



UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and
Information Administration
INTERDEPARTMENT RADIO ADVISORY COMMITTEE
Washington, D.C. 20230

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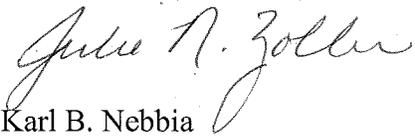
Ms. Mindel De La Torre
Chief of the International Bureau
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

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 views for WRC-15. The enclosed draft preliminary views address agenda items 1.10 (mobile-satellite service uplink/downlink in the 22-26 GHz range), 1.11 (Earth exploration-satellite service uplink in the 7-8 GHz range), 1.12 (Earth exploration-satellite service (active) additional 600 MHz allocation in the 8-10 GHz range), and 1.13 (space research service (space-to-space) at 410-420 MHz).

These draft preliminary views consider the federal agency inputs toward the development of U.S. proposals for WRC-15. NTIA forwards this package for your consideration and review by your WRC-15 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

for 
Karl B. Nebbia
Associate Administrator
Office of Spectrum Management

Enclosures

UNITED STATES OF AMERICA

DRAFT PRELIMINARY VIEWS FOR WRC-15

Agenda Item 1.10: to consider spectrum requirements and possible additional spectrum allocations for the mobile-satellite service in the Earth-to-space and space-to-Earth directions, including the satellite component for broadband applications, including International Mobile Telecommunications (IMT), within the frequency range from 22 GHz to 26 GHz, in accordance with Resolution 234 (WRC-12)

BACKGROUND: WRC-12 adopted agenda item 1.10 in order to consider additional allocations to the mobile-satellite service (MSS) taking into account ITU-R studies in accordance with Resolution 234 (WRC-12). Resolution 234 (WRC-12) invites the ITU-R to complete, for WRC-15, sharing and compatibility studies towards additional allocations to the mobile-satellite service in the Earth-to-space and space-to-Earth directions, within portions of the bands between 22 GHz and 26 GHz, while ensuring protection of existing services within these bands as well as taking into account No. 5.340 and No. 5.149.

WARC-92 adopted numerous MSS allocations. However, WRC-97 and WRC-2000 made modifications to and suppressed some of these MSS allocations because sharing with other services was difficult or the conditions of use by MSS in some bands were impractical. WRC-12 considered possible new MSS allocations in the 4-16 GHz range under agenda item 1.25. ITU-R studies and WRC-12 determined that sharing with existing services in this range was not feasible and therefore, no MSS allocations resulted. As a consequence, WRC-12 agreed to include agenda item 1.10 on the agenda for WRC-15, to consider possible MSS allocations in the 22-26 GHz range.

U.S. VIEW: The United States supports studies to determine if additional allocations for MSS in the 22-26 GHz frequency range are possible. Before WRC-15 considers any potential allocation to the MSS, the study results must show that MSS is compatible with the incumbent services. Given the propagation characteristics in this frequency range, proponents of the new MSS allocations must provide MSS characteristics demonstrating that the intended services can operate in the 22-26 GHz band with sufficient reliability.

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DRAFT PRELIMINARY VIEWS FOR WRC-15

Agenda Item 1.11: to consider a primary allocation for the Earth exploration-satellite service (Earth-to-space) in the 7-8 GHz range, in accordance with Resolution **650 (WRC-12)**

BACKGROUND: 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 currently support several hundred satellites, making coordination extremely difficult.

This Earth-to-space allocation, along with existing space-to-Earth allocations in the band 8 025-8 400 MHz, 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 the 8 025-8 400 MHz band, 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, subject to the conditions on the use of the space research service in No. **5.460**. ITU-R preliminary studies suggest that sharing with existing services within 7 190-7 235 MHz may be feasible, while difficulties have been cited with regard to sharing in the 7 145-7 190 MHz band segment, where the use of the space research service is restricted by No. **5.460** to deep space. Most of the remainder of the 7-8 GHz band is allocated to the fixed-satellite service (FSS) on a worldwide primary basis. Additional preliminary studies suggest that sharing may be difficult between EESS and FSS in this frequency range.

U.S. VIEW: The United States supports a primary allocation to EESS (Earth-to-space) within portions of the 7-8 GHz range with priority to the band 7 190-7 235 MHz, if the studies in accordance with Resolution **650 (WRC-12)** prove compatibility with existing services. The United States supports allocation within other portions of the 7-8 GHz range only if EESS (Earth-to-space) in the 7 190-7 235 MHz band proves insufficient, noting that sharing may be difficult between EESS and existing globally allocated FSS in the 7-8 GHz range.

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DRAFT PRELIMINARY VIEWS FOR WRC-15

Agenda Item 1.12: to consider an extension of the current worldwide allocation to the Earth exploration-satellite (active) service in the frequency band 9 300-9 900 MHz by up to 600 MHz within the frequency bands 8 700-9 300 MHz and/or 9 900-10 500 MHz, in accordance with Resolution **651 (WRC-12)**

BACKGROUND: This agenda item seeks to extend the current Earth exploration-satellite service (EESS) (active) allocation in 9 300-9 900 MHz by an additional 600 MHz within portions of the range 8 700-10 500 MHz. Currently, the 9 000-9 300 MHz band contains primary allocations to aeronautical and maritime radionavigation safety services. It is imperative to protect these safety service operations from harmful interference. Also, there is potential interference to passive services stations (radio astronomy, EESS (passive) and space research service (SRS) (passive)) operating in the adjacent 10.6 -10.7 GHz band if the extension is made in the upper 9 900-10 500 MHz band. Similarly, there is potential interference to stations operating in the space research service in the band 8 400-8 500 MHz if the EESS allocation is extended to the lower 8 700-9 300 MHz band. In accordance with Resolution **651 (WRC-12)**, the ITU should conduct sharing studies to ensure the protection of existing in-band services and compatibility studies to address interference due to unwanted emissions into the passive services in the 10 600 -10 700 MHz band and the space research service in the 8 400-8 500 MHz band.

U.S. VIEW: If studies demonstrate that the existing in-band services and the adjacent band passive services in the 10.6 -10.7 GHz band are protected, the United States supports extending the EESS allocation by up to 600 MHz utilizing the 9 900 MHz – 10.5 GHz band. Only if studies prove that existing services cannot be protected and/or sufficient spectrum cannot be made available in the 9 900 MHz – 10.5 GHz band does the United States support consideration of the 8 700-9 300 MHz band.

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DRAFT PRELIMINARY VIEWS FOR WRC-15

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: WARC-92 allocated the band 410-420 MHz to the space research service (SRS) on a secondary basis to allow for extra-vehicular activity (EVA) communications in the immediate vicinity of low earth orbit (LEO) manned space vehicles. EVA refers to manned activities outside a spacecraft (e.g., spacewalk). No. **651A (WARC-92)** 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.” ITU-R preliminary analyses using a spread spectrum signal in the 410-420 MHz band by a LEO vehicle suggest that these vehicle links can meet the pfd limits in No. **5.268** for distances beyond 5 km. 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. Therefore, it is necessary to modify No. **5.268** to remove the 5 km distance restriction and EVA limitation while maintaining the pfd limits.

U.S. VIEW: The United States supports the removal of both the 5 km distance limitation and restriction to EVA operation if the studies, in accordance with Resolution **652 (WRC-12)**, demonstrate space vehicle links operating around a manned vehicle beyond 5 km can meet the pfd limits in No. **5.268**. 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.