

WRC-27 Agenda Item 1.11

MSS Space Links, in accordance with Resolution 249 (WRC-23)

Overview

The Agenda Item invites consideration of appropriate regulatory actions for the provision of space-to-space links among non-geostationary and geostationary satellites in the frequency bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660 MHz, 1 670-1 675 MHz and 2 483.5-2 500 MHz allocated to the mobile-satellite service to facilitate relaying data from non-geostationary (non-GSO) space stations through satellite systems or networks in the mobile-satellite service, in accordance with Resolution **249 (WRC-23)**.

Background

Communication between such lower-altitude non-GSO small satellites, ("user space stations") and non-GSO and GSO MSS service provider space stations, operating at higher orbital altitudes, to relay data to or from the ground, opens a new realm of possibilities. This approach can make data available in near-real-time, significantly enhancing the availability and value of instrument data for applications requiring low latency. The evolving regulatory landscape and the increasing experimental authorizations reflect a collective move towards maximizing the utility of satellite networks, paving the way for innovative communication solutions that transcend traditional orbital and operational boundaries.

The space-to-space link of non-GSO user space station would be restricted to operate in the same manner as any other user in the MSS service provider network/system in the (space-to-Earth) direction (a higher orbit to a lower orbit only) and would only be receiving within the notified beam of the service provider of the satellite network/system. The evolving regulatory landscape and the increasing deployment and operation of small non-geostationary (non-GSO) satellites reflect a collective move towards maximizing the utility of satellite networks, which is supported by WRC-27 AI 1.11 studies towards developing the necessary provisions to secure the regulatory recognition for such space-to-space operations while protecting incumbent services. WRC-27 is considering taking appropriate regulatory actions for the provision of space-to-space links among non-geostationary and geostationary satellites in the frequency bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660 MHz, 1 670-1 675 MHz and 2 483.5-2 500 MHz allocated to the mobile-satellite service to facilitate relaying data from non-geostationary (non-GSO) space stations through satellite systems or networks in the mobile-satellite service.



Key Points

- › In accordance with Resolution 249 (WRC-23), it is necessary to ensure protection of existing services operating within and adjacent to the frequency bands being considered;
- › The regulatory considerations should clearly identify the concepts of operation being considered in the studies;
- › Considering that the MSS networks and systems have been operational for many decades in the frequency bands being considered, their technical and operational characteristics as well as technical and operational characteristics of the other incumbent services should be readily available.

GSOA Position

GSOA supports the consideration of appropriate technical and regulatory provisions at WRC-27 to address Resolution 249 (Rev. WRC-23) and provide for accommodating space-to-space links in the frequency bands 1 518-1 544 MHz, 1 545-1 559 MHz, 1 610-1 645.5 MHz, 1 646.5-1 660 MHz, 1 670-1 675 MHz and 2 483.5-2 500 MHz while ensuring the protection of, and compatibility with, and without imposing additional regulatory or technical constraints on, incumbent services in these bands and adjacent frequency bands, taking into consideration the allocated passive services.

GSOA is of the view that any changes in the technical and regulatory provisions in frequency bands under AI 1.11 shall protect the operations of existing GSO networks and maintain the integrity of the coordination in the 1.5/1.6 frequency bands under the multilateral process.

GSOA is also of the view that the studies of space-to-space operations for consideration under this agenda item should be limited to links operating in the same direction of transmission as provided in the current allocations for the mobile-satellite service in the frequency bands under consideration, as follows:

- › Earth-to-space direction in the frequency bands 1 626.5-1 645.5 MHz and 1 646.5-1 660 MHz;
- › Space-to-Earth direction in the frequency bands 1 525-1 544 MHz and 1 545-1 559 MHz;
- › Earth-to-space direction in the frequency bands 1 610-1 626.5 MHz and 1 670-1 675 MHz, and
- › Space-to-Earth direction in the frequency bands 1 518-1 525 MHz, 1 613.8-1 626.5 MHz and 2 483.5-2 500 MHz.

GSOA is also of the view that the existing regulatory framework, including Article 21 limits, and operational practices continue to govern transmissions for the downlink (space-to-Earth) direction, and should be appropriately applied to the space-to-space transmissions.