

## **Annex 2 to Resolution [SRS-MSS2]**

### **Information on near Earth phases of deep space missions to be provided to MSS operators**

#### **Information related to near Earth phases of deep space SRS missions**

The SRS system operators shall provide to the potentially affected MSS operator the following information:

- a) The beginning and end of the duration of the time slots during which the MSS space station may receive interference. The dates and times defining these time slots shall be referred to GMT; and
- b) The respective lower and upper frequency boundaries of the frequency slots where the transmissions referred to above will take place;

#### **Information related to near Earth SRS satellite networks**

SRS system operators shall provide to the MSS operators, upon request, the following information:

- a) orbit characteristics of the SRS satellite network;
- b) 360° gain pattern of the SRS space station transmit antenna(s);
- c) power density levels delivered to the SRS space station transmit antenna(s);
- d) frequency plan of the SRS satellite network; and
- e) if not yet in operation, date and time when the SRS operations will begin.

## **Annex 3 to Resolution [SRS-MSS2]**

### **Definition of and implementation of exclusion zones where operation of MSS earth stations is not permitted around SRS earth stations**

Exclusion zones wherein transmissions from MSS Earth stations in the 8 400 – 8 500 MHz frequency band are not allowed shall be established around existing and/or planned SRS Earth stations for each potentially affecting MSS satellite network.

- a) Exclusion zones for protection of SRS Earth stations operating in the 8 400 – 8 450 MHz band

Exclusion zones to protect SRS Earth stations operating with deep space missions shall be established for each MSS satellite network in accordance with the following procedure:

For each azimuth in  $[X]^\circ$  steps around an SRS Earth station registered with the ITU for operations in the frequency band 8 400 – 8450 MHz, the minimum angle between the direction of an MSS Earth station transmit antenna main beam, assumed to be pointing towards the MSS satellite with which it is communicating, and the direction of the SRS Earth station, shall be determined, taking into account the MSS satellite orbital location and station keeping tolerance, and the MSS antenna worst case pointing accuracy.

For each type of MSS Earth station, the sum of the maximum possible power density delivered to its transmit antenna and the respective transmit antenna gain calculated for the minimum off-axis angle determined above shall be determined. This is the value of the maximum off-axis e.i.r.p. density that may be radiated towards the SRS Earth station for that azimuth and for that type of Earth station of that specific MSS satellite network.

The maximum of all values of off-axis e.i.r.p. density that may be radiated towards the SRS Earth station for each azimuth around the SRS Earth station and for all types of Earth stations of that specific MSS satellite network shall then be determined.

The required separation distance for each azimuth around the SRS Earth station shall be the distance required to reduce the maximum e.i.r.p. density that may be radiated towards the SRS Earth station, determined by the above procedure, to -173.5 dBW/MHz for all but 0.001% of the time, using the procedure indicated in Recommendation ITU-R P. 452.

b) Exclusion zones for protection of SRS Earth stations operating in the 8 450 – 8 500 MHz band

Exclusion zones to protect SRS Earth stations operating with near Earth missions shall be established for each MSS satellite network in accordance with the following procedure:

For each azimuth in  $[X]^\circ$  steps around an SRS Earth station registered with the ITU for operations in the frequency band 8 450 – 8500 MHz, the minimum angle between the direction of an MSS Earth station transmit antenna main beam, assumed to be pointing towards the MSS satellite with which it is communicating, and the direction of the SRS Earth station, shall be determined, taking into account the MSS satellite orbital location and station keeping tolerance, and the MSS antenna worst case pointing accuracy.

For each type of MSS Earth station, the sum of the maximum possible power density delivered to its transmit antenna and the respective transmit antenna gain calculated for the minimum off-axis angle determined above shall be determined. This is the value of the maximum off-axis e.i.r.p. density that may be radiated towards the SRS Earth station for that azimuth and for that type of Earth station of that specific MSS satellite network.

The maximum of all values of off-axis e.i.r.p. density that may be radiated towards the SRS Earth station for each azimuth around the SRS Earth station and for all types of Earth stations of that specific MSS satellite network shall then be determined.

The required separation distance for each azimuth around the SRS Earth station shall be the distance required to reduce the maximum e.i.r.p. density that may be radiated towards the SRS Earth station, determined by the above procedure, to -170.5 dBW/MHz for all but 0.1% of the time, using the procedure indicated in Recommendation ITU-R P. 452.

No MSS transmissions shall be allowed within the exclusion zones established according to a) and b) above for that particular MSS satellite network around the potentially affected SRS Earth stations as long as the SRS Earth stations remain operational.

Whenever additional SRS Earth stations which may be affected by the MSS satellite networks operating in the 8 400 – 8 500 MHz frequency band are registered with the ITU, the relevant exclusion zones shall be developed by the affecting MSS operators. Any potentially affecting MSS transmission within the respective exclusion zone shall cease as soon as the new SRS Earth station becomes operational, and shall not be allowed as long as the potentially affected SRS Earth stations remain operational.

**Reason:** To provide provisions for coordination of GSO MSS stations with SRS stations, including application of exclusion zones around receiving SRS earth stations.

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**United States of America**

**DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE**

**Agenda item 1.25:** *to consider possible additional allocations to the mobile-satellite service in accordance with Resolution 231 (WRC-07);*

**Background**

Working Party 4C was the lead ITU-R Working Party for developing information related to Agenda Item 1.25 (WRC-12). It initiated this activity through a set of Liaison statements to other Working Parties requesting information on certain spectrum allocations of interest. The bands of interest were those which were potential candidates for additional mobile-satellite service (MSS) allocations.

Working Parties to which the liaisons were sent were those with services/bands that were of potential interest. The return Liaison Statements from the Working Parties included reference to various protection criteria and related ITU-R Recommendations. These were developed to provide for the sharing of the allocations by the services in the band whether of the same service or other services. Based on the responses from other Working Parties, WP 4C undertook sharing studies to determine if compatibility with the services already using the allocations could be achieved.

The Executive Summary of the draft CPM text for this agenda item indicates that studies of possible bands for new allocations to the MSS were developed in the (Earth-to-space) and (space-to-Earth) directions, with particular focus on the range 4-16 GHz, taking into account sharing and compatibility, without placing undue constraints on existing services in this band. Based on the results of studies, an appropriate amount of spectrum may be made available to the MSS systems in the 4-16 GHz range to overcome the shortfall of spectrum for the present and future MSS systems. The total requirements for the MSS in the 4-16 GHz range for the year 2020 are estimated to be between 240 and 335 MHz in each direction, and are contained in PDNRep ITU-R M.[MSS-REQS].

The Draft CPM text sets forth several Methods for each of the bands under consideration. The bands under consideration are indicated in the Table below. In general, the Methods of interest to the MSS proponents: Method A2, B2, C2, D2, E, F2, which provide for sharing with the incumbent services, are reflected in the proposals below.

<u>FREQUENCY BAND</u>	<u>MSS DIRECTION</u> (DL = DOWNLINK) (UL = UPLINK)
5150-5250 MHZ	DL
7055-7250 MHZ	DL
8400-8500 MHZ	UL
10.5 - 10.6 GHZ	DL
13.25-13.4 GHZ	DL
15.43-15.63 GHZ	UL

This document addresses a sub-set of the above frequency bands —10.55-10.6 GHz. The other bands are the subject of separate proposals.

**Proposals:**

**ARTICLE 5**

**Frequency allocations**

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Section IV – Table of Frequency Allocations  
(See No. 2.1)

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**MOD USA/1.25/18**

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**10-11.7 GHz**

<b>Allocation to services</b>		
<b>Region 1</b>	<b>Region 2</b>	<b>Region 3</b>
*****		
<b>10.5-10.55</b> FIXED MOBILE Radiolocation	<b>10.5-10.55</b> FIXED MOBILE RADIOLOCATION	
<b>10.55-10.6</b>	FIXED MOBILE except aeronautical mobile MOBILE-SATELLITE (space-to-Earth) Radiolocation 5.MSS	
*****		

**ADD** USA/1.25/19

**5.MSS** Use of the band 10.55-10.6 GHz by the mobile-satellite service is limited to geostationary satellite systems. Earth stations in the mobile-satellite service shall not claim protection from stations in the fixed service operating in accordance with the Radio Regulations.

**Reason:** To allocate 10.55-10.6 GHz to MSS in the downlink direction limited to geostationary satellite systems.

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## ARTICLE 21

### Terrestrial and space services sharing frequency bands above 1 GHz

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#### Section V – Limits of power flux-density from space stations

**21.16** § 6 1) The power flux-density at the Earth's surface produced by emissions from a space station, including emissions from a reflecting satellite, for all conditions and for all methods of modulation, shall not exceed the limit given in Table 21-4. The limit relates to the power flux-density which would be obtained under assumed free-space propagation conditions and applies to emissions by a space station of the service indicated where the frequency bands are shared with equal rights with the fixed or mobile service, unless otherwise stated.

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**MOD** USA/1.25/20

TABLE 21-4 (CONTINUED) (REV.WRC-07)

Frequency band	Service*	Limit in dB(W/m <sup>2</sup> ) for angles of arrival ( $\delta$ ) above the horizontal plane			Reference bandwidth
		0°-5°	5°-25°	25°-90°	
*****					
10.55-10.6 GHz	Mobile-satellite (space-to-Earth) (geostationary-satellite orbit)	-126	$-126 + 0.5(\delta - 5)$	-116	1 MHz
10.7-11.7 GHz	Fixed-satellite (space-to-Earth) (geostationary-satellite orbit)	-150	$-150 + 0.5(\delta - 5)$	-140	4 kHz
10.7-11.7 GHz	Fixed-satellite (space-to-Earth) (non-geostationary-satellite orbit) <sup>20</sup>	-126	$-126 + 0.5(\delta - 5)$	-116	1 MHz
*****					

**Reason:** To apply provisions to protect the fixed service, taking into account the need for regulatory certainty and enabling MSS systems to operate.

**United States of America**

**DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE**

**Agenda item 1.25:** *to consider possible additional allocations to the mobile-satellite service in accordance with Resolution 231 (WRC-07);*

Note: This revised proposal represents a compromise approach between agenda items 1.21 and 1.25 within IWG-1 and IWG-3 and assumes that a companion proposal under agenda item 1.21 in Document IWG-1/aaa that provides for a radiolocation service allocation in the 15.4-15.7 GHz band is also adopted.

If this document and the companion proposal under Agenda Item 1.21 are both adopted, the authors of this proposal withdraw document IWG-3/49.

**Background**

The Executive Summary of the CPM text for this agenda item indicates that studies of possible bands for new allocations to the mobile-satellite service (MSS) were developed in the (Earth-to-space) and (space-to-Earth) directions, with particular focus on the range 4-16 GHz, taking into account sharing and compatibility, without placing undue constraints on existing services in this band. Based on the results of studies, an appropriate amount of spectrum may be made available to the MSS systems in the 4-16 GHz range to overcome the shortfall of spectrum for the present and future MSS systems. The total requirements for the MSS in the 4-16 GHz range for the year 2020 are estimated to be between 240 and 335 MHz in each direction, and are contained in PDNRep ITU-R M.[MSS-REQS].

The CPM text sets forth several Methods for each of the bands under consideration. With respect to the 15 GHz band, the Method of interest to the MSS proponents, Method F2, provides for sharing with the incumbent services, and is reflected in the proposals below for this band.

Introduction of a MSS primary uplink allocation in the band 15.4-15.6 GHz in RR Article 5 is proposed, together with additional provisions in the RR to ensure necessary protection of existing services, developed based on the studies conducted in the Working Document towards a Preliminary Draft New Report ITU-R M.[MSS-SHARING], subject to the further development of the studies anticipated before WRC-12. The band allocated to MSS would take into account the need for an allocation in the range 15.4-15.7 GHz to address the requirements of radiolocation systems (WRC-12 Agenda item 1.21). In this proposal, an allocation to MSS is made with a separate, complimentary proposal under agenda 1.21 making the allocation to the radiolocation service in the range 15.4-15.7 GHz.

This method entails the following provisions:

- Footnote in RR Article 5 limiting use of the MSS allocation to GSO systems.
- Regulatory measures to address sharing between MSS and ARNS (RR No. 4.10 applies); and between MSS and FSS (limited to non-GSO MSS feeder links).

- Measures for protection of the radio astronomy service in the nearby band, 15.35-15.4 GHz.
- Resolution providing mechanism for providing detailed information from administrations operating MSS to administrations operating RLS systems
- Protection of MSS space station receivers at the geostationary orbit

Recognizing that additional studies are being conducted in the ITU-R, these provisions may be modified or additional provisions may be developed based on review of those additional studies.

**PROPOSALS:**

**ARTICLE 5**  
**Frequency allocations**

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Section IV – Table of Frequency Allocations  
(See No. 2.1)

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**MOD** USA/1.25/21

**15.4-18.4 GHz**

Allocation to services		
Region 1	Region 2	Region 3
<b>15.4-15.43</b>	AERONAUTICAL RADIONAVIGATION MOBILE-SATELLITE (Earth-to-space) 5.A125 ————— 5.511D 5.B125 5.C125 5.D125	
<b>15.43-15.63</b>	FIXED-SATELLITE (Earth-to-space) 5.511A AERONAUTICAL RADIONAVIGATION MOBILE-SATELLITE (Earth-to-space) 5.A125 5.511C 5.B125 5.C125 5.D125	
<b>15.6-15.63</b>	FIXED-SATELLITE (Earth-to-space) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C	
<b>15.63-15.7</b>	AERONAUTICAL RADIONAVIGATION 5.511D	
*****		

**Reason:** These allocations indicate the shared and compatible use of these frequencies and can provide support to several services.

**ADD** USA/1.25/22

**5.A125** The use of the band 15.4-15.6 GHz by the mobile-satellite service is limited to geostationary satellite networks, and is subject to coordination under No. 9.11A with non-GSO systems in the FSS in the band 15.43-15.6 GHz.

**Reason:** provides a better basis for the shared use of the allocation by multiple services

**ADD** USA/1.25/23

**5.B125** In order to protect the radio astronomy service in the band 15.35-15.4 GHz, mobile satellite service stations operating in the 15.4-15.6 GHz band shall not exceed the power flux density level of -156 dB(W/m<sup>2</sup>) in the band 15.35-15.4 GHz, at any radio astronomy observatory site for more than 2% of the time.

**Reason:** Minimizes the impact on the Radio Astronomy Service

**ADD** USA/1.25/24

**5.C125** In the band 15.4-15.6 GHz stations operating in mobile-satellite service shall not cause harmful interference to, nor claim protection from, stations operating in the aeronautical radionavigation service in [Sweden, Norway, Finland, United States....]

**Reason:** Preserves the regulatory status and minimizes the impact on an incumbent service.

**ADD** USA/1.25/25

**5.D125** Resolution [RLS-MSS] applies to stations in the radiolocation service and in the mobile-satellite service in the band 15.4-15.6 GHz. Stations in the radiolocation service shall not exceed a pfd level of XX dB(W/m<sup>2</sup>/MHz) at the satellite receiver antenna for MSS satellite networks in the geostationary arc that have been brought into use and/or notified under the Radio Regulations.

**Reason:** Ensures compatibility between the mobile-satellite service and radiolocation.

**ADD** USA/1.25/26

## RESOLUTION [RLS-MSS] (WRC-12)

### **Radiolocation and mobile satellite service sharing and compatibility in the frequency band 15.4-15.6 GHz**

The World Radiocommunication Conference (Geneva, 2012),

*considering*

- a) the band 15.4-15.7 GHz was allocated to the radiolocation service (RLS) on a primary basis by World Radiocommunication Conference -2012;
- b) the band 15.4-15.6 GHz was allocated to the mobile-satellite service (MSS) on a primary basis by World Radiocommunication Conference -2012;

*recognizing*

- a) that ITU-R studies have shown the potential for interference between the radiolocation and mobile-satellite service when they are co-frequency;
- b) the need for RLS and MSS stations and networks to operate without causing harmful interference to each other in the band 15.4-15.6 GHz;

*resolves*

1 that, upon receiving a request from an administration operating or planning to operate RLS stations in the 15.4-15.6 GHz band, administrations who are operating MSS earth stations in the band 15.4-15.6 GHz shall provide the following information to the requesting administration within 60 days of receiving the request:

- MSS earth station (MES) operational locations or service area, such that RLS station operators are able to avoid receiving interference from MESs;
- Operational MSS satellite receiver locations, such that RLS station operators are able to avoid interfering with MSS satellite receivers;

2 to invite ITU-R as a priority, to conduct sharing and compatibility studies between RLS stations and MSS networks with a view towards defining operational and technical sharing recommendations that provide mutually adequate access to the band 15.4-15.6 GHz;

*invites administrations*

to contribute to these sharing and compatibility studies;

*invites ITU-R*

to complete the necessary studies and create recommendations as a matter of urgency.

**Reasons:** This resolution provides a method for radiolocation service and mobile satellite service sharing of the band 15.4-15.6 GHz and guidance to the ITU-R on conducting studies to produce final recommendations.

## **Regulatory Issues**

WAC Informal Working Group (IWG)-4

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda item 4

**Agenda Item 4:** *In accordance with Resolution 95 (Rev. WRC-07), to review the resolutions and recommendations of previous conferences with a view to their possible revision, replacement or abrogation*

**Issue:** To review the resolutions and recommendations in the Radio Regulations and to identify potential modifications or suppressions.

**Background:** This is a standing item on every WRC agenda and its purpose is to examine the WRC resolutions and recommendations for editorial corrections as well as suppressions due to completion of work or material being superseded by other work. This includes consequential suppression or modification of resolutions associated with WRC-12 agenda items.

Emergency telecommunications has been identified as a top priority for all ITU Member States. Since WRC-07, the United States has actively supported the work of the ITU in all three sectors related to use of telecommunications/ICTs for disaster prediction, mitigation, relief, response and recovery. In order to take account of developments since 2007 and to reinforce the importance of ongoing work in the ITU Radiocommunication Sector in support of emergency telecommunications, the United States proposes modification of Resolution 644 (Rev. WRC-07) 'Radiocommunication resources for early warning, disaster mitigation and relief operations' and Resolution 647 (WRC-07) 'Spectrum management guidelines for emergency and disaster relief radiocommunication.'

**Proposals:**

**Resolution 644 (Rev. WRC-07)**

**MOD**

**RESOLUTION 644 (REV. WRC-1207)**

**Radiocommunication resources for early warning, disaster mitigation and relief operations**

The World Radiocommunication Conference (Rev. Geneva, 201207),

*considering*

a) that administrations have been urged to take all practical steps to facilitate the rapid deployment and effective use of telecommunication resources for early warning, disaster mitigation and disaster relief operations by reducing and, where possible, removing regulatory barriers and strengthening global, regional and transborder cooperation between States;

b) that ~~e-potential of~~ modern telecommunication technologies are an essential tool for disaster mitigation and relief operations and the vital role of telecommunications and ICT for the safety and security of relief workers in the field;

c) the particular needs of developing countries and the special requirements of the inhabitants living in high risk areas exposed to disasters, as well as those living in remote areas;

d) the work carried out by the Telecommunication Standardization Sector in standardizing the common alerting protocol (CAP), through the approval of the relevant CAP Recommendation;

e) that, under the Strategic Plan of the Union ~~2012-201508-2011~~, “the need for effective use of telecommunications/ICTs and modern technologies during critical emergencies, as a crucial part of disaster prediction, detection, early-warning, mitigation, management and relief strategies” ~~encouraging the effective use of telecommunications/ICTs and modern technologies during critical emergencies, as a crucial part of disaster early warning, mitigation, management and relief strategies, in light of the accelerating pace of change in the global environment and of the action lines of WSIS~~, is considered a priority one of the three major priorities for the ITU in this period;

f) that the majority of terrestrial networks in affected areas were damaged during recent disasters,

*recognizing*

a) Article 40 of the Constitution, on priority of telecommunications concerning safety of life;

b) Article 46 of the Constitution, on distress calls and messages;

c) No. 91 of the Tunis Agenda for the Information Society adopted by the second phase of the World Summit on the Information Society and in particular provision c): “Working expeditiously towards the establishment of standards-based monitoring and worldwide early-warning systems linked to national and regional networks and facilitating emergency disaster response all over the world, particularly in high-risk regions”;

d) Resolution 34 (Rev. ~~Hyderabad~~<sup>Doha</sup>, 2010~~06~~) of the World Telecommunication Development Conference on the role of telecommunications/information and communication technologies in disaster preparedness, early warning, rescue, mitigation, relief and response~~ICT in early warning and mitigation of disasters and humanitarian assistance~~, as well as ITU-D Question 22/2 “Utilization of telecommunications/ICT for disaster preparedness, mitigation and response~~management, resources and active and passive space based sensing systems as they apply to disaster and emergency relief situations~~”;

e) Resolution 36 (Rev. ~~Guadalajara~~<sup>Antalya</sup>, 2010~~06~~) of the Plenipotentiary Conference on telecommunications/information and communication technology in the service of humanitarian assistance;

f) Resolution 136 (~~Guadalajara~~<sup>Antalya</sup>, 2010~~06~~) of the Plenipotentiary Conference on the use of telecommunications/information and communication technologies for monitoring and management in emergency and disaster situations for early warning, prevention, mitigation and relief;

g) Resolution ITU-R 53 of the Radiocommunication Assembly (Geneva, 2007), on the use of radiocommunications in disaster response and relief;

h) Resolution ITU-R 55 of the Radiocommunication Assembly (Geneva, 2007), on the ITU-R studies of disaster prediction, detection, mitigation and relief,

*noting*

the close relation of this Resolution with Resolution 646 (WRC-03) on public protection and disaster relief and Resolution 647~~[COM6/2]~~ [(Rev. WRC-12~~07~~)] on spectrum management guidelines for emergency and disaster relief radiocommunication, and the need to coordinate activities under these Resolutions in order to prevent any possible overlap,

*resolves*

1 that the ITU Radiocommunication Sector (ITU-R) continue to study, as a matter of urgency, those aspects of radiocommunications/ICT that are relevant to early warning, disaster mitigation and relief operations, such as decentralized means of telecommunications that are appropriate and generally available, including amateur terrestrial and satellite radio facilities, mobile and portable satellite terminals, as well as the use of passive space-based sensing systems;

2 to urge the ITU-R Study Groups, taking into account the scope of ongoing studies/activities appended to Resolution ITU-R 55 of the Radiocommunication Assembly [(Rev. Geneva, 201~~2~~<sup>07</sup>)], to accelerate their work, particularly in the areas of disaster prediction, detection, mitigation and relief,

*instructs the Director of the Radiocommunication Bureau*

1 to support administrations in their work towards the implementation of both Resolutions 36 (Rev. ~~GuadalajaraAntalya, 201006~~) and 136 (~~GuadalajaraAntalya, 201006~~), as well as the Tampere Convention;

2 to collaborate, as appropriate, with the United Nations Working Group on Emergency Telecommunications (WGET);

~~3 to participate actively in, and contribute to, the ITU Global Forum on Effective Use of Telecommunications/ICT for Disaster Management: Saving Lives (Geneva, 10-12 December 2007);~~

4 to participate in, and contribute to, Telecommunications for Disaster Relief and Mitigation – Partnership Coordination Panel (PCP-TDR);

5 to synchronize activities between this Resolution, Resolution 646 (WRC-03) and Resolution ~~647[COM6/2] [(Rev. WRC-1207)]~~ to prevent a possible overlap.

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**Resolution 647 (WRC-07)**

**MOD**

**Resolution 647 (Rev. WRC-1207)**

**Spectrum management guidelines for emergency and disaster relief  
radiocommunication<sup>1</sup>**

The World Radiocommunication Conference (Rev. Geneva, 201207),

*considering*

*a)*

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<sup>1</sup> The term “emergency and disaster relief radiocommunication” refers to radiocommunications used by agencies and organizations dealing with a serious disruption of the functioning of society, posing a significant widespread threat to human life, health, property or the environment, whether caused by accident, natural phenomena or human activity, and whether occurring suddenly or as a result of complex, long-term processes.

a) the Tampere Convention on the Provision of Telecommunications Resources for Disaster Mitigation and Relief Operations (Tampere, 1998)<sup>2</sup>, an international treaty deposited with the United Nations Secretary-General, calls on the States Parties, when possible, and in conformity with their national law, to develop and implement measures to facilitate the availability of telecommunication resources for such operations;

b) that some administrations may have different operational needs and spectrum requirements for emergency and disaster-relief applications, depending on the circumstances;

c) that the immediate availability of pre-identified and pre-coordinated frequencies, and/or spectrum-flexible technologies to allow near-instantaneous decisions to make use of available spectrum, are important for successful telecommunications in the very early stages of humanitarian assistance intervention for disaster relief,

*recognizing*

a) Resolution 36 (Rev. ~~Guadalajara~~~~Antalya~~, 201006) of the Plenipotentiary Conference on telecommunications/information and communication technologies (ICTs) in the service of humanitarian assistance;

b) Resolution 136 (Rev. ~~Guadalajara~~~~Antalya~~, 201006) of the Plenipotentiary Conference on the use of telecommunications/information and communication technologies for monitoring and management in emergency and disaster situations for early warning, prevention, mitigation and relief;

c) Resolution 34 (Rev. ~~Hyderabad~~~~Doha~~, 201006) of the World Telecommunication Development Conference (WTDC) on the role of telecommunications/information and communication technologies in disaster preparedness, early warning, rescue, mitigation, relief and response, ~~ICT in early warning and mitigation of disasters and humanitarian assistance~~, as well as ITU-D Question 22/1-2 “Utilization of telecommunications/ICT for disaster management, resources, and active and passive space based sensing systems as they apply to disaster and emergency relief situations preparedness, mitigation and response”;

d) Resolution 48 (Rev. ~~Hyderabad~~~~Doha~~, 201006) of WTDC on strengthening cooperation among telecommunication regulators;

e) Resolution 644 [(Rev. WRC-1207)] on radiocommunication resources for early warning, disaster mitigation and relief operations;

f) Programme 56 (Least developed countries, countries in special need, ~~and small island developing states, and emergency telecommunications, and climate change adaptation~~), a revised version of which was adopted by WTDC (~~Hyderabad~~~~Doha~~, 201006);

g) Resolution 646 (WRC-03) on public protection and disaster relief;

h) Recommendation ITU-R M.1637, which offers guidance to facilitate the global circulation of radiocommunication equipment in emergency and disaster relief situations;

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<sup>2</sup> However, a number of countries have not ratified the Tampere Convention.

i) Recommendation ITU-R M.1854, "Use of mobile satellite service (MSS) in disaster response and relief", and Recommendation ITU-R S.1001-2, "Use of systems in the fixed-satellite service in the event of natural disasters and similar emergencies for warning and relief operations, which provide information on the range of radio-frequencies that can be used by MSS and FSS systems for emergency and disaster relief operations,

j) Report ITU-R M.2033, which contains information on some bands or parts thereof which have been designated for disaster relief operations,

*aware*

of the progress made in regional organizations around the world, and in particular in regional telecommunication organizations, on matters related to emergency communications planning and response,

*recognizing further*

a) Resolution ITU-R 55 of the Radiocommunication Assembly [(Rev. Geneva, 201207)], which invites the ITU-R Study Groups to take into consideration the scope of ongoing studies/activities outlined in the annex to the Resolution, and to develop guidelines related to the management of radiocommunications in disaster prediction, detection, mitigation and relief, collaboratively and cooperatively, within ITU and with organizations external to the Union, in order to avoid duplication of effort;

b) Resolution ITU-R 53 of the Radiocommunication Assembly [(Rev. Geneva, 201207)], which instructs the Director of the Radiocommunication Bureau to assist Member States with their emergency radiocommunication preparedness activities such as the listing of currently available frequencies for use in emergency situations for inclusion in a database maintained by the Bureau,

*noting*

a) that when a disaster occurs, the disaster relief agencies are usually the first on the scene using their day-to-day communication systems, but that in most cases other agencies and organizations may also be involved in disaster relief operations;

b) that there is a critical requirement to perform immediate spectrum management actions, including frequency coordination, sharing and spectrum reuse, within a disaster area;

c) that national spectrum planning for emergency and disaster relief should take into account the need for cooperation and bilateral consultation with other concerned administrations, which can be facilitated by spectrum harmonization and/or spectrum-flexible technology, as well as agreed spectrum management guidelines pertaining to disaster relief and emergency planning;

d) that in times of disasters, radiocommunication facilities may be destroyed or impaired and the national regulatory authorities may not be able to provide the necessary spectrum management services for the deployment of radio systems for relief operations;

e) that the identification of frequency availability within individual administrations within which equipment could operate, or the use of spectrum-flexible equipment that allows for operation in various spectrum-access scenarios, may ease the interoperability and/or interworking, with mutual cooperation and consultation, especially in national, regional and cross-border emergency situations and disaster relief activities,

*noting further*

a) that flexibility must be afforded to disaster relief agencies and organizations to use current and future radiocommunications, so as to facilitate their humanitarian operations;

b) that it is in the interest of administrations and disaster relief agencies and organizations to have access to updated information on national spectrum planning for emergency and disaster relief,

*resolves*

1 to encourage administrations to consider global and/or regional frequency bands/ranges for emergency and disaster relief when undertaking their national planning and to communicate this information to the Bureau;

2 to encourage administrations to maintain available frequencies for use in the very early stages of humanitarian assistance intervention for disaster relief,

*instructs the Director of the Radiocommunication Bureau*

1 to assist Member States with their emergency communication preparedness activities by establishing a database of currently available frequencies for use in emergency situations, which are not limited to those listed in Resolution 646 (WRC-03), and by issuing an appropriate listing, taking into account Resolution ITU-R 53 of the Radiocommunication Assembly [(Rev. Geneva, 201207)];

2 to maintain the database and facilitate online access thereto by administrations, national regulatory authorities, disaster relief agencies and organizations, in particular the United Nations Emergency Relief Coordinator, in accordance with the operating procedures developed for disaster situations;

3 to collaborate with the United Nations Office for the Coordination of Humanitarian Affairs and other organizations, as appropriate, in the development and dissemination of standard operating procedures and relevant spectrum management practices for use in the event of a disaster situation;

4 to take into consideration all relevant activities in ITU's other two Sectors and General Secretariat;

5 to report on the progress on this Resolution to subsequent World Radiocommunication Conferences,

*invites ITU-R*

to conduct studies as necessary, and as a matter of urgency, in support of the establishment of appropriate spectrum management guidelines applicable in emergency and disaster relief operations,

*urges administrations*

1 to participate in the emergency communication preparedness activities described above and to provide the relevant information to the Bureau concerning their national frequency allocations and spectrum management practices for emergency and disaster relief radiocommunications, taking into account Resolution ITU-R 53 of the Radiocommunication Assembly [(Rev. Geneva, 2012~~07~~)];

2 to assist in keeping the database up to date by advising the Bureau on an ongoing basis of any modifications to the information requested above.

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Draft IWG-4 modifications to NTIA Proposal on Agenda item 7 (No. 11.41A/Issue 3B)

UNITED STATES OF AMERICA

**DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE**

**Agenda Item 7:** *to consider possible changes in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference: "Advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks", in accordance with Resolution 86 (Rev. WRC-07)*

**Issue 3B:** Status of frequency assignments initially recorded under RR No. 11.41 in cases where the required coordinations are completed after the assignments are recorded in the MIFR  
The status of frequency assignments initially recorded under No. 11.41 in cases where the required coordinations are completed with the networks which were the basis for the unfavorable findings after the assignments are recorded in the Master International Frequency Register (MIFR).

**Background Information:** The Radiocommunication Bureau (BR) considered issues concerning definitive and provisional recordings of frequency assignments and related articles of the Radio Regulations.<sup>1</sup> The BR considers an assignment receiving an unfavorable finding for not completing coordination and filing under No. 11.41 as "provisional." If no interference has occurred between the provisional assignment and any assignment, which was the basis for the unfavorable finding during the four month period of simultaneous operation, then the BR changes the provisional recording to "definitive." The BR considers an assignment recorded under No. 11.41, even if the status changes from provisional to definitive, as having a lower status to the assignment for which the BR based the unfavorable finding on No. 11.32A.<sup>2</sup> The BR should record an assignment as definitive if the BR initially recorded it under No. 11.41 and the assignment subsequently completes all of the requirements for coordination and successfully operates simultaneously for the four-month period with the assignment which was the basis for the initial unfavorable finding. This assignment should also receive the same status as the existing assignment. Therefore, the BR should consider an assignment that it initially recorded under No. 11.41 equally with respect to an existing assignment which was the basis for the unfavorable findings under No. 11.32A if coordination with the latter is completed and should not be seen as "always lower." Continuing to consider the provisional assignment as having a lower status could be a disincentive to complete coordination.

This proposal modifies No. 11.41A to ensure that the BR consider the status of an assignment initially recorded under No. 11.41 as equal to the status of the existing assignment, which was the basis for the unfavorable findings under No. 11.32A if coordination is completed with respect to that existing assignment after the BR initially recorded the assignment in the MIFR.

<sup>1</sup> BR Report to the 2007 World Radiocommunication Conference (Document 4, Addendum 2, Section 3.1.3.3).

<sup>2</sup> BR Report to the 2007 World Radiocommunication Conference (Document 4, Addendum 2, Section 3.1.3.3.4).

**Proposal:**

## ARTICLE 11

### **Notification and recording of frequency assignments<sup>1, 2, 3, 4, 5, 6, 7</sup> (WRC-07)**

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

**MOD** USA/7/1

**11.41A** Should the assignments that were the basis of the unfavourable finding under Nos. **11.32A** or **11.33** not be brought into use within the period specified in Nos. **11.24**, **11.25** or **11.44**, as appropriate, then the finding of the assignments resubmitted under No. **11.41** shall be reviewed accordingly. Should the coordination procedures specified in No. **11.32** be completed with administration(s) whose assignments were the basis of the recording under No. **11.41** with respect to assignments recorded under No. **11.41**, then any conditions related to the initial recording of assignments under No. **11.41** shall be removed.

**Reasons:** The proposed modification to No. **11.41A** will ensure that the BR consider the status of an assignment initially recorded under No. **11.41** as equal to the status of the existing assignment, which was the basis for the unfavorable findings under No. **11.32A**, if coordination is completed with respect to that existing assignment after the BR initially recorded the assignment in the MIFR.

UNITED STATES OF AMERICA

***DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE***

**Agenda Item 7:** *to consider possible changes in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference: "Advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks", in accordance with Resolution 86 (Rev. WRC-07)*

**Issue 3A: Application of RR Nos. 11.41 and 11.42 in respect of satellite networks (Provisional / definitive recording of frequency assignments)**

**Background Information:** In its report to the 2007 World Radiocommunications Conference (Document 4, Addendum 2, Section 3.1.3.3), the Radiocommunications Bureau (BR) considered the case of recording provisional assignments under No. 11.41. The BR indicated that there were insufficient "indications as what would be the course of action, by the Bureau, if harmful interference is reported, during the four-month period of simultaneous operation."

The BR's initial proposal suggested that: "[i]f the interference is not eliminated by the end of the four-month period envisaged for simultaneous operation, the Bureau cancels the "incoming" assignment (i.e. the one recorded under No. 11.41) and informs the concerned administration accordingly."

The BR proposal may provide excessive control to the administration claiming interference, since there is no requirement for that administration to present proof of harmful interference. In the case of actual harmful interference, it may take considerable time to establish the source of interference which could result in automatic cancellation of particular frequency assignments without definitively establishing that those frequency assignments were the cause of the unresolved interference complaint. However, removing any type of "penalty" for a provisional assignment causing harmful interference to the assignment which was the basis of the unfavourable finding under No. 11.32A could lead to administrations purposefully not completing difficult coordinations with networks having date priority and already recorded in the MIFR.

For the case where complaints of interference are received after the four-month period, the BR's initial proposal suggested that: "For a complaint received beyond the four month period indicated in No. 11.41, it requests the administration responsible for the "incoming" assignment (i.e. the one recorded under No. 11.41) to eliminate the harmful interference immediately under No. 11.42. The matter is thereafter dealt with in accordance with the procedures set forth in Article 15 of the Radio Regulations."

So, summarizing the BR proposal, if an interference complaint is received against a new assignment within the first four months of operations of the new assignment and the interference is not eliminated within the 4 months, the BR would cancel the new assignment. If an interference complaint is received after the first four months, the BR would ask the administration responsible for the provisionally recorded assignments to eliminate the

interference immediately and then apply the procedures of Article 15. It would seem that there should be no difference in treatment applied to situations where the interference complaints occur within or outside the four-month period. However, if the harmful interference is not resolved, then the provisional assignment should be cancelled by the BR and the concerned administration informed accordingly.

**Proposal:**

## ARTICLE 11

### **Notification and recording of frequency assignments<sup>1, 2, 3, 4, 5, 6, 7</sup> (WRC-07)**

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

**NOC**  
**11.41**

**Reasons:** Changes are not required to this provision.

**11.42** Should harmful interference be caused by an assignment recorded under No. 11.41 to any recorded assignment which was the basis of the unfavourable finding, the station using the frequency assignment recorded under No. 11.41 shall, upon receipt of a detailed report of harmful interference using to the maximum extent possible the format prescribed in Appendix 10 of the Radio Regulations, advice thereof immediately eliminate this harmful interference. Administrations involved shall cooperate in the resolution of the harmful interference and may request assistance from the Bureau, as necessary.

**Reasons:** Changes clarify that complaints of harmful interference should be based on a detailed report of the interference event.

**ADD**

**11.42bis** In respect of satellite networks, if the Bureau is informed that the harmful interference reported under No. 11.41 is resolved and the two assignments have been in use for at least four months without any complaint of harmful interference, the Bureau shall change the provisional entry recorded under No. 11.41 to definitive. If, after cooperation between the concerned administrations and the assistance of the Bureau, the harmful interference is not resolved, the Bureau shall cancel the provisional entry recorded under No. 11.41, subject to confirmation by the Board, and shall inform the administrations concerned. Until the cancellation is confirmed by the Board, the Bureau shall maintain the provisional assignment in the MIFR.

**Reasons:** New provision explicitly states that if harmful interference is not resolved the BR shall cancel the provisional entry. However, cancellation depends on confirmation by the Board and does not go into force until such confirmation occurs.

**UNITED STATES OF AMERICA**

**DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE**

**Agenda item 8.1.1:** *on activities of the Radiocommunication Sector since WRC-07*

**Background Information:** This proposal addresses Issue C and Resolution 673 (WRC-07) on radiocommunications use for Earth observation applications. Resolution 673 (WRC-07) called for studies by the ITU-R on possible means to improve the recognition of the essential role and global importance of Earth observation radiocommunications applications and the knowledge and understanding of administrations regarding the utilization and benefits of these applications. This resolution also instructed the Director of the Radiocommunication Bureau to include the results of these studies in his report to WRC-12 for the purposes of considering adequate actions in response to these ITU-R studies. The objectives of these studies do not include new allocations or additional protection.

The ITU-R completed several studies resulting in Recommendation ITU-R RS.1859 on the use of remote sensing systems for data collection for guidance in the event of natural disasters and similar emergencies and Recommendation ITU-R RS.[CLIMATE] on the use of remote sensing systems in the study of climate change and the effects thereof. The ITU-R also completed Report ITU-R RS.2178 on the essential role and global importance of radio spectrum use for Earth observations and for related applications. The work under Resolution 673 (WRC-07) is complete.

In order to improve the recognition of the importance of Earth observation systems within the Radio Regulations, this proposal seek to replace s to modify Resolution 673 (WRC-07) with a Recommendation to reflect the conclusions of the ITU-R studies.

**Proposal:**

**ARTICLE 4**  
**Assignment and use of frequencies**

**NOC** USA/8.1.1.C/1

**Reasons:** Resolution 673 (WRC-07) notes that the ITU-R studies under this resolution should not result in additional protection or regulatory status of Earth observation systems and applications.

**ARTICLE 5**  
**Frequency allocations**

**NOC** USA/8.1.1.C/2

**Reasons:** Resolution 673 (WRC-07) notes that the ITU-R studies under this resolution should not result in new allocations or additional protection of Earth observation systems and applications.