not cause harmful interference to the use of the assignment for which coordination was requested.

2.12 Where necessary, as part of the procedure under paragraph 2.6, the Board shall assess the level of interference. In any case, the Board shall inform the administrations concerned of the results obtained.

2.13 In the event of continuing disagreement between one administration seeking to effect coordination and one with which coordination has been sought, provided that the assistance of the Board has been requested, the administration seeking coordination may, after one hundred and fifty days from the date of the request for coordination, taking into consideration the provisions of paragraph 4.4, send its notice concerning the proposed assignment to the Board.

3. Coordination procedure between space stations in the Broadcasting-Satellite Service and terrestrial stations

3.1 Before an administration in Region 2 notifies to the Board or brings into use any frequency assignment to a space station in the Broadcasting-Satellite Service, it shall coordinate the use of this assignment with the administrations of any Region whose terrestrial radiocommunication services may be affected. For this purpose, it shall inform the Board of all the technical characteristics of the station, as listed in the relevant sections of / Appendix 1A to the Radio Regulations /, which are necessary to assess the risk of interference to a terrestrial radiocommunication service[1].

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1) The technical data to be used in effecting coordination and the criteria to be employed in evaluating interference levels shall be based upon the technical information contained in the / Agreement / / Final Acts / or upon relevant CCIR Recommendations and shall be agreed between the Administrations concerned.

3.2 Coordination under paragraph 3.1 is only required when the prescribed limits shown in / Appendix A_/ are exceeded.

3.3 The Board shall publish this information in a special section of its weekly circular and shall also, when the weekly circular contains such information, so advise all administrations by circular telegram.

3.4 Any administration which considers that its terrestrial radiocommunication services may be affected shall forward its comments to the administration seeking coordination and, in any case, to the Board. These comments must be forwarded within one hundred and twenty days from the date of the relevant weekly circular. It shall be deemed that any administration which has not forwarded comments within that period considers that its terrestrial radiocommunication services are unlikely to be affected.

3.5 Any administration which has forwarded comments on the projected station shall either give its agreement or, if this is not possible, send to the administration seeking coordination all the data on which its comments are based as well as any such suggestions as it may be able to offer with a view to a satisfactory solution of the problem.

3.6 The administration which plans to bring into use a space station in the Broadcasting-Satellite Service as well as any other administration which believes that its terrestrial radiocommunication services are likely to be affected by the station in question may request the assistance of the Board at any time during the coordination procedure.

3.7 If the assistance of the Board has been sought and there is a continuing disagreement between the administration seeking coordination and the administration which has forwarded its comments, the administration seeking coordination may, after a total period of two hundred days, from the date of the relevant weekly circular, send to the Board its notice concerning the frequency assignment in question.

4. Notification of frequency assignments

4.1 Any frequency assignment to a space station in the Broadcasting-Satellite Service shall be notified to the Board. Similar notice shall be given for any frequency to be used for the reception of transmissions from space stations in this Service.

4.2 / A notice submitted in accordance with paragraph 4.1 and relating to a frequency assignment to a receiving earth station in the Broadcasting-Satellite Service shall pertain to a typical station indicating the related service area and shall include the information prescribed in / Section .../ of / Appendix 1A to the Radio Regulations_/_/.

4.3 For any notification under paragraphs 4.1 or 4.2, an individual notice for each frequency assignment shall be drawn up as prescribed in Appendix / 1A_/, the various Sections of which specify 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.

4.4 For a frequency assignment to an earth or space station, each notice must reach the Board not earlier than three years before the date on which the assignment is to be brought into use. The notice must reach the Board in any case not later than ninety days[1] before this date.

4.5 Any frequency assignment to an earth or space station, the notice of which reaches the Board after the applicable period specified in paragraph 4.4, shall, where it is to be recorded, bear a mark in the Master Register to indicate that it is not in conformity with paragraph 4.4.

5. Procedure for the examination of notices and the recording of frequency assignments in the Master Register

5.1 Any notice which does not contain at least those basic characteristics specified in Appendix / 1A /, shall be returned by the Board immediately, by airmail, to the notifying administration with the reasons therefore.

5.2 The Board shall examine each notice with respect to :

5.2.1 its conformity with the Convention, the Table of Frequency Allocations and the other provisions of the Radio Regulations and the provisions of this / Agreement / / Final Acts /, (with the exception of those relating to the coordination procedures and to the probability of harmful interference);

5.2.2 its conformity, where applicable, with the provisions of paragraph 3.1 above, relating to coordination of the use of the frequency assignment with the other administrations concerned;

5.2.3 its conformity, where applicable, with the provisions of paragraph 2.1, relating to coordination of the use of the frequency assignment with the other administrations concerned;

5.2.4 where appropriate, the probability of harmful interference to the service rendered by a station in a space or terrestrial radiocommunication service for which a frequency assignment has already been recorded in the Master Register in conformity with the provisions of No. 501 or 639BM of the Radio Regulations as appropriate, if that assignment has not, in fact, caused harmful interference to the service rendered by a station for which an assignment has been previously recorded in the Master Register and which itself is in conformity with No. 501 or 639BM as appropriate.

5.3 Depending upon the findings of the Board subsequent to the examination prescribed in sub-paragraphs 5.2.1 to 5.2.4, further action shall be as follows :

5.3.1 Where the Board reaches an unfavourable finding with respect to sub-paragraph 5.2.1 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 a satisfactory solution of the problem.

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1) The notifying administration shall take this limit into account when deciding, where appropriate, to initiate the coordination procedure(s).

5.3.2 Where the Board reaches a favourable finding with respect to sub-paragraph 5.2.1, or where it reaches the same finding after resubmission of the notice, it shall examine the notice with respect to the provisions of sub-paragraphs 5.2.2 and 5.2.3.

5.3.3 Where the Board finds that the coordination procedures mentioned in sub-paragraphs 5.2.2 and 5.2.3 have been successfully completed with all administrations whose 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.

5.3.4 Where the Board finds that the coordination procedures mentioned in sub-paragraph 5.2.2 or 5.2.3 have not, as appropriate, been applied or have been unsuccessfully applied, the notice shall be returned immediately by airmail to the notifying administration with the reason for its return and with such suggestions as the Board may be able to offer with a view to a satisfactory solution of the problem.

5.3.5 Where the notifying administration resubmits the notice and the Board finds that the coordination procedures have been successfully completed with all administrations whose services may be affected, the assignment shall be treated as indicated in sub-paragraph 5.3.3.

5.3.6 Where the notifying administration resubmits the notice and states that it has been unsuccessful in endeavouring to effect the coordination, the notice shall be examined by the Board with respect to sub-paragraph 5.2.4.

5.3.7 Where the Board reaches a favourable finding with respect to sub-paragraph 5.2.4, the assignment shall be recorded in the Master Register. The appropriate symbol indicating the finding by the Board shall indicate that the coordination procedures, as appropriate, referred to in paragraph 2.1 or 3.1 were not successfully completed. The date of receipt by the Board of the notice shall be entered in Column 2d.

5.3.8 Where the Board reaches an unfavourable finding with respect to sub-paragraph 5.2.4, the notice shall be returned immediately by airmail to the notifying administration with the reasons for the Board's findings and with such suggestions as the Board may be able to offer with a view to a satisfactory solution of the problem.

/5.4 If the administration resubmits the notice unchanged with the insistence that it be reconsidered, but should the Board's unfavourable finding under sub-paragraph 5.2.4 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. An appropriate remark shall be placed in Column 13 to indicate that the assignment is not in conformity with the provisions of sub-paragraphs 5.2.1 to 5.2.4, as appropriate. In the event that the administration concerned receives no complaint of harmful interference concerning the operation of the station in question for a period of one year from the commencement of operation, the Board shall review its finding./

6. Categories of frequency assignments

6.1 If harmful interference is actually caused to the reception of any space station in the Broadcasting-Satellite Service whose frequency assignment has been recorded in the Master Register as a result of a favourable finding with respect to sub-paragraphs 5.2.1 to 5.2.4, as appropriate, by the use of a frequency assignment to a space station which has been subsequently recorded in the Master Register in accordance with the provisions of paragraph 5.4 or of No. 639CP of the Radio Regulations, the station using the latter frequency assignment must, upon receipt of advice thereof, immediately eliminate this harmful interference.

6.2 If harmful interference is actually caused to the reception of any space radiocommunication station using an assignment recorded in the Master Register as a result of a favourable finding with respect to Nos. 639BM, 639BN, 639BO, 639BP, 639BQ and 639BR of the Radio Regulations, as appropriate, by the use of an assignment to a space station in the Broadcasting-Satellite Service which has been subsequently recorded in the Master Register in accordance with the provisions of paragraph 5.4, the station using the latter assignment must, on receipt of advice thereof, immediately eliminate this harmful interference.

6.3 If harmful interference is actually caused to the reception of any terrestrial station using an assignment recorded in the Master Register as a result of a favourable finding with respect to No. 501 of the Radio Regulations, by the use of an assignment to a space station in the Broadcasting-Satellite Service which has been subsequently recorded in the Master Register in accordance with the provisions of paragraph 5.4, the station using the latter assignment must, on receipt of advice thereof, immediately eliminate this harmful interference.

6.4 If harmful interference to the reception of any station whose assignment is in accordance with sub-paragraph 5.2.1, is actually caused by the use of a frequency assignment which is not in conformity with sub-paragraph 5.2.1, or with No. 501, 570AB or 639BM of the Radio Regulations, the station using the latter frequency assignment, must, upon receipt of advice thereof, immediately eliminate this harmful interference.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 197(Rev.1)-E
3 February 1977
Original : English

COMMITTEE 4

Note by the Chairman of Committee 4

In accordance with the decision of the 9th meeting of Committee 4, I submit herewith for final approval a series of recommendations to the CCIR and Administrations, concerning the furthering of studies on technical parameters for planning and coordination of systems in the Broadcasting-Satellite Service.

F. KRÁLÍK
Chairman of Committee 4

ARCHIVES U.I.T. GENÈVE

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DRAFT

RECOMMENDATION No. BS

TO THE CCIR RELATING TO TRANSMITTING ANTENNAE
FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) the need for more ample information on transmitting antennae required for planning the Broadcasting-Satellite Service;

b) the technical data required for World Administrative Radio Conference for revision of the Radio Regulations, Geneva, 1979;

c) the studies being pursued by the CCIR under the appropriate Questions and Study Programmes;

invites the CCIR

1. to continue the study of reference patterns for the co-polar and cross-polar components of transmitting antennae for the Broadcasting-Satellite Service for both individual and community reception;

2. to initiate studies on the technical factors necessary to achieve a pointing accuracy for transmitting antenna such that :

- the deviation of the antenna beam from its nominal direction of pointing shall not exceed 0.1°;
- the angle rotation of the transmitting beam about its axis shall not exceed $\pm 2^{\circ}$;

3. to submit as much data as possible on these problems to the World Administrative Radio Conference, 1979.

DRAFT

RECOMMENDATION No. BS

TO THE CCIR RELATING TO PROPAGATION AT 12 GHz
FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) the need for more ample information on the various propagation factors required for planning the Broadcasting-Satellite Service;

b) the technical data required for World Administrative Radio Conference for revision of the Radio Regulations, Geneva, 1979;

c) the studies being pursued by the CCIR under the appropriate Study Programmes;

invites the CCIR

1. to continue studies on the effects of precipitation attenuation at low angles of incidence;

2. to initiate studies on the effects of sand and dust storms;

3. to examine the relationship between propagation for 99 % of the worst month and that for 99 % of the year;

4. to examine, for emissions using circular polarization, the level of the depolarized component relative to the polarized component;

5. to submit as much data as possible on these problems to the World Administrative Radio Conference, 1979.

DRAFT

RECOMMENDATION No. BS

TO THE CCIR RELATING TO SPURIOUS OUT-OF-BAND EMISSIONS IN THE BROADCASTING-SATELLITE SERVICE

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) that broadcasting satellites operating at high power levels are likely to cause interference to services in adjacent and in harmonically related frequency bands due to spurious emissions;

b) that the planning of the Broadcasting-Satellite Service must take account of the need to reduce interference to services operating in the bands to acceptable levels at the lower and upper edges of the bands 11.7 GHz to 12.2 GHz in Regions 2 and 3 and 11.7 GHz to 12.5 GHz in Region 1, and to the Radio Astronomy Service which has an exclusive allocation at 23.6 to 24 GHz in all three Regions;

c) the technical data required for World Administrative Radio Conference for revision of the Radio Regulations, Geneva, 1979;

d) the studies being pursued by the CCIR under the appropriate Study Programme;

invites the CCIR

to continue, as a matter of urgency, the study of the technical and operational aspects of spurious emissions from Broadcasting-Satellites, with a view to preparing a report by the Special Joint Meeting of CCIR Study Groups, in preparation for the World Administrative Radio Conference, (RR), 1979.

DRAFT

RECOMMENDATION No. BS...

TO THE CCIR RELATING TO THE UP-LINK FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) the need for more ample information on the characteristics of the up-link for planning the Broadcasting-Satellite Service;

b) the technical data required for World Administrative Radio Conference for revision of the Radio Regulations, Geneva, 1979;

c) the studies being pursued by the CCIR under the appropriate Study Programme;

d) that the protection ratios in the up-links to broadcasting satellites need to be approximately one order of magnitude greater than those in the down-links;

e) that, as regards up-link interference between broadcasting satellites at different orbit locations, adequate up-path protection ratios (of approximately 10 dB greater than those in the down-path) would appear to be readily achievable by antenna pattern discrimination in earth station transmitting antennae which would, of course, have to be larger in diameter than the receiving antennae used in the down-link;

f) that, where planning makes use of isolation parameters such as radiation patterns for satellite transmitting antennae, carrier interleaving, and/or polarization discrimination in meeting the down-path carrier-to-interference requirements between service areas served from a single orbit position, the increased carrier-to-interference requirements in the up-paths serving the satellite(s) at that same orbit position will have to use the same isolation parameters but with the requirement to produce about 10 dB better net isolation. Obviously, the characteristics of transmitting earth station have no influence on this isolation, except as regards the precision of their on-beam polarization;

g) that in the actual implementation of broadcasting satellite systems, consideration must be given to all aspects of the provision of associated space operation service functions (tracking, telemetry, ranging and telecommand) in connection with the operation of broadcasting satellites;

invites the CCIR

1. to continue studies of those radiation characteristics of receiving antennae in the Broadcasting-Satellite Service, which singly, or in combination with other means of discrimination, would give the necessary protection ratios for the up-links of systems in the Broadcasting-Satellite Service for satellite(s) occupying a given position in the geostationary satellite orbit;

2. to continue studies of those polarization characteristics of receiving antennae in the Broadcasting-Satellite Service which, singly or in combination with other means of discrimination, would give the necessary protection ratios for the up-links of systems in the Broadcasting-Satellite Service for satellite(s) occupying a given position in the geostationary satellite orbit;

3. to continue studies of the technical characteristics of the up-link that are necessary for implementation of the plan for this service;

4. to study the technical and design characteristics and requirements which would affect the provision of "space operation service functions" of satellites in the Broadcasting-Satellite Service;

5. to study the requirements for adjacent-channel isolation in up-links for satellite(s) in the Broadcasting-Satellite Service occupying a given position in the geostationary satellite orbit;

6. to prepare a report by the Special Joint Meeting of CCIR Study Groups, to be held for preparing technical data for the World Administrative Radio Conference, 1979.

DRAFT

RECOMMENDATION No. BS...

TO THE CCIR RELATING TO THE INTERDEPENDENCE OF
RECEIVER DESIGN, CHANNEL GROUPING AND SHARING CRITERIA

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) that receiver design, channel grouping and sharing criteria are inter-related and have an important influence on the development of a plan for the Broadcasting-Satellite Service;

b) that, so far, insufficient attention may have been given to these factors and to their influence upon the operation of a plan;

invites the CCIR

to study the problem of the interdependence of receiver design, channel grouping and sharing criteria, together with the effects of these factors upon the operation of the Broadcasting-Satellite Service.

DRAFT

RECOMMENDATION No. BS...

TO ADMINISTRATIONS RELATING TO UP-LINKS FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) that the Fixed-Satellite Service includes, by the present provisions of the Radio Regulations (No. 84AG) earth-to-space links for the Broadcasting-Satellite Service;

b) that there is an unbalance in the bandwidths allocated to earth-to-space links compared with space-to-earth links in the Fixed-Satellite and Broadcasting-Satellite Services between 10 and 15 GHz;

c) that, in consequence, there may be insufficient earth-to-space capacity to meet future demands for, and to match the capacity of, space-to-earth links for the Broadcasting-Satellite and Fixed-Satellite Services;

d) that satellites in both services could find themselves severely constrained in attempting to implement the up-links due to interference considerations;

e) that Recommendation No. /- -/ invites the CCIR to continue studies on up-links for the Broadcasting-Satellite Service;

invites Administrations

to estimate their future requirements for such links, and to forward them to the appropriate Study Groups of the CCIR and to the Special Joint Meeting of CCIR Study Groups to be held in preparation for the WARC 1979.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 197-E
2 February 1977
Original : English

COMMITTEE 4

Note from the Chairman of Committee 4

In accordance with the decision of the 9th meeting of Committee 4, I submit herewith for final approval a series of recommendations to the CCIR and Administrations, concerning the furthering of studies on technical parameters for planning and coordination of systems in the Broadcasting-Satellite Service.

F. KRÁLÍK
Chairman of Committee 4

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DRAFT

RECOMMENDATION No. BS

TO THE CCIR RELATING TO TRANSMITTING ANTENNAE
FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) the need for more ample information on transmitting antennae required for planning the Broadcasting-Satellite Service;

b) the technical data required for World Administrative Radio Conference for revision of the Radio Regulations, Geneva, 1979;

c) the studies being pursued by the CCIR under Question 15/2, and draft Study Programme A0/2; Questions 34-1/10(Rev.76) and 23-1/11(Rev.76);

invites the CCIR

1. to continue the study of reference patterns for the co-polar and cross-polar components of transmitting antennae for the Broadcasting-Satellite Service for both individual and community reception;

2. to initiate studies on the technical factors necessary to achieve a pointing accuracy for transmitting antenna such that :

- the deviation of the antenna beam from its nominal direction of pointing shall not exceed 0.1°;
- the angle rotation of the transmitting beam about its axis shall not exceed $\pm 2^{\circ}$;

3. to submit as much data as possible on these problems to the World Administrative Radio Conference, 1979.

DRAFT

RECOMMENDATION No. BS

TO THE CCIR RELATING TO PROPAGATION AT 12 GHz
FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) the need for more ample information on the various propagation factors required for planning the Broadcasting-Satellite Service;

b) the technical data required for World Administrative Radio Conference for revision of the Radio Regulations, Geneva, 1979;

c) the studies being pursued by the CCIR under Study Programmes 5C-2/5(Rev.76), 5D-2/5(Rev.76), 5E-2/5(Rev.76) and 7B/5(Rev.76);

invites the CCIR

1. to continue studies on the effects of precipitation attenuation at low angles of incidence;

2. to initiate studies on the effects of sand and dust storms;

3. to examine the relationship between propagation for 99 % of the worst month and that for 99 % of the year;

4. to examine, for emissions using circular polarization, the level of the depolarized component relative to the polarized component;

5. to submit as much data as possible on these problems to the World Administrative Radio Conference, 1979.

DRAFT

RECOMMENDATION No. BS

TO THE CCIR RELATING TO SPURIOUS OUT-OF-BAND EMISSIONS IN THE BROADCASTING-SATELLITE SERVICE

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) that broadcasting satellites operating at high power levels are likely to cause interference to services in adjacent and in harmonically related frequency bands due to spurious emissions;

b) that the planning of the Broadcasting-Satellite Service must take account of the need to reduce interference to services operating in the bands to acceptable levels at the lower and upper edges of the bands 11.7 GHz to 12.2 GHz in Regions 2 and 3 and 11.7 GHz to 12.5 GHz in Region 1, and to the Radio Astronomy Service which has an exclusive allocation at 23.6 to 24 GHz in all three Regions;

c) the technical data required for World Administrative Radio Conference for revision of the Radio Regulations, Geneva, 1979;

d) the studies being pursued by the CCIR under Study Programme 38A-1/1;

invites the CCIR

to continue, as a matter of urgency, the study of the technical and operational aspects of spurious emissions from Broadcasting-Satellites, with a view to preparing a report by the Special Joint Meeting of CCIR Study Groups, in preparation for the World Administrative Radio Conference, (RR), 1979.

DRAFT

RECOMMENDATION No. BS...

TO THE CCIR RELATING TO THE UP-LINK FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) the need for more ample information on the characteristics of the up-link for planning the Broadcasting-Satellite Service;

b) the technical data required for World Administrative Radio Conference for revision of the Radio Regulations, Geneva, 1979;

c) the studies being pursued by the CCIR under Study Programme 2K-1/4;

d) that the protection ratios in the up-links to broadcasting satellites need to be approximately one order of magnitude greater than those in the down-links;

e) that, as regards up-link interference between broadcasting satellites at different orbit locations, adequate up-path protection ratios (of approximately 10 dB greater than those in the down-path) would appear to be readily achievable by antenna pattern discrimination in earth station transmitting antennae which would, of course, have to be larger in diameter than the receiving antennae used in the down-link;

f) that, where planning makes use of isolation parameters such as radiation patterns for satellite transmitting antennae, carrier interleaving, and/or polarization discrimination in meeting the down-path carrier-to-interference requirements between service areas served from a single orbit position, the increased carrier-to-interference requirements in the up-paths serving the satellite(s) at that same orbit position will have to use the same isolation parameters but with the requirement to produce about 10 dB better net isolation. Obviously, the characteristics of transmitting earth station have no influence on this isolation, except as regards the precision of their on-beam polarization;

g) that in the actual implementation of broadcasting satellite systems, consideration must be given to all aspects of the provision of associated space operation service functions (tracking, telemetry, ranging and telecommand) in connection with the operation of broadcasting satellites;

invites the CCIR

1. to continue studies of those radiation characteristics of receiving antennae in the Broadcasting-Satellite Service, which singly, or in combination with other means of discrimination, would give the necessary protection ratios for the up-links of systems in the Broadcasting-Satellite Service for satellite(s) occupying a given position in the geostationary satellite orbit;

2. to continue studies of those polarization characteristics of receiving antennae in the Broadcasting-Satellite Service which, singly or in combination with other means of discrimination, would give the necessary protection ratios for the up-links of systems in the Broadcasting-Satellite Service for satellite(s) occupying a given position in the geostationary satellite orbit;

3. to continue studies of the technical characteristics of the up-link that are necessary for implementation of the plan for this service;

4. to study the technical and design characteristics and requirements which would affect the provision of "space operation service functions" of satellites in the Broadcasting-Satellite Service;

5. to study the requirements for adjacent-channel isolation in up-links for satellite(s) in the Broadcasting-Satellite Service occupying a given position in the geostationary satellite orbit;

6. to prepare a report by the Special Joint Meeting of CCIR Study Groups, to be held for preparing technical data for the World Administrative Radio Conference, 1979.

DRAFT

RECOMMENDATION No. BS...

TO THE CCIR RELATING TO THE INTERDEPENDENCE OF
RECEIVER DESIGN, CHANNEL GROUPING AND SHARING CRITERIA

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) that receiver design, channel grouping and sharing criteria are inter-related and have an important influence on the construction of a plan for the Broadcasting-Satellite Service;

b) that, so far, insufficient attention has been paid to these factors and their influence in planning;

invites the CCIR

to study the problem of the interdependence of receiver design, channel grouping and sharing criteria, together with the effects of these factors in designing a plan for the Broadcasting-Satellite Service.

DRAFT

RECOMMENDATION No. BS...

TO ADMINISTRATIONS RELATING TO UP-LINKS FOR THE BROADCASTING-SATELLITE SERVICE

The World Administrative Broadcasting-Satellite Conference, Geneva, 1977,

considering

a) that the Fixed-Satellite Service includes, by the present provisions of the Radio Regulations (No. 84AG) earth-to-space links for the Broadcasting-Satellite Service;

b) that there is an unbalance in the bandwidths allocated to earth-to-space links compared with space-to-earth links in the Fixed-Satellite and Broadcasting-Satellite Services between 10 and 15 GHz;

c) that, in consequence, there may be insufficient earth-to-space capacity to meet future demands for, and to match the capacity of, space-to-earth links for the Broadcasting-Satellite and Fixed-Satellite Services;

d) that satellites in both services could find themselves severely constrained in attempting to implement the up-links due to interference considerations;

invites Administrations

to estimate their future requirements for such links, and to forward them to the appropriate Study Groups of the CCIR and to the Special Joint Meeting of CCIR Study Groups to be held in preparation for the WARC 1979.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 198-E
2 February 1977
Original : French

Note by the French delegation

The President of the French Republic, co-Prince of Andorra, has requested the French delegation to deposit five channel requirements for the Principality of Andorra.

Having powers to represent Andorra internationally, the French co-Prince, who has consulted the Bishop co-Prince on the subject, alone is authorized to submit such requirements.

He has instructed the French delegation to inform the other delegations of the above statement and to point out that there is accordingly no legal basis for any other requirement submitted at the Conference.

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INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 199-E
2 February 1977
Original : English

PLENARY MEETING

MINUTES

OF THE

FOURTH PLENARY MEETING

Tuesday, 25 January 1977, at 1545 hrs

Chairman : Mr. Ib LØNBERG (Denmark)

Subject discussed :	Documents Nos.
Documents submitted to the Plenary Meeting for approval	108(Rev.1) + Corr.1 122, RR7

Documents submitted to the Plenary Meeting for approval (Documents Nos. 108(Rev.1) + Corr.1, 122, RR7)

Document No. 108(Rev.1) + Corr.1 (submitted by Committee 4)

The Chairman of Committee 4 said that the document contained the first series of technical parameters required for planning, revised and corrected in accordance with the request by the Third Plenary Meeting.

The Secretary of Committee 4, referring to the French text only, said that the words "de l'antenne de réception" should be added to the title of paragraph 15 and that the word "favorable" at the end of sub-paragraph 16.2 should be replaced by "défavorable".

The Chairman, after recalling the discussion which had taken place at the Third Plenary Meeting, said that the contents of sub-paragraphs 1.2 and 2.3, which were concerned with future planning, would need to be studied in the light of the results of the work of Committees 5 and 6 and should therefore be left in abeyance for the time being.

It was so agreed.

The delegate of the Federal Republic of Germany, referring to Figure 1 (page 2) in the English text only, drew attention to an omission in the second line under the heading "B : Cross-polar component".

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The delegate of the United States of America, referring to Figure 2 (page 3), said that some of the countries in Region 2 were not entirely satisfied with pattern A for individual reception and would welcome the opportunity of discussing the question further with a view to introducing a small change.

The Chairman suggested that Committee 4 should be requested to reconsider paragraph 2, particularly sub-paragraph 2.2, and report back to the Plenary Meeting as soon as possible.

It was so agreed.

The delegate of France said that his delegation was not satisfied with the way in which the French text of paragraph 11 was drafted and would submit a new text to the Secretariat. He also proposed that the following sentence should be added at the end of the paragraph : "This does not preclude other types of broadcasting service, provided they neither cause greater interference nor are more sensitive to interference than the system considered by the Conference."

The Chairman observed that the proposed sentence related to a question of substance. Accordingly, he suggested that paragraph 11 should be referred back to Committee 4 for consideration in the light of the French proposal.

It was so agreed.

The delegate of the Federal Republic of Germany said that, as a result of the new definitions upon which agreement had been reached in Committee 4 that day, the words "service area" which appeared in the title of paragraph 16 and in sub-paragraphs 16.1 and 16.2 should be replaced by "coverage area", and that the Note at the end of the paragraph should be deleted.

The Chairman observed that all the texts submitted to the Plenary Meeting should be approved on the understanding that they might be modified subsequently to take into account any new terminology adopted by the Conference.

Replying to a question by the delegate of Egypt concerning paragraph 17, the Director of the CCIR said that the external antenna temperature which was one of the factors used in Annex 1 to CCIR Report 473-1 to calculate the figure of merit did take into account a certain amount of rainfall attenuation.

Document No. 108(Rev.1) and Corr.1 was approved subject to the decisions taken concerning sub-paragraphs 1.2 and 2.3 and paragraphs 2 and 11.

Document No. 122 (submitted by Committee 4)

The Chairman of Committee 4 said that the document contained the second series of technical parameters required for planning.

The delegate of France said that "600 MHz" should be replaced by "600 kHz" in the French text of sub-paragraph 18.5.

The delegate of the Federal Republic of Germany, referring to paragraph 19, said that the words "service area" which appeared between square brackets in sub-paragraph c) should be replaced by "coverage area" and that the Note at the end of the paragraph should be deleted.

It was so agreed.

Document No. 122, as amended, was approved.

Document No. RR7 (submitted by Committee 7)

The Chairman of Committee 7, introducing the document, said that a reference to Documents Nos. RR5 and RR6 should be inserted in paragraph 3 (page 1).

He stressed the fact that the texts adopted by Committee 7 were the result of lengthy discussion and constituted a compromise between the different points of view which had been expressed. Nevertheless, they had been adopted unanimously by the Committee, as was indicated in paragraph 5 of the Report (page 2).

Annex 1 contained a summary of the Committee's main decisions. He drew particular attention to Section 4 which was concerned with the method of presentation of the Re-arrangement. He would hand in to the Secretariat some minor corrections, concerning the Spanish text only, to be made towards the end of that section.

Annex 2 was made up of two parts, namely, a brief description of the decisions to be included in the Final Acts of the Conference and a draft Resolution which had been approved by the Committee after a great deal of discussion and negotiation.

The Chairman invited the Meeting first to consider the text of the Report itself (pages 1 and 2).

The delegate of China made the statement reproduced in Annex 1.

The delegate of the Republic of Korea made the statement reproduced in Annex 2.

The delegate of the Democratic People's Republic of Korea made the statement reproduced in Annex 3.

The delegate of the Republic of Korea said that the statement by the North Korean delegation contained observations of a political nature which were out of place in a purely technical Conference.

The Chairman invited the Meeting to consider Annex 1 to the Committee's Report.

The delegate of France, referring to the French text only, said that the brackets in the fourth and fifth lines of paragraph 1 should be deleted.

The delegate of the USSR proposed the deletion of the words "the proposal of the USSR" in the fourth line of paragraph 1.

The delegate of the United Kingdom proposed that the end of the last sentence of paragraph 1 should be altered to read : "... and the need to take account of the renumbering of Articles referred to in the Agenda".

The delegate of Norway proposed the deletion of "(page 476)" in paragraph 2B.

The delegate of the United Kingdom proposed that the phrase "i.e. by titles only" should be added after the words "G/E Report" in paragraph 3C and that the words "(see point B)" should be deleted from paragraph 3E.

The delegate of Norway proposed that the second example given under paragraph 3.F.a) should be altered to read :

"4996 676 Paragraph 1 Administrations ..."

The delegate of the United Kingdom, referring to the English text of paragraph 7, proposed that the end of the last sentence should be altered to read : "... within a frame and their deletion is foreseen".

Those amendments were adopted.

Annex 1, as amended, was approved.

The Chairman invited the Meeting to consider Annex 2 to the Committee's Report.

The delegate of the United Kingdom said that the first line of the draft text (page 7) should be altered to read : "The World Administrative Broadcasting-Satellite Conference, Geneva, 1977".

It was so agreed.

Following a discussion relating to the approval and alignment of the texts in the various languages, in which the delegates of Italy, the United Kingdom, the Federal Republic of Germany and Algeria, the Chairman of Committee 8 and the Deputy Secretary-General took part, the Chairman suggested that matters might be facilitated if the Meeting could agree to approve the draft text and draft resolution on the basis of the English text, which could then be taken by Committee 8 as the model for realignment of the other two language versions.

It was so agreed.

Annex 2, as amended, was approved on that understanding.

Document No. RR7 as a whole, as amended, was approved.

The Chairman thanked the Chairman of Committee 7 and his collaborators for the speed and diligence with which they had completed their task.

The meeting rose at 1700 hours.

The Secretary-General : The Chairman :

M. MILI Ib LØNBERG

Annexes : 3

ANNEX 1

STATEMENT BY THE DELEGATION OF CHINA

Now that we are discussing Committee 7's Report submitted to the Plenary Meeting for adoption we wish to make the following statement :

It is common knowledge that last year the group of experts from China stated its views at the session of the Group of Experts concerning the Re-arrangement of the "Radio Regulations" and the "Additional Radio Regulations" and that these views were included in the comments appearing in the Group of Experts' Report. They related in particular to the following matters, paragraph 4.2 of the Report of the Group of Experts, which was incorporated in paragraph 5 of Document No. RR7 (Report of Committee 7 to the Conference); the fact that some of the provisions in the present "Radio Regulations" were not in conformity with the existing situation in the world of today, for example, in respect of the nomenclature used to designate countries and geographical zones as well as References to the Table of Frequency Allocations and other problems which must be re-examined. In addition, the Chinese experts pointed out that certain Appendices in the "Radio Regulations" still contain many elements which are irrational or even prejudicial to national sovereignty and that that must be remedied. We regard the above-mentioned points as important and that it will be both essential and useful to bring them to the notice of the 1979 World Administrative Radio Conference so that it might take them into account while carrying out the complete revision of the "Radio Regulations".

For this reason the delegation of China wishes to reiterate its views concerning the above-mentioned points and it will expound its ideas in greater detail at the 1979 Conference.

ANNEX 2

STATEMENT BY THE DELEGATION OF THE REPUBLIC OF KOREA

The delegation of the Republic of Korea fully supports the draft Report of Committee 7 submitted for approval by this Plenary Meeting. However, it wishes to make a brief comment on the subject of the re-arrangement of the Radio Regulations and to make its basic position on the Report clear.

First, it holds the view that the Report of the Group of Experts will not lead to any change in the substance of the Radio Regulations.

Second, it strongly feels that the possible re-arrangement of the Radio Regulations should not in any way infringe upon or adversely affect the existing legitimate interests of the Member countries of the ITU.

In this connection, it wishes to refer very briefly to the statement of the North Korean delegation in Committee 7 concerning the radio call signs which, they claim, have been registered for the Republic of Korea. In fact, the call sign series claimed by the North Korean delegation was allocated to the Republic of Korea a long time ago under the relevant provisions of the Radio Regulations and has been in use ever since.

The delegation of the Republic of Korea, therefore, holds the strong view that recognition by the 1979 Conference of the above-mentioned claim by North Korea would gravely infringe upon the existing rights of the Republic of Korea as regards the allocation of call signs. Any such infringement would inevitably constitute a serious violation of the Radio Regulations.

Accordingly, the delegation of the Republic of Korea hopes that the two fundamental principles set out above will be reflected in the final re-arrangement of the Radio Regulations.

ANNEX 3

STATEMENT BY THE DELEGATION OF THE DEMOCRATIC PEOPLE'S REPUBLIC OF KOREA

The delegation of the Democratic People's Republic of Korea does not recognize any proposals made by the South Korean "authority". However, it wishes to address the following short statement to the Chairman and other representatives.

For more than thirty years the Democratic People's Republic of Korea has been using the radio call sign series HMA-HMZ, which was allocated to us according to the Radio Regulations adopted at the World Administrative Radio Conference held in 1947, even when we were not a Member of the ITU.

The delegation of the Democratic People's Republic of Korea to the present Conference has submitted to the ITU the just request that the radio call signs which we have been using for more than thirty years, in accordance with the Union's decision, should be registered intact. It is natural for Member States to submit such just requests to the Union and it is their right to do so.

However, the South Korean "authority" has challenged our just request, thereby challenging the sacred international organization itself. This is no more than an insidious machination designed to achieve political aims.

Confident that the ITU will register these call signs in accordance with its request, the delegation of the Democratic People's Republic of Korea wishes to state that it will continue to use them.

INTERNATIONAL TELECOMMUNICATION UNION

BROADCASTING SATELLITE CONFERENCE

(Geneva, 1977)

Document No. 200-E
3 February 1977

PL = Plenary Meetings
C = Committee
WG = Working Group

LIST OF DOCUMENTS

(101 to 200)

No.	Origin	Title	Destination
101	C.6	First report of Committee 6 relating to the form of the Final Acts of the Conference	PL
102	WG 4B	The use of energy dispersal in planning for the Broadcasting-Satellite Service	C.4
103(Rev.2) + Annexes 3 and 4	C.5	List of requirements	C.5
104	WG 4A3	Definitions	WG 4A
105 + (Rev.1)	WG 4A	Radio propagation factors	C.4
106	WG 4B	Characteristics of broadcasting-satellite receiving systems for community reception	C.4
107	WG 4B3	Out-of-band spurious emissions, draft recommendation	C.4
108 + (Rev.1) + Corr.1 & 2	C.4	Technical parameters required for planning	C.4, C.5 and PL
109	WG 4B3	Up-link considerations for the Broadcasting-Satellite Service	C.4
110	WG 5B	Planning principles	C.5
111 + (Rev.3) + Corr.1	WG 4B	Protection requirements for sharing between services in the 12 GHz band	C.4
112	WG 4B	Choice of polarization to be used in planning for the Broadcasting-Satellite Service	C.4
113 + (Rev.1)	WG 4B	Out-of-band spurious emissions from broadcasting satellites, planning considerations	C.4
114 + Corr.1	C.6	Summary record of the second meeting of Committee 6	C.6

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No.	Origin	Title	Destination
115	C.6	Summary record of the third meeting of Committee 6	C.6
116	Egypt	Proposals concerning the work of the Conference	PL
117 +(Rev.1)	WG 4A	Cross-section of antenna beams	C.4
118	C.7	Summary record of the first meeting of Committee 7	C.7
119	C.6	Summary record of the fourth meeting of Committee 6	C.6
120	Spain	Foreseeable requirements for the Broadcasting-Satellite Service in the 12 GHz band for the Principality of Andorra	PL
121 + Corr. 1	Colombia, Congo, Ecuador, Gabon, Kenya, Uganda, Zaire	Equatorial countries	C.5 and C.6
122	C.4	Technical parameters for planning (Report No. 2)	C.5 and PL
123 + Add.1	C.5	Instructions for the Sub-Working Group of Group 5A on orbit position assignments to be used in the establishment of the Plan.	WG 5
124	C.5	Intentional extended service area	WG 5
125	Sudan	Maximum antenna beamwidth corresponding to the feasible satellite output power	C.4 and C.5
126 + Add.1	SG	Situation concerning expenditure for the Broadcasting-Satellite Conference at 21 January 1977	C.3
127	Yugoslavia	Basic consideration on the planning principles	C.5 and PL
128	C.4	Draft CCIR Recommendation on out-of-band spurious emissions	PL
129 +(Rev.1)	WG 4A	Limitation of output power in the satellite transmitter	C.4

No.	Origin	Title	Destination
130 +(Rev.1)	WG 4A	Effects of propagation on cross-polarization	C.4
131	SG	Note by the Secretary-General (Symbols designating countries of a geographical area)	
132	WG 4A3	Definitions	WG 4A
133(Rev.1)	C.8	B.1	PL
134	WG 5A3	Note from Sub-Working Group 5A3 on the beams to be used for the first planning studies under its terms of reference	WG 5A
135	WG 5A3	Note from Sub-Working Group 5A3 on the provisional proposals for the orbit positions	WG 5A
136 + Corr.1	C.5	Summary record of the first meeting of Committee 5	C.5
137	C.5	Summary record of the second meeting of Committee 5	C.5
138	WG 5A3	Problems of the parts of Regions 1 and 3 with the highest density of requirements in the orbital arc	WG 5A
139	WG 5A2	Progress report, Sub-Working Group 5A2	WG 5A
140	WG 5A2 and 5A3	Report of joint meeting of Sub-Working Groups 5A2 and 5A3 on planning parameters	WG 5A
141	WG 6B2	Procedures for coordination, notification and registration for stations of terrestrial services in the bands 11.7-12.2 GHz (in Regions 2 and 3) and 11.7-12.5 GHz (in Region 1) in the case broadcasting-satellite stations are involved	WG 6B
142	France	Note from the French Delegation to the Broadcasting-Satellite Conference	PL
143	United States of America	Contribution to the question of intraservice sharing in the Broadcasting-Satellite Service	C.4
144	WG 4B3	Draft Recommendation to the CCIR on uplink considerations	WG 4B
145	C.4	Summary record of the third meeting of Committee 4	C.4

No.	Origin	Title	Destination
146	C.8	Summary record of the first meeting of Committee 8	C.8
147	C.4	Summary record of the fourth meeting of Committee 4	C.4
148	WG 4B3	Up-link carrier-to-interference ratio - Planning consideration	WG 4B
149	C.5	Note by the Chairman of Committee 5 List of test points	C.5
150	WG 5A2	Report of Sub-Working Group 5A2	WG 5A
151	WG C.2	Credentials	C.2
152	WG 6D	Terms of reference of Working Group 6D	C.6
153	WG 4B2 and 4B4	Reference antenna diameter for a fixed-satellite earth station for calculating interference from satellites in the Broadcasting Service	WG 4B
154	Chairman	Note by the Chairman of the Conference (Replacement of Vice-Chairman)	-
155	C.7	Summary Record of the second meeting of Committee 7	C.7
156	C.4	Note from the Chairman of Committee 4 to Committee 6	C.6
157 +(Rev.2)	WG 4A	Relation between the antenna beamwidth and the feasible output power from a satellite	C.4
158	Venezuela	Proposals for planning the Broadcasting-Satellite Service in Region 2	C.5
159	C.4	Third report of Committee 5 (Technical parameters for planning)	C.5, C.6 and PL
160	Cuba	Proposals for the work of Committee 5	C.5
161	WG 4B3	Spurious emissions - Power flux-density levels, planning considerations	WG 4B
162	WG 4B3	Information relating to up-links for the Broadcasting-Satellite Service	WG 4B
163	WG 4B3	Draft Recommendation to Administrations and to the CCIR on up-links for the Broadcasting-Satellite Service	WG 4B

No.	Origin	Title	Destination
164 + (Rev.1)	WG 4B3	Draft recommendation to the CCIR on the implementation and operation of up-links for the Broadcasting-Satellite Service	WG 4B
165	Colombia, Ecuador, Kenya, Uganda, Zaire	Planning of the orbit	C.5
166	WG 4B	Interregional sharing	WG 4B
167	PL	Minutes of the third Plenary Meeting	PL
168(Rev.1)	WG 4B	Interregional sharing criteria to protect the Fixed-Satellite Service against interference from the Broadcasting-Satellite Service organized in a priori plan	C.4
169 + (Rev.1) + Corr.1	WG 4B	Criteria for sharing between the Broadcasting-Satellite Service and Terrestrial Services	C.4
170	WG 5A3	Report of Sub-Group 5A3	WG 5A
171	Comoros	Transfer of right to vote	-
172 + Add. 1 & 2	C.5	Annex 3 (revised) to the List of requirements	C.5
173	Australia	The interdependence of receiver design, channel grouping and sharing criteria	C.4 and C.5
174 +(Rev.1)	WG 6A1	Report of Sub-Working Group 6A1	WG 6A
175	C.8	B.2	PL
176		(This number has not yet been allocated)	
177+Corr.1,2	C.4	Fourth Report of Committee 4 (Technical parameters for planning)	C.5, C.6 and PL
178	C.5	Note by the Chairman of Committee 5	Working Groups C.5
179	Iceland, Sweden	Proposal for further work of Sub-Group 5A2	WG 5A
180	WG 4B2	Interference within and between space services using the geostationary satellite orbit in the frequency band 11.7 - 12.2 GHz	WG 4B

No.	Origin	Title	Destination
181	Australia	Sovereignty of the geostationary orbit	C.4, C.5 and C.6
182	C.4	Summary record of the fifth meeting of Committee 4	C.4
183	C.5	Summary record of the third meeting of Committee 5	C.5
184	C.7	Summary record of the third meeting of Committee 7	C.7
185 + Corr.1	WG 6B	First Report of Working Group 6B	C.6
186	Argentina, Cuba, Mexico, Paraguay, Venezuela	Changes to be made in Document DL/22(Rev.1)	C.5
187	WG 6A	Report of Working Group 6A	C.6
188(Rev.1)	Drafting Group 4B	Interregional sharing criteria	C.4
189	C.5	Minimum requirements	C.5
190	C.4	Note from the Chairman of Committee 4 to the Chairman of Committee 6	C.6
191	C.4	Note from the Chairman of Committee 4	C.5
192	C.4	Note from the Chairman of Committee 4	C.6
193	C.3	Summary record of the second meeting of Committee 3	C.3
194	C.6	Note to the Chairman of Committee 4 from the Chairman of Committee 6	C.4
195	WG 5A2	Proposals for improving the planning work for final Plan	WG 5A
196	WG 6A2	Report of Sub-Working Group 6A2	WG 6A
197	C.4	Note from the Chairman of Committee 4	C.4
198	France	Note by the French Delegation (relative to the Principality of Andorra)	-
199	PL	Minutes of the fourth Plenary Meeting	PL
200	-	List of documents (101 to 200)	-