

IWG-4/028

Thomas Tycz : 202 429 4900

ttycz@G2W2.com

Damon Ladson: 202 730 1315

Dladson@wiltshiregrannis.com

07/22/2009

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

Background information

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.*²

Currently, the Radio Regulations lack regulatory provisions for notification, registration and coordination of the complementary ground component (“CGC”) of Integrated MSS Systems.³ Because the architectural and operational features of Integrated MSS Systems

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

³ 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 system.

are such that the MSS component and terrestrial component are inextricably linked within a single network, it is essential to recognize and give consideration to both elements of these networks. Consequently, modifications are proposed to Article 9, Article 11, and Appendix 4, Annexes 1 and 2 of the Radio Regulations to provide provisions for notifying and registering CGC stations, and for entering information on CGC stations and for associating CGC assignments with their operational MSS systems. Additionally, a new Resolution XXX is proposed that recognizes CGC as a part of the MSS coordination procedures and that instructs the ITU Radiocommunication Bureau on handling information submitted in accordance with proposed modifications (mentioned above) to Appendix 4 Annex 1 and Annex 2. This Resolution will supplement the current Article 9 and Article 11 procedures that are applicable to the satellite component of an Integrated MSS System.

Further, the ground component uses the same portions of MSS frequency bands as the associated operational mobile-satellite system.

Proposals:

ARTICLE 9

USA/ /01 MOD

Procedure for effecting coordination with or obtaining agreement of other administrations^{1, 2, 3, 4, 5, 6, 7, 8, 9} (WRC-07)

Section I – Advance publication of information on satellite networks or satellite systems

¹ **A.9.1** For the application of the provisions of this Article with respect to stations in a space radiocommunication service using frequency bands covered by the fixed-satellite service allotment Plan, see also Appendix **30B**.

² **A.9.2** These procedures may be applicable to stations on board satellite launching vehicles.

³ **A.9.3** See Appendices **30** and **30A**, as appropriate, for the coordination of:

- a)* proposed modifications to the Appendix **30** Plans for the broadcasting-satellite service in the frequency bands 11.7-12.2 GHz (in Region 3), 11.7-12.5 GHz (in Region 1) and 12.2-12.7 GHz (in Region 2), or new or modified assignments proposed for inclusion in the Regions 1 and 3 List of additional uses, with respect to frequency assignments in the same service or in other services to which these bands are allocated;
- b)* frequency assignments in other services to which the frequency bands referred to in § *a)* above are allocated in the same Region or in another Region, with respect to assignments in the broadcasting-satellite service in the frequency bands 11.7-12.2 GHz (in Region 3), 11.7-12.5 GHz (in Region 1) and 12.2-12.7 GHz (in Region 2);
- c)* proposed modifications to the Appendix **30A** Plans for feeder links to the broadcasting-satellite service in the frequency bands 17.3-17.8 GHz (in Region 2) and 14.5-14.8 GHz and 17.3-18.1 GHz (in Regions 1 and 3), or new or modified assignments proposed for inclusion in the Regions 1 and 3 Lists of additional uses, with respect to frequency assignments in the same service or in other services to which these bands are allocated;
- d)* frequency assignments in other services to which the frequency bands referred to in § *c)* above are allocated in the same Region or in another Region, with respect to assignments in the fixed-satellite service (Earth-to-space) in the frequency bands 17.3-17.8 GHz (in Region 2) and 14.5-14.8 GHz and 17.3-18.1 GHz (in Regions 1 and 3).

For the broadcasting-satellite service and for feeder links for the broadcasting-satellite service in the fixed-satellite service in Region 2, Resolution **42 (Rev.Orb-88)*** is also applicable. (WRC-2000)

⁴ **A.9.4** Resolution **49 (Rev.WRC-2000)**** shall also be applied with respect to those satellite networks and satellite systems that are subject to it. (WRC-2000)

⁵ **A.9.5** See also Resolution **51 (Rev.WRC-2000)**. (WRC-2000)

⁶ **A.9.6** The provisions of Appendices **30**, **30A** and **30B** do not apply to non-geostationary service-satellite systems in the fixed-satellite. (WRC-2000)

⁷ **A.9.6A** For the purpose of this Article, a geostationary satellite is a geosynchronous satellite with an orbit the inclination of which is less than or equal to 15°. (WRC-03)

⁸ **A.9.7** See also Resolution **33 (Rev.WRC-03)**. (WRC-03)

⁹ **A.9.8** Resolution **XXX** shall also be applied with respect to those satellite networks and satellite systems that are subject to it.

Reason: To provide for coordination of the Complementary Ground Component for an Integrated MSS System.

ARTICLE 11

USA/ /02 MOD

Notification and recording of frequency assignments^{1, 2, 3, 4, 5, 6, 7, 8} (WRC-07)

- ¹ **A.11.1** See also Appendices **30** and **30A** as appropriate, for the notification and recording of:
- a)* frequency assignments to stations in the broadcasting-satellite service in the frequency bands 11.7-12.2 GHz (in Region 3), 11.7-12.5 GHz (in Region 1) and 12.2-12.7 GHz (in Region 2);
 - b)* frequency assignments to stations in other services to which the frequency bands referred to in § *a*) above are allocated in the same Region or in another Region, so far as their relationship to the broadcasting-satellite service is concerned, in the frequency bands 11.7-12.2 GHz (in Region 3), 11.7-12.5 GHz (in Region 1) and 12.2-12.7 GHz (in Region 2);
 - c)* frequency assignments to feeder-link stations in the fixed-satellite service (Earth-to-space) in the frequency bands 14.5-14.8 GHz in Region 1 (see No. **5.510**) and in Region 3, 17.3-18.1 GHz in Regions 1 and 3 and 17.3-17.8 GHz in Region 2, and to stations in other services in these bands;
 - d)* frequency assignments to stations in the same service or other services to which the frequency bands referred to in § *c*) above are allocated in the same Region or in another Region, so far as their relationship to the fixed-satellite service (Earth-to-space) in these bands is concerned.

For the broadcasting-satellite service in Region 2 and for feeder links in the fixed-satellite service for the broadcasting-satellite service in Region 2, Resolution **42 (Rev.Orb-88)*** is also applicable.

See also Appendix **30B** for the notification and recording of assignments in the following frequency bands:

All Regions, fixed-satellite service only

4 500-4 800 MHz(space-to-Earth)
6 725-7 025 MHz(Earth-to-space)
10.7-10.95 GHz (space-to-Earth)
11.2-11.45 GHz (space-to-Earth)
12.75-13.25 GHz (Earth-to-space).

- ² **A.11.2** Resolution **49 (Rev.WRC-2000)**** shall also be applied with respect to those satellite networks and satellite systems that are subject to it. (WRC-2000)
- ³ **A.11.3** See also Resolution **51 (Rev.WRC-2000)**. (WRC-2000)
- ⁴ **A.11.4** The provisions of Appendices **30**, **30A** and **30B** do not apply to non-geostationary-satellite systems in the fixed-satellite service. (WRC-2000)
- ⁵ **A.11.4A** For the purpose of this Article, a geostationary satellite is a geosynchronous satellite with an orbit the inclination of which is less than or equal to 15°. (WRC-03)
- ⁶ **A.11.5** See also Resolution **33 (Rev.WRC-03)**. (WRC-03)
- ⁷ **A.11.6** If the payments are not received in accordance with the provisions of Council Decision 482, as amended, on the implementation of cost recovery for satellite network filings, the Bureau shall cancel the publication specified in Nos. **11.28** and **11.43** and the corresponding entries in the Master Register under Nos. **11.36**, **11.37**, **11.38**, **11.39**, **11.41**, **11.43B** or **11.43C**, as appropriate, after informing the administration concerned. The Bureau shall inform all administrations of such action and that the entries specified in the publication in question no longer have to be taken into consideration by the Bureau and other administrations and that any resubmitted notice shall be considered to be a new notice. The Bureau shall send a reminder to the notifying administration not later than two months prior to the deadline

for the payment in accordance with the above-mentioned Council Decision 482 unless the payment has already been received. See also Resolution **905 (WRC-07)**. (WRC-07)

* *Note by the Secretariat:* This Resolution was revised by WRC-03.

** *Note by the Secretariat:* This Resolution was revised by WRC-07.

8 A.11.6 Resolution XXX shall also be applied with respect to those satellite networks and satellite systems that are subject to it.

Reason: To provide for notification of the Complementary Ground Component for an Integrated MSS System.

ADD Resolution XXX (WRC-2012)

Use of the Mobile Satellite Service (MSS) at L Band for Integrated MSS Systems¹

The World Radiocommunication Conference (Geneva, 2012).

considering

a) that MSS systems can provide service over a wide area and are particularly suited for emergency and disaster recovery communications and rural communications;

b) that MSS systems may not be able to provide reliable 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 communications with one or more space stations 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;

¹ 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 system. 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 to continually increase the efficiency of the use of the radiocommunication spectrum resource as technology permits.

recognizing

a) _____ Resolutions 223 (WRC-07) and 225 (Rev. WRC-07) on the implementation of the terrestrial and satellite components of IMT;

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 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 and are identified for use by the satellite component of International Mobile Telecommunications (IMT) through Resolution 225 (Rev.WRC-07);

e) _____ that the frequency bands referred to in recognizing d) 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;

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

noting

1. _____ that wide-area and urban coverage characteristics of Integrated MSS Systems are important to meeting 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,

further noting

1. that co-frequency sharing of the spectrum by *separate* mobile-satellite and terrestrial mobile systems controlled by independent operators is not feasible in the same geographic area;

2. that WRC-07 adopted Recommendation **206 (WRC-07)** which recognizes that integrated MSS and terrestrial systems are being implemented by certain administrations and that these administrations may provide, in bilateral consultations of administrations, information on system characteristics of the Complementary Ground Component;

3. that these Integrated MSS Systems can avoid the spectrum-sharing incompatibilities in *further noting 1*);

4. 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;

5. 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;

6. that mobile terminals need to be included within the coordination of the associated mobile satellite network to ensure compatibility with other MSS satellite systems involved in the coordination process,

resolves

1. that the frequency bands in *recognizing d*) may be used by administrations to provide Integrated MSS Systems;

2. that Integrated MSS Systems shall include one or more space stations integrated with a Complementary Ground Component;
3. that the Complementary Ground Component must use the same designated frequency bands as the associated operational MSS system;
4. that the Complementary Ground Component is to 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;
5. that the Administration responsible for the Integrated MSS System shall indicate that the MSS system is an Integrated MSS system in Appendix 4 Annex 2;
6. that administrations will continue to use the coordination and notification procedures of Article 9 and 11 respectively for the MSS system in the Integrated MSS system;
7. that the Administration responsible for the MSS system shall also submit the technical characteristics of the land stations and typical mobile stations of the Complementary Ground Component in Appendix 4 Annex 1 and/or Annex 2, as appropriate, notices with the MSS system of the Integrated MSS System;
8. that the Complementary Ground Component land stations and typical mobile stations of the Integrated MSS System shall be notified by the other administrations in whose territory the Complementary Ground Component is being utilized. Such Complementary Ground Component notifications shall use Appendix 4 Annex 1 and/or Annex 2, as appropriate, in association with a specific MSS network that has been submitted for coordination and notification in accordance with Article 9 and Article 11, respectively;
9. that the land stations and typical mobile stations of the Complementary Ground Component shall be included in the coordination of the Integrated MSS System with the other MSS networks in accordance with Article 9;
10. that the Integrated MSS Systems shall be notified and recorded in accordance with Article 11 procedures; such notifications will include the land stations and typical mobile stations of the Complementary Ground Component,

invites administrations

1. to adopt regulations to enable the deployment of Integrated MSS Systems and to include the Complementary Ground Component of an Integrated MSS System within the mobile satellite coordination of the associated MSS network;

2. to bilaterally coordinate terrestrial elements of an Integrated MSS system with other terrestrial systems in accordance with existing or new bilateral arrangements, as appropriate,

instructs the Radiocommunication Bureau

1. to accept complete Appendix 4 Annex 1 and/or Annex 2, as appropriate, notices for terrestrial land stations transmitting in the bands 1 525 - 1544 MHz, 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 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 determine that such terrestrial land station and mobile station elements are integrated with MSS systems on the basis of a statement by the submitting administration of the Complementary Ground Component in the Appendix 4 Annex 1 and/or Annex 2, as appropriate, notice that identifies the MSS system with which the terrestrial elements are integrated;

3 to record such CGC land station and mobile station Appendix 4 Annex 1 and/or Annex 2, as appropriate, notices in accordance with Article 11 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.

Reason: To provide a Resolution providing the conditions for filing Appendix 4 Annex 1 and 2 information 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.

TABLE 1

Characteristics for terrestrial services

USA/ /XX MOD

Column No.	Item identifier	Notice related to	Description of data items and requirements	Broadcasting (sound and television) stations in the VHF/UHF bands up to 960 MHz, for the application of No. 11.2 and No. 9.21	Broadcasting (sound) stations in the LF/MF bands, for the application of No. 11.2	Transmitting stations (except broadcasting stations in the planned LF/MF bands, in the HF bands governed by Article 12, and in the VHF/UHF bands up to 960 MHz), for the application of No. 11.2 and No. 9.21	Receiving land stations, for the application of No. 11.9 and No. 9.21	Typical transmitting stations, for the application of No. 11.17	Maritime mobile frequency allotment, for the application of plan modification under Appendix 25 (Nos. 25/1.1, 25/1.1.2, 25/1.25)	Broadcasting stations in the HF bands, for the application of No. 12.16	Item identifier
13		REMARKS									
13.1	13C	Remarks for assisting the Bureau in processing the notice		O	O	+	+	+	O	O	13C
		For the case of terrestrial stations notified as a Complementary Ground Component of an Integrated MSS system pursuant to Resolution XXX, indicate the MSS system									

Reason: To provide for the notification of the Complementary Ground Component to be associated with the Mobile Satellite System of Integrated MSS system

Table of characteristics to be submitted for space and radio astronomy services
(WRC-07)

Items in Appendix	A – GENERAL CHARACTERISTICS OF THE SATELLITE NETWORK, EARTH STATION OR RADIO ASTRONOMY STATION	Advance publication of a geostationary-satellite network	Advance publication of a non-geostationary-satellite network subject to coordination under Section II of Article 9	Advance publication of a non-geostationary-satellite network not subject to coordination under Section II of Article 9	Notification or coordination of a geostationary-satellite network (including space operation functions under Article 2A of Appendices 30 or 30A)	Notification or coordination of a non-geostationary-satellite network	Notification or coordination of an earth station (including notification under Appendices 30A or 30B)	Notice for a satellite network in the broadcasting-satellite service under Appendix 30 (Articles 4 and 5)	Notice for a satellite network (feeder-link) under Appendix 30A (Articles 4 and 5)	Notice for a satellite network in the fixed-satellite service under Appendix 30B (Articles 6 and 8)	Items in Appendix	Radio astronomy
n	n	n	n	n	n	n	n	n	n	n	n	n
A.1.f.	Indicate if the notice is submitted for an integrated MSS system pursuant to Resolution XXX	+			+		+				A.1.f	

USA/ /yy ADD