

**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 CITELE 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<sup>2</sup>) 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.<sup>1</sup>

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

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<sup>1</sup> 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).

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 there from, which may be Region-specific, should not be automatically applied to Region 2.