ATTACHMENT 1
to FCC Public Notice DA 13-330

Recommendations presented at 7 March 2013 Meeting of the Advisory Committee for the 2015 World Radiocommunication Conference

Maritime Aeronautical and Radar Services

Document WAC/037(07.03.13)

PROPOSED EDITS TO NTIA PRELIMINARY VIEW ON WRC-15 AI 1.13
(REF. WAC/032(07.03.13))

UNITED STATES OF AMERICA

DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda Item 1.13: *to review No. **5.268** with a view to examining the possibility for increasing the 5 km distance limitation and allowing space research service (space-to-space) use for proximity operations by space vehicles communicating with an orbiting manned space vehicle, in accordance with Resolution **652 (WRC 12)***

Background Information: WARC-92 allocated the band 410-420 MHz to the space research service (SRS) on a secondary basis for extra-vehicular activity (EVA) communications in the immediate vicinity of low earth orbit (LEO) manned space vehicles, and limited the use of the band by the SRS to EVA operation within 5 kilometers (km) of orbiting manned space vehicles. WRC-97 upgraded the allocation to the SRS in the band 410-420 MHz to primary status and No. **5.268** specified a set of power flux-density (pfd) limits to ensure protection of the fixed and mobile services while retaining the 5 km distance limitation for EVA operation.

Resolution **652 (WRC-12)**, recognizing c, states that "power flux-density (pfd) limits contained in No. **5.268** ensure the protection of terrestrial stations operating in the fixed and mobile services independent of the distance from, or the source of, space-to-space communications in the SRS." Also, long-term space exploration objectives require new activities around a manned space station other than EVA, such as visiting vehicles for crew transportation/cargo re-supply and free-fly proximity vehicles for inspection and maintenance. These vehicles need to initiate communication over distances greater than 5 km to ensure proper vehicle positioning, data exchange and system monitoring. ITU-R sharing studies within Working Party 7B demonstrate that communication links for a variety of space vehicles other than EVA can meet the pfd limits in No. **5.268** for distances beyond 5 km by using different modulation, spreading technologies, and power control schemes (7B/88 Annex 1, Preliminary Draft New Report ITU-R SA.[Proximity operations] - "Sharing conditions between space research service proximity operations links and fixed and mobile service links in the 410-420 MHz band).

Therefore, it is necessary to modify No. **5.268** to remove both the 5 km distance limitation and restriction to EVA operation while maintaining the pfd limits. Removal of these two restrictions will allow for greater flexibility in using the band 410-420 MHz for space research activities while maintaining protection of the terrestrial services.

Proposal:

MOD USA/AI 1.13/1

5.268 Use of the band 410-420 MHz by the space research service is limited to space-to-space communications with ~~within 5 km of~~ an orbiting, manned space vehicle. The power flux-density at the surface of the Earth produced by emissions from stations of ~~extra-vehicular activities~~ the space research service (space-to-space) in the band 410-420 MHz shall not exceed -153 dB(W/m^2) for $0° \le \delta \le 5°$, $-153 + 0.077\ (\delta - 5)$ dB(W/m^2) for $5° \le \delta \le 70°$ and -148 dB(W/m^2) for $70° \le \delta \le 90°$, where δ is the angle of arrival of the radio-frequency wave and the reference bandwidth is 4 kHz. ~~No. **4.10** does not apply to extra-vehicular activities.~~ In this frequency band the space research (space-to-space) service shall not claim protection from, nor constrain the use and development of, stations of the fixed and mobile services. No. 4.10 does not apply. (WRC-~~97~~15)

Reasons: Modify No. **5.268** to remove both the 5 km distance limitation and restriction to EVA operation while maintaining the pfd limits to protect the terrestrial services.

SUP USA/AI 1.13/2

RESOLUTION 652 (WRC-12)

Use of the band 410-420 MHz by the space research service (space-to-space)

Reasons: ITU-R Working Party 7B completed required studies and this resolution is no longer needed.

Document WAC/038(07.03.13)

UNITED STATES OF AMERICA

DRAFT PRELIMINARY VIEWS FOR WRC-15

Agenda Item 1.16: to consider regulatory provisions and spectrum allocations to enable possible new Automatic Identification System (AIS) technology applications and possible new applications to improve maritime radiocommunication in accordance with **Resolution 360 (WRC-12)**;

BACKGROUND: Automatic Identification System (AIS) is a maritime communication and safety of navigation system operating in the VHF band and is used for vessel collision avoidance as well as the delivery of information about specific details of the vessel. Further, consequential to the introduction of the AIS-SART for search and rescue operations, the AIS channels were added to Appendix 15 of the International Radio Regulations.

With increasing demand for maritime VHF data communications, AIS has become heavily used for maritime safety, maritime situational awareness and port security. As a result, overloading of AIS1 and AIS2 has created a need for additional AIS channels. International Maritime Organization (IMO) Resolution MSC 74(69) required that AIS, "…improve the safety of navigation by assisting in the efficient navigation of ships, protection of the environment, and operation of Vessel Traffic Services (VTS), by satisfying the following functional requirements: 1) in a ship-to-ship mode for collision avoidance; 2) as a means for littoral States to obtain information about a ship and its cargo; and 3) as a VTS tool, i.e. ship-to-shore (traffic management)". The International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) has advised in its Maritime Radio Communication Plan (MRCP) that additional AIS channels are required for ship-to-ship and ship-to-shore maritime safety information (MSI) and general data communications (i.e. Area Warnings, Meteorological and Hydrological Data, Channel Management of AIS, future VHF Digital Data Channels, and Ship-shore Data Exchange).

Although satellite detection of AIS on AIS 1 and AIS 2 was proven to be possible, its effectiveness was determined to be unacceptably limited where VDL loading is high. The need for a separate dedicated service on separate dedicated channels was confirmed by WRC-12 and two additional channels were designated. While this new designation solves the problem for satellite detection, AIS VDL loading remains a serious issue to an increasing degree in many parts of the world due to the proliferation of AIS applications, message types, services and equipment types plus the unanticipated increase in user volume. To solve this problem and protect the integrity of the AIS VDL, AIS subject matter experts in IALA are considering a revision to the AIS system which would move Application Specific Messages (ASM) to two additional AIS channels. WRC-12 acknowledged this concept in its revision of Appendix 18 and provided four candidate channels on an experimental basis for this evaluation.

There is a need for studies to address potential terrestrial and satellite communication systems, which can provide additional Distress and Safety communication links, in the remote GMDSS Sea Area A4.

The United States also notes the progress at the "Workshop on International Standardization of Next Generation AIS" (Tokyo, Japan 2012). That workshop recommended that the Next Generation AIS should be comprised of an integrated AIS + VDE (VHF Data Exchange) and that this new hybrid should be named VHF Data Exchange System (VDES).

U.S. VIEW: The United States supports studies to address potential terrestrial and satellite communication systems and also supports the completion of studies and the development of an international standard for the prospective new VDES.

Terrestrial Services

Document WAC/034(07.03.13)

UNITED STATES OF AMERICA

DRAFT PRELIMINARY VIEWS FOR WRC-15

Agenda Item 1.1: to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC-12)**

BACKGROUND: Proposals have been introduced in WP 5D specifying frequency ranges between 1000 and 1700 MHz as suitable for IMT/ mobile broadband. The band 1435-1525 MHz, or portions thereof, have been included as "suitable frequency ranges" for IMT/mobile broadband applications for purposes of initiating inter-service compatibility and sharing studies to be conducted by Joint Task Group 4-5-6-7 under 2015 World Radiocommunication Conference (WRC-15) Agenda Item 1.1.

The band 1435-1525 MHz has long been used for flight testing in the United States. Along with the band 2360-2390 MHz, it is in *the critical path* for aerospace research and development, and for certifying aircraft to safety standards. Flight testing requires real-time data for the protection of the pilot and aircrew, the test aircraft, and people and property on the ground. This data must be transmitted in protected radio bands to minimize the chance of interference/interruption to critical safety communications. In the event disaster strikes, and the aircraft is lost, the real-time data collected via radio telemetry enables engineers to more quickly isolate the cause, and effect the completion of design changes. Aeronautical mobile telemetry ("AMT") spectrum also enables aerospace manufacturers to achieve material efficiencies in their test programs. It enables a test aircraft to clear multiple test points in a single flight.

Aerospace manufacturing is a multinational business. Manufacturing facilities are located in CITEL nations, as well as facilities which supply essential parts and components for aircraft which undergo final assembly in neighboring countries. Thus, it is important for our Region that access to AMT spectrum remains assured and protected.

The international community has long protected spectrum resources (such as 1435-1525 MHz (herein referred to as the "L-band") and 2360-2390 MHz) dedicated for flight testing. Prior to the 2003 World Radiocommunication Conference, the sharing possibilities between the L-band and Mobile Satellite Service downlinks were studied intensively. Section 2.8.1.2.1(b) to the CPM Report for WRC-03 included the following:

> "Studies submitted to the ITU-R show, in accordance with Recommendation ITU-R M.1459, that GSO MSS and aeronautical mobile telemetry are fundamentally incompatible under co-coverage scenarios, and that sharing is not feasible without causing harmful interference to AMT operations. AMT systems use low-gain transmit antennas (~2 dBi) and high gain (30 dBi) receive antennas. GSO MSS satellites use extremely high gain (~40 dBi) downlink antennas and mobile earth stations use low-gain (~2 dBi) receive antennas. This fundamental asymmetry in the competing links precludes sharing if an MSS satellite is within line of sight of an AMT ground

station and exceeds the protection levels in Recommendation ITU-R M.1459. Without meeting the protection levels in Recommendation ITU-R M.1459, GSO MSS satellites in Region 1 and 3 visible to AMT ground stations in Region 2 will interfere with AMT operations."

Subsequently, WRC-03 adopted a change to Article 21, Table 21-4, which established a "pfd fence" to protect flight test centers and ranges in substance as follows: pfd limits consistent with Recommendation ITU-R M.1459 [-181 dB (W/m^2) in 4 kHz at low elevation angles] to protect AMT systems west of 71° W, and more relaxed levels for AMT systems operating in Alaska, Hawaii and Puerto Rico.[1]

The use of the band 1435-1525 MHz for AMT systems is essential for the aerospace manufacturing industry in the Americas. Given this fact, the prior ITU-R studies, and the protection obligations for AMT in the Radio Regulations, it is unlikely that terrestrial broadband operations – whether from high-powered base stations or from ubiquitously-deployed user devices – will be able to co-exist with AMT in Region 2.

More specifically, RR 5.343 provides that "In Region 2, the use of the band 1435-1525 MHz by the aeronautical mobile service for telemetry has priority over other uses by the mobile service." Moreover, the U.S. took an alternative allocation for the sub-band 1452-1492 MHz on account of this. See RR 5.344. Within the United States, the band 1435-1525 MHz is and will remain allocated exclusively to the mobile service for aeronautical telemetry.

U.S. VIEW: The U.S. supports retaining the priority for aeronautical telemetry over other mobile services in Region 2 that is provided by RR No. 5.343, noting the need for test ranges to be free of cross-border interference. Stringent limits based on Recommendation ITU-R M.1459 remain necessary to protect AMT facilities against interfering signals. Thus, the U.S. does not support the globally harmonized identification of the 1435-1525 MHz band for IMT.

The U.S. does not object to potential studies on the use of the 1435-1525 MHz band outside of Region 2 for IMT, provided that the studies would include identification of measures to assure protection of AMT, and footnote RR 5.343, for Region 2. In 2003, MSS proponents for the 1435-1525 MHz band used relaxed AMT parameters in Region 1, and attempted to apply the sharing results to all three Regions. The U.S. is of the view that any AMT/IMT studies as well as regulatory provisions emanating therefrom, which may be Region-specific, should not be automatically applied to Region 2.

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[1] In passing, it may be noted that Recommendation ITU-R M.1459 has been applied in the terrestrial context by the Federal Communications Commission (co-channel sharing with medical telemetry and adjacent band compatibility with Wireless Communications Systems). It has also been referenced in ITU-R studies on AMT compatibility with satellite earth stations and the fixed and mobile services (Report M.2119 at page 3).

Document WAC/035(07.03.13)

PROPOSED EDITS TO NTIA PRELIMINARY VIEW ON WRC-15 AI 1.1
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UNITED STATES OF AMERICA

DRAFT PRELIMINARY VIEWS FOR WRC-15

Agenda Item 1.1: to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC-12)**

BACKGROUND: Third- and fourth-generation advanced wireless systems provide terrestrial and satellite-based broadband and multi-media capabilities, and represent a path for expanding broadband capabilities and coverage areas. It is important for administrations to identify spectrum that could be made available for terrestrial mobile broadband as administrations plan their spectrum use and as industry plans to meet the marketplace requirements of the future. The early identification of spectrum is critical to the timely introduction of new broadband services due to the time required to complete the reallocation process, which could include developing service rules or sharing methods, conducting auctions, relocating incumbent users to comparable spectrum as necessary, and the redesign of incumbent systems to accommodate new operations.

The United States considered the entire band 1 675-1 710 MHz as a candidate for terrestrial mobile broadband. The band 1 675-1 710 MHz includes co-primary allocations to the meteorological aids service, the meteorological-satellite service (space-to-Earth), and an additional co-primary allocation to the mobile service in the frequency range 1 675-1 690 MHz. The United States and other countries operate meteorological aids in the frequency range
1 675-1 683 MHz. Meteorological aids provide data critical to the accuracy of global weather prediction models and calibration of meteorological satellite sensor data. There is no suitable alternative for the in-situ measurements provided by meteorological aids and loss of data would have a significant negative impact on global weather prediction. Application of exclusion zones or other sharing mechanisms is impractical due to the large number of fixed and transportable meteorological aids stations releasing transmitters that drift up to 250 km while in flight.

Emergency managers and the public currently rely on information that National Oceanographic and Atmospheric Administration (NOAA) satellites broadcast in the 1 690-1 695 MHz range. This information includes severe weather warnings and forecasts via the Emergency Manager's Weather Information Network and re-broadcast data from ground-based sensors, such as flood gauges. NOAA's satellite command and control communications reside in the frequency range of 1 690-1 695 MHz. It is difficult to provide alternative communications to users who do not have reliable Internet access or who are in areas where a weather event has degraded or destroyed power or communications infrastructure. Without the data provided by meteorological satellite transmissions, emergency managers and other users would have to receive broadcasts through another transmission means, such as commercial satellite

broadcasts with an equivalent amount of reliability and availability present in current direct broadcast transmissions. The studies concluded that mobile broadband systems are incompatible with existing meteorological systems in the range of 1 675-1 695 MHz.

The United States determined that the range 1 695-1 710 MHz offers opportunity for mobile broadband while minimizing disruption of meteorological operations upon which the domestic and international public safety and weather prediction communities depend. Initial studies in the United States concluded that the use of some geographical limitations on terrestrial mobile broadband could protect the limited number of critical meteorological earth stations within 1 695-1 710 MHz. More recent studies resulted a framework for sharing the band that protects incumbent meteorological operations while maximizing the opportunity for commercial use. The framework recognizes the need to protect the operations of both the co-channel polar orbiting satellites as well as geostationary operations in the adjacent 1675-1695 MHz band. The framework provides for deployment of commercial operations outside of the Protection Zones without any coordination. It also permits commercial operations within the Protection zone following a successful coordination process concluding that such commercial operations can meet specified conditions and will not cause harmful interference to ensure no loss of meteorological capability within the protection zones. If coordination is unsuccessful, commercial operations will not be permitted within the Protection Zone.

U.S. VIEW: The United States supports studies to develop technical requirements that would allow a primary mobile, except aeronautical mobile, allocation in the 1695-1700 MHz band, and identification for broadband wireless systems including IMT, in the band 1 695-1 710 MHz. These studies should identify sharing arrangements to ensure protection of existing services, namely meteorological-satellite earth stations.

Document WAC/036(07.03.13)

UNITED STATES OF AMERICA

DRAFT PRELIMINARY VIEWS FOR WRC-15

Agenda Item 1.1: to consider additional spectrum allocations to the mobile service on a primary basis and identification of additional frequency bands for International Mobile Telecommunications (IMT) and related regulatory provisions, to facilitate the development of terrestrial mobile broadband applications, in accordance with Resolution **233 (WRC-12)**

BACKGROUND: The World Radiocommunication Conference 2012 (WRC-12) adopted WRC-15 Agenda Item 1.1 in an effort to meet the dramatic increase in demand for mobile broadband applications. Radio Local Area Networks (RLANs) have become an important component of broadband connectivity for consumers and businesses. The volume of traffic over the RLAN networks is growing as it supports local area networks as well as data offloading for mobile networks. Data traffic over RLANs is expected to grow even more as devices such as tablets are sold that connect to the internet solely through RLANs.

The World Radiocommunication Conference-2003 (WRC-03) allocated the bands 5150-5350 MHz and 5470-5725 MHz on a primary basis to the mobile service for the implementation of wireless access systems including RLANs, subject to Resolution 229 (Rev. WRC-12) (see No.5446A). Resolution 229 (Rev. WRC-12) establishes the regulatory, operational and technical provisions that ensure compatibility with the primary services in the subject bands. The WRC-03 action has enabled significant growth of RLANs while ensuring protection of other services.

RLANs have been utilized to provide local area access to the Internet for over a decade. Over that period, RLAN technology has evolved to provide higher data rates. However, wired and wireless broadband connections into the home or business also have increased data rates as fiber is now closer to the premise, 3G deployments are being replaced by LTE, etc. Therefore, it is crucial for RLAN technology to continue to evolve to support these increased data rates.

The newest RLAN evolution, IEEE 802.11ac, can support higher speeds with a theoretical maximum speed of 3.5 Gbps and actual throughputs for end users of greater than 2 Gpbs utilizing four antennas. (Note that IEEE 802.11ac utilizing 8 antennas can support a theoretical maximum speed of 6.9 Gbps). However, these throughputs depend on the availability of wide spectrum channels. IEEE 802.11ac will utilize 80 to 160 MHz wide channels compared to 20-40 MHz channels utilized by today's RLAN technologies.

In addition to distributing local area internet traffic and providing offloading of data for mobile networks, RLANs can also be utilized for direct device to device connectivity. For example, content can be streamed over RLANs from a smart device to a larger screen or support data back-up directly to servers.

The increasing traffic on RLAN networks, wider channel sizes to support higher data rates, and device to device connectivity have created a need for additional spectrum. The 5350-5470 MHz band is particularly attractive for RLANs for several reasons:

- RLAN devices already operate in spectrum immediately adjacent to the 5350-5470 MHz band (i.e.5150-5350 MHz and 5470-5725 MHz). The allocation of 5350-5470 MHz would be relatively easy in terms of equipment cost and complexity.
- A new international allocation to the Mobile service for 5350-5470 MHz would facilitate contiguous spectrum for RLANs, which would increase the number of non-overlapping channels available for use. The contiguous spectrum would enable two additional 80 MHz channels as well as one additional 160 MHz channel. (Note: the increase in channels is greater than the corresponding increase in spectrum since a more efficient band plan could be implemented.)
- Currently, the 5350-5460MHz and 5350-5470 MHz bands are allocated to the following services: Earth Exploration-Satellite (active), Radiolocation, Aeronautical Radionavigation, Space Research (active), and Radionavigation. Many of these services also operate in 5470-5725 MHz, where Dynamic Frequency Selection (DFS) has already been employed to protect incumbent services.

In order to ensure protection of the existing services in the band 5350-5470 MHz, it will be important to document the results of compatibility studies in modifications to the Resolution 229 (Rev. WRC-12) and associated ITU-R recommendations, particularly Recommendation ITU-R M.1652-1.

U.S. VIEW: The United States supports studies towards a possible primary allocation to the mobile service in the 5350-5470 MHz frequency band for the implementation of wireless access systems including radio local area networks (RLANs) and the corresponding revision of Resolution 229 (Rev.WRC-12) in order to ensure protection of the existing services. In particular, noting that the band 5350-5470 MHz falls between the two bands, 5150-5350 MHz and 5470-5725 MHz, that are subject to Resolution 229 and that all three bands are allocated for Earth Exploration Satellite, Space Research and Radiolocation Services on a primary basis, the United States is of the view that wireless access systems including RLANs could likely operate under the same technical framework specified in Resolution 229 (Rev. WRC-12) in all three bands ranging from 5250-5725 MHz.

Regulatory Issues

Document WAC/039(07.03.13)

UNITED STATES OF AMERICA

DRAFT PRELIMINARY VIEW FOR WRC-15

Agenda Item 9.1.4: Updating of the Radio Regulations in accordance with Resolution **67 (WRC-12)**[1]

BACKGROUND:

Resolution **67 (WRC-12)** notes that "the majority of agenda items for past WRCs concern frequency allocations, currently contained in Article **5** and associated regulations," and "that regulatory provisions should continually be assessed in order to meet the demands of administrations." Studies toward possible updating, review, and possible revision of the Radio Regulations are called for. Certain articles (**1, 4, 5, 6, 7, 8, 9, 11, 13, 14, 15, 16, 17, 18, 21, 22, 23** and **59**) are exempted from this review.

Among the articles not exempted from consideration are those governing the fixed service (**24**), the amateur and amateur-satellite services (**25**), the standard frequency and time signal service (**26**), experimental stations (**27**), radiodetermination services (**28**), the radio astronomy service (**29**), rules governing distress and safety communications (**30** through **34**, inclusive), aeronautical services (**35** through **45**, inclusive), and maritime services (**46** through **58**). Most of this information remains highly relevant and appropriate for retention in the Articles.

U.S. VIEW:

It is the view of the United States that there is no compelling justification to engage in an expansive update of the Radio Regulations, and that such an update should be avoided. Regulations governing specific services should be maintained in the Articles absent a compelling justification and unless otherwise agreed by WRCs.

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[1] This matter has been included in the Outline of the draft CPM Report to WRC-15 and is addressed in the Allocation of ITU-R preparatory work for WRC-15. *See* Administrative Circular (CA/201), Results of the first session of the Conference Preparatory Meeting for WRC-15 (CPM15-1), at Annexes 7 and 8.

Document WAC/040(07.03.13)

UNITED STATES OF AMERICA

DRAFT PRELIMINARY VIEW FOR WRC-15

Agenda Item 9.1.2: Studies on possible reduction of the coordination arc and technical criteria used in application of **No. 9.41** in respect of coordination under **No. 9.7** as per Resolution **756 (WRC-12)**[1]

BACKGROUND:

In Resolution **756 (WRC-12)** it was recognized that the coordination arc to be used to identify coordination requirements in the 6/4 GHz and 14/10/11/12 GHz frequency bands had been reduced and that "further reductions in the coordination arc in these bands may be warranted".

Accordingly *resolves 2* of Resolution **756 (WRC-12)** invites the ITU-R "to study whether additional reductions in the coordination arcs in RR Appendix **5 (Rev.WRC-12)** are appropriate for the 6/4 GHz and 14/10/11/12 GHz frequency bands, and whether it is appropriate to reduce the coordination arc in the 30/20 GHz band".

With respect to the 6/4 GHz and 14/10/11/12 GHz frequency bands, it is noted that at WRC-12 a number of administrations proposed that the coordination arc applicable to FSS geostationary satellite networks in certain congested portions of the 4/6 GHz and 10/11/12/14 GHz frequency bands be reduced from 10º to 6º in 4/6 GHz and from 9º to 5º in 10/11/12/14 GHz. These reductions received broad support from countries from all the three ITU Regions.

The grounds for such proposal can be found in the extensive studies on the subject conducted by Working Party 4A prior to WRC-12. Such studies were fully described in the associated proposals to WRC-12, and virtually all of the proposals shared a rationale similar to that included in Addendum 36 to WRC-12 Document 9 submitted by the United States. In particular, it is noted in Addendum 36 to WRC-12 Document 9 that:

[1] This matter has been included in the Outline of the draft CPM Report to WRC-15 and is addressed in the Allocation of ITU-R preparatory work for WRC-15. *See* Administrative Circular (CA/201), Results of the first session of the Conference Preparatory Meeting for WRC-15 (CPM15-1), at Annexes 7 and 8, and Addendum 1 to CA/201.

"In certain portions of the 6/4 GHz band[2] as well as of the 10/11/12/14 GHz band[3], a new GSO FSS satellite network is likely required to effect coordination with a large number of other satellite networks with orbital separations in the range of 2º to 4º or even with less than 2º separation. The need to co-exist and ensure appropriate protection to all these satellite networks implies that coexistence with and protection of satellite networks with larger separation angles will automatically result and coordination with such networks is actually unnecessary.
One of the consequences of this situation is that many of the coordinations triggered by the current coordination arcs of 10º (6/4 GHz) and 9º (10/11/12/14 GHz) are never conducted because neither of the parties involved feels an actual need for it to be done. The burden of having to conduct coordination with satellite networks which are closer to the incoming network is already heavy enough to discourage operators and administrations to devote scarce resources to conduct coordination exercises that are clearly unnecessary."

Although agreeing to a reduction of the coordination arc, WRC-12 did not go as far as proposed by the United States, or other administrations. Instead, WRC-12 approved a reduction from 10º to 8º in 4/6 GHz and from 9º to 7º in 10/11/12/14 GHz.

The points raised in the proposals to WRC-12 for a larger reduction will be even more valid in 2015 than they were in 2012 because congestion in the frequency ranges under consideration continues to grow.

U.S. VIEW:

It is the view of the United States that the coordination arc applicable to FSS geostationary satellite networks in certain congested portions of the 4/6 GHz and 10/11/12/14 GHz frequency bands be reduced from 8º to 6º in 4/6 GHz and from 7º to 5º in 10/11/12/14 GHz.

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[2] 3 400-4 200 MHz (space-to-Earth), 5 725-5 850 MHz (Earth-to-space) in Region 1, 5 850-6 725 MHz (Earth-to-space), 7 025-7 075 MHz (space-to-Earth) and (Earth-to-space).

[3] 10.95-11.2 GHz (space-to-Earth), 11.45-11.7 GHz (space-to-Earth), 11.7-12.2 GHz (space-to-Earth) in Region 2, 12.2-12.5 GHz (space-to-Earth) in Region 3, 12.5-12.75 GHz (space-to-Earth) in Regions 1 and 3, 12.7-12.75 GHz (Earth-to-space) in Region 2, and 13.75-14.5 GHz (Earth-to-space).

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PROPOSED EDITS TO NTIA PRELIMINARY VIEW ON WRC-15 AI 9.1.8
(REF. WAC/033(07.03.13))

UNITED STATES OF AMERICA

DRAFT PRELIMINARY VIEWS FOR WRC-15

Agenda Item 9.1.8: to consider and approve the Report of the Director of the Radiocommunication Bureau, in accordance with Article 7 of the Convention:
9.1: on the activities of the Radiocommunication Sector since WRC-12
Section 9.1.8 of the CPM Report: Resolution **757 (WRC-12)** Regulatory aspects for nanosatellites and picosatellites

BACKGROUND: WRC-12 adopted Resolution **757 (WRC-12)** which resolves to invite WRC-18 to consider whether modifications to the regulatory procedures for notifying satellite networks are needed to facilitate the deployment and operation of nanosatellites and picosatellites, and to take appropriate actions. Resolution **757 (WRC-12)** further invites ITU-R studies to examine the procedures for notifying space networks and consider modifications to enable the deployment and operation of nanosatellites and picosatellites, taking into account the satellites' short development time, short mission time, and unique orbital characteristics. Resolution **757 (WRC-12)** recognizes that the missions of some nanosatellites and picosatellites are potentially inconsistent with the services in which they operate and/or have limited orbit control capabilities. The Resolution also instructs the Director of the Radiocommunication Bureau to report to WRC-15 on the results of these studies.

The regulatory procedures for notifying frequency assignments to satellite networks in unplanned bands apply to all satellite networks and systems in order to avoid causing or receiving harmful interference. Consistent with Resolution **757 (WRC-12)**, and in response to Question ITU-R 254/7, ITU-R Working Party 7B~~, in response to Question ITU-R 254/7,~~ is developing a Draft New Report on technical and operational characteristics of nanosatellites and picosatellites,~~.~~ which is expected to provide useful information on these types of satellites. Currently, Resolution **757 (WRC-12)** provides the only direct recognition of nanosatellites and picosatellites in the Radio Regulations. ~~Consistent with Resolution **757 (WRC-12)**, the ITU-R is to examine the procedures for notifying space networks and consider possible modifications to enable the deployment and operation of nanosatellites and picosatellites, taking into account the short development time, short mission time, and unique orbital characteristics. The Resolution also instructs the Director of the Radiocommunication Bureau to report to WRC-15 on the results of these studies.~~

U.S. VIEW: The United States supports completing the studies to characterize nanosatellites and picosatellites and examining the notification procedures for space networks with respect to whether modifications are needed to enable the deployment and operation of these satellites. The studies should include exploration of whether the applicable regulations and procedures ensure that the operation of nanosatellites and picosatellites does not cause harmful interference to other space networks. Based on the results of the studies, WRC-15 should, if appropriate, modify or delete the related preliminary WRC-18 agenda item.