

UNITED STATES OF AMERICA

PRELIMINARY VIEWS FOR WRC-15

AGENDA ITEM 1.7: to review the use of the band 5 091-5 150 MHz by the fixed-satellite service (Earth-to-space) (limited to feeder links of the non-geostationary mobile-satellite systems in the mobile-satellite service) in accordance with Resolution **114 (Rev.WRC-12)**

ISSUE: This agenda item invites the ITU-R to conduct appropriate studies to review the use of the band 5091-5150 MHz by feeder links (Earth-to-space) of non-geostationary mobile-satellite systems with respect to the aeronautical radionavigation service in accordance with Resolution **114 (WRC-12)**.

BACKGROUND: At WRC-95, a Primary allocation, subject to **5.444A**, was made to the fixed-satellite service in the 5091-5150 MHz band for feeder links to non-GSO mobile-satellite service systems, in the Earth-to-space direction.

The 5091-5150 MHz band was originally designated for expansion of the international standard Microwave Landing System (MLS) and Recommendation ITU-R S.1342 describes a method for determining coordination distances between international standard MLS stations operating in the band 5030-5090 MHz and FSS stations providing Earth-to-space feeder links in the 5091-5150 MHz band.

At WRC-07, an additional allocation subject to **5.444B** was made, in the 5091-5150 MHz band, to the aeronautical mobile service (AMS) for use by surface applications at airports, aeronautical telemetry transmissions from aircraft stations and aeronautical security transmissions. The latter application was suppressed by WRC-12. Compatibility between the newly allocated aeronautical mobile service planned usage and the existing fixed-satellite service (FSS) usage was demonstrated by extensive studies carried out by the ITU-R in the lead up to WRC-07. Those studies resulted in arrangements by which the aeronautical radionavigation, aeronautical mobile (R) and aeronautical mobile (limited to aeronautical telemetry) services were restricted to not cause increases in FSS satellite noise temperature ($\Delta T_s/T_s$) of more than 3%, 2% and 1% respectively (see Resolution **748(Rev. WRC-012)**).

The fixed-satellite service allocation at 5091-5150 MHz is currently used by the HIBLEO-4FL and HIBLEO-X systems and has been used compatibly with other services since 1998. The extensive studies undertaken in preparation for WRC-07 resulted in the creation of **No. 5.444B** and Resolutions **748(WRC-07)**, **418(WRC-07)** and **419(WRC-07)** and demonstrated compatibility between the fixed-satellite service and each of the aeronautical mobile (route) service applications.

The operator of the HIBLEO-4FL and HIBLEO-X systems is nearing the completion of the replenishment of its satellite constellation with the expected completion in 2013. As these new spacecraft will be replacements for existing equipment, they will also utilize the 5091-5150 MHz

range for feeder links in the Earth-to-space direction. The replacement satellites are expected to remain in service beyond the year 2025.

As a result of these developments, continued FSS use of the 5091-5150 MHz band for feeder links of the MSS, Earth-to-space, is required. Taking into account the time constraints contained in **5.444A**, it is necessary to comply with Resolution **114 (WRC-03)** prior to 2018. Recognizing the considerable effort expended in studying the compatibility between the Earth-to-space feeder links of the MSS systems and the Aeronautical Mobile Service in preparation for WRC-07, and since the interference budgets and scenarios studied before remain the same for the HIBLEO-4FL and HIBLEO-X replacement spacecraft, study of technical and operational issues can and should be limited to the sharing of this band between new systems of the aeronautical radionavigation service (ARNS) and the FSS providing feeder links of the non-GSO systems in the MSS.

The continued use of this allocation by feeder uplinks is of great importance in providing ongoing service by MSS systems to developing countries, under-served areas and critical response in the event of natural disasters and other civil emergencies.

U.S. VIEW: A permanent primary allocation to the fixed-satellite service for use by feeder links (Earth-to-space) of non-geostationary MSS systems in the 5091-5150 MHz band would be feasible if ITU-R studies show conclusively that the operation of these feeder links are compatible with the operation of ARNS systems in the 5091-5150 MHz band. If no ARNS systems are identified as operating in the band 5091-5150 MHz, the United States supports considering consequential changes to the increase in noise temperature limit from the AM(R)S, while maintaining the overall aggregate interference into the FSS.