GSOA
GLOBAL SATELLITE OPERATORS ASSOCIATION

Agenda Item
10 Ku band

Agenda Item 10: 13.75-14 GHz band

Overview

Some ITU-R regional organizations are currently considering agenda item 10 proposals to review the usage and sharing conditions of the band 13.75-14 GHz to enable efficient use of the band by uplink FSS earth stations, including FSS earth stations using smaller antenna sizes.

Background

In Ku-band, there is only 500 MHz of spectrum available for return links in 14.00-14.5 GHz for use by smaller satellite terminals. This is not enough spectrum to support rapidly growing demand for ubiquitous satellite services deploying smaller FSS antennas, including ESIM connectivity, which has placed tremendous strain on the available spectrum for satellite services in Ku-band. There has been a big increase in number of operational satellite networks and use of orbit and spectrum resources over the last decades and corresponding great development of a variety of applications and satellite user equipment, while customers are increasingly requiring higher data transmission rates, smaller user terminals, and increasingly flexible products.

Footnotes **5.502** and **5.503** pose limitations on the minimum size of the earth station antenna (1.2m for GSO and 4.5m for n-GSO) and on the maximum power flux density that a terminal can transmit towards the sea, which invalidate the use of this band by FSS return links. In addition to the fact that satellite technology has changed tremendously since these conditions were developed 20 years ago, there may also have been a change in other services sharing the band, their applications and co-existence conditions.

Key Points

- There is a pressing and growing need for Ku-band spectrum to be available to meet the increasing demand for connectivity, particularly for the use of smaller user terminals, including ubiquitously deployed very small aperture terminals (VSATs). Emergence of high throughput satellites (HTS) and NGSO satellites capable of providing large throughputs and broadband connections has significantly increased the use of smaller user terminals that more broadly meet customer needs, e.g. Electronically Steered Array.
- As shown in the table below, in all three ITU-R Regions there is a significant mismatch between the uplink and downlink non-planned spectrum in the 10-15 GHz range that can operationally be used to provide services for smaller antennas, e.g. HTS or broadband user terminals, VSATs, satellite news gathering, etc.

REGIONS	Downlink (MHz)	Uplink (MHz)
Region 1	750 (1000[1])	500
Region 2	1000	500
Region 3	1050	500

Table 1: Amount of uplink and downlink non-planned spectrum in the 10-15 GHz range available for smaller user terminals.

GSOA Position

1. GSOA supports review of the usage and sharing conditions of the band 13.75-14 GHz as an Agenda Item for WRC-27.
2. GSOA is of the view that allowing smaller use terminals to operate in the 13.75-14 GHz band would enable more efficient use of the band, alleviate the congestion in the existing uplink Ku-band and balance the mismatch between available uplink and downlink spectrum resources for FSS.

1 13.4-13.65 GHz band is less likely to be used due to a large separation to the other downlink bands, its placement between satellite uplink bands and the limitations of RR Nos. 5.499A and 5.499B.