

**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 concept of identifying spectrum for IMT was conceived at WARC-92. Since WARC-92 there has been a tremendous growth in mobile communications including an increasing demand for mobile broadband multimedia capability. The bands identified for IMT generally are also allocated to other services in addition to the mobile service.

Conference Preparatory Meeting (CPM) 15-1 created JTG-4-5-6-7 to develop draft CPM text and perform associated studies under WRC-15 Agenda items 1.1 and 1.2. The sharing studies in the JTG for WRC-15 agenda item 1.1 are to be performed in accordance with the provisions of Resolution 233 (WRC-12). The Terms of Reference of the JTG 4-5-6-7 identify that ITU-R WP 5D has the responsibility of identifying suitable frequency ranges for possible consideration for additional spectrum to be identified for IMT and for providing this information to the JTG 4-5-6-7. WP 5D has provided to the JTG 4-5-6-7 the suitable frequency ranges for IMT, which range from 410 MHz to 6,425 MHz, as suitable.

The band 3 400-4 200 MHz has been used by the FSS for space-to-Earth links (downlinks) since the 1970's. The technology needed to support FSS operations is mature and the equipment is readily available and ubiquitously deployed in all or part of the band. This, together with the wide coverage beams possible in this band, has led to satellites in this band being an integral part of the telecommunications infrastructure in almost every developing country. As of 2008, there are more than 160 geostationary satellites worldwide operating in all or part of the band 3400-4 200 MHz. Nearly two out of three of commercial satellites included payloads using part or all of the 3 400-4 200 MHz FSS allocation. This indicates that administrations and operators are still investing substantially in this FSS spectrum. In addition, many satellites that operate in other bands have their telemetry operations (telemetry, tracking and ranging) in the 3 400-4 200 MHz range under the FSS allocation, including for the purposes of launch and transfer orbit operations. This band, in particular the lower part of the band, is also used for feeder links to satellites in the mobile-satellite service.

The United States is currently considering the 3550-3650 MHz band for small cell deployments in the United States. Recently, the United States Federal Communications Commission (FCC) published a notice of proposed rulemaking (NPRM) entitled "Amendment of the Commission's Rules with regard to commercial operations in the 3550-3650 MHz band. The FCC proceeding indicates that its intention is to "promote two major advances that enable more efficient use of radio spectrum: small cells and spectrum sharing" "while ensuring that incumbent services remain protected." The NPRM builds on the United States rulemaking experience with spectrum sharing in the television white spaces (TVWS), proposes ideas from the FCC's recent Notice of Inquiry on dynamic spectrum access technologies, and broadly reflects recommendations made in a recent report by the President's Council of Advisors on Science and Technology (PCAST). The FCC is also considering whether to include these proposed new, flexible rules in the neighboring

3650-3700 MHz band: this band is already used for commercial broadband services on a non-exclusive basis, with protections for incumbent FSS operations. In November 2013, the FCC issued a new public notice seeking additional comment on licensing models and technical requirements in the 3550-3650 MHz band. The proceeding is still open and no decision has been taken.

United States National Telecommunications and Information Administration (NTIA), in its 2010 fast track report, identified federal spectrum (including the 3.5 GHz band) for increased sharing with mobile broadband and analyzed how sharing could be accomplished with those federal systems. With regard to sharing with federal users, NTIA, in its 2010 fast track report, recommended that the band 3550-3650 MHz be made available for wireless broadband, by licensing it for broadband use outside certain coastal areas and test and training areas to protect Federal users, within 5 years contingent on timely allocation of funds for implementation.

Under a similar Agenda Item at World Radiocommunication Conference 2007 (WRC-07) the spectrum 3400-3600 MHz was identified for use by IMT systems in countries indicated in Nos. **5.430A**, **5.432A**, **5.432B** and **5.433A** under the conditions of the associated provisions. Prior to WRC-07, extensive studies were performed and captured in Report ITU-R M.2109 titled “Sharing studies between IMT Advanced systems and geostationary satellite networks in the fixed-satellite service in the 3 400-4 200 and 4 500-4 800 MHz frequency bands.” Report ITU-R M.2109 considered compatibility between FSS networks and IMT including macro and micro IMT deployments.

Subsequent to WRC-07, Study Group 4 adopted Report ITU-R S.2199 “Studies on compatibility of broadband wireless access systems and fixed-satellite service networks in the 3 400-4 200 MHz band (2010).”

These previous technical studies showed that IMT systems studied in the 3 400-4 200 MHz (Report ITU-R S.2109 and Report ITU-R M.2109) and 4 500-4 800 MHz bands (Report ITU-R M.2109) could not share in the same geographical area with FSS, when the FSS or IMT was deployed in a ubiquitous manner and/or with no individual licensing of earth stations, since no minimum separation can be guaranteed. Sharing was found to be feasible only when the location of the receiving earth station was known and under the condition that the minimum required separation distance together with the criteria mutually agreed between the concerned administrations were observed.

Working Party 5D recently provided the JTG with the final list of parameters for IMT-technology and network deployment information to be used in sharing studies in support of WRC-15 agenda item 1.1. Consequently, additional sharing studies are being initiated in the ITU-R to evaluate the compatibility of these IMT networks, including small cell deployments, with existing services.

**U.S. VIEW:**

The United States believes the results derived from the studies given in Report ITU-R M.2109 are valid for the cases considered. The United States supports additional studies based on the information recently provided to the Joint Task Group 4-5-6-7 by WP 5D on IMT parameters and deployment information. The studies should assess compatibility with existing services in accordance with Resolution **233 (WRC-12)**.

