

**ATTACHMENT 2**  
**to FCC Public Notice DA 11-447**

**Draft Proposals formulated and approved within the National  
Telecommunications and Information Administration:**

**Document WAC/107(08.03.11)**

Ms. Mindel De La Torre  
Chief of the International Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA) on behalf of the Executive Branch agencies, approves the release of the attached Executive Branch proposals for WRC-12 agenda items 1.8 and 7 (Resolution 49).

NTIA proposes no change in the use of the band 71-238 GHz for fixed services and no change to Resolutions **731 (WRC-2000)** and **732 (WRC-2000)** for agenda item 1.8. NTIA also proposes no change to Resolution 49 on administrative due diligence applicable to some satellite radiocommunication services for agenda item 7.

NTIA considered the Federal agencies' input toward the development of U.S. proposals for WRC-12. NTIA forwards this package for your consideration and review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

*(Original Signed November 9, 2010)*

Karl B. Nebbia  
Associate Administrator  
Office of Spectrum Management

**UNITED STATES OF AMERICA**  
**DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE**

**Agenda Item 1.8:** *to consider the progress of ITU-R studies concerning the technical and regulatory issues relative to the fixed service in the bands between 71 GHz and 238 GHz, taking into account Resolutions 731 (WRC-2000) and 732 (WRC-2000)*

Resolution **731 (WRC-2000)**: *Consideration by a future competent world radiocommunication conference of issues dealing with sharing and adjacent-band compatibility between passive and active services above 71 GHz*

Resolution **732 (WRC-2000)**: *Consideration by a future competent world radiocommunication conference of issues dealing with sharing between active services above 71 GHz*

**Background Information:** This agenda item addresses consideration of changes in regulations for spectrum above 71 GHz to accommodate sharing among the fixed service and other active services and to protect the passive services from adjacent band fixed systems.

Several countries have operational fixed service links in the frequency bands 71-76 GHz, 81-86 GHz, 92-94 GHz and 94.1-95 GHz. In addition to these active service applications, several countries also operate remote sensing and meteorological satellites that utilize the Earth exploration-satellite service (EESS) (passive) allocation from 86-92 GHz subject to No. **5.340**. The ITU-R was unable to fully evaluate sharing among the active services or sharing between the active services and passive services allocated above 71 GHz due to the lack of studies prepared during this study cycle for this agenda item.

WRC-2000 adopted Resolutions **731 (WRC-2000)** and **732 (WRC-2000)** as part of the conference decisions in an overall rearrangement of the allocation tables in Article **5** of the Radio Regulations, and not in support of WRC-07 agenda item 1.8. The ITU-R did not complete studies in support of this agenda item; therefore the conference should retain these resolutions unchanged.

**Proposals:**

**NOC**      USA/AI 1.8/1

**ARTICLE 5**

**Frequency allocations**

**Reasons:** Insufficient information is available at this time to substantiate specific out-of-band emission limits to protect the EESS (passive) in the 86-92 GHz band. The ITU-R studies are immature because the technologies employed by the active services in these bands are still in the early stages of development.

**NOC** USA/AI 1.8/2

RESOLUTION 731 (WRC-2000)

**Consideration by a future competent world radiocommunication conference  
of issues dealing with sharing and adjacent-band compatibility between  
passive and active services above 71 GHz**

**Reasons:** WRC-2000 developed this resolution as a result of the realignment of the Table of Allocations above 71 GHz. The retention of this resolution allows the ITU-R to continue studies on sharing and adjacent band compatibility in this frequency range.

**NOC** USA/AI 1.8/3

RESOLUTION 732 (WRC-2000)

**Consideration by a future competent world radiocommunication  
conference of issues dealing with sharing between  
active services above 71 GHz**

**Reasons:** WRC-2000 developed this resolution as a result of the realignment of the Table of Allocations above 71 GHz. The retention of this resolution allows the ITU-R to continue studies on sharing and adjacent band compatibility in this frequency range.

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**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)*

**Background Information:** WRC-97 first adopted administrative due diligence applicable to some satellite services to address the problem of reserving orbit and spectrum capacity without actual use (i.e. “paper” satellites). The Radio Regulations and Resolution **49 (Rev. WRC-07)** on administrative due diligence contain provisions on disclosure of data for the implementation of a satellite network or satellite system of the fixed-satellite service, mobile-satellite service or broadcasting-satellite service with frequency assignments that are subject to coordination under Nos. **9.7, 9.11, 9.12, 9.12A and 9.13** and Resolution **33 (Rev.WRC-03)** as well as to any such satellite network not yet recorded in the Master International Frequency Register by 22 November 1997. Resolution **49 (Rev. WRC-07)** also applies to certain provisions of Appendices **30 (Rev.WRC-07), 30A (Rev.WRC-07), and 30B (Rev.WRC-07)**.

Many administrations consider due diligence information to be a valuable requirement to present how frequency assignments of a satellite network were brought into use. Administrations have also been updating due diligence information and submitting updates to the Bureau for already recorded assignments either during the period of operation of specific satellite network assignments due to e.g. a change of the spacecraft, or at the time of bringing into use modified recorded assignments under No. **11.43A**, or for the resumption of use of frequency assignments suspended under No. **11.47**. Although not covered in Resolution **49 (Rev.WRC-07)**, the Bureau publishes such updates in RES49 Special Sections accordingly.

Every conference since WRC-97 extensively discussed the usefulness and adequacy of the information submitted to the ITU in accordance with Resolution **49 (Rev.WRC-07)** and discussed various options to improve the resolution. Ultimately, each conference maintained the data elements and basic structure. This resolution in its current form contains adequate and appropriate due diligence procedures. Therefore, WRC-12 should not modify this resolution.

**Proposal:**

**NOC**      USA/AI7\_RES49/1

**RESOLUTION 49 (Rev.WRC-07)**

**Administrative due diligence applicable to some satellite  
radiocommunication services**

**Reasons:** Administrations wishing to update their due diligence information may do so under the current procedures and there is no need for additional regulatory requirements.

**Document WAC/109(08.03.11)**

Ms. Mindel De La Torre  
Chief of the International Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA) on behalf of the Executive Branch agencies, approves the release of the attached Executive Branch preliminary view for WRC-12 agenda item 4. This preliminary view contains NTIA's assessment of the status of resolutions and recommendations in the Radio Regulations.

NTIA considered the Federal agencies' input toward the development of U.S. preliminary views for WRC-12. NTIA forwards this package for your consideration and review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

*(Original Signed November 17, 2010)*

Karl B. Nebbia  
Associate Administrator  
Office of Spectrum Management

**UNITED STATES OF AMERICA**  
**DRAFT PRELIMINARY VIEWS ON WRC-12**

**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.

**U.S. View:** The United States' views on agenda item 4 are contained in the attached table.

## Review of Resolutions and Recommendations in response to Resolution 95 (Rev.WRC-07)

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 1	(Rev.WRC-97) Notification of frequency assignments		NOC		
RES 2	(Rev.WRC-03) Equitable use, by all countries, with equal rights, of the geostationary-satellite and other satellite orbits and of frequency bands for space radiocommunication services		NOC		
RES 4	(Rev.WRC-03) Period of validity of frequency assignments to space stations using the geostationary-satellite and other satellite orbits		NOC	BR Note: Res 4 should be considered by a future competent conference.	
RES 5	(Rev.WRC-03) Technical cooperation with the developing countries in the study of propagation in tropical and similar areas		NOC		
RES 7	(Rev.WRC-03) Development of national radio frequency management		NOC		
RES 10	(Rev.WRC-2000) Use of two-way wireless telecommunications by the International Red Cross and Red Crescent Movement		NOC		
RES 13	(Rev.WRC-97) Formation of call signs and allocation of new international series		NOC		
RES 15	(Rev.WRC-03) International cooperation and technical assistance in the field of space radiocommunications		NOC		
RES 18	(Rev.WRC-07) Relating to the procedure for identifying and announcing the position of ships and aircraft of States not parties to an armed conflict		NOC		
RES 20	(Rev.WRC-03) Technical cooperation with developing countries in the field of aeronautical telecommunications		NOC		



## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 25	(Rev.WRC-03) Operation of global satellite systems for personal communications		SUP	Should be deleted, if not significantly revised – is quite outdated, especially given the breadth of mobile terrestrial cellular communications	
RES 26	(Rev.WRC-07) Footnotes to the Table of Frequency Allocations in Article 5 of the Radio Regulations		<u>NOC</u>		<b>1.1</b>
RES 27	(Rev.WRC-07) Use of incorporation by reference in the Radio Regulations		NOC	Recently updated.	<b>2</b>
	ANNEX 1 Principles of incorporation by reference		NOC		<b>2</b>
	ANNEX 2 Application of incorporation by reference		NOC		<b>2</b>
	ANNEX 3 Procedures applicable by WRC for approving the incorporation by reference of ITU-R Recommendations or parts there of		NOC		<b>2</b>
RES 28	(Rev.WRC-07) Revision of references to the text of ITU-R Recommendations incorporated by reference in the Radio Regulations		NOC		<b>2</b>
RES 33	(Rev.WRC-03) Bringing into use of space stations in the broadcasting-satellite service, prior to the entry into force of agreements and associated plans for the broadcasting-satellite service		NOC		
RES 34	(Rev.WRC-03) Establishment of the broadcasting-satellite service in Region 3 in the 12.5-12.75 GHz frequency band and sharing with space and terrestrial services in Regions 1, 2 and 3		NOC	Maintained by WRC-07 following intervention of BR and supported by CITEL and Arab Group: Some parts are still relevant	
RES 42	(Rev.WRC-03) Use of interim systems in Region 2 in the broadcasting-satellite and fixed-satellite (feeder-link) services in Region 2 for the bands covered by Appendices 30 and 30A		NOC		
	ANNEX		NOC		

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 49	(Rev.WRC-07) Administrative due diligence applicable to some satellite radiocommunication services		<u>NOC</u>		7
	ANNEX 1		<u>NOC</u>		7
	ANNEX 2		<u>NOC</u>		7
RES 55	(WRC-2000) Temporary procedures for improving satellite network coordination and notification procedures		NOC		
RES 58	(WRC-2000) Transitional measures for coordination between certain specific geostationary fixed-satellite service receive earth stations and non-geostationary fixed-satellite service transmit space stations in the frequency bands 10.7-12.75 GHz, 17.8-18.6 GHz, and 19.7-20.2 GHz where efd limits apply		NOC		
	ANNEX 1		NOC		
RES 63	(Rev.WRC-07) Protection of radiocommunication services against interference caused by radiation from industrial, scientific and medical (ISM) equipment		MOD	May require consequential revision. Draft CPM text for this AI has a suggested revision to this Resolution (See page 4 of Doc. 1A/311, Annex 7.)	1.22
RES 72	(Rev.WRC-07) World and Regional preparations for world radiocommunication conferences		NOC		
RES 73	(Rev.WRC-2000) Measures to solve the incompatibility between the broadcasting-satellite service in Region 1 and the fixed-satellite service in Region 3 in the frequency band 12.2-12.5 GHz		NOC		
RES 74	(Rev.WRC-03) Process to keep the technical bases of Appendix 7 current		NOC	On-going consideration in SGs 1 and 3.	

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 75	(WRC-2000) Development of the technical basis for determining the coordination area for coordination of a receiving earth station in the space research service (deep space) with transmitting stations of high-density systems in the fixed service in the 31.8-32.3 GHz and 37-38 GHz bands		NOC		
RES 76	(WRC-2000) Protection of geostationary fixed-satellite service and geostationary broadcasting-satellite service networks from the maximum aggregate equivalent power flux-density produced by multiple non-geostationary fixed-satellite service systems in frequency bands where equivalent power flux-density limits have been adopted		NOC		
	ANNEX 1		NOC		
RES 80	(Rev.WRC-07) Due diligence in applying the principles embodied in the Constitution		NOC		<b>8.1.3</b>
	ANNEX 1		NOC		<b>8.1.3</b>
	ANNEX 2		NOC		<b>8.1.3</b>
RES 81	(WRC-2000) Evaluation of the administrative due diligence procedure for satellite networks		NOC		
RES 85	(WRC-03) Application of Article 22 of the Radio Regulations to the protection of geostationary fixed-satellite service and broadcasting-satellite service networks from non-geostationary fixed-satellite service systems		NOC		
RES 86	(WRC-07) Implementation of Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference		NOC		<b>7</b>
RES 95	(Rev.WRC-07) General review of the Resolutions and Recommendations of world administrative radio conferences and world radiocommunication conferences		NOC		<b>4</b>

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 111	(Orb-88) Planning of the fixed-satellite service in the bands 18.1-18.3 GHz, 18.3-20.2 GHz and 27-30 GHz		NOC		
RES 114	(Rev.WRC-03) Studies on compatibility between new systems of the aeronautical radionavigation service and the fixed-satellite service (Earth-to-space) (limited to feeder links of the non-geostationary mobile-satellite systems in the mobile-satellite service) in the frequency band 5 091-5 150 MHz		NOC	This Resolution is referred to in Nos. <b>5.444</b> and <b>5.444A</b> . Also referred to by agenda item 2.2 in Res. 806 (WRC-07) – Doc. IWG-4/30r1 calls for NOC to this provision of Res. 806, and this proposal was sent to Nov. 2009 CITELE PCC.II meeting as Doc. CCPII-RADIO-2057	
RES 122	(Rev.WRC-07) Use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz by high altitude platform stations in the fixed service and by other services		NOC		
RES 124	(Rev.WRC-2000) Protection of the fixed service in the frequency band 8 025-8 400 MHz sharing with geostationary-satellite systems of the Earth exploration-satellite service (space-to-Earth)		MOD Or SUP	Old information. Calls for a subsequent WRC to reconcile a discrepancy between pfd limits given in No. 5.462A and Rec. ITU-R F.1502, but this has not been acted upon in 10 years.	
RES 125	(WRC-97) Frequency sharing in the bands 1 610.6-1 613.8 MHz and 1 660-1 660.5 MHz between the mobile-satellite service and the radio astronomy service		NOC		
RES 136	(Rev.WRC-03) Frequency sharing in the range 37.5-50.2 GHz between geostationary fixed-satellite service networks and non-geostationary fixed-satellite service systems		NOC		
RES 140	(WRC-03) Measures and studies associated with the equivalent power flux-density (epfd) limits in the band 19.7-20.2 GHz		NOC		
RES 142	(WRC-03) Transitional arrangements relating to use of the frequency band 11.7-12.2 GHz by geostationary-satellite networks in the fixed-satellite service in Region 2		NOC		
RES 143	(Rev.WRC-07) Guidelines for the implementation of high-density applications in the fixed-satellite service in frequency bands identified for these applications		NOC		

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 144	(Rev.WRC-07) Special requirements of geographically small or narrow countries operating earth stations in the fixed-satellite service in the band 13.75-14 GHz		NOC		
RES 145	(Rev.WRC-07) Use of the bands 27.9-28.2 GHz and 31-31.3 GHz by high altitude platform stations in the fixed service		NOC		
RES 147	(WRC-07) Power flux-density limits for certain systems in the fixed-satellite service using highly-inclined orbits having an apogee altitude greater than 18 000 km and an orbital inclination between 35° and 145° in the band 17.7-19.7 GHz		NOC		
RES 148	(WRC-07) Satellite systems formerly listed in Part B of the Plan of Appendix 30B (WARC Orb-88)		NOC		
RES 205	(Rev.Mob-87) Protection of the band 406-406.1 MHz allocated to the mobile-satellite service		MOD	Appears outdated as –ITU-R Rec.604 (Rev Mob -83) to which it refers has been abrogated. Additionally No. 5.266 and 5.267 appear to fully address the issues concerning 406-406.1 MHz.	
RES 207	(Rev.WRC-07) Measures to address unauthorized use of and interference to frequencies in the bands allocated to the maritime mobile service and to the aeronautical mobile ® service		NOC		
	ANNEX Interference mitigation techniques		NOC		
RES 212	(Rev.WRC-07) Implementation of International Mobile Telecommunications in the bands 1 885 – 2 025 MHz and 2 110 – 2 200 MHz		NOC	This Resolution is referred to in Nos. <b>5.351A</b> and <b>5.388</b> .	
RES 215	(Rev.WRC-97) Coordination process among mobile-satellite systems and efficient use of the allocations to the mobile-satellite service in the 1-3 GHz range		NOC		
RES 217	(WRC-97) Implementation of wind profiler radars		NOC	This Resolution is referred to in Nos. <b>5.162A</b> and <b>5.291A</b>	

**ATTACHMENT**

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 221	(Rev.WRC-07) Use of high altitude platform stations providing IMT in the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3 and 1 885-1 980 MHz and 2 110-2 160 MHz in Region 2		NOC	This Resolution is referred to in No. <b>5.388A</b> .	
	ANNEX Characteristics of a HAPS operating as an IMT base station in the frequency bands given in RES 221 (Rev.WRC-07)		NOC		
RES 222	(Rev.WRC-07) Use of the bands 1 525-1 559 MHz and 1 626.5-1 660.5 MHz by the mobile-satellite service and studies to ensure long-term spectrum availability for the aeronautical mobile-satellite (R) service		MOD	This Resolution is referred to in Nos. <b>5.353A</b> and <b>5.357A</b>	<b>1.7</b>
RES 223	(Rev.WRC-07) Additional frequency bands identified for IMT		NOC	This Resolution is referred to in Nos. <b>5.384A</b> and <b>5.388</b> .	
RES 224	(Rev.WRC-07) Frequency bands for the terrestrial component of International Mobile Telecommunications below 1 GHz		NOC	This Resolution is referred to in No. <b>5.317A</b> .	
RES 225	(Rev.WRC-07) Use of additional frequency bands for the satellite component of IMT		NOC		
RES 229	(WRC-03) Use of the bands 5 150-5 250 MHz, 5 250-5 350 MHz and 5 470-5 725 MHz by the mobile service for the implementation of wireless access systems including radio local area networks		NOC	This Resolution is referred to in Nos. <b>5.446A</b> , <b>5.447</b> and <b>5.453</b> .	
RES 231	(WRC-07) Additional allocations to the mobile-satellite service with particular focus on the bands between 4 GHz and 16 GHz		NOC		<b>1.25</b>
RES 331	(Rev.WRC-07) Transition to the Global Maritime Distress and Safety System (GMDSS)		NOC		
RES 339	(Rev.WRC-03) Coordination of NAVTEX services		NOC		

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 342	(Rev.WRC-2000) New technologies to provide improved efficiency in the use of the band 156-174 MHz by stations in the maritime mobile service		NOC	May require suppression as consequence of A11.10 action.	
RES 343	(WRC-97) Maritime certification for personnel of ship stations and ship earth stations for which a radio installation is not compulsory		NOC		
	ANNEX Examination syllabus for radio operator's certificates appropriate to vessels using the frequencies and techniques of the Global Maritime Distress and Safety System on a non-compulsory basis		NOC		
RES 344	(Rev.WRC-03) Management of the maritime mobile service identity numbering resource		NOC	Note: Revision of Recommendation ITU-R M.585 and review in 2015	
RES 345	(WRC-97) Operation of Global Maritime Distress and Safety System equipment on and assignment of maritime mobile service identities to non-compulsory fitted vessels		NOC		
RES 349	(WRC-97) Operational procedures for cancelling false distress alerts in the Global Maritime Distress and Safety System		NOC		
	ANNEX Cancelling of false distress alerts		NOC		
RES 351	(Rev. WRC-07) Review of the frequency and channel arrangements in the HF bands allocated to the maritime mobile service contained in Appendix 17 with a view to improving efficiency through the use of new digital technology by the maritime mobile service		SUP	Consequential suppression	<b>1.9</b>
RES 352	(WRC-03) Use of the carrier frequencies 12 290 kHz and 16 420 kHz for safety-related calling to and from rescue coordination centers		NOC		
RES 354	(WRC-07) Distress and safety radiotelephony procedures for 2 182 MHz		NOC		

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
	ANNEX		NOC		
RES 355	(WRC-07) Content, format and periodicity of the maritime related service publications		NOC		
RES 356	(WRC-07) ITU maritime service information registration		NOC		
RES 357	(WRC-07) Consideration of regulatory provisions and spectrum allocations for use by enhanced maritime safety systems for ships and ports		MOD	Consequential revision. Linked with RES.342 and RES.351.	<b>1.10</b>
RES 405	Relating to the use of frequencies of the aeronautical mobile (R) service		NOC		
RES 413	(Rev. WRC-07) Use of the band 108-117.975 MHz by aeronautical mobile (R) service		MOD	Consequential revision. This Resolution is referred to in No. <b>5.197A</b> .	<b>1.4</b>
RES 416	(WRC-07) Use of the bands 4 400 – 4 940 MHz and 5 925 – 6 700 MHz by an aeronautical mobile telemetry application in the mobile service		NOC	Maintain.	
RES 417	(WRC-07) Use of the band 960-1 164 MHz by the aeronautical mobile (R) service		NOC		<b>1.4</b>
RES 418	(WRC-07) Use of the band 5 091 – 5 250 MHz by the aeronautical mobile service for telemetry applications		NOC		
	ANNEX		NOC		
RES 419	(WRC-07) Considerations for the use of the band 5 091 – 5 150 MHz by the aeronautical mobile service for certain aeronautical applications		NOC		
RES 420	(WRC-07) Consideration of the frequency bands between 5 000 and 5 030 MHz for aeronautical mobile (R) service surface applications at airports		SUP	Consequential suppression.	<b>1.4</b>



## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 421	(WRC-07) Consideration of appropriate regulatory provisions for the operation of unmanned aircraft systems		NOC		<b>1.3</b>
RES 506	(Rev.WRC-97) Use by space stations in the broadcasting-satellite service operating in the 12 GHz frequency bands allocated to the broadcasting-satellite service of the geostationary-satellite orbit and no other		NOC		
RES 507	(Rev.WRC-03) Establishment of agreements and associated plans for the broadcasting-satellite service		NOC		
RES 517	(Rev.WRC-07) Introduction of digitally modulated emissions in the high-frequency bands between 3 200 kHz and 26 100 kHz allocated to the broadcasting service		NOC		
RES 525	(Rev.WRC-07) Introduction of high-definition television systems of the broadcasting-satellite service in the band 21.4 -22.0 GHz in Regions 1 and 3		SUP	PER USPR-1.13 CITEL dated 15 Oct 2009 A reference is made to this Resolution in No.5.530.	<b>1.13</b>
	ANNEX Interim procedures for the introduction of BSS (HDTV) systems in the band 21.4-22.0 GHz in Regions 1 and 3		SUP		<b>1.13</b>
RES 526	(WARC-92) Future adoption of procedures to ensure flexibility in the use of the frequency band allocated to the broadcasting-satellite service (BSS) for wide RF-band high-definition television (HDTV) and to the associated feeder links		MOD or SUP	This resolution will be twenty years old and still not on the agenda. Should be added to WRC-15 agenda or revised/abrogated.	
RES 528	(Rev.WRC-03) Introduction of the broadcasting-satellite service (sound) systems and complementary terrestrial broadcasting in the bands allocated to these services within the range 1-3 GHz		MOD	This Resolution is referred to in Nos. <b>5.417A</b> and <b>5.418</b> . A former version of this Resolution is referred to in Nos. <b>5.345</b> and <b>5.393</b> .	
RES 533	(Rev.WRC-2000) Implementation of the decisions of WRC-2000 relating to processing of proposed networks submitted under Articles 4, 6 and 7 of Appendices 30 and 30A to the Radio Regulations		NOC		

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RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 535	(Rev.WRC-03) Information needed for the application of Article 12 of the Radio Regulations		NOC		
	ANNEX		NOC		
RES 539	(Rev.WRC-03) Use of the band 2 605-2 655 MHz in certain Region 3 countries by non-geostationary satellite systems in the broadcasting-satellite service (sound)		NOC	This Resolution is referred to in Nos. <b>5.417A</b> and <b>5.418</b> .	
RES 543	(WRC-03) Provisional RF protection ratio values for analogue and digitally modulated emissions in the HF broadcasting service		NOC		
	ANNEX		NOC		
RES 546	(WRC-03) Implementation of the decisions of WRC-03 relating to processing of networks under Appendices 30 and 30A of the Radio Regulations		NOC		
RES 547	(Rev. WRC-07) Updating of the “Remarks” columns in the Tables of Article 9A of Appendix 30A and Article 11 of Appendix 30 of the Radio Regulations		NOC		
RES 548	(WRC-03) Application of the grouping concept in Appendices 30 and 30A in Regions 1 and 3		NOC		
RES 549	(WRC-07) Use of the frequency band 620 – 790 MHz for existing assignments to stations of the broadcasting satellite service		NOC		
RES 550	(WRC-07) Information relating to the high-frequency broadcasting service		NOC		
RES 551	(WRC-07) use of the band 21.4 – 22 GHz for broadcasting-satellite service and associated feeder link bands in Regions 1 and 3		NOC		<b>1.13</b>
RES 608	(WRC-03) Use of the frequency band 1 215-1 300 MHz by systems of the radionavigation-satellite service (space-to-Earth)		NOC	This Resolution is referred to in No. <b>5.329</b> .	

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 609	(Rev.WRC-07) Protection of aeronautical radionavigation service systems from the equivalent power flux-density produced by radionavigation-satellite service networks and systems in the 1 164-1 215 MHz frequency band		NOC	This Resolution is referred to in No. <b>5.328A</b> .	
	ANNEX Criteria for application of RES 609 (Rev.WRC-07)		NOC		
RES 610	(WRC-03) Coordination and bilateral resolution of technical compatibility issues for radionavigation-satellite service networks and systems in the bands 1 164-1 300 MHz, 1 559-1 610 MHz and 5 010-5 030 MHz		NOC	This Resolution is referred to in No. <b>5.328B</b> .	
	ANNEX Criteria for application of RES 610 (WRC-03)		NOC		
RES 611	(WRC-07) Use of portion of the VHF-Band by the radiolocation service		SUP	Consequential suppression as required by US proposal for AI 1.14.	<b>1.14</b>
RES 612	(WRC-07) Use of the radiolocation service between 3 and 50 MHz to support high-frequency oceanographic radar operations		NOC		<b>1.15</b>
RES 613	(WRC-07) Global primary allocation to the radiodetermination-satellite service in the frequency band 2483.5 – 2500 MHz		NOC		<b>1.18</b>
RES 614	(WRC-07) Use of the band 15.4-15.7 GHz by the radiolocation service		SUP	Consequential suppression as required by US proposal for AI 1.21.	<b>1.21</b>
RES 641	(Rev.HFBC-87) Use of the frequency band 7 000-7 100 kHz		NOC		
RES 642	Relating to the bringing into use of earth stations in the amateur-satellite service		NOC		
RES 644	(Rev.WRC-07) Radiocommunication resources for early warning, disaster mitigation and relief operations		NOC		

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 646	(WRC-03) Public protection and disaster relief		NOC		
RES 647	(WRC-07) Spectrum management guidelines for emergency and disaster relief radiocommunication		NOC		
RES 671	(WRC-07) Recognition of systems in the meteorological aids service in the frequency range below 20 kHz		NOC		<b>1.16</b>
RES 672	(WRC-07) Extension of the allocation to the meteorological satellite service in the band 7 750 – 7 850 MHz		SUP	Per USPR 1.24 CITELE dated 15 Oct 2009	<b>1.24</b>
RES 673	(WRC-07) Radiocommunications use of Earth observation applications		NOC		
RES 703	(Rev.WRC-07) Calculation methods and interference criteria recommended by ITU-R for sharing frequency bands between space radiocommunication and terrestrial radiocommunication services or between space radiocommunication services		NOC		
RES 705	(Mob-87) Mutual protection of radio services operating in the band 70-130 kHz		NOC		
RES 716	(Rev.WRC-2000) Use of the frequency bands 1 980-2 010 MHz and 2 170-2 200 MHz in all three Regions and 2 010-2 025 MHz and 2 160-2 170 MHz in Region 2 by the fixed and mobile-satellite services and associated transition arrangements		NOC	A former version of this Resolution is referred to in Nos. <b>5.389A</b> , <b>5.389C</b> and <b>5.390</b> .	
RES 729	(Rev.WRC-07) Use of frequency adaptive systems in the MF and HF bands		NOC		

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 731	(WRC-2000) Consideration by a future competent world radiocommunication conference of issues dealing with sharing and adjacent-band compatibility between passive and active services above 71 GHz		<u>NOC</u>		<b>1.8</b>
RES 732	(WRC-2000) Consideration by a future competent world radiocommunication conference of issues dealing with sharing between active services above 71 GHz		<u>NOC</u>		<b>1.8</b>
RES 734	(Rev.WRC-07) Studies for spectrum identification for gateway links for high altitude platform stations in the range from 5 850 to 7 500 MHz		NOC		<b>1.20</b>
RES 739	(Rev.WRC-07) Compatibility between the radio astronomy service and the active space services in certain adjacent and nearby frequency bands		NOC	This Resolution is referred to in No. <b>5.347A</b> .	
	ANNEX 1 Unwanted emission threshold levels		NOC		
RES 741	(WRC-03) Protection of the radio astronomy service in the band 4 990-5 000 MHz from unwanted emissions of the radionavigation-satellite service (space-to-Earth) operating in the frequency band 5 010-5 030 MHz		NOC	This Resolution is referred to in No. <b>5.443B</b> .	
RES 743	(WRC-03) Protection of single-dish radio astronomy stations in Region 2 in the 42.5-43.5 GHz band		NOC	This Resolution is referred to in Nos. <b>5.551H</b> and <b>5.551I</b> .	
RES 744	(Rev.WRC-07) Sharing between the mobile-satellite service (Earth-to-space) and the fixed and mobile services in the band 1 668.4-1 675 MHz		NOC		
RES 748	(WRC-07) Compatibility between the aeronautical mobile (R) service and the fixed-satellite service (Earth-to-space) in the band 5 091 – 5 150 MHz		NOC	Referred to in Res. 418 and Res. 419. Res. 748 in turn refers to Res. 114.	
RES 749	(WRC-07) Studies on the use of the band 790-862 MHz by mobile applications and by other services		<u>NOC</u>		<b>1.17</b>
RES 750	(WRC-07) Compatibility between the Earth exploration-satellite service (passive) and relevant active services		NOC		

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 751	(WRC-07) Use of the frequency band 10.6-10.68 GHz		NOC		
	ANNEX Sharing criteria in the band 10.6-10.68 GHz		NOC		
RES 752	(WRC-07) Use of the frequency band 36-37 GHz		NOC		
	ANNEX Sharing criteria in the band 36-37 GHz		NOC		
RES 753	(WRC-07) Use of the band 22.55 – 23.15 GHz by the space research service		SUP	Consequential Suppression	<b>1.11</b>
RES 754	(WRC-07) Consideration of modification of the aeronautical component of the mobile service allocation in the 37-38 GHz band for protection of other primary services in the band		SUP	Consequential Suppression	<b>1.12</b>
RES 804	(WRC-07) Principles for establishing agendas for world radiocommunication conferences		<u>NOC</u>		
	ANNEX 1 Principles for establishing agendas for WRCs		<u>NOC</u>		
	ANNEX 2 Template for the submission of proposals for agenda items		<u>NOC</u>		
RES 805	(WRC-07) Agenda for the 2011 World Radiocommunication Conference		SUP	Consequential Suppression	
RES 806	(WRC-07) Preliminary agenda for the 2015 World Radiocommunication Conference		NOC	A new Resolution will be developed during WRC-11, containing the agenda for WRC-15	<b>8.2</b>
RES 900	(WRC-03) Review of the Rule of Procedure for No. 9.35 of the Radio Regulations		NOC	This resolution has been implemented and the Rule of Procedure for No. 9.35 of the Radio Regulations has been suppressed (2005).	
	ANNEX Procedure to be used by the Radiocommunication Bureau for networks examined under the Rule of Procedure on No. 9.35		NOC		

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
RES 901	(Rev.WRC-07) Determination of the orbital arc separation for which coordination would be required between two satellite networks operating in a space service not subject to a Plan		NOC		
RES 902	(WRC-03) Provisions relating to earth stations located on board vessels which operate in fixed-satellite service networks in the uplink bands 5 925-6 425 MHz and 14-14.5 GHz		NOC	This Resolution is referred to in Nos. <b>5.457A</b> , <b>5.457B</b> , <b>5.506A</b> and <b>5.506B</b> .	
	ANNEX 1 Regulatory and operational provisions for ESVs transmitting in the 5 925-6 425 MHz and 14-14.5 GHz bands		NOC		
	ANNEX 2 Technical limitations applicable to ESVs transmitting in the bands 5 925-6 425 MHz and 14-14.5 GHz		NOC		
RES 903	(WRC-07) Transitional measures for certain broadcasting satellite / FSS systems in the band 2 500 – 2 620 MHz		NOC		
RES 904	(WRC-07) Transitional measure for coordination between Mobile-Satellite Service (Earth-to-space) and the space research (passive) service in the band 1 668 – 1 668.4 Mhz for a specific case		NOC		
RES 905	(WRC-07) Date of entry into force of certain provisions of the RR relating to the non-payment of cost recovery fees		NOC		
RES 906	(WRC-07) Submission of notices for terrestrial services to the Radiocommunication Bureau		NOC		
RES 950	(Rev.WRC-07) Consideration of the use of the frequencies between 275 and 3 000 GHz		SUP	Consequential Suppression	<b>1.6</b>
RES 951	(Rev.WRC-07) Enhancing the international spectrum regulatory framework		SUP		<b>1.2</b>

## ATTACHMENT

RESOLUTION		FCC	NTIA	Comments	WRC-12 Agenda Item
	ANNEX 1 Options for enhancing the international spectrum regulatory framework		SUP		1.2
	ANNEX 2 Guidelines for implementing this resolution		SUP		1.2
RES 953	(WRC-07) Protection of radiocommunication services from emissions by short-range radio devices		SUP		1.22
RES 954	(WRC-07) Harmonisation of spectrum for use by terrestrial electronic news gathering systems		SUP		1.5
RES 955	(WRC-07) Consideration of procedures for free-space optical links		SUP		1.6
RES 956	(WRC-07) Regulatory measures and their relevance to enable the introduction of software-defined radio and cognitive radio systems		SUP		1.19



## ATTACHMENT

RECOMMENDATION		FCC	NTIA	Comments	WRC-12 Agenda Item
REC 7	(Rev.WRC-97) Adoption of standard forms for ship station and ship earth station licences and aircraft station and aircraft earth station licences		NOC		
	ANNEX 1 Principles for the formulation of standard ship and aircraft station licences		NOC		
	ANNEX 2		NOC		
	ANNEX 3		NOC		
REC 8	Relating to automatic identification of stations		NOC		
REC 9	Relating to the measures to be taken to prevent the operation of broadcasting stations on board ships or aircraft outside national territories		NOC		
REC 34	(WRC-95) Principles for the allocation of frequency bands		NOC		1.2
REC 36	(WRC-97) Role of international monitoring in reducing apparent congestion in the use of orbit and spectrum resources		NOC		
REC 37	(WRC-03) Operational procedures for earth stations on board vessels (ESVs) use		NOC		
	ANNEX 1 Operational procedures for ESV use		NOC		

## ATTACHMENT

RECOMMENDATION		FCC	NTIA	Comments	WRC-12 Agenda Item
REC 63	Relating to the provision of formulae and examples for the calculation of necessary bandwidths		NOC		
REC 71	Relating to the standardization of the technical and operational characteristics of radio equipment		NOC		8.1
REC 75	(WRC-03) Study of the boundary between the out-of-band and spurious domains of primary radars using magnetrons		NOC		8.1
REC 100	(Rev.WRC-03) Preferred frequency bands for systems using tropospheric scatter		NOC		
REC 104	(WRC-95) Development of power flux-density and equivalent isotropically radiated power limits to be met by feeder links of non-geostationary satellite networks in the mobile-satellite service for the protection of geostationary-satellite networks in the fixed-satellite service in bands where No. 22.2 of the Radio Regulations applies		NOC		
REC 206	(WRC-07) Consideration on the possible use of integrated mobile-satellite service and ground component systems in some frequency bands identified for the satellite component of International Mobile Telecommunications		NOC		

## ATTACHMENT

RECOMMENDATION		FCC	NTIA	Comments	WRC-12 Agenda Item
REC 207	(WRC-07) Future IMT systems		NOC		
REC 316	(Rev.Mob-87) Use of ship earth stations within harbours and other waters under national jurisdiction		NOC		
REC 401	Relating to the efficient use of aeronautical mobile @ worldwide frequencies		NOC		
REC 503	(Rev.WRC-2000) High-frequency broadcasting		SUP		
REC 506	Relating to the harmonics of the fundamental frequency of broadcasting-satellite stations		NOC		
REC 520	(WARC-92) Elimination of HF broadcasting on frequencies outside the HF bands allocated to the broadcasting service		NOC		
REC 522	(WRC-97) Coordination of high-frequency broadcasting schedules in the bands allocated to the broadcasting service between 5 900 kHz and 26 100 kHz		NOC		
REC 608	(WRC-03) Guidelines for consultation meetings established in Resolution 609 (WRC-03)		NOC		
	ANNEX 1 List of RNSS system characteristics and format of the result of the aggregate epfd calculation to be provided to the Radiocommunication Bureau for publication for information		NOC		
REC 622	(WRC-97) Use of the frequency bands		NOC		

**ATTACHMENT**

<b>RECOMMENDATION</b>		<b>FCC</b>	<b>NTIA</b>	<b>Comments</b>	<b>WRC-12 Agenda Item</b>
	2 025-2 110 MHz and 2 200-2 290 MHz by the space research, space operation, Earth exploration-satellite, fixed and mobile services				
REC 707	Relating to the use of the frequency band 32-33 GHz shared between the inter-satellite service and the radionavigation service		NOC		
REC 724	(WRC-07) Use by civil aviation of frequency allocations on a primary basis to the fixed-satellite service		NOC		

**Document WAC/110(08.03.11)**

Ms. Mindel De La Torre  
Chief of the International Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA), on behalf of the Executive Branch agencies, approves the release of the attached Executive Branch proposal for WRC-12 agenda item 8.2. NTIA proposes a future conference agenda item on the feasibility of sharing between Earth exploration-satellite service (EESS) uplinks and existing services operating in the 7190-7235 MHz band.

NTIA considered the Federal agencies' input toward the development of U.S. proposals for WRC-12. NTIA forwards this package for your consideration, and for review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

*(Original Signed December 2, 2010)*

Karl B. Nebbia  
Associate Administrator  
Office of Spectrum Management

**UNITED STATES OF AMERICA**  
**DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE**

**Agenda Item 8.2:** *to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution 806 (WRC-07)*

**Background Information:** The Earth exploration-satellite service (EESS) requires an additional Earth-to-space allocation in the frequency band 7 190 – 7 235 MHz because of congestion in the bands 2 025 – 2 110 MHz and 2 200 – 2 290 MHz. These bands currently support several hundred satellites, making coordination extremely difficult. This allocation, along with existing space-to-Earth allocations near 8 GHz, would also allow EESS satellites to employ a single transponder for both uplinks and downlinks, reducing design and launch costs.

Currently, no suitable Earth-to-space allocations are available for tracking, telemetry and control (TT&C) of EESS satellites at frequencies higher than the 2 025 – 2 110 MHz global allocation. Additionally, the band 2 200 – 2 290 MHz can support payload data downlinks for only a few EESS satellites. These factors require current EESS satellites to be equipped with two transponders: one operating near 2 GHz for TT&C and the other operating at the higher frequencies required for medium- and high-rate payload data downlinks, typically in the band 8 025 – 8 400 MHz. With a suitable EESS Earth-to-space allocation near 8 025 – 8 400 MHz, a single transponder could accommodate both satellite control and payload data downlink requirements.

The band 7 145 – 7 235 MHz is currently allocated to the fixed, mobile and space research (Earth-to-space) services on a primary basis, in accordance with No. **5.460**. EESS satellites normally operate in low-Earth orbit. The number of EESS ground stations receivers in the 8 025 – 8 400 MHz band is small and they are usually located at high latitudes. EESS telecommand uplinks and EESS downlink receivers typically share the same ground station locations.

**Proposals:**

**MOD** USA/8.2 /1

RESOLUTION 806 (WRC-~~07~~12)

~~Preliminary~~ **Agenda for the 2015 World Radiocommunication Conference**

The World Radiocommunication Conference (Geneva, 200~~7~~12),

**ADD** USA/8.2 /2

**2.BB** to review ITU-R studies on sharing between potential Earth exploration-satellite service (EESS) uplinks and existing services in the band 7 190 – 7 235 MHz, with the view to providing a primary allocation for the EESS (Earth-to-space) in the 7 190 – 7 235 MHz band, in accordance with Resolution [USA-YYY] (WRC-12).

**Reasons:** To provide a primary allocation to the EESS (Earth-to-space) in the 7 190 – 7 235 MHz band which, when used in conjunction with EESS (space-to-Earth) allocations near 8 GHz, would accommodate both uplinks and high data rate downlinks on the same EESS satellite transponder.

**ADD** USA/8.2/3

## RESOLUTION YYY (WRC-12)

### **Use of the 7 190 – 7 235 MHz band by the Earth exploration-satellite service (Earth-to-space)**

The World Radiocommunication Conference (Geneva, 2012),

#### *considering*

- a) that the band 7 145 – 7 235 MHz is allocated to the fixed, mobile and space research (Earth-to-space) services on a primary basis, subject to No. **5.460**;
- b) that the bands 8 025 – 8 175 MHz, 8 175 – 8 215 MHz, and 8 215 – 8 400 MHz are allocated to the Earth exploration-satellite service (EESS) (space-to-Earth) worldwide;
- c) that an EESS (Earth-to-space) allocation in the band 7 190 – 7 235 MHz would provide for uplinks and downlinks on the same transponder, increasing efficiency and reducing costs;
- d) that limited bandwidth is available in the bands 2 025 – 2 110 MHz and 2 200 – 2 290 MHz for EESS operations;
- e) that requirements for environmental and climate change data from EESS satellites are increasing,

#### *recognizing*

- a) that simplifying satellite design and reducing design and launch costs by incorporating a single transponder on EESS satellites would be beneficial to EESS operators;
- b) that congestion in the 2 025 – 2 110 MHz and 2 220 – 2 290 MHz bands increases the probability of harmful interference, which could contribute to deleterious effects on critical environmental data available only through EESS satellite resources,

#### *further recognizing*

- a) that the number of EESS ground stations receivers in the band 8 025 – 8 400 MHz is small and that they are usually located at high latitudes;
- b) that EESS telecommand uplinks and corresponding EESS ground station receivers typically share the same ground station locations,

#### *resolves to invite ITU-R*

- 1 to conduct sharing studies between EESS (Earth-to-space) systems and existing services in the band 7 190 – 7 235 MHz;
- 2 to complete the studies as a matter of urgency, taking into account the present use of the allocated band, with a view to presenting, at the appropriate time, the technical basis for the work of WRC-15,

*resolves to invite WRC-15*

1 to consider a primary allocation to the EESS (Earth-to-space) in the band 7 190 – 7 235 MHz, taking into account the results of ITU-R studies;

2 to consider appropriate modifications to the Table of Frequency Allocations, based on proposals from administrations,

*invites administrations*

to participate actively in the studies by submitting contributions to ITU-R,

*instructs the Secretary-General*

to bring this Resolution to the attention of the World Meteorological Organization (WMO) and other international and regional organizations concerned.

**Reasons:** To support ITU-R studies toward a potential new EESS (Earth-to-space) allocation in the band 7 190 – 7 235 MHz.



**ATTACHMENT**

**PROPOSAL FOR AN AGENDA ITEM STUDYING THE EARTH EXPLORATION-SATELLITE SERVICE (EARTH-TO-SPACE) SHARING WITH SERVICES IN THE BAND 7 190 – 7 235 MHz**

**Subject:** Proposed Agenda Item for WRC-15 studying an Earth exploration-satellite service (Earth-to-space) allocation in the band 7 190 – 7 235 MHz and sharing between the fixed, mobile and space research services.

**Origin:** United States of America

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**Proposal:** to review ITU-R studies on sharing between potential Earth exploration-satellite service (EESS) uplinks and existing services in the band 7 190 – 7 235 MHz, with the view to providing a primary allocation for the EESS (Earth-to-space) in the 7 190 – 7 235 MHz band, in accordance with Resolution **[USA-YYY] (WRC-12)**.

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**Background/reason:** The Earth exploration-satellite service (EESS) requires an additional Earth-to-space allocation in the frequency band 7 190 – 7 235 MHz because of congestion in the bands 2 025 – 2 110 MHz and 2 200 – 2 290 MHz, which support several hundred satellites, making coordination extremely difficult. This allocation, along with existing space-to-Earth allocations near 8 GHz, would also allow EESS satellites to employ a single transponder for both uplinks and downlinks, reducing design and launch costs.

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**Radiocommunication services concerned:** fixed, mobile, space research (Earth-to-space)

**Indication of possible difficulties:** none foreseen

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**Previous/ongoing studies on the issue:** TBD

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<b>Studies to be carried out by:</b> WP 7B	with the participation of: <b>WPs 5A, 5C</b>
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**ITU-R Study Groups concerned:** SG7

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ITU resource implications, including financial implications (refer to CV126): **minimal**

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**Common regional proposal:** Yes/No

**Multicountry proposal:** Yes/No

Number of countries:

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**Remarks**

**Document WAC/112(08.03.11)**

Ms. Mindel De La Torre  
Chief of the International Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA), on behalf of the Executive Branch agencies, approves the release of draft Executive Branch proposals for WRC-12 agenda items 1.4 Res.417, 1.5, 1.16, 7 No. 11.41A, 8.1.1 (Issue C), and 8.2 Global Maritime Distress & Safety System (GMDSS). NTIA proposes to modify Resolution 417 (WRC-07) under agenda item 1.4. NTIA proposes to suppress Resolution 954 (WRC-07) to supplement the existing U.S. proposal on agenda item 1.5. For agenda item 1.16, NTIA proposes to extend the Table of Frequency Allocations down to 8.3 kHz and add a meteorological aids allocation to 8.3-11.3 kHz for the purpose of lightning detection. For agenda item 7, NTIA proposes to modify No. 11.41A on the recording of satellite frequency assignments. Regarding agenda item 8.1.1 Issue C, NTIA proposes to modify Resolution 673 (WRC-07) for recognition and importance of Earth observation radiocommunications. For agenda item 8.2, NTIA proposes a future conference agenda item for GMDSS and e-Navigation.

NTIA considered the Federal agencies' input toward the development of U.S. proposals for WRC-12. NTIA forwards this package for consideration and review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

*(Original Signed January 12, 2011)*

Karl B. Nebbia  
Associate Administrator  
Office of Spectrum Management

## UNITED STATES OF AMERICA

### DRAFT PROPOSALS FOR THE WORK AT THE CONFERENCE

**Agenda Item 1.4:** *to consider, based on the results of ITU-R studies, any further regulatory measures to facilitate introduction of new aeronautical mobile (R) service (AM(R)S) systems in the bands 112-117.975 MHz, 960-1 164 MHz, and 5 000-5 030 MHz in accordance with Resolutions 413 (Rev. WRC-07), 417 (WRC-07) and 420 (WRC-07)*

**Background Information:** ITU-R studies indicate the need to modify Resolution 417 (WRC-07) on the use of the band 960-1 164 MHz by the aeronautical mobile (R) service to ensure coexistence with the incumbent safety of life systems. Aeronautical mobile (route) service (AM(R)S) systems are critical for various air traffic and flight safety communications. Some of the communications systems and services in the 960-1 164 MHz band include traffic information, automatic dependent surveillance-broadcast, and flight information. These systems provide easily accessible air traffic information to multiple air traffic managers at the same time, thus allowing for more efficient airspace use by allowing more planes to fly in closer routes.

International Civil Aviation Organization (ICAO) aeronautical radionavigation service (ARNS) systems, as well as ARNS systems that are not standardized by ICAO, operate in this band and are critical to safety of life operations. These systems allow for aircraft to fly safely by accurately determining flight paths during all phases of flight including take off and landing, and increase the pilot's awareness of close aircraft by scanning the area surrounding the plane. Radionavigation-satellite service (RNSS) systems, which operate in the adjacent band 1 164-1 215 MHz, must also operate in an environment free of harmful interference from emissions in the 960-1 164 MHz band.

Given the importance of both AM(R)S and ARNS systems for safety of life operations in the 960-1 164 MHz band and the need to safeguard the RNSS systems in the adjacent 1 164-1 215 MHz band, this proposal advocates placing equivalent isotropically radiated power (e.i.r.p) limits on AM(R)S systems below 1 164 MHz to ensure compatibility and protection from harmful interference among the various safety of life systems. This proposal supports Method B1 of the draft CPM Report.

**Proposal:**

**MOD** USA/AI 1.4/1

RESOLUTION 417 (Rev. WRC-0712)

**Use of the band 960-1 164 MHz by the aeronautical mobile (R) service**

The World Radiocommunication Conference (Geneva, 200712),

*considering*

- a) that ~~WRC-07~~this Conference has allocated the band 960 to 1 164 MHz to the aeronautical mobile (R) service (AM(R)S) in order to make available this frequency band for new AM(R)S systems, and in doing so enabled further technical developments, investments and deployment;
- b) the current allocation of the frequency band 960-1 164 MHz to the aeronautical radionavigation service (ARNS);
- c) the use of the band 960-1 215 MHz by the ARNS is reserved on a worldwide basis for the operation and development of airborne electronic aids to air navigation and any directly associated ground-based facilities per No. **5.328**;
- d) that new technologies are being developed to support communications and air navigation, including airborne and ground surveillance applications;
- e) that the this new allocation of the frequency band 960-1 164 MHz to the aeronautical mobile (R) service is intended to support the introduction of applications and concepts in air traffic management which are data intensive and which could support data links that carry safety critical aeronautical data;
- f) that in countries listed in No. **5.312** the frequency band 960-1 164 MHz is also used by systems in the ARNS for which standards and recommended practices (SARPs) have not been developed nor published by the International Civil Aviation Organization (ICAO);
- g) that, furthermore, the frequency band 960-1 164 MHz is also used by a non-ICAO system operating in the ARNS that has characteristics similar to those of ICAO standard distance measuring equipment;
- ~~h) that this allocation was made knowing that studies are ongoing with respect to the technical characteristics, sharing criteria and sharing capabilities;~~
- ~~i) that the frequency band 117.975-137 MHz currently allocated to the AM(R)S is reaching saturation within certain areas of the world, therefore that band would not be available to support additional medium and long range data communications;~~
- ~~j) that, additional information is needed on the new technologies which will be used, other than the AM(R)S system identified in recognizing e), the amount of spectrum required, and the characteristics and sharing capabilities/conditions. Therefore, studies are urgently required on which AM(R)S systems will be used, the amount of spectrum required and the characteristics and conditions for sharing with ARNS systems;~~

*recognizing*

- ~~a) that precedence must be given to the ARNS operating in the frequency band 960-1 164 MHz;~~
- ~~ba) that Annex 10 of the Convention of the ICAO on International Civil Aviation contains SARPs for aeronautical radionavigation and radiocommunication systems used by international civil aviation;~~
- ~~eb) that all compatibility issues between the ICAO Standard Universal Access Transceiver (UAT) operating under an AM(R)S allocation and other systems which operate in the same frequency range excluding the system identified in considering f), have been addressed;~~

~~d~~c) that in the frequency band 1 024-1 164 MHz the sharing conditions are more complex than in the band 960-1 024 MHz,

*noting*

that, ~~excluding the system identified in recognizing e), no compatibility criteria currently exist between AM(R)S systems proposed for operations in the frequency band 960-1 164 MHz and ICAO-standardized the existing aeronautical systems in the band will be developed in ICAO,~~

*resolves*

1 that any AM(R)S system operating in the frequency band 960-1 164 MHz shall meet SARPs requirements published in Annex 10 ~~of to the ICAO~~ Convention on International Civil Aviation;

2 that any AM(R)S systems ~~operating in the band 960-1 164 MHz~~ with aircraft station operating within 934 km or/and ground stations operating within 465 km from the border of the territory of [Armenia, Azerbaijan, Belarus, Bulgaria, Russian Federation, Georgia, Hungary, Kazakhstan, Moldova, Mongolia, Uzbekistan, Poland, Kyrgyzstan, Slovakia, Czech Rep., Romania, Tajikistan, Turkmenistan and Ukraine] shall not cause harmful interference to, nor claim protection from, and shall not impose constraints on the operation and planned development of aeronautical radionavigation systems (*see considering f)*) in the same band ~~of these countries unless otherwise agreed;~~

~~3 that compatibility studies between AM(R)S systems operating in the band 960-1 164 MHz and ARNS systems in considering f) and g) need to be conducted to develop sharing conditions to ensure that the conditions of resolves 2 are satisfied, and that ITU-R Recommendations are developed as appropriate;~~

3 that administrations authorizing AM(R)S systems in the band 960-1 164 MHz are urged to take into account the sharing conditions as concluded in Report ITU-R M.[AM(R)S\_1GHZ\_SHARING] on the coexistence with system indicated under *considering g)*;

4 that the result of the studies pursuant to *resolves 3* shall be reported to WRC-11 and the decision should be taken by WRC-11 to review, if appropriate, regulatory provisions in *resolves 2* taking into account protection requirements of ARNS systems identified in *considering f)* and *g)* and the need for global facilitation of AM(R)S operating in accordance with ICAO standards;

4 that administrations intending to implement AM(R)S in the band 960-1 164 MHz, in order not to cause harmful interference to the radionavigation-satellite service in the band 1 164-1 215 MHz, shall utilize the criteria set forth below:

- any ground station operating under the AM(R)S allocation in the band 960-1 164 MHz, shall limit its equivalent isotropically radiated power (e.i.r.p.) to the values presented in the following table:

<u>Emissions in the band 960-1 164 MHz</u> (Total e.i.r.p. in the band 960-1 164 MHz as a function of the carrier central frequency)	<u>Emissions in the band 1 164-1 215 MHz</u>	
AM(R)S centre frequency 1 146.45-1 164 MHz	1 164-1 197.6 MHz	1 197.6-1 215 MHz
Linearly decreasing from 34 to -62.9 dBW	-90.8 dBW in any 1 MHz of the band 1 164-1 197.6 MHz	-90.8 dBW in any 1 MHz of the band 1 197.6-1 215 MHz

- any aircraft station operating under the AM(R)S allocation in the band 960-1 164 MHz shall limit its equivalent isotropically radiated power (e.i.r.p.) to the values presented in the following table:

<u>Emissions in the band 960-1 164 MHz</u> (Total e.i.r.p. in the band 960-1 164 MHz as	<u>Emissions in the band 1 164-1 215 MHz</u>
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<b><u>a function of the carrier central frequency)</u></b>		
<u>AM(R)S centre frequency</u> <u>1 146.45-1 164 MHz</u>	<u>1 164-1 197.6 MHz</u>	<u>1 197.6-1 215 MHz</u>
<u>Linearly decreasing from 37.75 to -59.2 dBW</u>	<u>-84 dBW in any 1 MHz of the band 1 164-1 197.6 MHz</u>	<u>-92.4 dBW in any 1 MHz of the band 1 197.6-1 215 MHz</u>

~~5~~ that frequencies in the band 960-1 164 MHz shall not be used by an AM(R)S system, except for the AM(R)S system identified in *recognizing c)*, until all potential compatibility issues with the ARNS and, as necessary, the radionavigation satellite service (RNSS) in the adjacent band have been resolved, also taking into account *recognizing d)*;

~~5~~ that compatibility between any AM(R)S systems in the band 960-1 164 MHz and systems in *considering g)* is a matter to be dealt with by ICAO;

*invites*

administrations and ICAO, for the purposes of conducting the ITU-R studies mentioned in *resolves 3* and *5*, to provide to ITU-R the technical and operational characteristics of systems involved;

*invites ITU-R*

~~1~~ to conduct studies in accordance with *resolves 3* and *5* on operational and technical means to facilitate sharing between AM(R)S systems operating in the band 960-1 164 MHz and ARNS systems identified in *considering f)* and *g)*;

~~2~~ to conduct studies in accordance with *resolves 5* on operational and technical means to facilitate sharing between AM(R)S systems operating in the band 960-1 164 MHz and the RNSS operating in the band 1 164-1 215 MHz;

~~3~~ to report the results of the studies to WRC-11;

*instructs the Secretary-General*

to bring this Resolution to the attention of ICAO.

**Reasons:** This proposal enables AM(R)S and ARNS systems, critical to flight safety and human life, to operate compatibly in the 960-1 164 MHz band. Finally, requiring e.i.r.p limits protects RNSS in bands above 1 164 MHz from potential harmful interference from AM(R)S in bands below 1 164 MHz.

**UNITED STATES OF AMERICA**

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

**Agenda Item 1.5:** *to consider worldwide/regional harmonization of spectrum for electronic news gathering (ENG), taking into account the results of ITU-R studies, in accordance with Resolution 954 (WRC-07)*

**Background Information:** This proposal supplements the existing U.S. proposal for agenda item 1.5.

**Proposal:**

SUP      USA/AI 1.5/1

**RESOLUTION 954 (WRC-07)**

**Harmonization of spectrum for use by terrestrial electronic news gathering systems**

**Reasons:** The ITU-R completed work on this agenda item for WRC-12.

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## UNITED STATES OF AMERICA

### DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

**Agenda Item 1.16:** *to consider the needs of passive systems for lightning detection in the meteorological aids service, including the possibility of an allocation in the frequency range below 20 kHz, and to take appropriate action, in accordance with Resolution 671 (WRC-07)*

**Background Information:** Resolution 671 (WRC-07) resolves to invite the ITU-R to conduct and complete studies related to lightning detection to enable a decision on an appropriate method for providing recognition, including the possibility of making an allocation, to the meteorological aids service in the frequency range below 20 kHz.

The automated Arrival Time Difference (ATD) system uses the time differences of signal received to derive lightning strike locations. Meteorological organizations analyze the data from the ATD system and provide forecasts to assist safety of life, public safety and aviation operations. Recent ITU-R studies show the optimal frequency for ATD measurements is around 9.76 kHz.

Recommendation ITU-R RS.[20 kHz ATD PROTECTION] determined lightning detection systems are optimized with a 3 kHz bandwidth signal from 8.3 - 11.3 kHz. Any interference in the lower portion, i.e. 8.3 - 9 kHz, would impact the whole system. Therefore, it is important to protect the full range of the signal to ensure that the systems will be able to use their allocated band without interference.

**Proposal:**



## ARTICLE 5

### Frequency allocations

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

**MOD** USA/1.16/1

98.3-110 kHz

Allocation to services		
Region 1	Region 2	Region 3
<b>Below <u>98.3</u></b>	(Not allocated) <u>MOD 5.53</u> <u>MOD 5.54</u>	
<b><u>8.3-9</u></b>	<u>METEOROLOGICAL AIDS</u> <u>ADD 5.C116</u>	
<b><u>9-14</u><u>11.3</u></b>	<u>METEOROLOGICAL AIDS</u> RADIONAVIGATION <u>ADD 5.C116</u>	
<b><u>911.3-14</u></b>	RADIONAVIGATION	
....		

**Reasons:** A primary allocation to the meteorological aids service in 8.3-11.3 kHz will protect the lightning detection systems from users operating under No. 4.4. Interference in the lower portion, i.e. 8.3-9 kHz, is expected to impact the whole system.

**MOD** USA/1.16/2

**5.53** Administrations authorizing the use of frequencies below 9-8.3 kHz shall ensure that no harmful interference is caused thereby to the services to which the bands above 98.3 kHz are allocated.

**Reasons:** Consequential to the meteorological aids service primary allocation in the 8.3-9 kHz frequency band.

**MOD** USA/1.16/3

**5.54** Administrations conducting scientific research using frequencies below 9-8.3 kHz are urged to advise other administrations that may be concerned in order that such research may be afforded all practicable protection from harmful interference.

**Reasons:** Consequential to the meteorological aids service primary allocation in the 8.3-9 kHz frequency band.

**ADD** USA/1.16/4

**5.C116** Use of the band 8.3-11.3 kHz by the meteorological aids service is limited to passive use. In the 9-11.3 kHz band, meteorological aids service stations shall not claim protection from stations of the radionavigation service submitted for notification to the Bureau prior to the [date of entry into force of WRC-12 Final Acts]. For sharing between stations of the meteorological aids service and stations in the radionavigation service submitted after this date the most recent version of Recommendation ITU-R RS.[20 kHz ATD PROTECTION] should be applied.

**Reasons:** To protect passive lightning detection systems below 20 kHz and support a meteorological aids service allocation, limited to passive use, under the condition that no undue constraints are placed on existing services.

**SUP** USA/1.16/5

## RESOLUTION 671 (WRC-07)

### **Recognition of systems in the meteorological aids service in the frequency range below 20 kHz**

**Reasons:** The ITU-R completed the required studies for this agenda item.

## 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:** 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.

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<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) with respect to assignments recorded under No. 11.41, any conditions related to the initial recording 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.

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## 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.

In order to improve the recognition of the importance of Earth observation systems within the Radio Regulations, this proposal seeks to modify Resolution **673 (WRC-07)** 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.

RESOLUTION 673 (Rev. WRC-0712)

**Radiocommunications The use of the radio spectrum for Earth observation applications**

The World Radiocommunication Conference (Geneva, 20072012),

*considering*

- a) that *in situ* and remote Earth observation capabilities depend on the availability of radio frequencies under a number of radio services, allowing for a wide range of passive and active applications on satellite- or ground-based platforms;
- b) that the collection and exchange of Earth observation data are essential for maintaining and improving the accuracy of weather forecasts that contribute to the protection of life, preservation of property and sustainable development throughout the world;
- c) that Earth observation data are also essential for monitoring and predicting climate changes, for disaster prediction, monitoring and mitigation, for increasing the understanding, modelling and verification of all aspects of climate change, and for related policy-making;
- d) that Earth observations are also used to obtain pertinent data regarding natural resources, this being particularly crucial for the benefit of developing countries;
- e) that Earth observations are performed for the benefit of the whole international community and all mankind, are shared among all countries and are generally available at no cost,

*recognizing*

- a) that § 20 c) of the Plan of Action of the World Summit on Information Society (Geneva, 2003), on e-environment, calls for the establishment of monitoring systems, using information and communication technologies (ICT), to forecast and monitor the impact of natural and man-made disasters, particularly in developing countries, least developed countries and small economies;
- b) Resolution 34 (Rev. Doha, 2006) of the World Telecommunication Development Conference, on the role of telecommunications/ICT in early warning and mitigation of disasters and humanitarian assistance;
- c) that ITU-D Question 22/2 “Utilization of ICT for disaster management, resources and active and passive space-based sensing systems as they apply to disaster and emergency relief situations” studies resulted in ITU-D Report “Utilization of ICT for disaster management, resources and active and passive space-based sensing systems as they apply to disaster and emergency relief situations”;
- d) that ITU-R studies resulted in Report ITU-R RS.2178 “The essential role and global importance of radio spectrum use for Earth observations and for related applications”;

*noting*

- a) that Earth observation applications are conducted under the Earth exploration-satellite (active and passive), meteorological satellite, meteorological aids and radiolocation services;
- b) that some essential passive frequency bands are covered by No. **5.340**;
- c) that certain frequency bands used by Earth observation applications have specific physical characteristics (e.g., spectral lines, propagation) that do not allow a migration to a different frequency.

*noting further*

- a) that the importance of Earth observation radiocommunications applications has been stressed by a number of international bodies such as the Group on Earth Observation (GEO), the World Meteorological Organization (WMO) and the Intergovernmental Panel on Climate Change (IPCC) and that collaboration of ITU-R with these bodies ~~could be~~ is important;
- b) that, in particular, GEO is leading a worldwide effort to build a Global Earth Observation System of Systems (GEOSS) to provide comprehensive and coordinated Earth observations from thousands of instruments worldwide, transforming the collected data into vital information for society and mankind;
- ~~e) that GEOSS provides a broad range of societal benefits, including disaster management and aspects related to human health, energy, climate, water, weather, ecosystems, agriculture and biodiversity;~~
- ~~d~~c) that more than 90 per cent of natural disasters are climate- or weather-related;
- ~~e~~d) that some essential passive Earth observation operations currently suffer radio interference resulting in erroneous data or even complete loss of data;
- ~~f~~e) that, although meteorological and Earth observation satellites are currently only operated by a limited number of countries, the data and/or related analyses resulting from their operation are distributed and used globally, in particular by national weather services in developed and developing countries and by climate-change-related organizations,

*resolves to invite ITU-R*

- 1 to recognize that Earth observation applications have economic and societal benefits as most of the data retrieved by these observations are used for applications to meteorology, climatology, environmental monitoring, agriculture, civil security and the protection of life and property;
- 2 to encourage Member States to take into account the radio-frequency requirements of Earth observation systems and, in particular, the protection and long-term availability of related frequency bands;
- 3 to urge Member States to consider the use of certain frequency bands by Earth observation applications prior to any decision potentially affecting these applications;
- 4 to remind Member States of their obligations under No. **5.340** of the Radio Regulations, which prohibits all emissions in the frequency bands listed in No. **5.340**.

~~to carry out studies 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,~~

~~instructs the Director of the Radiocommunication Bureau~~

~~to include the results of these studies in his Report to WRC-11 for the purposes of considering adequate actions in response to *resolves to invite ITU-R* above, noting that neither new allocations nor additional protection would be objectives of such studies,~~

~~invites administrations~~

~~to participate actively in the studies by submitting contributions to ITU-R.~~

**Reasons:** Noting the results of the ITU-R studies and related work completed in ITU-D, which led to approval of relevant recommendations and reports, the modifications proposed to this resolution complete the goal of increasing the recognition of the importance of radio spectrum use by Earth observation applications.

UNITED STATES OF AMERICA

DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

**Agenda Item 8.2:** *to recommend to the Council items for inclusion in the agenda of the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution 806 (WRC-07)*

**Background Information:** There is a global requirement for modernization of the Global Maritime Distress and Safety System (GMDSS), as noted by the International Maritime Organization (IMO). IMO COMSAR 14 has initiated scoping exercises, and a work plan to define the requirements for GMDSS modernization. This GMDSS modernization has the endorsement of the IMO Maritime Safety Committee 88.

The International Telecommunication Union Radio Regulations contain many provisions, articles, appendices, and recommendations, associated with the GMDSS. Changes to the Radio Regulations will be necessary to support GMDSS modernization.

IMO is also developing an e-Navigation strategy and implementation plan as endorsed by IMO NAV 56. Initial analysis shows that e-Navigation would require global harmonization of data communications systems. IMO technical bodies have identified that countries could not deploy e-Navigation without an ITU review of the Radio Regulations, to accommodate advanced maritime communication systems.

**Proposal:**

**MOD** USA/8.2 /1

RESOLUTION 806 (REV. WRC-0712)

~~Preliminary a~~**Agenda for the 2015 World Radiocommunication Conference**

The World Radiocommunication Conference (Geneva, ~~2007~~2012),

**Reasons:** To modify the agenda for WRC-15 to add a new item.

**ADD** USA/8.2/2

**2.XYZ** to consider regulatory changes to support implementation of e-Navigation within the maritime mobile service and any possible regulatory action, as necessary, to support GMDSS modernization in accordance with Resolution ~~USXYZ~~ (**WRC-12**).

**Reasons:** Meet international maritime shipping need and IMO requirements for GMDSS modernization and IMO implementation of e-Navigation.

**ADD** USA/8.2/3

## RESOLUTION XYZ (WRC-12)

### **Consideration of implementing regulatory provisions from the Global Maritime Distress Safety System modernization and studies related to e-Navigation**

The World Radiocommunication Conference (Geneva, 2012),

*considering*

- a) that there is an increasing need, on a global basis, for modern Global Maritime Distress Safety System (GMDSS) communication capabilities, for enhanced maritime safety;
- b) that the International Maritime Organization (IMO) has initiated work plans for GMDSS modernization;
- c) that the establishment of the maritime Automatic Identification Systems (AIS) offers potential enhancements to VHF maritime safety communications;
- d) that advanced maritime MF/HF/VHF data systems may be used to deliver Maritime Safety Information (MSI), and GMDSS communications;
- e) that additional global and regional GMDSS satellite providers are being considered by IMO;
- f) that IMO is developing an e-Navigation strategy and implementation plan;
- g) that GMDSS modernization may be influenced by the development of e-Navigation,

*recognizing*

- a) that advanced maritime communication systems may support the implementation of GMDSS modernization and e-Navigation;
- b) that due to the importance of these radio links in ensuring the safe operation of international shipping and commerce, they must be resilient to interference,

*resolves to invite WRC-15*

- 1 to consider appropriate modifications to the Radio Regulations, as necessary, but excluding new allocations, to support GMDSS modernization;
- 2 to consider appropriate modifications to the Radio Regulations, based on ITU R studies and excluding new allocations, for maritime communication systems supporting e-Navigation within the maritime mobile service,

*invites ITU-R*

- 1 to conduct, as a matter of urgency, studies to determine the spectrum requirements and potential frequency bands within the existing maritime mobile service allocations suitable to support e-Navigation;
- 2 to conduct, as a matter of urgency, studies that identify potential regulatory actions required by WRC-15 to accommodate GMDSS modernization,

*further invites*

all members of the Radiocommunication Sector and the International Maritime Organization (IMO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA), the International Electrotechnical Commission (IEC) and the World Meteorological Organization (WMO) to contribute to these studies,

*instructs the Secretary-General*

to bring this Resolution to the attention of the International Maritime Organization (IMO), and other international and regional organizations concerned.

**Reasons:** Meet advanced maritime communication systems needs from IMO requirements for GMDSS modernization and IMO implementation of e-Navigation.

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## Annex

**Subject: 2012 World Radiocommunication Conference Agenda Item 8.2 Proposal to support Global Maritime Distress Safety System modernization and e-Navigation studies.**

**Origin: United States of America**

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**Proposal:** to consider regulatory changes to support implementation of e-Navigation within the maritime mobile service and any possible regulatory action, as necessary, to support GMDSS modernization in accordance with Resolution **USXYZ (WRC-12)**

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**Background/reason:**

The International Telecommunication Union Radio Regulations contain many provisions, articles, appendices, and recommendations, associated with the GMDSS. Changes to the Radio Regulations will be necessary to support GMDSS modernization.

Initial analysis shows that e-Navigation would require global harmonization of data communications systems. International Maritime Organization technical bodies have identified that countries could not deploy e-Navigation without an ITU review of the Radio Regulations, to accommodate advanced maritime communication systems.

**Radiocommunication services concerned:** maritime mobile service, mobile satellite service.

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**Indication of possible difficulties:** None

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**Previous/ongoing studies on the issue:** None

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**Studies to be carried out by:** ITU-R Study Group 5, Working Party 5B.

**with the participation of:** Working Party 4C, IMO, IALA, IMSO

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**ITU-R Study Groups concerned:** Study Groups 4 and 5.

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**ITU resource implications, including financial implications (refer to CV126):** -- Minimal.

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**Common regional proposal:** No

**Multicountry proposal:** No

**Number of countries:**

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**Remarks**

**Document WAC/113(08.03.11)**

Ms. Mindel De La Torre  
Chief of the International Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA) on behalf of the Executive Branch agencies, approves the release of the attached Executive Branch proposals for WRC-12 agenda items 7 No. 11.49 and 7 No. 13.6.

For agenda item 7, NTIA proposes to modify No. 11.49 to shorten the timelines for notifying the Bureau when an assignment is suspended and specify a timeline when an assignment is brought back into use. NTIA also proposes to modify No. 13.6 to clarify timelines associated with Bureau's actions and associated effective dates in maintaining the Master Register.

NTIA considered the Federal agencies' input toward the development of U.S. proposals for WRC-12. NTIA forwards this package for your consideration and review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

*(Original Signed January 24, 2011)*

Karl B. Nebbia  
Associate Administrator  
Office of Spectrum Management

## 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:** Modifications to No. **11.49** to clarify when an administration must inform the Bureau of a suspended network.

**Background Information:** No. **11.49** of the Radio Regulations allows for the use of a recorded assignment to a space station to be suspended for a finite period of time. The Rule of Procedure for No. **11.49** clarifies the time limit (two years) and states that suspensions may be effected by the administration either at its own initiative or in response to an inquiry by the BR under No. **13.6**. During the BR’s recent review of the Master Register for the C, Ku and Ka bands, almost half of the recent inquiries made under No. **13.6** resulted in suspensions under No. **11.49**. In some cases, the operation was actually suspended many months before the BR inquiry under No. **13.6**, but the BR was not informed until after the inquiry.

This document modifies No. **11.49** to quantify “as soon as possible” and proposes a period of “six months” to minimize delays or situations where the suspension is announced and the two year period begins after operation was actually suspended. This proposal modifies No. **11.49** to separate the declaration of suspension from the declaration of resumption to improve clarity in the formulation of this regulatory provision and provide certainty on the actual date of bringing the assignment back into regular operation.

**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

**11.49** ~~Where~~ Whenever the use of a recorded assignment to a space station is suspended for a period not exceeding eighteen months, the notifying administration shall, as soon as possible, but no later than six months from the date on which the use was suspended, inform the Bureau of the date on which such use was suspended. The notifying administration shall also inform the Bureau ~~and of~~ the date on which the assignment is to be brought back into regular use within 30 days of the assignment being brought back into use. ~~The latter~~ date of the assignment being brought back into use shall not exceed two years from the date of suspension.

**Reasons:** Establishes a six-month period for the administration to notify the Bureau of the network's suspension and clarifies when an administration needs to inform the Bureau that the network has been brought back into use.

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## 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:** Modifications to No. 13.6 to clarify the Radiocommunications Bureau’s (BR) actions before cancelling a network and the subsequent confirmation of the cancellation by the Radiocommunication Regulations Board (RRB).

**Background Information:** Under No. 13.4, the BR is solely responsible for maintenance of the Master Register in accordance with the Rules of Procedure. One of the BR’s duties, under No. 13.6, is to consult with the notifying administration in the case where reliable information has been brought to the BR’s attention that a recorded assignment has not been brought into regular operation in accordance with the filed characteristics. The first sentence of No. 13.6 states “... the Bureau shall consult the notifying administration and, subject to its agreement or in the event of non-response after the dispatch of two consecutive reminders, each within a three-month period, shall either cancel, or suitably modify, or retain the basic characteristics of the entry.” A reminder is only necessary in the case of non-response, which includes the situation where the administration replies but does not respond to the inquiry.

The time period during which the BR dispatches the two consecutive reminders is not completely clear. There is no timeframe specified by which the administration must respond. This proposal clarifies the time period of the reminders and limits the administration response time. This proposal adopts the 30-day response time for clarifications concerning notices. This proposal modifies No. 13.6 to specify a one-month period between the initial inquiry and the first reminder, a one-month period between the first reminder and the second reminder, and a one-month period after the second reminder by which the notifying administration must respond. This retains the spirit of the three month period currently provided for in No. 13.6 and clarifies its application.

The last sentence of No. 13.6 states that “A decision of the Bureau to cancel the entry in the event of non-response shall be confirmed by the Board.” There are two ways of understanding this wording:

- That the Bureau’s decision was in force from the time that it was taken by the Bureau and subject to confirmation by the Board, or
- That the Bureau’s decision did not come into force until it was confirmed by the Board.

The practice followed by the Bureau, as confirmed by the Board, is to implement the decision immediately, subject to later confirmation by the Board. Notwithstanding the situation that the Bureau would have to restore the assignments and inform all affected administrations should the Board not

confirm the Bureau's decision, the primary advantage to this approach is that the cancelled assignments no longer have to be taken into account by the Bureau or other administrations with respect to coordination. This proposal modifies No. 13.6 to specify that the Bureau's decision to cancel an assignment takes effect immediately, but is subject to confirmation by the Board.

**Proposal:**

## ARTICLE 13

### Instruction to the Bureau

#### Section II – Maintenance of the Master Register and World Plans by the Bureau

**MOD** USA/7/1

**13.6** b) whenever it appears from reliable information available that a recorded assignment has not been brought into regular operation in accordance with the notified required characteristics as specified in Appendix 4, or is not being used in accordance with those characteristics, the Bureau shall consult the notifying administration and request clarification as to whether the assignment was brought into use in accordance with the notified characteristics and continues to be in regular operation. If the notifying administration does not provide clarification within one month, the Bureau shall issue a reminder. and, In the event the notifying administration does not respond within one month of the first reminder, the Bureau shall issue a second reminder. Subject to its the agreement of the notifying administration or in the event of the notifying administration does not respond within non-response one month after the dispatch of two consecutive the second reminders, each within a three month period, the Bureau shall either cancel, or suitably modify, or retain the basic characteristics of the entry. A decision of the Bureau to cancel the entry in the event of non-response shall take effect immediately, but is subject to be confirmed confirmation by the Board.

**Reasons:** To clarify the BR's actions with respect to No. 13.6 for requesting clarification from administrations before network cancellation and to clarify the RRB's role in confirming any network cancellations.

**Document WAC/114(08.03.11)**

Ms. Mindel De La Torre  
Chief of the International Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA), on behalf of the Executive Branch agencies, approves the release of a draft Executive Branch proposal in response to the FCC proposal on WRC-12 agenda item 8.2 Wireless Avionics Intra-Communications (WAIC). NTIA supports the FCC proposal with modifications for a future conference agenda item on WAIC.

NTIA considered the Federal agencies' input toward the development of U.S. proposals for WRC-12. NTIA forwards this package for consideration and review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

*(Original Signed January 24, 2011)*

Karl B. Nebbia  
Associate Administrator  
Office of Spectrum Management

**UNITED STATES OF AMERICA**  
**DRAFT PROPOSALS FOR THE WORK AT THE CONFERENCE**

**Agenda Item 8.2:** *to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution 806 (WRC 07)*

**Background Information:** The aerospace industry is developing the future generation of commercial aircraft to provide airlines and the flying public more cost-efficient, safe, and reliable aircraft. One important way of accomplishing these aims is to reduce aircraft weight while providing multiple and redundant methods to transmit information on an aircraft. Employment of wireless technologies can accomplish these goals while providing environmental benefits and cost savings to manufacturers and operators.

Installed Wireless Avionics Intra-Communications (WAIC) systems are one way to derive these benefits. WAIC systems consist of radiocommunications between two or more transmitters and receivers on a single aircraft. Both the transmitter and receiver are integrated with or installed on the aircraft. In all cases, communication is part of a closed, exclusive network required for aircraft operation. WAIC systems will not provide air-to-ground or air-to-air communications. WAIC systems will include safety-related applications among their operations.

Draft New Report ITU-R M.[WAIC] provides findings on the technical characteristics and operational requirements of WAIC systems for a single aircraft. Current aeronautical services allocations may not be sufficient to permit the introduction of WAIC systems due to the anticipated WAIC bandwidth requirements. Therefore, this document proposes a WRC-15 agenda item with an associated draft resolution to conduct studies and take appropriate regulatory action to accommodate WAIC systems.

**Proposal:**

**MOD** USA/8.2/1

RESOLUTION 806 (REV. WRC-0712)

~~Preliminary a~~**Agenda for the 2015 World Radiocommunication Conference**

**Reasons:** To modify the agenda for WRC-15 to add a new item.

**ADD** USA/8.2/2

**2.WAIC** to consider spectrum requirements and possible regulatory actions, including allocations, to support wireless avionics intra-communications (WAIC) systems, based on ITU-R studies in accordance with Resolution [WAIC-X] (WRC-12);

**Reasons:** WAIC is submitted as an agenda item for WRC-15 to enable the appropriate studies on the spectrum requirements and regulatory actions for wireless avionics intra-communications (WAIC) systems.

**ADD** USA/8.2/3

RESOLUTION [WAIC-X] (WRC-12)

**Consideration of regulatory actions, including allocations, for Wireless Avionics Intra-Communications (WAIC)**

The World Radiocommunication Conference (Geneva, 2012),

*considering*

- a) that the future generation of commercial aircraft is being designed to be more cost-efficient, safe, and reliable as well as environmentally friendly;
- b) that WAIC systems are restricted to radiocommunications between two or more points integrated into or installed on a single aircraft;
- c) that WAIC systems will be operated onboard aircraft on the ground and during all phases of flight;
- d) that WAIC systems are expected to be used for safety-related aircraft applications;
- e) that in identifying any spectrum for use by WAIC systems, there is a need to protect and not unduly constrain existing services,

*recognizing*

- a) that WAIC systems, as described in *considering b)*, are being developed to operate safely and efficiently in one or more non-contiguous radio frequency bands, with emphasis on those currently allocated to aeronautical services;

- b) that WAIC systems operating inside an aircraft will obtain some benefits of fuselage attenuation and other aircraft surface attenuation in order to facilitate sharing with other services;
- c) that ITU-R Report M.2197 identifies the need for up to 200 MHz of spectrum in the 1-10 GHz range for low data rate applications and up to 2 GHz of spectrum in the range 10-66 GHz for high data rate applications;
- d) that studies will be required to provide the basis for considering regulatory changes, including additional allocation, to accommodate justified spectrum requirements of WAIC systems taking into account protection of incumbent services,

*resolves*

- 1 that ITU-R conduct, in time for WRC-15, more detailed studies than contained in ITU-R Report M.2197 to determine the specific spectrum requirements needed to support WAIC systems as described in *considering b*);
- 2 that ITU-R, based on the results of *resolves 1*, conduct sharing and compatibility studies;
- 3 that in conducting the sharing and compatibility studies in *resolves 2*:
  - for bands below 15.7 GHz, to only consider spectrum within existing aeronautical service allocations;
  - if spectrum requirements cannot be met below 15.7 GHz, to consider frequency bands above 15.7 GHz for new AMS allocation(s) limited to WAIC use;
- 4 that, if compatibility with existing services is confirmed under *resolves 2* and *3* and based on the results of ITU-R studies, recommend that WRC-15 consider possible regulatory provisions to support the implementation of WAIC systems, including the possibility of new AMS allocation(s), taking into account protection of incumbent services and without placing undue constraints on existing services in the considered bands,

*invites*

all members of the Radiocommunication Sector and the International Civil Aviation Organization (ICAO) to participate in these studies.

**Reasons:** This resolution details the scope and required studies related to future spectrum requirements of wireless avionics intra-communications systems. This resolution will enable the required analysis to determine the spectrum requirements and potential frequency bands to take place in the appropriate ITU-R study group(s).

Annex

**Subject: 2012 World Radiocommunication Conference Agenda Item 8.2 Proposal to support the introduction of new allocations in the Aeronautical Mobile Service.**

**Origin: United States of America**

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**Proposal:** To consider spectrum requirements and possible regulatory actions, including allocations, to support wireless avionics intra-communications (WAIC) systems, based on ITU-R studies in accordance with Resolution [WAIC-X] (WRC-12)

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**Background/reason:** The commercial aviation industry is developing the next generation of aircraft to provide airlines and the flying public more cost-efficient, safer, and more reliable aircraft. It is believed that wireless technologies can reduce the weight of systems on an aircraft, thereby reducing the amount of fuel required to fly and providing significant cost savings. Installed wireless avionics intra-communications (WAIC) systems are one way to derive these benefits.

**Radiocommunication services concerned:** All services.

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**Indication of possible difficulties:** None

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**Previous/ongoing studies on the issue:** Report ITU-R M. [WAIC] as approved at November 2010 Study Group 5 meeting.

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<b>Studies to be carried out by:</b> ITU-R Study Group 5, Working Party 5B.	<b>with the participation of:</b> ICAO
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**ITU-R Study Groups concerned:** Study Groups 4, 5, 6, and 7.

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**ITU resource implications, including financial implications (refer to CV126):** -- Minimal.

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**Common regional proposal:** No

**Multicountry proposal:** No

**Number of countries:**

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**Remarks**

**Document WAC/115(08.03.11)**

Ms. Mindel De La Torre  
Chief of the International Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA) on behalf of the Executive Branch agencies, approves the release of the attached Executive Branch proposal for WRC-12 agenda item 8.2 broadband wireless access. NTIA proposes to modify Resolution 806 (WRC-07) to add a WRC-15 future conference agenda item for broadband wireless access.

NTIA considered the Federal agencies' input toward the development of U.S. proposals for WRC-12. NTIA forwards this package for your consideration and review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

*(Original Signed January 28, 2011)*

Karl B. Nebbia  
Associate Administrator  
Office of Spectrum Management



**UNITED STATES OF AMERICA**  
**DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE**

**Agenda item 8.2:** *to recommend to the Council, items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution 806 (WRC-07)*

**Background Information:** The dual trends of greater bandwidth demands and the desire of users for mobile access have led to broadband wireless access (BWA) and other emerging technologies. Few technological developments hold as much potential to enhance economic development and improve the quality of our lives as wireless high-speed access to the Internet. Expanded broadband wireless access potentially will trigger the creation of innovative new businesses, provide cost-effective connections in developing countries and under-served areas, increase productivity, improve public safety, and allow for the development of mobile telemedicine, telework, distance learning, and other new applications that will transform lives.

*Healthcare*

Information technology plays a key role in improving health and health care delivery. BWA can improve care quality, safety, efficiency, and reduce disparities in health care. Increased access to broadband will serve to engage patients and families in managing their health and enhance care coordination.

Broadband access might help ensure adequate privacy and security of health information. Increased access to broadband wireless systems can dramatically improve the collection, presentation and exchange of health care information, and provide clinicians and consumers the tools to transform care. Technology alone cannot heal, but when appropriately incorporated into care, technology can help health care professionals and consumers make better decisions, become more efficient, engage in innovation, and understand both individual and public health more effectively.

*Education*

Broadband can be an important tool to help educators, parents and students meet major challenges in education. A country's economic welfare and long-term success depend on improving learning for all students, and broadband-enabled solutions hold tremendous promise to help reverse patterns of low achievement and lack of access. With broadband, students and teachers can expand instruction beyond the confines of the physical classroom and traditional school day. Broadband can also provide more customized learning opportunities for students to access high-quality, low-cost and personally relevant educational material. Broadband can improve the flow of educational information, allowing teachers, parents and organizations to make better decisions tied to each student's location, needs and abilities. Improved information flow can also make educational product and service markets more competitive by allowing school districts and other organizations to develop or purchase higher-quality educational products and services.

### *Economic Growth*

Broadband and the Internet make it possible for small businesses to reach new markets and improve their business processes. They have also become a critical pathway for individuals to gain skills and access careers. It is a core infrastructure component for local communities seeking to attract new industries and skilled work forces. As a result, small businesses, workers, and communities must have the broadband infrastructure, training and tools to participate and compete in a changing economy. Broadband can help every community.

### *Government Services*

Smarter use of broadband can facilitate a vast change in government. Like private companies, government can make its services available 24 hours a day, seven days a week, 365 days a year. Broadband-enabled online services can create paths across government's bureaucratic silos so that someone wanting to access unemployment benefits can deal with the local government and the federal government at the same time. Broadband holds the potential to move all government forms online, eliminating paperwork. Broadband allows for online tutorials for simple government services, which can help free government employees to focus on the most complicated cases. And broadband can increase efficiency by increasing the speed and depth of cooperation across departments and across different levels of government.

### *Civic Engagement*

Civic engagement starts with an informed public, and broadband can help by strengthening the reach and relevance of mediated and unmediated information. Broadband can enable government to share unmediated information more easily. Providing more information and data to the public about the processes and results of government can strengthen the citizenry and its government. Broadband can also empower citizens to engage their government through new broadband-enabled tools. Broadband has already increased access to information and revolutionized the way citizens interact with each other.

### *Public Safety*

There are significant benefits, including cost efficiencies and improved technological advancement, if the public safety community can increasingly use applications and devices developed for commercial wireless broadband networks. Ultimately, this system must be flexible, allowing public safety entities to forge incentive-based partnerships with commercial operators and others. This system will allow the public safety community to realize the benefits of commercial technologies, which will reduce costs and ensure the network evolves.

As the use of BWA and other emerging technologies expands, however, existing fixed and mobile service allocations available for BWA may not be adequate to meet the growing demand. Furthermore, the benefits of global or regional harmonization of frequency bands for new BWA and other emerging technologies may not be realized unless adequate spectrum is identified for this purpose. One administration has estimated that a total of 500 MHz may need to be available for fixed and mobile broadband use within the coming 10 years.

### **Proposal:**

**MOD** USA/8.2/1

RESOLUTION 806 (WRC-~~07~~12)

**~~Preliminary a~~Agenda for the 2015 World  
Radiocommunication Conference**

The World Radiocommunication Conference (Geneva, 20~~07~~12),

**Reasons:** To modify the agenda for WRC-15 to add a new item.

**ADD** USA/8.2/2

**2.n** based on studies to determine spectrum requirements for broadband applications and available spectrum in existing fixed and/or mobile allocations in the frequency range 400-4 400 MHz, to consider possible additional allocations to the fixed and/or mobile services in the frequency range 400-4 400 MHz, in accordance with Resolution [USA-~~nn~~] (WRC-12)

**Reasons:** Available spectrum for BWA services may not be adequate to meet the growing worldwide demand. This agenda item will consider additional allocations, based on identified spectrum requirements, to meet this demand.

**ADD** USA/8.2/3

RESOLUTION [USA-NN] (WRC-12)

**Additional allocations to the fixed and mobile services for future broadband  
wireless access (BWA) systems in the frequency range 400-4 400 MHz**

The World Radiocommunication Conference (Geneva, 2012),

*considering*

- a) that there is increased worldwide demand for broadband wireless access (BWA) services;
- b) that multimedia applications on mobile devices have increased the bandwidth requirements and expectations of mobile users;
- c) that the availability of new and innovative telecommunication devices has spurred demand for wireless access to the Internet;
- d) that expanded broadband wireless access is expected to trigger new business opportunities, provide the potential for cost-effective connections in developing countries and underserved areas, increase productivity and improve public safety;
- e) that expanded broadband wireless access also is expected to allow for the development of mobile telemedicine, telework, distance learning, and other new applications;
- f) that it is uncertain whether current allocations to the fixed and/or mobile service will be sufficient to meet projected requirements for BWA;

g) that there may be a need for additional suitable spectrum worldwide to meet this demand,

*further considering*

a) that among other bands, the bands 1 695-1 710 MHz and 4 200-4 400 MHz may provide opportunities for BWA, if improved efficiency in the meteorological services and the aeronautical radionavigation service can be achieved;

b) that the band 1 700-1 710 MHz is allocated to the mobile, except aeronautical mobile, service on a primary basis worldwide, and that the band 1 690-1 700 MHz is allocated to the mobile, except aeronautical mobile, service on a secondary basis in Region 1;

c) that the band 1 675-1 710 MHz is allocated to the meteorological-satellite (space-to-Earth) service, and that the band 1 675-1 700 MHz is allocated to the meteorological aids service on a primary basis worldwide;

d) that the band 1 700-1 710 MHz is allocated to the fixed service on a primary basis worldwide, and that the band 1 690-1 700 MHz is allocated to the fixed service on a secondary basis in Region 1;

e) that the band 4 200-4 400 MHz is allocated on a primary basis to the aeronautical radionavigation service (ARNS);

f) that the use of the band 4 200-4 400 MHz is reserved exclusively for radio altimeters installed on board aircraft and for the associated transponders on the ground (No. **5.438**), and that radar altimeters provide a critical safety service (No. **4.10**) used for aircraft landings and ground proximity warning;

g) that the standard frequency and time signal-satellite service may be authorized to use the frequency 4 204 MHz for space-to-Earth transmissions, and that such transmissions shall be confined within the limits of  $\pm 2$  MHz, subject to agreement contained under No. **9.21** (No. **5.440**);

h) that the Earth exploration-satellite (passive) and space research services may be authorized for use in the 4 200-4 400 MHz band on a secondary basis (No. **5.439**);

i) that the potential for reallocating portions of the lower and upper ends of the band 4 200-4 400 MHz is based on preliminary radar altimeter emission data indicating that those portions of the band may not currently be heavily used by radar altimeters,

*recognizing*

a) the need to protect existing services when considering frequency bands for possible additional mobile and/or fixed service allocations for identification for BWA;

b) the economic benefits that the further development of BWA is expected to bring to countries;

c) the role that BWA could play in bridging the digital divide, especially in underdeveloped or rural areas of the world;

d) the need to balance commercial wireless service use of the radio spectrum with other priorities established by individual administrations;

e) that any fixed and mobile service bands that are found suitable for BWA applications should not preclude the use of these allocations for other fixed and mobile service applications or establish priority in the Radio Regulations;

f) that in support of Report ITU-R M.1186 (1990) on the use of the frequency band 4 200-4 400 MHz by radio altimeters, the International Civil Aviation Organization (ICAO) conducted a survey of its member states and major manufacturers of radio altimeters;

g) that Report ITU-R M.1186 (1990) concludes that the whole of the band 4 200-4 400 MHz should remain allocated to ARNS and reserved exclusively for radio altimeters to at least the year 2015;

*h)* that Report ITU-R M.1186 (1990) states that based on a limited sample of currently available radar altimeters in the frequency band 4 200-4 400 MHz, that it would be imprudent to reduce the frequency band while the current equipment is still in operation;

*i)* that Report ITU-R M.1186 (1990) states that new or alternative FM continuous wave techniques might provide the same accuracy in smaller bandwidth and, if this proves to be true, that it may be possible to reduce the allocated bandwidth in the frequency band 4 200-4 400 MHz (around the year 2015),

*noting*

that ITU-R is reviewing and updating M- and F-Series Reports and Recommendations on the characteristics and framework of BWA systems, taking into account the current state of wireless technology,

*resolves*

1 to invite ITU-R to conduct studies on the spectrum requirements for BWA, including determination of whether existing fixed and/or mobile service allocations are sufficient to satisfy any validated requirements;

2 to invite ITU-R to conduct sharing and compatibility studies between BWA and existing services, taking into account the *noting*, if existing fixed service and mobile service allocations are found to be insufficient to meet the projected requirements of BWA, as per *resolves* 1, in the frequency range 400-4 400 MHz, with a view to:

- identifying suitable spectrum for BWA in existing mobile and/or fixed service bands, with particular attention on those bands currently identified in the Radio Regulations for International Mobile Telecommunications use, for possible re-identification for, or inclusion of, BWA;
- considering allocations of additional spectrum to the mobile and/or fixed service, as required, for identification for BWA;
- protecting the incumbent services in these bands and those in adjacent bands that could be impacted by the expected increased density resulting from the deployment of ubiquitous mobile broadband devices, including the expected use in some administrations on an unlicensed basis;

3 to invite ITU-R, as a priority, to conduct the studies described in *resolves* 2 specifically in the following bands:

- 1 695-1 710 MHz, which has frequency allocations as described in *further considerings b)* through *d)*;
- 4 200-4 400 MHz, which has frequency allocations as described in *further considerings e)* through *i)* and *recognizings f)* through *i)*;

4 to report the results of studies in *resolves* 1, 2 and 3 to WRC-15,

*invites administrations*

to contribute to these sharing studies by, *inter alia*, providing information on their use of the existing services in candidate bands and expected characteristics of future broadband wireless systems,

*invites ITU-R*

to complete the necessary studies, as a matter of urgency, taking into account the needs of the current uses of the allocated bands and adjacent bands, as well as the rapidly expanding demand worldwide for BWA services and the need to provide adequate spectrum for that purpose,

*instructs the Secretary-General*

to bring this Resolution to the attention of the International Maritime Organization (IMO), International Civil Aviation Organization (ICAO), World Meteorological Organization (WMO) and other international and regional organizations concerned.

**Reasons:** This resolution provides guidance to the ITU-R on conducting studies in support of the agenda item.

ATTACHMENT

**Proposal for an additional WRC-15 agenda item to provide identified spectrum for broadband wireless access systems**

**Subject:** Proposed WRC-15 agenda item to provide identification of spectrum for broadband wireless access systems

**Origin:** United States of America

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**Proposal: To study additional new fixed and mobile service allocations for broadband wireless access.**

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**Background/reason:**

Demand for broadband data supporting access to government services, telemedicine, and other essential applications is growing worldwide. This agenda item will provide an opportunity to determine the need for spectrum, and to identify suitable spectrum for this purpose through sharing studies of candidate frequency bands.

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**Radiocommunication services concerned:**

MSS, F, M, RA, SRS, RLS, ARS, EESS, ARNS, RNSS, BS, BSS, SO, RDSS, Metatds, Metsat

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**Indication of possible difficulties:**

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**Previous/ongoing studies on the issue:**

*Several studies have been performed in SG 5 on Broadband Wireless Access*

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<b>Studies to be carried out by:</b>	<b>with the participation of:</b>
WP 5A	WP's 4A, 4B, 4C, 5B, 5C, 5D, 6A, 7B, 7C, 7D

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**ITU-R Study Groups concerned:**

SG's 4, 5, 6, 7

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**ITU resource implications, including financial implications (refer to CV126):**

Nothing beyond normal ITU-R work

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**Common regional proposal:** Yes/No

**Multicountry proposal:** Yes/No

**Number of countries:**

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**Remarks** \_\_\_\_\_

**Document WAC/117(08.03.11)**

Ms. Mindel De La Torre  
Chief of the International Bureau  
Federal Communications Commission  
445 12<sup>th</sup> Street SW  
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA) on behalf of the Executive Branch agencies, approves the release of the attached Executive Branch proposal for WRC-12 agenda item 8.2 nanosatellites. NTIA proposes a new resolution and future conference agenda item on nanosatellites for WRC-19.

NTIA considered the Federal agencies' input toward the development of U.S. proposals for WRC-12. NTIA forwards this package for your consideration and review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

*(Original Signed February 23, 2011)*

Karl B. Nebbia  
Associate Administrator  
Office of Spectrum Management



## UNITED STATES OF AMERICA

### DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

**Agenda Item 8.2:** *to recommend to the Council, items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution 806 (WRC-07)*

**Background Information:** The use of nanosatellites and picosatellites, satellites having mass less than 10 kg,<sup>1</sup> is increasing for a variety of applications, including meteorology, space research and telecommunications. A large number of administrations from all ITU regions have launched these satellites. Academic and research institutions are designing and developing many more projects, with launches planned over the next few years.

These satellite systems exhibit certain characteristics:

- a) they are built at low cost using off-the-shelf equipment, often based on a standard structural design;<sup>2</sup>
- b) they employ off-the-shelf radiocommunication hardware that is small, lightweight, economical, and adaptable to a wide variety of missions;
- c) they are launched as secondary payloads when space is available on launch vehicles; thus the launch date is not known well in advance;
- d) the launch vehicle deploys them in a low-Earth orbit, though orbital parameters are not known in advance with any precision;<sup>3</sup>
- e) they generally have no attitude control and must use antennas with little directional gain for both uplinks and downlinks;
- f) data download and command and control uplinks may involve a variety of earth stations depending on requirements, including earth stations not operated by those responsible for the satellite; and
- g) their useful lifetime is unpredictable, but can range from a few weeks to a few years.

To date, a number of these satellites have been using frequency bands near 400 MHz allocated to the meteorological-satellite service or the amateur-satellite service for data downlinks, though the satellite mission may not be consistent with those services. This proposal addresses the need for one or more frequency bands to support command, control, and data relay for nanosatellites and picosatellites performing a variety of functions. It also addresses regulatory procedures for these satellites.

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<sup>1</sup> The terms *nanosatellite* and *picosatellite* may refer to satellites having mass in the range 1-10 kg, or less than 1 kg, respectively.

<sup>2</sup> The academic and amateur-satellite communities, and others, developed the *Cubesat* standard for low-cost satellites in the late 1990's; the basic *Cubesat* standard, now widely adopted, consists of a 10 cm cube with mass of about 1 kg; a nanosatellite may consist of several stacked *Cubesat* modules; some launch vehicles include spring-loaded containers designed to deploy satellites built to the *Cubesat* standard.

<sup>3</sup> The trajectory of the launch vehicle, which is optimized for delivery of the primary payload, largely determines the orbital parameters of the nanosatellite or picosatellite.

**Proposal:**

**ADD** USA/8.2/1

RESOLUTION XXX (WRC-12)

**Preliminary Agenda for the 2019 World Radiocommunication Conference**

**Reasons:** To add a new item to the preliminary agenda of WRC-19.

**ADD** USA/8.2 /2

**2.AA** to consider the results of ITU-R studies, and based on the studies designate up to 10 MHz of spectrum, along with appropriate regulatory procedures, to accommodate command, control and data relay for nanosatellites and picosatellites in the 400-2 025 MHz range, in accordance with Resolution [ZZZ] (WRC-12).

**Reasons:** Nanosatellites and picosatellites have characteristics unlike those of larger satellites and provide a growing variety of functions, mostly in meteorology, space research, and Earth sciences.

**ADD** USA/8.2/3

RESOLUTION ZZZ (WRC-12)

**Studies for identifying up to 10 MHz of spectrum for the space research service in the 400-2 025 MHz range for the operation of nanosatellites and picosatellites**

The World Radiocommunication Conference (Geneva, 2012),

*considering*

- a) that nanosatellites and picosatellites are low-cost satellites having mass no greater than 10 kg;
- b) that the lifetime of these satellites ranges from a few weeks to a few years;
- c) that these satellites are increasingly used in studies of the Earth, the Earth's atmosphere and the near-Earth environment, and in a variety of other fields;
- d) that these satellites have distinctive characteristics that affect spectrum and regulatory requirements for command, control and data relay;
- e) that it is desirable to have a designated band to accommodate command, control and data relay for these satellites;
- f) that it is also desirable to have regulatory provisions for these satellites that take into account their unique characteristics;

g) that some experiments require the simultaneous operation of several such satellites and that fifty or more of these satellites may be released during a single launch;

*recognizing*

a) the need to protect existing services in the 400-2 025 MHz range;

b) that the requirements in Article 9 for the advanced publication of information of satellite systems that is not subject to coordination and Article 11 for notification and recording of frequency assignments apply,

*resolves to invite ITU-R*

1 to conduct studies to identify up to 10 MHz in the 400-2 025 MHz range to accommodate command, control and data relay operations for nanosatellites and picosatellites, while ensuring the protection of the services, particularly safety-of-life services, allocated to these bands;

2 to study the regulatory procedures applicable to these satellites,

*resolves to invite WRC-19*

1 to review the results of the studies in *resolves to invite ITU-R* 1 and 2, with a view to provide a designated band or bands in the space research service to accommodate command, control and data relay for nanosatellites and picosatellites on a primary, worldwide basis;

2 to consider appropriate modifications to the Table of Frequency Allocations and to develop appropriate regulatory provisions based on proposals from administrations,

*invites administrations*

to participate actively in the studies by submitting contributions to ITU-R.

**Reasons:** Nanosatellites and picosatellites that have distinctive characteristics and are increasingly used for many purposes require a designated band that can be used for operations, including command, control, and data transmission.

**ATTACHMENT**

**PROPOSAL FOR AGENDA ITEM**

**Subject:** Proposed Future Agenda Item for WRC-2019, to conduct studies to identify up to 10 MHz in the 400-2 025 MHz range, designated for the operations of nanosatellites and picosatellites,

**Origin:** United States of America

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**Proposal:** to consider the results of ITU-R studies, and based on the studies to identify up to 10 MHz of spectrum in the 400-2 025 MHz range, in order to support operations of nanosatellites and picosatellites, in accordance with Resolution [ZZZ] (WRC-12).

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**Background/reason:** The use of nanosatellites and picosatellites is increasing for a variety of applications, including meteorology, space research, and telecommunications. The increasing variety of activities that are conducted from these satellites makes it necessary to find a dedicated band for their operations, under a suitable service.

**Radiocommunication services concerned:** services operating in the 400-2 025 MHz bands.

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**Indication of possible difficulties:** TBD

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**Previous/ongoing studies on the issue:** TBD

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**Studies to be carried out by:** WP 7B

with the participation of: **WP 4C, WP 5B, and WP7C**

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**ITU-R Study Groups concerned:** SG7

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ITU resource implications, including financial implications (refer to CV126): **Minimal**

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**Common regional proposal:** Yes/No

**Multicountry proposal:** Yes/No

Number of countries:

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**Remarks**

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