

IWG-4/028 rev 3

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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 of the Radio Regulations for frequency assignments pertaining to space services,”¹ in accordance with Resolution 86 (Rev. WRC 07).*

Background: Integrated MSS Systems² employ technology that integrates mobile-satellite components and terrestrial components (“complementary ground component or ‘CGC’”) into a single system reusing MSS frequencies for both components. Currently, there are provisions in the Radio Regulations to accommodate satellite systems and terrestrial networks separately, but additional provisions are needed to accommodate the unique aspects of Integrated MSS Systems.

Resolution 86 resolves to invite future world radiocommunication conferences to:

- 1) *to consider any proposals which deal with deficiencies and improvements in the advance publication, coordination, notification and recording procedures of the Radio Regulations for frequency assignments pertaining to space services which have been identified by administrations as appropriate, and 2) to ensure that these procedures and the related appendices of the Radio Regulations reflect the latest technologies as far as possible.*³

¹ Int’l Telecomm. Union [ITU], *Implementation of Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference*, at resolves to invite future world radiocommunication conferences ¶ 1, Resolution 86 (Rev. WRC-07) (2007).

² The ITU-R Coordination Committee for Vocabulary (“CCV”) is considering the definition of Integrated MSS System given below. This is also the working definition used in ITU-R Working Parties 4C, 4B, and 4A. See, *SUMMARY RECORD OF THE CCV/1-10 MEETING OF THE COORDINATION COMMITTEE FOR VOCABULARY (CCV)*, Document CCV/29, 22 March 2010 (Geneva).

³ *Supra* note 1, resolves to invite future world radiocommunication conferences ¶¶ 1-2.

Discussion: Currently, the Radio Regulations need additional regulatory provisions for coordinating, notifying, and registering the complementary ground component (“CGC”) of Integrated MSS Systems. Because the architectural and operational features of Integrated MSS Systems are such that the MSS component and terrestrial component are integrated within a single network, it is essential to recognize and give consideration to both elements of these networks. In the bands 1525-1544 MHz, 1545-1559 MHz, 1626.5-1645.5 MHz and 1646.5- 1660.5 MHz , at least one MSS operator will roll out CGC deployments in 2011.

Consequently, it is necessary to provide, on an interim bases as a minimum, procedures in the Radio Regulations to take account of CGC deployment in the bands 1525-1544 MHz, 1545-1559 MHz, 1626.5- 1645.5 MHz and 1646.5- 1660.5 MHz . Therefore, interim provisions are proposed in New Resolution [CGC.Notify] to provide a mechanism for notifying and registering CGC stations, and for submitting to the ITU BR and subsequently entering information for the notification of CGC stations and for associating and coordinating CGC assignments with their operational MSS systems within the bands referenced above.

Additionally, Resolution [CGC. Notify] proposes and recognizes that CGC can be included as a part of the MSS coordination process in these frequency bands, and thus instructs the ITU Radiocommunication Bureau on procedures for handling such CGC information submitted in accordance with interim procedures provided in Resolution [CGC.Notify]. Resolution [CGC.Notify] will supplement the current Article 9 and Article 11 procedures that are applicable to the satellite component of Integrated MSS Systems.

Resolution [CGC.Notify] (WRC-2012)

Coordination, Notification and Recording of the Complementary Ground Component of Integrated MSS Systems⁴ in 1525-1544MHz, 1545-1559 MHz, 1626.5-1645.5MHz and 1646.5- 1660.5MHz

The World Radiocommunication Conference (Geneva, 2012),

considering

- a)* that MSS systems can provide service over a wide geographic area and are particularly suited for emergency and disaster recovery communications and rural communications;
- b)* that MSS systems can have limited capacity for providing radiocommunications services in urban areas due to natural and/or man-made blockage;
- c)* that an MSS system with an integrated Complementary Ground Component (CGC) system will extend and improve the availability of radiocommunications services in areas where reliable current and next generation communications are not otherwise provided with one or more space stations or cannot otherwise be assured, and in this way increase spectrum efficiency in bands allocated to the Mobile-Satellite service;
- d)* that a number of administrations are implementing or planning to implement Integrated MSS Systems in some or parts of the bands identified for the satellite component of IMT in the bands 1525- 1559 MHz, and 1626.5- 1660.5 MHz.;

⁴ An Integrated MSS System is a system employing a satellite component and ground component where the ground component is complementary to the satellite component and operates as and is an integral part of the MSS system. In such systems the ground component is controlled by the satellite resource and network management systems. Further, the ground component uses the same portions of MSS frequency bands as the associated operational mobile-satellite system.

e) _____ that in providing radiocommunication services, there is a need continually to exploit technological developments to increase the efficiency of use of finite radiocommunication spectrum resources as technology permits,

recognizing

a) _____ that the bands 1525-1544 MHz, 1545-1559 MHz, 1626.5-1645.5 MHz and 1646.5-1660.5 MHz are allocated on a co-primary basis to the mobile-satellite service

b) _____ that Resolution **215 (Rev.WRC-97)** addresses the coordination process among mobile-satellite systems and the efficient use of the allocations to the mobile – satellite service in the 1- 3 GHz range;

c) _____ that the distress, urgency and safety communications of the Global Maritime Distress and Safety System and the aeronautical mobile-satellite (R) service have priority in specified bands over all other mobile-satellite service communications in accordance with Nos. 5.353A and 5.357A;

d) _____ that the frequency bands referred to in *recognizing a)* are also used by other systems in the services to which the bands are allocated, and that these systems and services need to be protected from harmful interference;

e) _____ that, the radio astronomy service operates in the band 1660-1660.5 MHz and needs to be protected from harmful interference,

f) _____ that the deployment of the Complementary Ground Component is predicated upon the Complementary Ground Component being integrated with one or more space stations of an Integrated MSS System;

g) _____ that the Complementary Ground Component will use the same allocated and assigned frequency bands as the associated operational MSS system;

h) _____ that the Complementary Ground Component will be located only within the service area of its associated MSS system and is to be controlled by the Integrated MSS System network management system;

j) _____ that the MSS in the bands 1525-1544MHz , 1545 – 1559 MHz, 1626.5-1645.5 and 1646.5 – 1660.5 MHz also includes Integrated MSS systems in accordance with Resolution [IMS 1.5/1.6 GHz];

k) _____ that WRC-16 has an agenda item to consider regulatory, technical and allocation provisions to enable the CGC of MSS systems to operate on a co primary basis with the MSS allocation in accordance with Resolution [CGC.Agenda].

noting

1. that wide-area and urban coverage characteristics of Integrated MSS Systems are important to meeting universal coverage requirements, and the particular needs of developing countries;
2. that for public protection and disaster relief, such Integrated MSS Systems are of critical importance in times of emergency and provide redundant, ubiquitous service;
3. that such Integrated MSS Systems provide access to a wide range of radiocommunications services,
4. that the coordination and notification procedures of Articles 9 and 11 apply to the MSS component of Integrated MSS Systems;

further noting

1. that co-frequency sharing and reuse of the spectrum by independently controlled mobile-satellite and terrestrial mobile systems is not feasible in the same geographic area;
2. that Article 11 provisions No 11.2 through 11.11 requires that “ Any frequency assignment to a transmitter station and to its associated receiving station...shall be notified to the Bureau”;
3. that currently the Radio Regulations do not contain provisions for associating notified Complementary Ground Component Stations with their parent MSS systems;
4. that Integrated MSS Systems can avoid the spectrum-sharing incompatibilities in *further noting 1*);
5. that the mobile terminals (consisting of mobile earth stations and mobile stations in the same platform) of such Integrated MSS Systems are capable of communicating directly with the land stations of the Complementary Ground Component and the space stations of the associated mobile satellite system using the same common frequency bands;
6. that the mobile terminals of the Complementary Ground Component may have multiple air interfaces to communicate with the CGC land stations and the associated MSS system space stations;

resolves

1. that CGC land and typical mobile stations shall be included within the coordination pursuant to Article 9 of the associated MSS satellite network with other MSS networks to ensure that the CGC is compatible with other MSS satellite systems involved in the coordination process.

2. that administrations choosing to notify their CGC assignments shall apply the Annex of Resolution [CGC.Notify] to the Complementary Ground Component of Integrated MSS systems as described in the *recognizings*.

3. that the administration responsible for an Integrated MSS System shall indicate that the MSS system is an Integrated MSS system pursuant to the Annex of Resolution [CGC.Notify]. .

4. that the administration responsible for the Integrated MSS system shall also submit notices as appropriate of the technical characteristics of the land stations and typical mobile stations of the Complementary Ground Component pursuant to the Annex of Resolution [CGC.Notify].

5. that Complementary Ground Component land stations and typical mobile stations of the Integrated MSS System shall also be notified in accordance with the Annex of Resolution [CGC.Notify] by administrations in whose territory the Complementary Ground Component is being deployed . Such Complementary Ground Component notifications shall include notices as appropriate, in association with a specific MSS network of the Integrated MSS System that has been submitted for coordination and notification pursuant to Article 9 and Article 11, respectively.

7. that Integrated MSS Systems shall be notified and recorded in accordance with Article 11 procedures; further, such notifications shall refer to the notices pursuant to Resolution[CGC.Notify] for the land stations and typical mobile stations of the Complementary Ground Component.

invites administrations

1. to consider developing provisions to enable the deployment of Integrated MSS Systems;

2 to include the Complementary Ground Component of an Integrated MSS System within the mobile satellite coordination;

3. to bilaterally coordinate the Complementary Ground Component of an Integrated MSS system with terrestrial systems in accordance with existing or new bilateral arrangements, as appropriate.

instructs the Radiocommunication Bureau

1. to accept complete notices in accordance with the attached Annex for land stations transmitting in the bands 1 525 - 1544 MHz, and 1 545 - 1 559 MHz, and mobile stations transmitting in the bands 1626.5 - 1645.5 MHz ,and 1646.5 - 1660.5 MHz that are integrated with MSS systems operating in the same frequency bands and in territories within the MSS system service area provided that coordination or notification information has been submitted for the associated MSS system in accordance with Article 9 or Article 11;

2. to record such CGC land stations and mobile stations as integrated with MSS systems on the basis of:
 - a) a statement by the submitting administration of the Complementary Ground Component in notices submitted in accordance with the attached Annex that identifies the MSS system with which the Complementary Ground Component is integrated; and
 - b) a confirmation of the above statement by the administration notifying the Integrated MSS System;
3. to record such CGC land station and mobile station, notices, as appropriate, together with the identification of the associated MSS system, concurrently with, or after assignments are recorded for the associated MSS system in the Integrated MSS System;
4. to record such CGC stations with a favorable finding with respect to a particular affected MSS network, if the administration of that affected MSS network indicates that an agreement between the affected administrations includes provisions that assure that the CGC will not cause harmful interference to the affected MSS network;
5. where there is no such agreement with affected administrations of MSS networks, to record the assignment of such CGC stations in the Master Register for information purposes with respect to those specific MSS networks of those affected administrations.

ANNEX

Interim Procedures for the Coordination, Notification and Recording of Complementary Ground Components of Integrated MSS Systems

Introduction

This annex provides interim procedures for the submission of technical information to the ITU Radiocommunications Bureau (BR) for the Complementary Ground Components of Integrated MSS networks in the 1525-1544 MHz, 1545-1559 MHz, 1626.5- 1645.5 MHz and 1646.5 – 1660.5MHz bands. These interim procedures provide information that is to be submitted by the Administration sponsoring the Mobile Satellite Service (MSS) System of the Integrated MSS system and by the Administrations implementing the Complementary Ground Component of the Integrated MSS system. This interim procedure also provides information for the ITU BR to implement this Resolution [CGC.Notify].

Interim Procedure

A) Administrations that are implementing a Complementary Ground Component of an Integrated MSS system shall submit the following information to the ITU-BR in accordance with Resolution [CGC.Notify].

- 1) an Appendix 4 Annex 1 notice for the land and mobile stations of a Complementary Ground Component;
- 2) in the remarks of the Appendix 4 Annex 1 notice,
 - a. indicate that the land and mobile stations are complementary ground components of an Integrated MSS System submitted in accordance with Resolution [CGC.Notify] and
 - b. specify the associated MSS system and related ITU IFIC and Network Identifier.

B) Administrations that are implementing the MSS system of an Integrated MSS system shall submit an Appendix 4 Annex 2 notice and

- 1) shall indicate in the submittal letter for the Appendix 4 Annex 2 notice that the MSS network is an Integrated MSS network , and
- 2) shall provide a cross reference to the Appendix 4 Annex 1 filing which has the characteristics of the land and mobile stations of the Complementary Ground Component,

3) shall confirm separately any Appendix 4 Annex 1 notice that is submitted by another Administration implementing a Complementary Ground Component that is associated with the Integrated MSS system.

C) Administrations that are implementing the MSS component of the Integrated MSS system shall include in the coordination of the MSS Network in accordance with Article 9, the Complementary Ground Component characteristics as provided in Appendix 4 Annex 1 to seek agreement with affected administrations of MSS networks that the CGC will not cause harmful interference to such affected MSS system operations.

D) Administrations of Integrated MSS systems and the Administrations of affected MSS networks shall inform the ITU –BR of agreements that include the Complementary Ground Components of Integrated MSS systems.

E) Administrations implementing Integrated MSS systems shall reference in the submittal letter for the Appendix 4 Annex 2 notice, the Appendix 4 Annex 1 notice of the associated Complementary Ground Component of an Integrated MSS system in the Article 11 notification.

The ITU Radiocommunications Bureau shall

1. accept complete notices for land stations transmitting in the bands 1 525 - 1544 MHz, and 1 545 - 1 559 MHz, and mobile stations transmitting in the bands 1626.5 - 1645.5 MHz ,and 1646.5 - 1660.5 MHz that are integrated with MSS systems operating in the same frequency bands and in territories within the MSS system service area provided that coordination or notification information has been submitted for the associated MSS system in accordance with Article 9 or Article 11;
2. include the reference to the Appendix 4, Annex 1 Complementary Ground Component notice with the publication of the Appendix 4 Annex 2 information for the MSS system of the Integrated MSS system.
3. record such CGC land stations and mobile stations as integrated with MSS systems on the basis of:
 - a) a statement by the submitting Administration of the Complementary Ground Component in notices submitted in accordance with the attached Annex that identifies the MSS system with which the Complementary Ground Component integrated; and
 - b) a confirmation of the above statement by the Administration notifying the Integrated MSS System;

4. record such CGC land station and mobile station, notices, as appropriate, together with the identification of the associated MSS system, concurrently with, or after assignments are recorded for the associated MSS system in the Integrated MSS System.

5. record such CGC stations with a favorable finding with respect to a particular affected MSS network, if the administration of that affected MSS network indicates that the an agreement between the affected administrations includes provisions that assure that the CGC will not cause harmful interference to the affected MSS network. The recording of such an agreement does not provide priority rights for the Complementary Ground Component with respect to any future MSS network.

6. where there is no such agreement with affected administrations of MSS networks regarding the Complementary Ground Component, to record the assignment of such CGC stations in the Master Register for information purposes with respect to those specific MSS networks of those affected administrations.

***Reason:** To provide additional interim coordination, notification, and recording procedures for the Complementary Ground Component of Integrated MSS Systems by providing a Resolution [CGC.Notify] with conditions for filing notices of the land stations and mobile stations of the Complementary Ground Component of Integrated MSS Systems and to identify the relevant associated Mobile Satellite Network for the Complementary Ground Component.*