Georgia

INTERNATIONAL TELECOMMUNICATION UNION

Telecommunication Development Bureau

Administrative Circular CA/08

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Radiocommunication Bureau

Administrative Circular CA/71

2 November 1999

Contact: Albert Nalbandian
Tel: +41 22 730 5815
Fax: +41 22 730 5806
E-Mail: albert.nalbandian@itu.int

Subject: **Questionnaire on national radio frequency spectrum management to seek information needed for responding to Resolution 9 of the World Telecommunication Development Conference (WTDC-98, Valleta)**

TO ADMINISTRATIONS OF MEMBER STATES OF THE ITU,
MEMBERS OF THE DEVELOPMENT SECTOR
AND MEMBERS OF THE RADIOCOMMUNICATION SECTOR

Dear Sir/Madam,

At the request of both Mr. Nabil Kisrawi, Chairperson of ITU-D Study Group 2, and Mr. Robert Mayher, Chairperson of ITU-R Study Group 1, we are forwarding to you by means of the attached Action Memorandum 1) for your action, a two-part questionnaire on national radio frequency spectrum management (see Attachments 1 and 2); and 2) for your information, a summary report on the information contained in responses to similar questionnaires previously distributed on the same subject (see Attachment 3).

The subject questionnaire has been designed to gather current information, from both administrations and industry, regarding 1) national activities in radio frequency spectrum

management and 2) the products available from industry for using the spectrum. The information requested is urgently needed to enable the preparation of a joint Radiocommunication and Telecommunication Development Sectors report that is intended to assist administrations in their consideration of alternative strategies for national radio frequency spectrum use.

Administrations are invited to complete Parts I and II of the questionnaire, while Sector members are invited to complete only Part I, if relevant. We would be grateful if you could complete responses to this questionnaire and return them by **31 January 2000**, to the Telecommunication Development Bureau:
ITU-D Study Groups Secretariat
Fax: +41 22 7305484
e-mail: devsg2@itu.int

Queries or requests for further information regarding this questionnaire will be answered by the Co-Chairpersons of the Joint Group on WTDC-98 Resolution 9, Mr. Jeacock or Mr. Garg. Their respective addresses are presented in the Annex. This Administrative Circular, including the questionnaire, is available on the ITU-R (*http://www.itu.int/itudoc/itu-r/ac/ca/*) and ITU-D web sites (*http://www.itu.int/ITU-D-StGrps/circular/CircLet.html*) in electronic form. To facilitate the timely analysis of the collected information, all respondees are kindly invited to submit the requested information, to the extent possible, in electronic form.
Yours faithfully,

Hamadoun I. Touré
Director
Telecommunication Development Bureau

Robert W. Jones
Director
Radiocommunication Bureau

Annex: Questionnaire

Distribution:
- Administrations of Member States of the ITU;
- United Nations and certain United Nations Specialized Agencies;
- Region representatives in the Joint Group on WTDC-98 Resolution;
- ITU distribution list;
- Development Sector:
  - Development Sector Members;
  - Chairpersons and Vice-Chairpersons of ITU-D Study Groups 1 and 2;
- Radiocommunication Sector:
  - Radiocommunication Sector Members;
  - Chairpersons and Vice-Chairpersons of Radiocommunication Study Groups and the Special Committee on Regulatory/Procedural Matters
  - Chairperson and Vice-Chairpersons of the Radiocommunication Advisory Group;
  - Chairperson and Vice-Chairpersons of the Conference Preparatory Meeting;
  - Members of the Radio Regulations Board.

ANNEX
Date: 11 October 1999

ACTION MEMORANDUM

To: All ITU Member States and all Sector Members of the Radiocommunication and Telecommunication Development Sectors

From: Mr. Nabil Kisrawi, Chairperson of ITU-D Study Group 2
Mr. Robert Mayher, Chairperson of ITU-R Study Group 1

Focal point: Mr. Terry Jeacock, Chairperson of the Joint Group on WTDC-98 Resolution 9

Subject: Questionnaire on National Radio Frequency Spectrum Management in Response to Resolution 9 of the World Telecommunication Development Conference (WTDC-98, Valleta)

Resolution 9 adopted by the World Telecommunication Development Conference (WTDC-98) requires the Directors of ITU-D and ITU-R to develop a report on current and foreseen national uses of the radio frequency spectrum. This resolution also requires the Directors of the Telecommunication Development and Radiocommunication Sectors to consider and implement effective means to encourage and facilitate the active participation of both developing and least developed countries in the preparation of this report.

In response to this resolution, ITU-R Study Group 1 has approved the proposal from ITU-D to establish a joint ITU-R/ITU-D group, to be named the "Joint Group on Resolution 9", and has defined a proposed programme of work that leads towards the production of the required report. This proposed work program was submitted for review and adopted by ITU-D Study Groups 1 and 2 during their meetings in Geneva in September 1999.

As envisioned in the proposed work program for the Joint Group on Resolution 9, the scope of the proposed work includes 1) collecting selected information from all Member States and all Sector Members of the Radiocommunication and Telecommunication Development Sectors, through the use of a two-part questionnaire (see the Attachments to this Annex) distributed jointly by the Radiocommunication and Telecommunication Development Sectors; 2) using the spectrum management expertise in the Joint Group on Resolution 9 to analyze the collected information; and 3) producing a report that will be reviewed by ITU-R Study Group 1 and ITU-D Study Groups 1 and 2. To ensure the timely completion of this work, Member States and Sector Members are urged to complete the attached questionnaire by 31 January 2000.

The first review of the responses to this questionnaire is tentatively scheduled to be performed at a meeting of the Joint Group on Resolution 9 in Geneva on 6 and 7 March 2000.

Attachment 1 (Specific Questions on National Spectrum Management Relating to Resolution 9) presents the portion of the questionnaire that is intended to be completed by both Member States and Sector Members. Member States are requested 1) to respond to the questions on national spectrum allocations (plus providing the technical parameters of systems in use in given frequency bands); and 2) to describe in detail specific problems in national spectrum management currently faced by the responding Member State. Sector Members are requested to provide the technical parameters of systems currently available for given frequency bands. For convenience in responding to these questions, an extract of Article S5 of the Radio Regulations (Allocation Table for the frequency bands from 29.7 to 960 MHz) is included in the Attachment 1; however, this extract is available in electronic form from the ITU-R web site, and consequently, all respondees are urged to submit the requested information in electronic form.

Attachment 2 (General Questions on National Spectrum Management) presents the portion of the questionnaire that is intended to be completed by Member States only. This attachment is a revision of a general questionnaire that has been distributed previously by the ITU-R (CA/401 dated 20 January 1993). The responses to the questions in Attachment 2 will be used both in the preparation of the report required in Resolution 9, and also in planning the future work program of ITU-R Study Group 1.

Attachment 3 is a summary report that lists the countries who responded to ITU-R Study Group 1's previous general questionnaire on national spectrum management, and presents some results of analyses performed on the responses. Both Member States and Sector Members are invited to forward their responses to this two-part questionnaire, before **31 January 2000**, to the Telecommunication Development Bureau:

ITU-D Study Groups Secretariat
Fax: +41 22 7305484
e-mail: devsg2@itu.int

Any queries or requests for further information regarding this questionnaire should be directed to the Co-Chairmen of the Joint Group, Mr. Jeacock or Mr. Garg at the addresses listed below:

Mr. P. K. GARG

Ministry of Communications

Joint Wireless Advisor to the Government of India

Wireless Planning and Coordination Wing

317 Dak Bhavan

Parliament Street

New Delhi 110001

India

Tel.: + 91 11 37 55440

Fax: + 91 11 37 16111

E-mail: pkgarg@vsnl.com

Mr. Terence JEACOCK

Radiocommunications Agency

Wyndham House

189 Marsh Wall

London E14 9SX

United Kingdom

Tel.: + 44 207 21 10004

Fax: + 44 207 21 10021

E-mail: terence.jeacock@ties.itu.int

Attachment 1

QUESTIONNAIRE - PART I
(To be completed by both Administrations and Sector members, if relevant)
Specific Questions on National Radio Frequency Spectrum Management

1. Information on national radio frequency spectrum allocations: 29.7 - 960 MHz

a) If you have published a National Table of Radio Frequency Spectrum Allocations, please submit a copy (either in electronic, or printed form, or both) of that table along with your responses to the attached questionnaire.

b) If you do not have a national frequency allocations table available, the attached modified extract from Article S.5 of the Radio Regulations may be used to indicate general information on how this range of frequencies is used by your administration within your national borders.
In using the attached modified extract of the International Frequency Allocations table presented in the excerpt from the Radio Regulations Article S.5, you, as a respondee from an administration or industry, are invited to enter the following information. In the column designated "National Allocations", respondees from administrations are requested to enter the name of the radiocommunications service (using the ITU terminology given in Article S1 of the Radio Regulations, such as FIXED, MOBILE, space research, radio astronomy...) that is allocated use of a given frequency band. In the column designated "Remarks", 1) respondees from administrations are invited to enter further technical specifications, if any, that have been established nationally for a given band such as channel spacing, limitations on radiated signal power...; and 2) respondees from industry are invited to enter the operating parameters such as channel spacing, radiated signal power capabilities,..., of products available for operation in a given frequency band.

2 Identification of a focal point regarding correspondence on this questionnaire (Parts I and II)

Please identify a focal point in your administration/organization who could provide a response to further correspondence regarding this questionnaire (see hereafter).

FOCAL POINT REGARDING CORRESPONDENCE ON THIS QUESTIONNAIRE (PARTS I AND II)

1. Mr./Ms **Tsivtsivadze** (Family Name) **Alexander** (First Name)

2. Country **GEORGIA**

3. Name of the Administration/Organization **Ministry of Post and Communications, Post and Communication Supervision Service**

4. Title **Director**

5. Address **46, Tevdore Mghvdeli St., Tbilisi, 380054, Georgia**

6. Tel.: **+995 32 933126** Fax: **+995 32 984071** E-Mail: **alexander.tsivtsivadze@ties.itu.int**

*To be returned no later than **31 January 2000** to:*
ITU-D Study Groups Secretariat
Telecommunication Development Bureau
Fax: +41 22 730 54 84
E-Mail: devsg2@itu.int

Section IV – Table of Frequency Allocations (extract from the RR, 1998)

Read only			To be completed	
Allocation to services				
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Remarks**
27.5-47 MHz				
27.5-28	METEOROLOGICAL AIDS FIXED MOBILE		FIXED MOBILE	
28-29.7	AMATEUR AMATEUR-SATELLITE		AMATEUR	
29.7-30.005	FIXED MOBILE		FIXED MOBILE	
30.005-30.01	SPACE OPERATION (satellite identification) FIXED MOBILE SPACE RESEARCH		FIXED MOBILE SPACE RESEARCH	
30.01-37.5	FIXED MOBILE		FIXED MOBILE	
37.5-38.25	FIXED MOBILE Radio astronomy S5.149		FIXED MOBILE	
38.25-39.986	FIXED MOBILE		FIXED MOBILE	
39.986-40.02	FIXED MOBILE Space research		FIXED MOBILE Space research	

Georgia

Read only			To be completed	
Allocation to services				
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Remarks**
40.02-40.98	FIXED MOBILE S5.150		FIXED MOBILE	
40.98-41.015	FIXED MOBILE Space research S5.160 S5.161		FIXED MOBILE Space research	
41.015-44	FIXED MOBILE S5.160 S5.161		FIXED MOBILE	
44-47	FIXED MOBILE S5.162 S5.162A		FIXED MOBILE	
47-68 BROADCASTING S5.162A S5.163 S5.164 S5.165 S5.169 S5.171	**47-50** FIXED MOBILE	**47-50** FIXED MOBILE BROADCASTING	**47-68** BROADCASTING Fixed Mobile	**47-48.5 MHz** **56.5-58 MHz** Fixed Mobile
	50-54 AMATEUR S5.166 S5.167 S5.168 S5.170			
	54-68 BROADCASTING Fixed Mobile S5.172	**54-68** FIXED MOBILE BROADCASTING		

Read only			To be completed	
Allocation to services				
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Remarks**
68-74.8 FIXED MOBILE except aeronautical mobile S5.149 S5.174 S5.175 S5.177 S5.179	**68-72** BROADCASTING Fixed Mobile S5.173	**68-74.8** FIXED MOBILE S5.149 S5.176 S5.179	**68-74.8** BROADCASTING FIXED MOBILE except aeronautical mobile	**68-74 MHz** Sound Broadcasting **74.6-74.8 MHz** Aeronautical Radionavigation
	72-73 FIXED MOBILE			
	73-74.6 RADIO ASTRONOMY S5.178			
	74.6-74.8 FIXED MOBILE			
74.8-75.2	AERONAUTICAL RADIONAVIGATION S5.180 S5.181		AERONAUTICAL RADIONAVIGATION	

75.2-137.175 MHz

75.2-87.5 FIXED MOBILE except aeronautical mobile	**75.2-75.4** FIXED MOBILE S5.179		BROADCASTING FIXED MOBILE except aeronautical mobile	**75.2-75.4 MHz** Aeronautical Radionavigation **76-87.5 MHz** TV Broadcasting
	75.4-76 FIXED MOBILE	**75.4-87** FIXED MOBILE		

Georgia

<table>
<tr><th colspan="3">Read only</th><th colspan="2">To be completed</th></tr>
<tr><th colspan="3">Allocation to services</th><th colspan="2"></th></tr>
<tr><th>Region 1</th><th>Region 2</th><th>Region 3</th><th>National Allocation</th><th>Remarks</th></tr>
<tr><td rowspan="3">S5.175 S5.179 S5.184 S5.187</td><td rowspan="3">76-88
BROADCASTING
Fixed
Mobile

S5.185</td><td>S5.149 S5.182 S5.183 S5.188</td><td></td><td></td></tr>
<tr><td rowspan="3">87-100
FIXED
MOBILE
BROADCASTING</td><td></td><td></td></tr>
<tr><td rowspan="2">87.5-100
BROADCASTING

S5.190</td><td>87.5-100
BROADCASTING</td><td></td></tr>
<tr><td>88-100
BROADCASTING</td><td></td><td></td></tr>
<tr><td>100-108</td><td colspan="2">BROADCASTING
S5.192 S5.194</td><td>BROADCASTING</td><td></td></tr>
<tr><td>108-117.975</td><td colspan="2">AERONAUTICAL RADIONAVIGATION
S5.197</td><td>AERONAUTICAL RADIONAVIGATION</td><td></td></tr>
<tr><td>117.975-137</td><td colspan="2">AERONAUTICAL MOBILE (R)
S5.111 S5.198 S5.199 S5.200 S5.201 S5.202 S5.203 S5.203A S5.203B</td><td>AERONAUTICAL MOBILE (R)</td><td></td></tr>
<tr><td>137-137.025</td><td colspan="2">SPACE OPERATION (space-to-Earth)
METEOROLOGICAL-SATELLITE (space-to-Earth)
MOBILE-SATELLITE (space-to-Earth) S5.208A S5.209
SPACE RESEARCH (space-to-Earth)
Fixed
Mobile except aeronautical mobile (R)
S5.204 S5.205 S5.206 S5.207 S5.208</td><td>METEOROLOGICAL-SATELLITE (space-to-Earth)
MOBILE-SATELLITE (space-to-Earth)
SPACE RESEARCH (space-to-Earth)
Fixed
Mobile except aeronautical mobile (R)</td><td></td></tr>
</table>

Read only			To be completed	
Allocation to services				
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Remarks**
137.025-137.175	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) S5.208A S5.209 Mobile except aeronautical mobile (R) S5.204 S5.205 S5.206 S5.207 S5.208		METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) S5.208A S5.209 Mobile except aeronautical mobile (R)	

137.175-148 MHz

137.175-137.825	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.208A S5.209 SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R) S5.204 S5.205 S5.206 S5.207 S5.208		METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile except aeronautical mobile (R)	
137.825-138	SPACE OPERATION (space-to-Earth) METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) S5.208A S5.209 Mobile except aeronautical mobile (R) S5.204 S5.205 S5.206 S5.207 S5.208		METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) Fixed Mobile-satellite (space-to-Earth) Mobile except aeronautical mobile (R)	

Georgia

Read only			To be completed	
Allocation to services				
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Remarks**
138-143.6 AERONAUTICAL MOBILE (OR) S5.210 S5.211 S5.212 S5.214	**138-143.6** FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	**138-143.6** FIXED MOBILE Space research (space-to-Earth) S5.207 S5.213	AERONAUTICAL MOBILE (OR)	
143.6-143.65 AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth) S5.211 S5.212 S5.214	**143.6-143.65** FIXED MOBILE RADIOLOCATION SPACE RESEARCH (space-to-Earth)	**143.6-143.65** FIXED MOBILE SPACE RESEARCH (space-to-Earth) S5.207 S5.213	AERONAUTICAL MOBILE (OR) SPACE RESEARCH (space-to-Earth)	
143.65-144 AERONAUTICAL MOBILE (OR) S5.210 S5.211 S5.212 S5.214	**143.65-144** FIXED MOBILE RADIOLOCATION Space research (space-to-Earth)	**143.65-144** FIXED MOBILE Space research (space-to-Earth) S5.207 S5.213	AERONAUTICAL MOBILE (OR)	
144-146	AMATEUR S5.120 AMATEUR-SATELLITE S5.216		AMATEUR AMATEUR-SATELLITE	
146-148 FIXED MOBILE except aeronautical mobile (R)	**146-148** AMATEUR S5.217	**146-148** AMATEUR FIXED MOBILE S5.217	FIXED MOBILE except aeronautical mobile (R)	

Read only			To be completed	
Allocation to services				
Region 1	Region 2	Region 3	National Allocation	Remarks
148-149.9 FIXED MOBILE except aeronautical mobile (R) MOBILE-SATELLITE (Earth-to-space) S5.209 S5.218 S5.219 S5.221	**148-149.9** FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.209 S5.218 S5.219 S5.221		FIXED MOBILE except aeronautical mobile (R)	
149.9-150.05	MOBILE-SATELLITE (Earth-to-space) S5.209 S5.224A RADIONAVIGATION-SATELLITE S5.224B S5.220 S5.222 S5.223		RADIONAVIGATION-SATELLITE	
150.05-153 FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149	**150.05-156.7625** FIXED MOBILE		FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY	
153-154 FIXED MOBILE except aeronautical mobile (R) Meteorological Aids			FIXED MOBILE except aeronautical mobile (R) Meteorological Aids	
154-156.7625 FIXED MOBILE except aeronautical mobile (R) S5.226 S5.227	S5.225 S5.226 S5.227		FIXED MOBILE except aeronautical mobile (R)	

Read only			To be completed	
Allocation to services				
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Remarks**
156.7625-156.8375 MARITIME MOBILE (distress and calling) S5.111 S5.226			MARITIME MOBILE (distress and calling)	
156.8375-174 FIXED MOBILE except aeronautical mobile S5.226 S5.229	**156.8375-174** FIXED MOBILE S5.226 S5.230 S5.231 S5.232		FIXED MOBILE except aeronautical mobile	
174-223 BROADCASTING S5.235 S5.237 S5.243	**174-216** BROADCASTING Fixed Mobile S5.234	**174-223** FIXED MOBILE BROADCASTING S5.233 S5.238 S5.240 S5.245	**174-223** BROADCASTING	
	216-220 FIXED MARITIME MOBILE Radiolocation S5.241 S5.242			

220-335.4 MHz

	220-225 AMATEUR FIXED MOBILE Radiolocation S5.241			
223-230 BROADCASTING Fixed Mobile	**225-235** FIXED MOBILE	**223-230** FIXED MOBILE BROADCASTING AERONAUTICAL RADIONAVIGATION Radiolocation	BROADCASTING Fixed	

Read only			To be completed	
Allocation to services				
Region 1	Region 2	Region 3	National Allocation	Remarks
S5.243 S5.246 S5.247		S5.250		
230-235 FIXED MOBILE S5.247 S5.251 S5.252		**230-235** FIXED MOBILE AERONAUTICAL RADIONAVIGATION S5.250	FIXED MOBILE	
235-267	FIXED MOBILE S5.111 S5.199 S5.252 S5.254 S5.256		FIXED MOBILE	
267-272	FIXED MOBILE Space operation (space-to-Earth) S5.254 S5.257		FIXED MOBILE	
272-273	SPACE OPERATION (space-to-Earth) FIXED MOBILE S5.254		FIXED MOBILE	
273-312	FIXED MOBILE S5.254		FIXED MOBILE	
312-315	FIXED MOBILE Mobile-satellite (Earth-to-space) S5.254 S5.255		FIXED MOBILE	
315-322	FIXED MOBILE S5.254		FIXED MOBILE	

Read only			To be completed	
Allocation to services				
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Remarks**
322-328.6	FIXED MOBILE RADIO ASTRONOMY S5.149		FIXED MOBILE RADIO ASTRONOMY	
328.6-335.4	AERONAUTICAL RADIONAVIGATION S5.258 S5.259		AERONAUTICAL RADIONAVIGATION	

335.4-410 MHz

335.4-387	FIXED MOBILE S5.254		FIXED MOBILE	
387-390	FIXED MOBILE Mobile-satellite (space-to-Earth) S5.208A S5.254 S5.255		FIXED MOBILE	
390-399.9	FIXED MOBILE S5.254		FIXED MOBILE	
399.9-400.05	MOBILE-SATELLITE (Earth-to-space) S5.209 S5.224A RADIONAVIGATION-SATELLITE S5.222 S5.224B S5.260 S5.220		RADIONAVIGATION-SATELLITE	
400.05-400.15	STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz) S5.261 S5.262		STANDARD FREQUENCY AND TIME SIGNAL-SATELLITE (400.1 MHz)	

Georgia

Read only			To be completed	
Allocation to services				
Region 1	Region 2	Region 3	National Allocation	Remarks
400.15-401	METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) MOBILE-SATELLITE (space-to-Earth) S5.208A S5.209 SPACE RESEARCH (space-to-Earth) S5.263 Space operation (space-to-Earth) S5.262 S5.264		METEOROLOGICAL AIDS METEOROLOGICAL-SATELLITE (space-to-Earth) SPACE RESEARCH (space-to-Earth) FIXED MOBILE	
401-402	METEOROLOGICAL AIDS SPACE OPERATION (space-to-Earth) EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile		METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	
402-403	METEOROLOGICAL AIDS EARTH EXPLORATION-SATELLITE (Earth-to-space) METEOROLOGICAL-SATELLITE (Earth-to-space) Fixed Mobile except aeronautical mobile		METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	
403-406	METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile		METEOROLOGICAL AIDS Fixed Mobile except aeronautical mobile	
406-406.1	MOBILE-SATELLITE (Earth-to-space) S5.266 S5.267			
406.1-410	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY S5.149		FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY	

Read only			To be completed	
Allocation to services				
Region 1	Region 2	Region 3	National Allocation	Remarks
410-470 MHz				
410-420 FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) S5.268			FIXED MOBILE except aeronautical mobile	
420-430 FIXED MOBILE except aeronautical mobile Radiolocation S5.269 S5.270 S5.271			FIXED MOBILE except aeronautical mobile	
430-440 AMATEUR RADIOLOCATION S5.138 S5.271 S5.272 S5.273 S5.274 S5.275 S5.276 S5.277 S5.280 S5.281 S5.282 S5.283	**430-440** RADIOLOCATION Amateur S5.271 S5.276 S5.277 S5.278 S5.279 S5.281 S5.282		AMATEUR FIXED	
440-450 FIXED MOBILE except aeronautical mobile Radiolocation S5.269 S5.270 S5.271 S5.284 S5.285 S5.286			FIXED MOBILE except aeronautical mobile	
450-455 FIXED MOBILE S5.209 S5.271 S5.286 S5.286A S5.286B S5.286C S5.286D S5.286E			FIXED MOBILE	

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Read only			To be completed	
Allocation to services				
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Remarks**
455-456 S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	**455-456** S5.209 S5.271	**455-456** S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	FIXED	
456-459	FIXED MOBILE S5.271 S5.287 S5.288		FIXED MOBILE	
459-460 FIXED MOBILE S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	**459-460** FIXED MOBILE MOBILE-SATELLITE (Earth-to-space) S5.286A S5.286B S5.286C S5.209 S5.271	**459-460** FIXED MOBILE S5.209 S5.271 S5.286A S5.286B S5.286C S5.286E	FIXED MOBILE	
460-470	FIXED MOBILE Meteorological-Satellite (space-to-Earth) S5.287 S5.288 S5.289 S5.290		FIXED MOBILE	

Georgia

Read only			To be completed	
Allocation to services				
Region 1	**Region 2**	**Region 3**	**National Allocation**	**Remarks**
470-890 MHz				
470-790 BROADCASTING S5.149 S5.291A S5.294 S5.296 S5.300 S5.302 S5.304 S5.306 S5.311 S5.312	**470-512** BROADCASTING Fixed Mobile S5.292 S5.293	**470-585** FIXED MOBILE BROADCASTING S5.291 S5.298	BROADCASTING	
	512-608 BROADCASTING S5.297	**585-610** FIXED MOBILE BROADCASTING RADIONAVIGATION S5.149 S5.305 S5.306 S5.307		
	608-614 RADIO ASTRONOMY Mobile-satellite except aeronautical mobile-satellite (Earth-to-space)	**610-890** FIXED MOBILE BROADCASTING		
	614-806 BROADCASTING Fixed Mobile S5.293 S5.309 S5.311			
790-862 FIXED BROADCASTING S5.312 S5.314 S5.315 S5.316 S5.319 S5.321	**806-890** FIXED MOBILE BROADCASTING		**790-862** BROADCASTING FIXED MOBILE	

Read only			To be completed	
Allocation to services				
Region 1	Region 2	Region 3	National Allocation	Remarks
862-890 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322			FIXED MOBILE except aeronautical mobile	

890-1 350 MHz

890-942 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 Radiolocation	**890-902** FIXED MOBILE except aeronautical mobile Radiolocation S5.318 S5.325	**890-942** FIXED MOBILE BROADCASTING Radiolocation	FIXED MOBILE except aeronautical mobile	
	902-928 FIXED Amateur Mobile except aeronautical mobile Radiolocation S5.150 S5.325 S5.326			
S5.323	**928-942** FIXED MOBILE except aeronautical mobile Radiolocation S5.325	S5.327		
942-960 FIXED MOBILE except aeronautical mobile BROADCASTING S5.322 S5.323	**942-960** FIXED MOBILE	**942-960** FIXED MOBILE BROADCASTING S5.320	FIXED MOBILE except aeronautical mobile	

S5.160 *Additional allocation:* in Botswana, Burundi, Lesotho, Malawi, Namibia, Dem. Rep. of the Congo, Rwanda and Swaziland, the band 41-44 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-97)

S5.161 *Additional allocation:* in the Islamic Republic of Iran and Japan, the band 41-44 MHz is also allocated to the radiolocation service on a secondary basis.

S5.162 *Additional allocation:* in Australia and New Zealand, the band 44-47 MHz is also allocated to the broadcasting service on a primary basis.

S5.162A *Additional allocation:* in Germany, Austria, Belgium, Bosnia and Herzegovina, China, Vatican, Denmark, Spain, Estonia, Finland, France, Ireland, Iceland, Italy, Latvia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Lithuania, Luxembourg, Moldova, Monaco, Norway, the Netherlands, Poland, Portugal, Slovakia, the Czech Republic, the United Kingdom, Russian Federation, Sweden, Switzerland and Turkey, the band 46-68 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution **217 (WRC-97)**. (WRC-97)

S5.163 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Estonia, Georgia, Hungary, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 47-48.5 MHz and 56.5-58 MHz are also allocated to the fixed and land mobile services on a secondary basis.

S5.164 *Additional allocation:* in Albania, Germany, Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Côte d'Ivoire, Denmark, Spain, Finland, France, Gabon, Greece, Ireland, Israel, Italy, Jordan, Lebanon, Libya, Liechtenstein, Luxembourg, Madagascar, Mali, Malta, Morocco, Mauritania, Monaco, Nigeria, Norway, the Netherlands, Poland, Syria, the United Kingdom, Senegal, Slovenia, Sweden, Switzerland, Swaziland, Togo, Tunisia, Turkey and Yugoslavia the band 47-68 MHz, in Romania the band 47-58 MHz and in the Czech Republic the band 66-68 MHz, are also allocated to the land mobile service on a primary basis. However, stations of the land mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations of countries other than those mentioned in connection with the band. (WRC-97)

S5.165 *Additional allocation:* in Angola, Cameroon, the Congo, Madagascar, Mozambique, Somalia, Sudan, Tanzania and Chad, the band 47-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.166 *Alternative allocation:* in New Zealand, the band 50-51 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis; the band 53-54 MHz is allocated to the fixed and mobile services on a primary basis.

S5.167 *Alternative allocation:* in Bangladesh, Brunei Darussalam, India, Indonesia, the Islamic Republic of Iran, Malaysia, Pakistan, Singapore and Thailand, the band 50-54 MHz is allocated to the fixed, mobile and broadcasting services on a primary basis.

S5.168 *Additional allocation:* in Australia, China and the Democratic People's Republic of Korea, the band 50-54 MHz is also allocated to the broadcasting service on a primary basis.

S5.169 *Alternative allocation:* in Botswana, Burundi, Lesotho, Malawi, Namibia, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland, Zambia and Zimbabwe, the band 50-54 MHz is allocated to the amateur service on a primary basis.

S5.170 *Additional allocation:* in New Zealand, the band 51-53 MHz is also allocated to the fixed and mobile services on a primary basis.

S5.171 *Additional allocation:* in Botswana, Burundi, Lesotho, Malawi, Mali, Namibia, Dem. Rep. of the Congo, Rwanda, South Africa, Swaziland and Zimbabwe, the band 54-68 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.172 *Different category of service:* in the French Overseas Departments in Region 2, Guyana, Jamaica and Mexico, the allocation of the band 54-68 MHz to the fixed and mobile services is on a primary basis (see No. **S5.33**).

S5.173 *Different category of service:* in the French Overseas Departments in Region 2, Guyana, Jamaica and Mexico, the allocation of the band 68-72 MHz to the fixed and mobile services is on a primary basis (see No. **S5.33**).

S5.174 *Alternative allocation:* in Bulgaria, Hungary, Poland and Romania, the band 68-73 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions in the Final Acts of the Special Regional Conference (Geneva, 1960). (WRC-97)

S5.175 *Alternative allocation:* in Armenia, Azerbaijan, Belarus, Estonia, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 68-73 MHz and 76-87.5 MHz are allocated to the broadcasting service on a primary basis. The services to which these bands are allocated in other countries and the broadcasting service in the countries listed above are subject to agreements with the neighbouring countries concerned.

S5.176 *Additional allocation:* in Australia, China, the Republic of Korea, the Philippines, the Democratic People's Republic of Korea and Western Samoa, the band 68-74 MHz is also allocated to the broadcasting service on a primary basis.

S5.177 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 73-74 MHz is also allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. **S9.21**. (WRC-97)

S5.178 *Additional allocation:* in Colombia, Costa Rica, Cuba, El Salvador, Guatemala, Guyana, Honduras and Nicaragua, the band 73-74.6 MHz is also allocated to the fixed and mobile services on a secondary basis.

S5.179 *Additional allocation:* in Armenia, Azerbaijan, Belarus, Bulgaria, China, Georgia, Kazakstan, Latvia, Lithuania, Moldova, Mongolia, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the bands 74.6-74.8 MHz and 75.2-75.4 MHz are also allocated to the aeronautical radionavigation service, on a primary basis, for ground-based transmitters only.

S5.180 The frequency 75 MHz is assigned to marker beacons. Administrations shall refrain from assigning frequencies close to the limits of the guardband to stations of other services which, because of their power or geographical position, might cause harmful interference or otherwise place a constraint on marker beacons.

Every effort should be made to improve further the characteristics of airborne receivers and to limit the power of transmitting stations close to the limits 74.8 MHz and 75.2 MHz.

S5.181 *Additional allocation:* in Germany, Austria, Cyprus, Denmark, Egypt, France, Greece, Israel, Italy, Japan, Jordan, Lebanon, Malta, Morocco, Monaco, Norway, Syria, Sweden and Switzerland, the band 74.8-75.2 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. **S9.21**. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedure invoked under No. **S9.21**. (WRC-97)

S5.182 *Additional allocation:* in Western Samoa, the band 75.4-87 MHz is also allocated to the broadcasting service on a primary basis.

S5.183 *Additional allocation:* in China, the Republic of Korea, Japan, the Philippines and the Democratic People's Republic of Korea, the band 76-87 MHz is also allocated to the broadcasting service on a primary basis.

S5.184 *Additional allocation:* in Bulgaria and Romania, the band 76-87.5 MHz is also allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960). (WRC-97)

S5.185 *Different category of service:* in the United States, the French Overseas Departments in Region 2, Guyana, Jamaica, Mexico and Paraguay, the allocation of the band 76-88 MHz to the fixed and mobile services is on a primary basis (see No. **S5.33**).

S5.186 (SUP - WRC-97)

S5.187 *Alternative allocation:* in Albania, the band 81-87.5 MHz is allocated to the broadcasting service on a primary basis and used in accordance with the decisions contained in the Final Acts of the Special Regional Conference (Geneva, 1960).

S5.188 *Additional allocation:* in Australia, the band 85-87 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service in Australia is subject to special agreements between the administrations concerned.

S5.189 Not used.

S5.190 *Additional allocation:* in Monaco, the band 87.5-88 MHz is also allocated to the land mobile service on a primary basis, subject to agreement obtained under No. **S9.21**. (WRC-97)

S5.191 Not used.

S5.192 *Additional allocation:* in China and the Republic of Korea, the band 100-108 MHz is also allocated to the fixed and mobile services on a primary basis. (WRC-97)

S5.193 Not used.

S5.194 *Additional allocation:* in Azerbaijan, Lebanon, Syria, Kyrgyzstan, Somalia and Turkmenistan, the band 104-108 MHz is also allocated to the mobile, except aeronautical mobile (R), service on a secondary basis. (WRC-97)

S5.195 and **S5.196** Not used.

S5.197 *Additional allocation:* in Germany, Austria, Cyprus, Denmark, Egypt, France, Italy, Japan, Jordan, Lebanon, Malta, Morocco, Monaco, Norway, Pakistan, Syria, and Sweden, the band 108-111.975 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. **S9.21**. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedures invoked under No. **S9.21**. (WRC-97)

S5.198 *Additional allocation:* the band 117.975-136 MHz is also allocated to the aeronautical mobile-satellite (R) service on a secondary basis, subject to agreement obtained under No. **S9.21**. (WRC-97)

S5.199 The bands 121.45-121.55 MHz and 242.95-243.05 MHz are also allocated to the mobile-satellite service for the reception on board satellites of emissions from emergency position-indicating radiobeacons transmitting at 121.5 MHz and 243 MHz (see Appendix **S13**).

S5.200 In the band 117.975-136 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies under the conditions laid down in Article **S31** and Appendix **S13** for distress and safety purposes with stations of the aeronautical mobile service.

S5.201 *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Bulgaria, Estonia, Georgia, Hungary, the Islamic Republic of Iran, Iraq, Japan, Kazakstan, Latvia, Moldova, Mongolia, Mozambique, Uzbekistan, Papua New Guinea, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 132-136 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service. (WRC-97)

S5.202 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Belarus, Bulgaria, United Arab Emirates, Georgia, the Islamic Republic of Iran, Jordan, Kazakstan, Latvia, Moldova, Oman, Uzbekistan, Poland, Syria, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan, Turkey and Ukraine, the band 136-137 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service. (WRC-97)

S5.203 In the band 136-137 MHz, existing operational meteorological satellites may continue to operate, under the conditions defined in No. **S4.4** with respect to the aeronautical mobile service, until 1 January 2002. Administrations shall not authorize new frequency assignments in this band to stations in the meteorological-satellite service. (WRC-97)

S5.203A *Additional allocation:* in Israel, Mauritania, Qatar and Zimbabwe, the band 136-137 MHz is also allocated to the fixed and mobile, except aeronautical mobile (R), services on a secondary basis until 1 January 2005. (WRC-97)

S5.203B *Additional allocation:* in Saudi Arabia, United Arab Emirates, Jordan, Oman and Syria, the band 136-137 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis until 1 January 2005. (WRC-97)

S5.204 *Different category of service:* in Afghanistan, Saudi Arabia, Bahrain, Bangladesh, Bosnia and Herzegovina, Brunei Darussalam, China, Cuba, the United Arab Emirates, India, Indonesia, the Islamic Republic of Iran, Iraq, Malaysia, Oman, Pakistan, Philippines, Qatar, Singapore, Sri Lanka, Thailand, Yemen and Yugoslavia, the band 137-138 MHz is allocated to the fixed and mobile, except aeronautical mobile (R), services on a primary basis (see No. **S5.33**).

S5.205 *Different category of service:* in Israel and Jordan, the allocation of the band 137-138 MHz to the fixed and mobile, except aeronautical mobile, services is on a primary basis (see No. **S5.33**).

S5.206 *Different category of service:* in Armenia, Austria, Azerbaijan, Belarus, Bulgaria, Egypt, Finland, France, Georgia, Greece, Hungary, Kazakstan, Lebanon, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Syria, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 137-138 MHz to the aeronautical mobile (OR) service is on a primary basis (see No. **S5.33**).

S5.207 *Additional allocation:* in Australia, the band 137-144 MHz is also allocated to the broadcasting service on a primary basis until that service can be accommodated within regional broadcasting allocations.

S5.208 The use of the band 137-138 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A**. (WRC-97)

S5.208A In making assignments to space stations in the mobile-satellite service in the bands 137-138 MHz, 387-390 MHz and 400.15-401 MHz, administrations shall take all practicable steps to protect the radio astronomy service in the bands 150.05-153 MHz, 322-328.6 MHz, 406.1-410 MHz and 608-614 MHz from harmful interference from unwanted emissions. The threshold levels of interference detrimental to the radio astronomy service are shown in Table 1 of Recommendation ITU-R RA.769-1. (WRC-97)

S5.209 The use of the bands 137-138 MHz, 148-150.05 MHz, 399.9-400.05 MHz, 400.15-401 MHz, 454-456 MHz and 459-460 MHz by the mobile-satellite service is limited to non-geostationary-satellite systems. (WRC-97)

S5.210 *Additional allocation:* in Austria, France, Italy, Liechtenstein, Slovakia, the Czech Republic, the United Kingdom and Switzerland, the bands 138-143.6 MHz and 143.65-144 MHz are also allocated to the space research service (space-to-Earth) on a secondary basis. (WRC-97)

S5.211 *Additional allocation:* in Germany, Saudi Arabia, Austria, Bahrain, Belgium, Bosnia and Herzegovina, Denmark, the United Arab Emirates, Spain, Finland, Greece, Ireland, Israel, Kenya, Kuwait, The Former Yugoslav Republic of Macedonia, Liechtenstein, Luxembourg, Mali, Malta, Norway, the Netherlands, Qatar, the United Kingdom, Slovenia, Somalia, Sweden, Switzerland, Tanzania, Tunisia, Turkey and Yugoslavia, the band 138-144 MHz is also allocated to the maritime mobile and land mobile services on a primary basis.

S5.212 *Alternative allocation:* in Angola, Botswana, Burundi, Cameroon, the Central African Republic, the Congo, Gabon, Gambia, Ghana, Guinea, Iraq, Jordan, Lesotho, Liberia, Libya, Malawi, Mozambique, Namibia, Nigeria, Oman, Dem. Rep. of the Congo, Rwanda, Sierra Leone, South Africa, Swaziland, Chad, Togo, Zaire, Zambia and Zimbabwe, the band 138-144 MHz is allocated to the fixed and mobile services on a primary basis.

S5.213 *Additional allocation:* in China, the band 138-144 MHz is also allocated to the radiolocation service on a primary basis.

S5.214 *Additional allocation:* in Bosnia and Herzegovina, Croatia, Eritrea, Ethiopia, Kenya, The Former Yugoslav Republic of Macedonia, Malta, Slovenia, Somalia, Sudan, Tanzania and Yugoslavia, the band 138-144 MHz is also allocated to the fixed service on a primary basis.

S5.215 Not used.

S5.216 *Additional allocation:* in China, the band 144-146 MHz is also allocated to the aeronautical mobile (OR) service on a secondary basis.

S5.217 *Alternative allocation:* in Afghanistan, Bangladesh, Cuba, Guyana and India, the band 146-148 MHz is allocated to the fixed and mobile services on a primary basis.

S5.218 *Additional allocation:* the band 148-149.9 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis, subject to agreement obtained under No. **S9.21**. The bandwidth of any individual transmission shall not exceed ± 25 kHz.

S5.219 The use of the band 148-149.9 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A**. The mobile-satellite service shall not constrain the development and use of the fixed, mobile and space operation services in the band 148-149.9 MHz.

S5.220 The use of the bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A**. The mobile-satellite service shall not constrain the development and use of the radionavigation-satellite service in the bands 149.9-150.05 MHz and 399.9-400.05 MHz. (WRC-97)

S5.221 Stations of the mobile-satellite service in the band 148-149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo, the Republic of Korea, Croatia, Cuba, Denmark, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Ethiopia, Finland, France, Gabon, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, the Islamic Republic of Iran, Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakstan, Kenya, Kuwait, Latvia, The Former Yugoslav Republic of Macedonia, Lebanon, Libya, Liechtenstein, Luxembourg, Malaysia, Mali, Malta, Mauritania, Moldova, Mongolia, Mozambique, Namibia, Norway, New Zealand, Oman, Uganda, Uzbekistan, Pakistan, Panama, Papua New Guinea, Paraguay, the Netherlands, Philippines, Poland, Portugal, Qatar, Syria, Kyrgyzstan, Slovakia, Romania, the United Kingdom, Russian Federation, Senegal, Sierra Leone, Singapore, Slovenia, Sri Lanka, South Africa, Sweden, Switzerland, Swaziland, Tanzania, Chad, Thailand, Togo, Tonga, Trinidad and Tobago, Tunisia, Turkey, Ukraine, Viet Nam, Yemen, Yugoslavia, Zambia, and Zimbabwe. (WRC-97)

S5.222 Emissions of the radionavigation-satellite service in the bands 149.9-150.05 MHz and 399.9-400.05 MHz may also be used by receiving earth stations of the space research service.

S5.223 Recognizing that the use of the band 149.9-150.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation-satellite service, administrations are urged not to authorize such use in application of No. **S4.4**.

S5.224 (SUP - WRC-97)

S5.224A The use of the bands 149.9-150.05 MHz and 399.9-400.05 MHz by the mobile-satellite service (Earth-to-space) is limited to the land mobile-satellite service (Earth-to-space) until 1 January 2015. (WRC-97)

S5.224B The allocation of the bands 149.9-150.05 MHz and 399.9-400.05 MHz to the radionavigation-satellite service shall be effective until 1 January 2015. (WRC-97)

S5.225 *Additional allocation:* in Australia and India, the band 150.05-153 MHz is also allocated to the radio astronomy service on a primary basis.

S5.226 The frequency 156.8 MHz is the international distress, safety and calling frequency for the maritime mobile VHF radiotelephone service. The conditions for the use of this frequency are contained in Article **S31** and Appendix **S13**.

In the bands 156-156.7625 MHz, 156.8375-157.45 MHz, 160.6-160.975 MHz and 161.475-162.05 MHz, each administration shall give priority to the maritime mobile service on only such frequencies as are assigned to stations of the maritime mobile service by the administration (see Articles **S31** and **S52**, and Appendix **S13**).

Any use of frequencies in these bands by stations of other services to which they are allocated should be avoided in areas where such use might cause harmful interference to the maritime mobile VHF radiocommunication service.

However, the frequency 156.8 MHz and the frequency bands in which priority is given to the maritime mobile service may be used for radiocommunications on inland waterways subject to agreement between interested and affected administrations and taking into account current frequency usage and existing agreements.

S5.227 In the maritime mobile VHF service the frequency 156.525 MHz is to be used exclusively for digital selective calling for distress, safety and calling. The conditions for the use of this frequency are prescribed in Articles **S31** and **S52**, and Appendices **S13** and **S18**.

S5.228 Not used.

S5.229 *Alternative allocation:* in Morocco, the band 162-174 MHz is allocated to the broadcasting service on a primary basis. The use of this band shall be subject to agreement with administrations having services, operating or planned, in accordance with the Table which are likely to be affected. Stations in existence on 1 January 1981, with their technical characteristics as of that date, are not affected by such agreement.

S5.230 *Additional allocation:* in China, the band 163-167 MHz is also allocated to the space operation service (space-to-Earth) on a primary basis, subject to agreement obtained under No. **S9.21**.

S5.231 *Additional allocation:* in Afghanistan, China and Pakistan, the band 167-174 MHz is also allocated to the broadcasting service on a primary basis. The introduction of the broadcasting service into this band shall be subject to agreement with the neighbouring countries in Region 3 whose services are likely to be affected.

S5.232 *Additional allocation:* in Japan, the band 170-174 MHz is also allocated to the broadcasting service on a primary basis.

S5.233 *Additional allocation:* in China, the band 174-184 MHz is also allocated to the space research (space-to-Earth) and the space operation (space-to-Earth) services on a primary basis, subject to agreement obtained under No. **S9.21**. These services shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations.

S5.234 *Different category of service:* in Mexico, the allocation of the band 174-216 MHz to the fixed and mobile services is on a primary basis (see No. **S5.33**).

S5.235 *Additional allocation:* in Germany, Austria, Belgium, Denmark, Spain, Finland, France, Israel, Italy, Liechtenstein, Malta, Monaco, Norway, the Netherlands, the United Kingdom, Sweden and Switzerland, the band 174-223 MHz is also allocated to the land mobile service on a primary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, broadcasting stations, existing or planned, in countries other than those listed in this footnote.

S5.236 Not used.

S5.237 *Additional allocation:* in the Congo, Eritrea, Ethiopia, Gambia, Guinea, Libya, Malawi, Mali, Senegal, Sierra Leone, Somalia, Tanzania and Zimbabwe, the band 174-223 MHz is also allocated to the fixed and mobile services on a secondary basis. (WRC-97)

S5.238 *Additional allocation:* in Bangladesh, India, Pakistan and the Philippines, the band 200-216 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

S5.239 Not used.

S5.240 *Additional allocation:* in China and India, the band 216-223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.

S5.241 In Region 2, no new stations in the radiolocation service may be authorized in the band 216-225 MHz. Stations authorized prior to 1 January 1990 may continue to operate on a secondary basis.

S5.242 *Additional allocation:* in Canada, the band 216-220 MHz is also allocated to the land mobile service on a primary basis.

S5.243 *Additional allocation:* in Somalia, the band 216-225 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to not causing harmful interference to existing or planned broadcasting services in other countries.

S5.244 (SUP - WRC-97)

S5.245 *Additional allocation:* in Japan, the band 222-223 MHz is also allocated to the aeronautical radionavigation service on a primary basis and to the radiolocation service on a secondary basis.

S5.246 *Alternative allocation:* in Spain, France, Israel and Monaco, the band 223-230 MHz is allocated to the broadcasting and land mobile services on a primary basis (see No. **S5.33**) on the basis that, in the preparation of frequency plans, the broadcasting service shall have prior choice of frequencies; and allocated to the fixed and mobile, except land mobile, services on a secondary basis. However, the stations of the land mobile service shall not cause harmful interference to, or claim protection from, existing or planned broadcasting stations in Morocco and Algeria.

S5.247 *Additional allocation:* in Saudi Arabia, Bahrain, the United Arab Emirates, Jordan, Oman, Qatar and Syria, the band 223-235 MHz is also allocated to the aeronautical radionavigation service on a primary basis.

S5.248 and **S5.249** Not used.

S5.250 *Additional allocation*: in China, the band 225-235 MHz is also allocated to the radio astronomy service on a secondary basis.

S5.251 *Additional allocation:* in Nigeria, the band 230-235 MHz is also allocated to the aeronautical radionavigation service on a primary basis, subject to agreement obtained under No. **S9.21**.

S5.252 *Alternative allocation:* in Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe, the bands 230-238 MHz and 246-254 MHz are allocated to the broadcasting service on a primary basis, subject to agreement obtained under No. **S9.21**.

S5.253 Not used.

S5.254 The bands 235-322 MHz and 335.4-399.9 MHz may be used by the mobile-satellite service, subject to agreement obtained under No. **S9.21**, on condition that stations in this service do not cause harmful interference to those of other services operating or planned to be operated in accordance with the Table of Frequency Allocations.

S5.255 The bands 312-315 MHz (Earth-to-space) and 387-390 MHz (space-to-Earth) in the mobile-satellite service may also be used by non-geostationary-satellite systems. Such use is subject to coordination under No. **S9.11A**.

S5.256 The frequency 243 MHz is the frequency in this band for use by survival craft stations and equipment used for survival purposes (see Appendix **S13**).

S5.257 The band 267-272 MHz may be used by administrations for space telemetry in their countries on a primary basis, subject to agreement obtained under No. **S9.21**.

S5.258 The use of the band 328.6-335.4 MHz by the aeronautical radionavigation service is limited to Instrument Landing Systems (glide path).

S5.259 *Additional allocation:* in Germany, Austria, Cyprus, the Republic of Korea, Denmark, Egypt, Spain, France, Greece, Israel, Italy, Japan, Jordan, Malta, Morocco, Monaco, Norway, the Netherlands, Syria and Sweden, the band 328.6-335.4 MHz is also allocated to the mobile service on a secondary basis, subject to agreement obtained under No. **S9.21**. In order to ensure that harmful interference is not caused to stations of the aeronautical radionavigation service, stations of the mobile service shall not be introduced in the band until it is no longer required for the aeronautical radionavigation service by any administration which may be identified in the application of the procedure invoked under No. **S9.21**. (WRC-97)

S5.260 Recognizing that the use of the band 399.9-400.05 MHz by the fixed and mobile services may cause harmful interference to the radionavigation satellite service, administrations are urged not to authorize such use in application of No. **S4.4**.

S5.261 Emissions shall be confined in a band of ± 25 kHz about the standard frequency 400.1 MHz.

S5.262 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Belarus, Bosnia and Herzegovina, Bulgaria, Colombia, Costa Rica, Cuba, Egypt, the United Arab Emirates, Ecuador, Estonia, Georgia, Hungary, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Jordan, Kazakstan, Kuwait, Liberia, Malaysia, Moldova, Nigeria, Uzbekistan, Pakistan, the Philippines, Qatar, Syria, Kyrgyzstan, Slovakia, Romania, Russian Federation, Singapore, Somalia, Sri Lanka, Tajikistan, Turkmenistan, Ukraine and Yugoslavia, the band 400.05-401 MHz is also allocated to the fixed and mobile services on a primary basis.

S5.263 The band 400.15-401 MHz is also allocated to the space research service in the space-to-space direction for communications with manned space vehicles. In this application, the space research service will not be regarded as a safety service.

S5.264 The use of the band 400.15-401 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A**. The power flux-density limit indicated in Annex 1 of Appendix **S5** shall apply until such time as a competent world radiocommunication conference revises it.

S5.265 Not used.

S5.266 The use of the band 406-406.1 MHz by the mobile-satellite service is limited to low power satellite emergency position-indicating radiobeacons (see also Article **S31** and Appendix **S13**).

S5.267 Any emission capable of causing harmful interference to the authorized uses of the band 406-406.1 MHz is prohibited.

S5.268 Use of the band 410-420 MHz by the space research service is limited to communications within 5 km of an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from extra-vehicular activities shall not exceed –153 dB(W/m^2) for $0° \le \delta \le 5°$, $-153 + 0.077 (\delta - 5)$ dB(W/m^2) for $5° \le \delta \le 70°$ and –148 dB(W/m^2) for $70° \le \delta \le 90°$, where δ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. No. **S4.10** does not apply to extra-vehicular activities. In this frequency band the space research (space-to-space) service shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services. (WRC-97)

S5.269 *Different category of service:* in Australia, the United States, India, Japan and the United Kingdom, the allocation of the bands 420-430 MHz and 440-450 MHz to the radiolocation service is on a primary basis (see No. **S5.33**).

S5.270 *Additional allocation:* in Australia, the United States, Jamaica and the Philippines, the bands 420-430 MHz and 440-450 MHz are also allocated to the amateur service on a secondary basis.

S5.271 *Additional allocation:* in Azerbaijan, Belarus, China, Estonia, India, Latvia, Lithuania, Kyrgyzstan, Turkmenistan and Ukraine, the band 420-460 MHz is also allocated to the aeronautical radionavigation service (radio altimeters) on a secondary basis. (WRC-97)

S5.272 *Different category of service:* in France, the allocation of the band 430-434 MHz to the amateur service is on a secondary basis (see No. **S5.32**).

S5.273 *Different category of service:* in Denmark, Libya and Norway, the allocation of the bands 430-432 MHz and 438-440 MHz to the radiolocation service is on a secondary basis (see No. **S5.32**).

S5.274 *Alternative allocation:* in Denmark, Norway and Sweden, the bands 430-432 MHz and 438-440 MHz are allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.275 *Additional allocation:* in Bosnia and Herzegovina, Croatia, Estonia, Finland, Latvia, The Former Yugoslav Republic of Macedonia, Libya, Slovenia and Yugoslavia, the bands 430-432 MHz and 438-440 MHz are also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis. (WRC-97)

S5.276 *Additional allocation:* in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Burkina Faso, Burundi, Egypt, the United Arab Emirates, Ecuador, Eritrea, Ethiopia, Greece, Guinea, India, Indonesia, the Islamic Republic of Iran, Iraq, Israel, Italy, Jordan, Kenya, Kuwait, Lebanon, Libya, Liechtenstein, Malaysia, Malta, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Democratic People's Republic of Korea, Singapore, Somalia, Switzerland, Tanzania, Thailand, Togo, Turkey and Yemen, the band 430-440 MHz is also allocated to the fixed service on a primary basis and the bands 430-435 MHz and 438-440 MHz are also allocated to the mobile, except aeronautical mobile, service on a primary basis. (WRC-97)

S5.277 *Additional allocation:* in Angola, Armenia, Azerbaijan, Belarus, Cameroon, the Congo, Djibouti, Gabon, Georgia, Hungary, Kazakstan, Latvia, Mali, Moldova, Mongolia, Uzbekistan, Pakistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Rwanda, Tajikistan, Chad, Turkmenistan and Ukraine, the band 430-440 MHz is also allocated to the fixed service on a primary basis. (WRC-97)

S5.278 *Different category of service:* in Argentina, Colombia, Costa Rica, Cuba, Guyana, Honduras, Panama and Venezuela, the allocation of the band 430-440 MHz to the amateur service is on a primary basis (see No. **S5.33**).

S5.279 *Additional allocation:* in Mexico, the bands 430-435 MHz and 438-440 MHz are also allocated on a primary basis to the land mobile service, subject to agreement obtained under No. **S9.21**.

S5.280 In Germany, Austria, Bosnia and Herzegovina, Croatia, The Former Yugoslav Republic of Macedonia, Liechtenstein, Portugal, Slovenia, Switzerland and Yugoslavia, the band 433.05-434.79 MHz (centre frequency 433.92 MHz) is designated for industrial, scientific and medical (ISM) applications. Radiocommunication services of these countries operating within this band must accept harmful interference which may be caused by these applications. ISM equipment operating in this band is subject to the provisions of No. **S15.13**.

S5.281 *Additional allocation:* in the French Overseas Departments in Region 2 and India, the band 433.75-434.25 MHz is also allocated to the space operation service (Earth-to-space) on a primary basis. In France and in Brazil, the band is allocated to the same service on a secondary basis.

S5.282 In the bands 435-438 MHz, 1 260-1 270 MHz, 2 400-2 450 MHz, 3 400-3 410 MHz (in Regions 2 and 3 only) and 5 650-5 670 MHz, the amateur-satellite service may operate subject to not causing harmful interference to other services operating in accordance with the Table (see No. **S5.43**). Administrations authorizing such use shall ensure that any harmful interference caused by emissions from a station in the amateur-satellite service is immediately eliminated in accordance with the provisions of No. **S25.11**. The use of the bands 1 260-1 270 MHz and 5 650-5 670 MHz by the amateur-satellite service is limited to the Earth-to-space direction.

S5.283 *Additional allocation:* in Austria, the band 438-440 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a primary basis.

S5.284 *Additional allocation:* in Canada, the band 440-450 MHz is also allocated to the amateur service on a secondary basis.

S5.285 *Different category of service:* in Canada, the allocation of the band 440-450 MHz to the radiolocation service is on a primary basis (see No. **S5.33**).

S5.286 The band 449.75-450.25 MHz may be used for the space operation service (Earth-to-space) and the space research service (Earth-to-space), subject to agreement obtained under No. **S9.21**.

S5.286A The use of the bands 454-456 MHz and 459-460 MHz by the mobile-satellite service is subject to coordination under No. **S9.11A**. (WRC-97)

S5.286B The use of the band 454-455 MHz in the countries listed in No. **S5.286D**, 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. **S5.286E**, by stations in the mobile-satellite service, shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations. (WRC-97)

S5.286C The use of the band 454-455 MHz in the countries listed in No. **S5.286D**, 455-456 MHz and 459-460 MHz in Region 2, and 454-456 MHz and 459-460 MHz in the countries listed in No. **S5.286E**, by stations in the mobile-satellite service, shall not constrain the development and use of the fixed and mobile services operating in accordance with the Table of Frequency Allocations. (WRC-97)

S5.286D *Additional allocation:* in Canada, the United States, Mexico and Panama, the band 454-455 MHz is also allocated to the mobile-satellite service (Earth-to-space) on a primary basis. (WRC-97)

S5.286E *Additional allocation:* in Cape Verde, Indonesia, Nepal, Nigeria and Papua New Guinea, the bands 454-456 MHz and 459-460 MHz are also allocated to the mobile-satellite (Earth-to-space) service on a primary basis. (WRC-97)

S5.287 In the maritime mobile service, the frequencies 457.525 MHz, 457.550 MHz, 457.575 MHz, 467.525 MHz, 467.550 MHz and 467.575 MHz may be used by on-board communication stations. Where needed, equipment designed for 12.5 kHz channel spacing using also the additional frequencies 457.5375 MHz, 457.5625 MHz, 467.5375 MHz and 467.5625 MHz may be introduced for on-board communications. The use of these frequencies in territorial waters may be subject to the national regulations of the administration concerned. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174 (see Resolution **341 (WRC-97)**). (WRC-97)

S5.288 In the territorial waters of the United States and the Philippines, the preferred frequencies for use by on-board communication stations shall be 457.525 MHz, 457.550 MHz, 457.575 MHz and 457.600 MHz paired, respectively, with 467.750 MHz, 467.775 MHz, 467.800 MHz and 467.825 MHz. The characteristics of the equipment used shall conform to those specified in Recommendation ITU-R M.1174.

S5.289 Earth exploration-satellite service applications, other than the meteorological-satellite service, may also be used in the bands 460-470 MHz and 1 690-1 710 MHz for space-to-Earth transmissions subject to not causing harmful interference to stations operating in accordance with the Table.

S5.290 *Different category of service:* in Afghanistan, Armenia, Azerbaijan, Belarus, China, Japan, Kazakstan, Mongolia, Uzbekistan, Kyrgyzstan, Slovakia, the Czech Republic, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the allocation of the band 460-470 MHz to the meteorological-satellite service (space-to-Earth) is on a primary basis (see No. **S5.33**), subject to agreement obtained under No. **S9.21**. (WRC-97)

S5.291 *Additional allocation:* in China, the band 470-485 MHz is also allocated to the space research (space-to-Earth) and the space operation (space-to-Earth) services on a primary basis subject to agreement obtained under No. **S9.21** and subject to not causing harmful interference to existing and planned broadcasting stations.

S5.291A *Additional allocation:* in Germany, Austria, Denmark, Estonia, Finland, Liechtenstein, Norway, Netherlands, the Czech Republic and Switzerland, the band 470-494 MHz is also allocated to the radiolocation service on a secondary basis. This use is limited to the operation of wind profiler radars in accordance with Resolution **217 (WRC-97)**. (WRC-97)

S5.292 *Different category of service:* in Mexico and Venezuela, the allocation of the band 470-512 MHz to the fixed and mobile services, and in Argentina and Uruguay to the mobile service, is on a primary basis (see No. **S5.33**), subject to agreement obtained under No. **S9.21**.

S5.293 *Different category of service:* in Chile, Colombia, Cuba, the United States, Guyana, Honduras, Jamaica, Mexico and Panama, the allocation of the bands 470-512 MHz and 614-806 MHz to the fixed and mobile services is on a primary basis (see No. **S5.33**), subject to agreement obtained under No. **S9.21**.

S5.294 *Additional allocation:* in Burundi, Cameroon, the Congo, Ethiopia, Israel, Kenya, Lebanon, Libya, Malawi, Senegal, Sudan, Syria, and Yemen, the band 470-582 MHz is also allocated to the fixed service on a secondary basis.

S5.295 Not used.

S5.296 *Additional allocation:* in Germany, Austria, Belgium, Cyprus, Denmark, Spain, Finland, France, Ireland, Israel, Italy, Libya, Malta, Morocco, Monaco, Norway, the Netherlands, Portugal, Syria, the United Kingdom, Sweden, Switzerland, Swaziland and Tunisia, the band 470-790 MHz is also allocated on a secondary basis to the land mobile service, intended for applications ancillary to broadcasting. Stations of the land mobile service in the countries listed in this footnote shall not cause harmful interference to existing or planned stations operating in accordance with the Table of Frequency Allocations in countries other than those listed in this footnote. (WRC-97)

S5.297 *Additional allocation:* in Costa Rica, Cuba, El Salvador, the United States, Guatemala, Guyana, Honduras, Jamaica, Mexico and Venezuela, the band 512-608 MHz is also allocated to the fixed and mobile services on a primary basis, subject to agreement obtained under No. **S9.21**.

S5.298 *Additional allocation:* in India, the band 549.75-550.25 MHz is also allocated to the space operation service (space-to-Earth) on a secondary basis.

S5.299 Not used.

S5.300 *Additional allocation:* in Israel, Libya, Syria and Sudan, the band 582-790 MHz is also allocated to the fixed and mobile, except aeronautical mobile, services on a secondary basis.

S5.301 Not used.

S5.302 *Additional allocation:* in the United Kingdom, the band 590-598 MHz is also allocated to the aeronautical radionavigation service on a primary basis. All new assignments to stations in the aeronautical radionavigation service, including those transferred from the adjacent bands, shall be subject to coordination with the Administrations of the following countries: Germany, Belgium, Denmark, Spain, France, Ireland, Luxembourg, Morocco, Norway and the Netherlands.

S5.303 Not used.

S5.304 *Additional allocation:* in the African Broadcasting Area (see Nos. **S5.10** to **S5.13**), the band 606-614 MHz is also allocated to the radio astronomy service on a primary basis.

S5.305 *Additional allocation:* in China, the band 606-614 MHz is also allocated to the radio astronomy service on a primary basis.

S5.306 *Additional allocation:* in Region 1, except in the African Broadcasting Area (see Nos. **S5.10** to **S5.13**), and in Region 3, the band 608-614 MHz is also allocated to the radio astronomy service on a secondary basis.

S5.307 *Additional allocation:* in India, the band 608-614 MHz is also allocated to the radio astronomy service on a primary basis.

S5.308 Not used.

S5.309 *Different category of service*: in Costa Rica, El Salvador and Honduras, the allocation of the band 614-806 MHz to the fixed service is on a primary basis (see No. **S5.33**), subject to agreement obtained under No. **S9.21**.

S5.310 (SUP - WRC-97)

S5.311 Within the frequency band 620-790 MHz, assignments may be made to television stations using frequency modulation in the broadcasting-satellite service subject to agreement between the administrations concerned and those having services, operating in accordance with the Table, which may be affected (see Resolutions **33 (Rev. WRC-97)** and **507**). Such stations shall not produce a power flux-density in excess of the value –129 dB(W/m^2) for angles of arrival less than 20° (see Recommendation **705**) within the territories of other countries without the consent of the administrations of those countries.

S5.312 *Additional allocation*: in Armenia, Azerbaijan, Belarus, Bulgaria, Georgia, Hungary, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 645-862 MHz is also allocated to the aeronautical radionavigation service on a primary basis. (WRC-97)

S5.313 (SUP - WRC-97)

S5.314 *Additional allocation*: in Austria, Italy, Uzbekistan, the United Kingdom and Swaziland, the band 790-862 MHz is also allocated to the land mobile service on a secondary basis. (WRC-97)

S5.315 *Alternative allocation*: in Greece, Italy, Morocco and Tunisia, the band 790-838 MHz is allocated to the broadcasting service on a primary basis.

S5.316 *Additional allocation*: in Germany, Bosnia and Herzegovina, Burkina Faso, Cameroon, Côte d'Ivoire, Croatia, Denmark, Egypt, Finland, Israel, Kenya, the Former Yugoslav Republic of Macedonia, Libya, Liechtenstein, Monaco, Norway, the Netherlands, Portugal, Syria, Sweden, Switzerland and Yugoslavia, the band 790-830 MHz, and in these same countries and in Spain, France, Gabon and Malta, the band 830-862 MHz, are also allocated to the mobile, except aeronautical mobile, service on a primary basis. However, stations of the mobile service in the countries mentioned in connection with each band referred to in this footnote shall not cause harmful interference to, or claim protection from, stations of services operating in accordance with the Table in countries other than those mentioned in connection with the band. (WRC-97)

S5.317 *Additional allocation*: in Region 2 (except Brazil and the United States), the band 806-890 MHz is also allocated to the mobile-satellite service on a primary basis, subject to agreement obtained under No. **S9.21**. The use of this service is intended for operation within national boundaries.

S5.318 *Additional allocation*: in Canada, the United States and Mexico, the bands 849-851 MHz and 894-896 MHz are also allocated to the aeronautical mobile service on a primary basis, for public correspondence with aircraft. The use of the band 849-851 MHz is limited to transmissions from aeronautical stations and the use of the band 894-896 MHz is limited to transmissions from aircraft stations.

S5.319 *Additional allocation*: in Belarus, Russian Federation and Ukraine, the bands 806-840 MHz (Earth-to-space) and 856-890 MHz (space-to-Earth) are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service. The use of these bands by this service shall not cause harmful interference to, or claim protection from, services in other countries operating in accordance with the Table of Frequency Allocations and is subject to special agreements between the administrations concerned.

S5.320 *Additional allocation*: in Region 3, the bands 806-890 MHz and 942-960 MHz are also allocated to the mobile-satellite, except aeronautical mobile-satellite (R), service on a primary basis, subject to agreement obtained under No. **S9.21**. The use of this service is limited to operation within national boundaries. In seeking such agreement, appropriate protection shall be afforded to services operating in accordance with the Table, to ensure that no harmful interference is caused to such services.

S5.321 *Alternative allocation*: in Italy, the band 838-854 MHz is allocated to the broadcasting service on a primary basis as from 1 January 1995.

S5.322 In Region 1, in the band 862-960 MHz, stations of the broadcasting service shall be operated only in the African Broadcasting Area (see Nos. **S5.10** to **S5.13**) excluding Algeria, Egypt, Spain, Libya, Morocco, Nigeria, South Africa, Tanzania and Zimbabwe, subject to agreement obtained under No. **S9.21**. (WRC-97)

S5.323 *Additional allocation*: in Armenia, Azerbaijan, Belarus, Bulgaria, Hungary, Kazakstan, Latvia, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, the Czech Republic, Romania, Russian Federation, Tajikistan, Turkmenistan and Ukraine, the band 862-960 MHz is also allocated to the aeronautical radionavigation service on a primary basis. Such use is subject to agreement obtained under No. **S9.21** with administrations concerned and limited to ground-based radiobeacons in operation on 27 October 1997 until the end of their lifetime. (WRC-97)

Attachment 2

QUESTIONNAIRE - PART II
(To be completed by Administrations only)
General Questions on National Spectrum Management

Describe succinctly the problems that your administration is currently experiencing in national spectrum management (for example subject areas in national spectrum management).

Country __**GEORGIA**_____
Focal point _**Post and Communication Supervision Service**

_____

The following general questions on national spectrum management are based in part on the functional requirements of spectrum management described in the handbook on "National Spectrum Management." If you need additional space to answer the questions please continue on a separate sheet of paper.

1. Do you have a national law governing spectrum management? YES_**X**_ NO__
   - Last date this law was changed or modified? _**09.1999**_____
   - Are any actions planned to change this law? YES_**X**_ NO__
   Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?
   _____

2. Have you published regulations and procedures for national spectrum management (e.g. radio services, license requirements etc.)? YES__ NO_**X**_
   Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?
   ___**We need an assistance from the ITU in preparation of regulations.** _____

3. Do you have a national radio frequency spectrum allocation table? YES__ NO_**X**_
   Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?
   _____

4. Do you have technical specifications for national spectrum use? YES_**X**_ NO__
   Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?
   According to the Attachment 3 (2.4) it would be very useful to have "a list of parameters that are required for Spectrum Management and the Efficient Use of the Radio _____
   Spectrum", developed by Study Group 1. _____

5. Do you have a need for any spectrum redeployment* ? YES__ NO_**X**_
   * The term "redeployment" is used here to refer to a process of national scope in which an assessment is conducted 1) to determine if portions of spectrum can be identified that are in limited use; and 2) to determine if such spectrum segments can be reallocated for use in delivering radiocommunication services that have expanding spectrum requirements.
   - If so, do you have a strategy for achieving this redeployment in respective frequency bands and for given radiocommunication services? YES__ NO__
   - Please define the established strategy and describe the nature of the consultation, if any, with users regarding the potential costs resulting from the planned redeployment.
   _____

6. What is the total cost of national spectrum management functions performed by your Government (expressed in Swiss francs)? _____
- What is the source of the funding required to accomplish these spectrum management functions?

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7. Do you have a method for establishing spectrum users' fees? YES_**X**_ NO__
- If so, please give a brief description of the method used in establishing those fees.

---

8. Do you maintain centralized databases for spectrum management? YES__ NO_**X**_
- What is the approximate size of your database (expressed in number of records)? _____
- Do you have a computerized data base management system (DBMS)? YES__ NO_**X**_
- What DBMS system do you use? _____
- Are these frequency assignment records available to public? YES__ NO_**X**_

Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?

__We'd like to get a new version of DBMS from ITU online service.

9. Do you notify frequency assignments to the ITU? YES_**X**_ NO__

Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?

_We need assistance according to the satelite services.

10. Do you have a policy and planning function for national spectrum management (i.e. a national strategy for future use of the spectrum)? YES_**X**_ NO__

Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?

__We need consultation assistance.

11. Do you perform technical analyses of frequency assignment requests? YES_**X**_ NO__

Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?

_We need consultation assistance.

12. Do you perform radio monitoring? YES_**X**_ NO__
- number of fixed monitoring stations __**3**_____
    - facilities available at fixed monitoring stations
        - -- monitoring up to _**2700**___ MHz
        - -- direction finding up to __**2700**__MHz
- number of mobile monitoring stations ___**2**_____
    - facilities available at mobile monitoring stations
        - -- monitoring up to __**2700**__ MHz
        - -- direction finding up to __**2700**__MHz

Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?

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13. Do you perform technical analyses of radio frequency interference complaints? YES_**X**_ NO__
- Do you have an established consultation process, involving Government and non-government organization, for resolving these complaints? YES_**X**_ NO__
Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?

_____

14. What computers and operating systems are in use for national spectrum management?
Type of computers **_Pentium 3_**
Operating system(s) **_Windows 98, Windows NT_**
Have any problems been identified? and if so, do you need any assistance from the ITU in solving them?

_____

15. Number of technical/professional staff in national spectrum management? **_20**_____

16. Number of support staff in national spectrum management? **__30**_____

17. Describe your country's spectrum management structure (Please enclose a copy of organization chart).

18. Do you use the ITU-R Handbooks and Reports on:
    a) National Spectrum Management, version 1995 ?
    b) Spectrum Monitoring[1], version 1995?
    c) Computer-aided Techniques for Spectrum Management, version 1999?
    d) HF Broadcasting System Design, version 1999?
    e) Report SM.2012, Economic Aspects of Spectrum Management, version 1997[2]?
    f) Windows Basic Automated Spectrum Management System (WinBASMS) Software Version 1997, Manual Version 1997

What additional information/handbooks do you need from the ITU?
_We have a), b), e). We need c), d), f). _____

*To be returned no later than **31 January 2000** to:*
ITU-D Study Groups Secretariat
Telecommunication Development Bureau
Fax: +41 22 730 54 84
E-Mail: devsg1@itu.int

THANK YOU FOR YOUR COOPERATION

[1] The Spectrum Monitoring Handbook is currently being updated, therefore, you are urged to contact Mr Jan Verduijn (NL), the designated Rapporteur from ITU-R Study Group 1, Working Party 1C if you have any comments that you wish included in a future version of this Handbook.

[2] This Report SM.2012 was updated during the ITU-R Study Group 1 meeting in August 1999. This new version is expected to be available in the three working languages by January 2000.

Attachment 3

FOR INFORMATION

SUMMARY REPORT OF PREVIOUS QUESTIONNAIRES ON THE NEEDS OF DEVELOPING COUNTRIES IN NATIONAL RADIO FREQUENCY SPECTRUM MANAGEMENT

1. Background

The Chairman of Study Group 1 distributed a Questionnaire to developing countries with the purpose of obtaining information about spectrum management in the developing countries. The Questions that were listed in the questionnaire directly reflected the descriptions of the functional requirements of national spectrum management described in the Handbook on "National Spectrum Management". The following discusses the results obtained from that Questionnaire. The sixty-two countries who answered the Questionnaire are listed in Table 1.

2. Results of the Discussions concerning the Questionnaire

2.1 Communication law

Sixty-seven percent of the countries indicated that they had an up to date communication law. Some of the dates of the enactment of the laws indicate that at a minimum the laws should be reviewed. Discussions with some of the countries indicate that the laws should be modified to include additions that encourage efficient use of the spectrum. This subject has been reviewed under Question 2/1 by Study Group 1 of the ITU-D and a report has been prepared.

2.2 Allocation Table

Sixty-five percent of the countries indicated that they had an up-to-date Allocation Table. Allocation tables in many countries are being reviewed because of changes in technology and the reviews will probably result in a modified table in the future. Study Group 1 discussions indicate that this subject should be further addressed to describe what are the basic principles to be followed in developing the allocation tables and the services the allocation tables should contain. Software should be made available to allow simple construction and use of the allocation table in the processing of frequency assignment licenses (See ITU software catalog).

2.3 National Regulations and Procedures

Eighty-six percent of the countries indicated that they were using regulations and procedures to administer the national spectrum management activities. Although the numbers do not indicate a major problem in this area, discussions with many of the countries indicate that the regulations and procedures are not complete. Study Group 1 should address typical subject areas and principles that need to be addressed in producing national regulations and procedures.

2.4 Technical Specifications for Spectrum Use

Fifty-two percent of the countries indicated that they had available spectrum standards. In general it is recognized that developing countries do not have the staff or the expertise to develop radio standards. These countries mainly use the standards of other countries or regional groups. Study Group 1 has been developing a list of parameters that are required for Spectrum Management and the Efficient Use of the Radio Spectrum. This could be used as input guidance for the development of radio standards. Standards could be developed based on a limited set of recommended parameters and therefore could be developed in a simpler and less time consuming manner than is normally done.

2.5 Spectrum Management Data

Seventy-eight percent of the countries indicated that they were collecting data for spectrum management. The countries had frequency assignment records that varied from 200,000 to 500,000 records. The fact that a few countries were collecting little or no data was surprising. Spectrum Management operations require data to effectively manage the Spectrum. This data has been described in the Handbook on "Computer Aided Techniques for National Spectrum Management". What is needed for the future is additional guidance on how to use data effectively in Spectrum Management. This requires new documents to be developed that explain how to effectively use various types of data and the specific data required for these data files. In addition, there appears to be limited data available in the TeraSys(IFL) because countries do not always notify this information to the ITU.

2.6 Policy and Planning

Seventy-three percent of the countries indicated that they were involved in planning and policy for national spectrum management. The comments received indicate that this is a very important activity and that this topic should be further addressed. A particular area that should be addressed is the interference criteria used for frequency assignments in both block assignments and frequency distance procedures. This should include BR procedures for assignments, if applicable, and a general procedure for each region of the world.

2.7 Frequency Assignment and Licensing

Ninety percent of the countries indicated that they did frequency assignment and licensing. These functions are basic functional requirements of spectrum management and it is not surprising that the countries responded this way. Discussions indicated that automated procedures are required especially for those countries with large number of

frequency assignments. General discussion of this topic by Study Group 1 also indicates that the Study Group should adopt a Recommendation describing general procedures. It would be useful to describe multiple approaches to this problem including very basic or simple procedures for developing countries.

2.8 Monitoring and Enforcement

Sixty-seven percent of the countries indicated that they were doing monitoring. Thirty-nine percent indicated that they were doing enforcement but not monitoring. In general, some countries indicated that they were doing monitoring but not using enforcement procedures in cases in which harmful interference had been created. Enforcement laws are the responsibility of each country. Some countries indicated that Study Group 1 should do additional tasks on monitoring beyond what is included in the Handbook on Monitoring to help developing countries. The number of fixed monitoring stations varied from 1 to 22 while the number of mobile stations varied from 0 to 26.

2.9 Liaison and Consultation

Seventy-one percent of the countries indicated that they did some type of liaison and consultation with those interested in obtaining information about Spectrum Management activities. Although only 29 per cent said they were not giving information about Spectrum Management, the answers do not indicate that the process of given information was open to all that requested information. A simple Handbook or Document on Spectrum Management should be prepared emphasizing an open process for liaison and consultation on matters concerning Spectrum Management. In addition, information about tariff and fees for radio licenses was considered to be important to developing countries. It was thought that it would be valuable to hold "Information Meetings" on general aspects of Spectrum Management in various portions of the world. This could be organized and sponsored by the BR and the BDT.

2.10 Spectrum Management Engineering

About fifty percent of the countries indicated that they were doing interference analysis, Spectrum usage, efficiency calculations, or frequency assignment calculations. This is approximately one-half of the frequency assignment action indicated in 2.7 and indicates that no technical evaluation is done for one-half of the action. Additional guidance is available in this area in the Handbook on "National Spectrum Management". Additional assistance could be made available through a new mini Handbook and through Spectrum Management seminars.

2.11 Computerized Engineering

In response to the three Questions on this topic, approximately fifty percent said that they did automated engineering analysis (the same percent as indicated in the previous Questions), some type of Data Base Management System (DBMS) and used a computer system for administrative support. The answer to the first two Questions is surprising. The answer to this Question indicates that Engineering Analysis or Spectrum Engineering is being done with computer software or probably not at all. This is surprising since many calculations can be done manually, although complex calculations can generally only be done with the aid of computer software.

2.12 Fifty-nine percent of the countries indicated they were using a DBMS in spectrum management. In many cases this may be an inadequate DBMS system and needs improvement. The answer to the second Question on Data Base Management Systems is expected since many developing countries have asked for assistance in setting up a DBMS and no general DBMS like WINBASMS is known to exist. It can be concluded that, in general, a system like WINBASMS for small developing countries is also needed for larger or medium size countries. Overall, the information contained in the Questionnaire and Study Group discussions indicated that computerized engineering software is being used and further use should be encouraged through activities such as the Handbooks and seminars. The WINBASMS and ASMS tasks should continue so that general DBMS software is more readily available for all radio services and countries.

2.13 Types of computers

The types of computers varied from 486's to various Pentium computers.

2.14 Operating Systems

The operating system varied from a few countries still using DOS, to countries mainly using WINDOWS and a few using WINDOWS 3.1 and NT and UNIX.

2.15 Number of Technical and Non-Technical Staff in Spectrum Management

The technical staff varied from 1 to 450 and the non-technical staff from none to 250. There is no relationship between the number of technical staff and the non-technical staff employed by the countries.

3. General

The responses to the questions generally improved by approximately 4% from the previous survey. This is certainly encouraging although an examination of the responses indicates that additional improvement is needed in many areas. In addition, many countries have indicated that much additional work is needed in the areas of regulations, frequency assignments, standards, data structures, interference and computer techniques.