GSOA
GLOBAL SATELLITE OPERATORS ASSOCIATION

www.gsoasatellite.com
@GSOA_SAT
GSOA

UK SPF Cluster 4: WRC-23 Agenda Item 10

30th July 2023

What are the pros of Satellite Communications?

Satcom to provide universal and meaningful connectivity everywhere, doubling the number of connected people by 2030

140% growth of satcom broadband users for Africa & Middel East by 2030

By 2030 via Satcoms 81 million students will benefit from satcom tele-education
&
74 million people from satcom tele-medicine by 2030

Today's society relies on **connectivity**

Terrestrial infrastructure is limited and leaves a connectivity gap

Satcom to bridge gap and **provide universal** and **meaningful connectivity** to all

More than 500 million people will connect via Satcom by 2030

twice as much as today

* Sources: VVA elaboration based on ITU (2022); Statista (2022); CNBC (n.d); Satellite Industry Association (2022)

The socio-economic impact of Satellite Communications

By 2030, global socio-economic benefits of Satcom to surpass $256 Billion

Broadband delivery for households, education, healthcare, emergency and critical services

$52 billion socio-economic benefits for **350 million** people by 2030*

Media broadcasting (satellite TV and radio)

Socio-economic benefits expected to stabilize at **$86 billion** by 2030**

Broadband on the move

Socio-economic benefits to skyrocket from **$15 billion** in 2022 to **$121 billion** in 2030***

The success of the industry depends on a favourable regulatory environment, assumed to be stable over the years to come

Sources: VVA elaboration based on * World Bank (2022); ITU (2022); ** Statista (2022); Satellite Industry Association (2022); *** Statista (2022); London School of Economics (2018)

*to recommend to the Council items for inclusion in the agenda for the next WRC, and items for the preliminary agenda of future conferences, in accordance with Article 7 of the Convention and Resolution **804 (Rev. WRC-19)**;*

Resolution 804 (rev. WRC-19): Principles for establishing agendas for world radiocommunication conferences
Resolution 812 (WRC-19): Preliminary agenda for the 2027 World Radiocommunication Conference

Background:

Resolution **812 (WRC-19)** contains 13 AI proposals carried forward from WRC-19 to WRC-23. Six of these relate to satellite services (Study Group 4), five to terrestrial services (Study Group 5) & three to scientific services (Study Group 7). Additionally, ITU regional organizations are discussing further Agenda Item proposals for WRC-27.

GSOA
GLOBAL SATELLITE OPERATORS ASSOCIATION

Agenda Item 10
Q/V-band ESIM

Resolution **176 (WRC-19)** calls for studies on the use of the frequency bands 37.5-39.5 GHz (space-to-Earth), 40.5-42.5GHz (space-to-Earth), 47.2-50.2GHz (Earth-to-space) & 50.4-51.4GHz (Earth-to-space) by aeronautical & maritime earth stations in motion communicating with geostationary space stations in the fixed-satellite service

- While Resolution **176 (WRC-19)** developed for GSO only…
  - Antenna & terminal technology enhancements enable usage of these bands by GSO FSS networks & non-GSO FSS systems
  - Non-GSO satellite constellations in these bands allow broadband connectivity enhanced applications.
  - More non-GSO systems will be deployed to meet the increasing consumer demand for access to broadband connectivity, regardless of location
- Studies under AI 1.16 => same band can be used by GSO FSS networks & non-GSO systems to provide connectivity for ESIM

GSOA supports **this AI for WRC-27 with extended scope to consider GSO FSS networks & non-GSO FSS systems (LEO, MEO)**

GSOA
GLOBAL SATELLITE OPERATORS ASSOCIATION

Agenda Item 10

Review of conditions FSS use 13.75-14 GHz (E-s)

- **In Ku band, only 500 MHz (14.00 - 14.5 GHz) appropriate for return links**
- **Not sufficient spectrum to attend the current demand like ESIM type services**

Footnotes 5.502 & 5.503 apply to the 13.75 - 14.00 GHz band:

⇒ **Limitations on the minimum size of the earth station antenna & maximum power flux density that a terminal can transmit**

=

invalidation of this band for FSS return links

Regional organizations ➡ proposal to review usage & sharing conditions to enable efficient use of the band by uplink GSO & non-GSO FSS earth stations - including FSS earth stations using smaller antenna sizes

(Attachment 2 APG23-5 OUT-39)

GSOA supports **reviewing the band's usage & sharing conditions 13.75-14 GHz as an AI for WRC-27**

GSOA
GLOBAL SATELLITE OPERATORS ASSOCIATION

Agenda Item 10
NGSO Gateway Use in 51.4 - 52.4 GHz FSS (E-s)

Background:

- Report ITU-R S.2461 under WRC-19 9.1.9: partial response established need for additional FSS spectrum in the 50 GHz range for non-GSO FSS gateway uplinks. Studies included need for spectrum for non-GSO systems & GSO FSS networks

- In response to Res. 162 (WRC.15), WRC-19 allocated 51.4-52.4 GHz to the FSS (Earth-to-space) on a primary basis & adopted No. 5.555C which limited the use of the FSS allocation to geostationary satellite networks

➢ **Enable efficient spectrum use to allow fixed-satellite services to meet the ever-increasing demand:**

Consider expanding the use of the 51.4 - 52.4GHz band by gateway earth stations transmitting to non-geostationary FSS satellite orbit systems (Earth-to-space)

GSOA supports **including studies on using 51.4 - 52.4 GHz by gateway earth stations transmitting to non-GSO FSS satellite systems (Earth-to-space) for WRC-27**

GSOA
GLOBAL SATELLITE OPERATORS ASSOCIATION

Agenda Item 10
New Spectrum allocations to the Mobile-Satellite Service

Background:

- There is a demand for new harmonized spectrum for Mobile Satellite Service (MSS) to satisfy the demand of a wide variety of applications covering both narrowband emissions such as IoT/M2M, and wider band emissions such as non-terrestrial network (NTN) MSS voice and data communications.
- WRC-23 Agenda Item 1.18 failed to provide new allocations to the mobile-satellite service in the frequency bands 1 695-1710 MHz, 2010-2025 MHz, 3300-3315 MHz and 3385-3400 MHz due to the lack of agreement on the interpretation of Resolution 248 (WRC-19) and the pre-requisite to make this spectrum available for the exclusive use of low duty cycle narrowband applications.

➢ **Goal:** Create a new Agenda Item to considerate potential allocations to the MSS in the bands 2 010-2 025 MHz (E-s) and 2 160-2 170 MHz (s-E) in Regions 1 and 3 (already allocated to the MSS in Region 2), and 2 200-2 215 MHz (s-E) globally, with the aim to conduct sharing and compatibility studies that ensure the protection of incumbent services (in band and adjacent).

GSOA supports **studies on 2 010-2 025 MHz, 2 160-2 170 MHz and 2 200-2 215 MHz for a potential allocation to the MSS**

GSOA WRC-23 Positions

Thank You