IWG-4/Doc 036

IWG-4 MEETING MINUTES

Wednesday, April 11, 2018 at 10 am EDT

Meeting: IWG-4 (Meeting 13)

Location: Conference call only

Committee Members and Observers Present: See attached list

FCC DFO: Dante Ibarra

Minutes Prepared by: Robert Weller

Meeting Summary:

1. Opening Remarks and Introductions. The meeting was called to order at 10:02 am ET, and all participants introduced themselves.
2. Approval of the Agenda. The agenda of the meeting (Doc. IWG4/032) was approved. Note that the day shown on the draft agenda (Thursday, April 11, 2018) was incorrect. The correct day is Wednesday.
3. Approval of Minutes. The minutes of meeting 12 (Doc. IWG4/031) were approved.
4. Proposed Preliminary Views/Proposals
   1. NTIA Proposals on AI 7, issues B, C5, and D (Docs IWG4/ 033, 034 and 035, attached)
   2. Kellen Gibson introduced document 33. Jack W suggested edits to the background section. Following some discussion, it was agreed that Jack, Kellen, Don J and others would form an editorial group to work out precise language.
   3. Kellen introduced document 34. Jack W had similar suggested edits. Don J suggested removing any mention of the CPM text. Dante I indicated that since the proposal had already been approved by IRAC’s RCS, IWG-4 should not make edits and instead consider the proposal as written. Steve B indicated that since there are still more meetings of WP4A, the CPM text is not yet final. Don J agreed to work out edits in the same group.
   4. Kellen introduced document 35. Larry R had similar suggested edits. The editorial group will resolve and provide an input for the next meeting.
5. Other agenda Items for Discussion - none
6. Updates on relevant International meetings – none
7. Next Meetings:
   1. WAC April 23; next WAC meeting probably October
   2. IWG 4 to be coordinated with IWG 3
8. Other Issues - none
9. Documents Distributed:
   1. Agenda for 13th meeting
   2. Draft minutes from 12th meeting
   3. NTIA input documents (Docs 33, 34, 35)
10. Adjournment at 10:29 am.

**Participant List – April 11, 2018 IWG-4 Teleconference**

**Members**

Audrey Allison, Boeing

Steve Baruch, New Wave Spectrum Partners

Kim Baum, SES

Christine Di Lapi, Peraton

Charles Einolf, CBS

David Eierman, Motorola

Kyle Entz, Sprint

Alexander Gerdenitsch, Intelsat

Chris Hofer, ViaSat

Don Jansky, Jansky-Barmat

Scott Kotler, Lockheed Martin

Jennifer Manner, Echostar

Jen Oberhausen, CTIA

Maria Shuman, OneWeb

Robert Weller, NAB

Jack Wengryniuk, Inmarsat

Julie Zoller, Omnispace

**Observers**

Bob Denny (NTIA)

Kellen Gibson (NTIA)

Shelli Haskins, ACES (NOAA)

Tom Hayden, TLH Consulting  
Bruce Lamb, NTIA

Brian Patten, NTIA

Larry Reed

Amy Sanders, NTIA

Jonathan Williams, NSF

**FCC Representatives**

Dante Ibarra

Michael Mullinix

Larry Olson

Allen Yang

IWG4/033

# UNITED STATES OF AMERICA

# DRAFT PROPOSAL FOR WRC-19

**Agenda Item 7**: to consider possible changes, and other options, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, an advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution **86 (Rev.WRC‑07)**, in order to facilitate rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary‑satellite orbit;

**Issue B** – Application of coordination arc in the Ka-band, to determine coordination requirements between the FSS and other satellite services

**Background Information**: WRC-19 agenda item 7, Issue B, proposes the introduction of the coordination arc with a value of 8 degrees as coordination criteria between fixed-satellite service (FSS) and mobile-satellite service (MSS) systems and between MSS systems, in the frequency bands 29.5-30 GHz (Earth-to-space)/19.7-20.2 GHz (space-to-Earth) in all 3 Regions. The introduction of an 8 degree coordination arc would serve as a substitution of the existing coordination trigger of Δ*T/T* > 6%. Currently, when determining whether coordination under RR No. **9.7** is required between FSS vs FSS satellite networks, a coordination arc of 8º is the coordination criteria applied in the frequency bands 29.5-30 GHz (Earth-to-space)/19.7-20.2 GHz (space-to-Earth). Results of ITU-R studies show that earth station terminals used in the MSS and FSS for these frequency bands are quite similar. Therefore, it could be considered that the coordination arc that currently triggers coordination between FSS systems could be applied to trigger coordination between MSS and FSS systems and between MSS systems.

Introduction of the coordination arc of 8 degrees would reduce the number of Administrations identified for coordination, thereby reducing the number of coordination processes and resulting in a reduction of required resources in Administrations, operators, and Bureau. Administrations will continue to have the possibility to request application of RR No. **9.41** for inclusion of additional affected satellite networks, taking into account the Δ*T/T* > 6% criteria. In this proposal, it is proposed to implement the modifications to the Radio Regulations in accordance with Method B.

**Proposal**:

APPENDIX 5 (Rev.WRC‑15)

**Identification of administrations with which coordination is to be effected or  
agreement sought under the provisions of Article 9**

**MOD** USA/AI7/1

TABLE 5-1     (Rev.WRC‑19)

**Technical conditions for coordination**

(see Article **9**)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Reference of Article 9** | **Case** | **Frequency bands (and Region) of the service for which coordination is sought** | **Threshold/condition** | **Calculation  method** | **Remarks** |
| No. **9.7** GSO/GSO | A station in a satellite network using the geostationary-satellite orbit (GSO), in any space radiocommunication service, in a frequency band and in a Region where this service is not subject to a Plan, in respect of any other satellite network using that orbit, in any space radiocommunication service in a frequency band and in a Region where this service is not subject to a Plan, with the exception of the coordination between earth stations operating in the opposite direction of transmission | 1) 3 400-4 200 MHz 5 725-5 850 MHz (Region 1) and 5 850-6 725 MHz 7 025-7 075 MHz | i) Bandwidth overlap, and  ii) any network in the fixed-satellite service (FSS) and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±7° of the nominal orbital position of a proposed network in the FSS |  | With respect to the space services listed in the threshold/condition column in the frequency bands in 1), 2), 2*bis*), 3), 3*bis*), 4), 5), 6), 7) and 8), an administration may request, pursuant to No. **9.41**, to be included in requests for coordination, indicating the networks for which the value of Δ*T*/*T* calculated by the method in § 2.2.1.2 and 3.2 of Appendix **8** exceeds 6%. When the Bureau, on request by an affected administration, studies this information pursuant to No. **9.42**, the calculation method given in § 2.2.1.2 and 3.2 of Appendix **8** shall be used |
| 2) 10.95-11.2 GHz 11.45‑11.7 GHz  11.7-12.2 GHz  (Region 2) 12.2-12.5 GHz  (Region 3) 12.5‑12.75 GHz (Regions 1 and 3) 12.7‑12.75 GHz (Region 2) and  13.75‑14.8 GHz | i) Bandwidth overlap, and  ii) any network in the FSS or broadcasting-satellite service (BSS), not subject to a Plan, and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±6° of the nominal orbital position of a proposed network in the FSS or BSS, not subject to a Plan  iii) in the band 14.5-14.8 GHz any network in the space research service (SRS) or FSS not subject to a Plan and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±6° of the nominal orbital position of a proposed network in the SRS or FSS not subject to a Plan |

TABLE 5-1 (*continued*)     (Rev.WRC‑19)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Reference of Article 9** | **Case** | **Frequency bands (and Region) of the service for which coordination is sought** | **Threshold/condition** | **Calculation  method** | **Remarks** |
| No. **9.7** GSO/GSO (*cont.*) |  | 2*bis*) 13.4-13.65 GHz  (Region 1) | i) Bandwidth overlap, and  ii) any network in the space research service (SRS) or any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±6° of the nominal orbital position of a proposed network in the FSS or SRS |  |  |
|  | 3) 17.7‑19.7 GHz, (Regions 2 and 3),  17.3-19.7 GHz  (Region 1) and 27.5‑29.5 GHz | i) Bandwidth overlap, and  ii) any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS |  |  |
|  | 3*bis)* 19.7-20.2 GHz and  29.5-30 GHz | i) Bandwidth overlap, and  ii) any network in the FSS or in the MSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS or in the MSS. |  |  |
|  | 4) 17.3‑17.7 GHz  (Regions 1 and 2) | i) Bandwidth overlap, and  ii) a) any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the BSS,  or  b) any network in the BSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS |  |  |

TABLE 5-1 (*continued*)     (Rev.WRC‑19)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Reference of Article 9** | **Case** | **Frequency bands (and Region) of the service for which coordination is sought** | **Threshold/condition** | **Calculation  method** | **Remarks** |
| No. **9.7** GSO/GSO (*cont.*) |  | 5) 17.7‑17.8 GHz | i) Bandwidth overlap, and  ii) a) any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the BSS,  or  b) any network in the BSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS  NOTE – No. **5.517** applies in Region 2. |  |  |
|  |  | 6) 18.0-18.3 GHz (Region 2) 18.1-18.4 GHz (Regions 1 and 3) | i) Bandwidth overlap, and  ii) any network in the FSS or meteorological-satellite service and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS or the meteorological-satellite service |  |  |

TABLE 5-1 (*continued*)     (Rev.WRC‑19)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Reference of Article 9** | **Case** | **Frequency bands (and Region) of the service for which coordination is sought** | **Threshold/condition** | **Calculation  method** | **Remarks** |
| No. **9.7** GSO/GSO (*cont.*) |  | 6*bis*) 21.4-22 GHz  (Regions 1 and 3) | i) Bandwidth overlap; and  ii) any network in the BSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±12° of the nominal orbital position of a proposed network in the BSS (see also Resolutions **554 (WRC‑12)** and **553 (WRC‑12)**). |  | No. **9.41** does not apply. |
|  |  | 7) Bands above 17.3 GHz, except those defined in § 3), 3*bis*) and 6) | i) Bandwidth overlap, and  ii) any network in the FSS and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±8° of the nominal orbital position of a proposed network in the FSS (see also Resolution **901 (Rev.WRC‑07)**) |  |  |
|  |  | 8) Bands above 17.3 GHz except those defined in § 4), 5) and 6*bis*) | i) Bandwidth overlap, and  ii) any network in the FSS or BSS, not subject to a Plan, and any associated space operation functions (see No. **1.23**) with a space station within an orbital arc of ±16° of the nominal orbital position of a proposed network in the FSS or BSS, not subject to a Plan, except in the case of a network in the FSS with respect to a network in the FSS (see also Resolution **901 (Rev.WRC‑07)**) |  |  |

TABLE 5-1 (*continued*)     (Rev.WRC‑19)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Reference of Article 9** | **Case** | **Frequency bands (and Region) of the service for which coordination is sought** | **Threshold/condition** | **Calculation  method** | **Remarks** |
| No. **9.7** GSO/GSO (*cont.*) |  | 9) All frequency bands, other than those in 1), 2), 2*bis*), 3), 3*bis*), 4), 5), 6), 6*bis)*, 7) and 8), allocated to a space service, and the bands in 1), 2), 2*bis*), 3), 3*bis*), 4), 5), 6), 6*bis*), 7) and 8) where the radio service of the proposed network or affected networks is other than the space services listed in the threshold/ condition column, or in the case of coordination of space stations operating in the opposite direction of transmission | i) Bandwidth overlap, and  ii) Value of ∆*T/T* exceeds 6% | Appendix **8** | In application of Article 2A of Appendix **30** for the space operation functions using the guardbands defined in § 3.9 of Annex 5 of Appendix **30**, the threshold/condition specified for the FSS in the bands in 2) applies.  In application of Article 2A of Appendix**30A** for the space operation functions using the guardbands defined in § 3.1 and 4.1 of Annex 3 of Appendix**30A**, the threshold/condition specified for the FSS in the bands in 7) applies |

**Reasons:** Extend the coordination arc to consider MSS in the frequency bands 29.5-30 GHz and 19.7-20.2 GHz.

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IWG4/034

# UNITED STATES OF AMERICA

# DRAFT PROPOSAL FOR WRC-19

**Agenda Item 7**: to consider possible changes, and other options, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, an advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution **86 (Rev.WRC‑07)**, in order to facilitate rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary‑satellite orbit;

**Issue C5** – Issues for which consensus was achieved in ITU-R

**Background Information**: Issue C is a collection of several different topics that are viewed as being straightforward and for which consensus was readily achieved within ITU-R. The issues address such things as resolving inconsistencies in regulatory provisions, clarifying certain existing practices, or increasing transparency in the regulatory process.

Pursuant to RR No. **11.46**, the Bureau allows Notifying Administrations six months to resubmit their notified frequency assignments, which were returned due to an unfavorable finding with respect to RR Nos. **11.32**, **11.32A** or **11.33**. Any notification resubmitted beyond six months is considered as a new notification with a new date of receipt and would be subject to cost recovery fees. However, neither RR No. **11.46** nor any other provision in the Radio Regulations requires the Bureau to send a reminder to the Notifying Administration at any point during the six-month period. If the Notifying administration resubmits the notice to the Bureau beyond the required six-month period, the Bureau assigns a new date of receipt and reviews whether the notice complies with the period in RR No. **11.44.1** or RR No. **11.43A** and takes the appropriate action. In the case that a notice resubmitted beyond the six-month deadline is receivable, cost recovery fees would be required for the resubmitted assignments. Addressing this lack of a reminder would be beneficial to Administrations who may have experienced difficulties receiving or addressing the Bureau’s return of notice and the need to ensure that frequency assignments that are in use are properly recorded in the Master Register.

A single method has been identified to address this issue. It would be considered advantageous to Notifying Administrations if the Bureau sends a reminder of the option to resubmit returned frequency assignments under RR No. **11.37** or **11.38**. Modification of RR No. **11.46** requiring the Bureau to remind the Notifying Administration of the six-month deadline would aid Administrations who may have had difficulties in receiving the communication of returned frequency assignments.

**Proposal**:

ARTICLE 11

**Notification and recording of frequency   
assignments1, 2, 3, 4, 5, 6, 7, 8    (WRC‑15)**

**MOD** USA/AI7(C5)/1

**11.46** In applying the provisions of this Article, any resubmitted notice which is received by the Bureau more than six months after the date on which the original notice was returned by the Bureau shall be considered to be a new notification with a new date of receiptX. For frequency assignments to a space station, should the new date of receipt of such a notice not comply with the period specified in No. **11.44.1** or No. **11.43A**, as appropriate, the notice shall be returned to the notifying administration in the case of No. **11.44.1**, and the notice shall be examined as a new notice of a change in the characteristics of an assignment already recorded with a new date of receipt in the case of No. **11.43A**.     (WRC‑19)

**Reasons**: To include a reference to a footnote provision requiring the Bureau to send a reminder 2 months prior to the end of the six-month period referred to in No. **11.46**.

**ADD** USA/AI7(C5)/2

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**X 11.46.1** If the notifying administration does not resubmit its notice within four months from the date on which the original notice was returned by the Bureau, the Bureau shall issue a reminder.

**Reasons**: To implement the requirement for reminders during the six-month period and reduce the risk of a resubmission beyond the end six-month period referred to in No. **11.46.**

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**IWG4/035**

# UNITED STATES OF AMERICA

# DRAFT PROPOSAL FOR WRC-19

**Agenda Item 7**: to consider possible changes, and other options, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, an advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution **86 (Rev.WRC‑07)**, in order to facilitate rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary‑satellite orbit;

**Issue D** – Identification of those specific satellite networks and systems with which coordination needs to be effected under RR Nos. 9.12, 9.12A and 9.13

**Background Information**: At the 2012 World Radiocommunication Conference (WRC-12) modifications to RR No. **9.36.2** to Article **9** of the Radio Regulations were adopted to decrease the administrative workload related to the identification of the satellite networks, systems and earth stations, as applicable, with which coordination needs to be effected under RR Nos. **9.7**, **9.7A** and **9.7B**. The Bureau now publishes a “definitive list” of those networks, systems and earth stations with which coordination under RR Nos. **9.7**, **9.7A** and **9.7B** needs to be effected once a coordination request (a new one or a modification to an existing one, as appropriate) for a satellite network or system is processed. Such a list is published in the relevant Special Section of the BR International Frequency Information Circular (BR IFIC). However, in the cases of coordination under RR Nos. **9.12**, **9.12A** and **9.13**, the Bureau does not publish a list of the satellite networks or systems potentially affected to complement the list of administrations potentially affected by incoming satellite networks or systems that they do provide.

Bearing in mind that, according to RR No. **9.36.1**, the list of administrations identified for coordination under RR Nos. **9.12**, **9.12A** and **9.13** is only for information purposes, each of those potentially affected administrations needs to carry out the following tasks:

1 Identify, together with each of its operators, those GSO networks and non-GSO systems that may be affected by the new satellite system requesting coordination;

2 Compile, in case the administration is responsible for more than one operator, a comprehensive list covering all the GSO networks and non-GSO systems with which coordination is required;

3 Transmit to the administration having filed a CR/C (a new one or a modification to an existing one, as appropriate) and to the Bureau its comments on or disagreement to the request for coordination pursuant to RR No. **9.52**.

The above process could be simplified if a pre-compiled list of satellite networks or systems considered as potentially affected would be available, for information purposes only, in the cases of coordination under RR Nos. **9.12**, **9.12A** and **9.13** as it is currently for the cases of RR Nos. **9.7**, **9.7A** and **9.7B** in the CR/C Special Section. In this proposal, it is proposed to implement the modifications to the Radio Regulations in accordance with Method D2.

**Proposal**:

ARTICLE 9

**Procedure for effecting coordination with or obtaining agreement of other administrations**1, 2, 3, 4, 5, 6, 7, 8, 9    (WRC‑15)

**Section II − Procedure for effecting coordination**12, 13

**Sub-Section IIA − Requirement and request for coordination**

**MOD** USA/AI7(D)/1

20 **9.36.1** In the case of coordination under Nos. **9.12, 9.12A** and **9.13**, as appropriate, the Bureau shall also identify the satellite networks or systems with which coordination may need to be effected.The list of administrations identified by the Bureau under Nos. **9.11** to **9.14** and **9.21** and the list of satellite networks or systems identified by the Bureau under Nos. **9.12, 9.12A** and **9.13** are only for information purposes, to help administrations comply with this procedure. (WRC-19)

**Reasons:** This modification is required in order to have the list of potentially affected satellite networks or systems published in addition to the list of administrations.

**Sub-Section IIC − Action upon a request for coordination**

**MOD** USA/AI7(B)/2

**9.52C**  For coordination requests under Nos. **9.11** to **9.14** and **9.21**, an administration not responding under No. **9.52** within the same four‑month period shall be regarded as unaffected and, in the cases of Nos. **9.11** to **9.14**, the provisions of Nos. **9.48** and **9.49** shall apply. Furthermore, for coordination under Nos. **9.12**, **9.12A** and **9.13**, any satellite network or system identified under No. **9.36.1** but not confirmed in the response provided by administrations under No. **9.52** within the same four-month period shall be regarded as unaffected and the provisions of Nos. **9.48** and **9.49** shall also apply. (WRC-19)

**Reasons:** This modification is required to indicate the consequence for not identifying satellite networks or systems in the response provided under No. **9.52**.

**MOD** USA/AI7(D)/3

**9.53A** Upon expiry of the deadline for comments in respect of a coordination request under Nos. **9.11** to **9.14** and **9.21**, the Bureau shall, according to its records, publish a Special Section, indicating the list of administrations having submitted their disagreement and the list of satellite networks or systems upon which their disagreement is based, as appropriate, or other comments within the regulatory deadline.     (WRC‑19)

**Reasons:** This modification is required in order to have the definitive list of affected satellite networks or systems published in addition to the list of administrations.

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