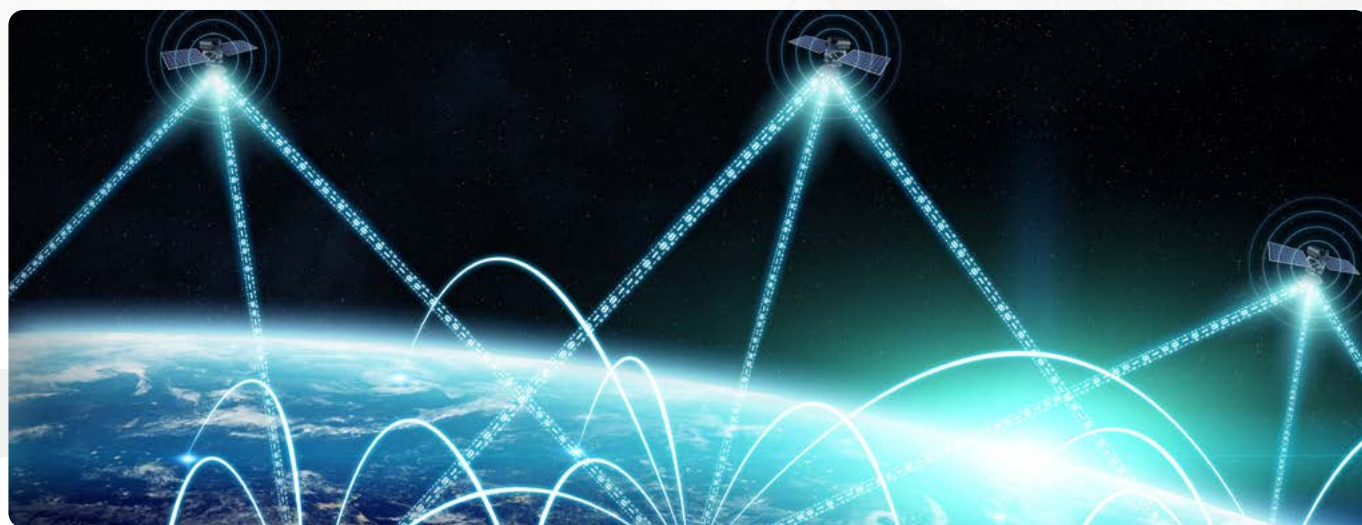


## WRC-23 Agenda Item 1.16

### Overview

Agenda Item 1.16: to study and develop technical, operational and regulatory measures, as appropriate, to facilitate the use of the frequency bands 17.7-18.6 GHz and 18.8-19.3 GHz and 19.7-20.2 GHz (space-to-Earth) and 27.5-29.1 GHz and 29.5-30 GHz (Earth-to-space) by NGSO FSS earth stations in motion (“NGSO ESIM”), while ensuring due protection of existing services in those frequency bands, in line with Resolution 173 (WRC-19)

- Technical and regulatory provisions for the operation of ESIM under this Agenda Item are limited to aeronautical and maritime ESIM
- ESIM using GSO networks (“GSO ESIM”) in Ka-band have already been addressed by the ITU, with Resolution 156 (WRC-15) (19.7-20.2 / 29.5-30.0 GHz) & Resolution 169 (WRC-19) (17.7-19.7 / 27.5-29.5 GHz)
- A harmonized international framework for the use of NGSO ESIM, including ensuring the protection of existing services, is also required



### Background

- There is a growing demand for in-flight and maritime connectivity worldwide
- Several NGSO constellations are being planned, in the process of being deployed or already operating in the Ka band and are positioned to provide service via ESIM
- NGSO ESIM in the Ka-band will support the need for ubiquitous broadband connectivity to passengers/crew on aircraft and vessels
- NGSO ESIM have technical characteristics that are similar to GSO ESIM

## Key Points - Status of Agenda Item 1.16

WP 4A has identified two methods to satisfy Agenda Item 1.16:

### Method A

No change to the Radio Regulations and suppression of Resolution 173 (WRC-19)

### Method B

Add a new footnote in RR Article 5 that refers to a new WRC Resolution with technical, operational and regulatory conditions for the operation of NGSO maritime and aeronautical ESIMs while ensuring protection of allocated services, and consequential suppression of Resolution **173 (WRC-19)**

- NGSO ESIM operating in 17.7–18.6, 18.8–19.3 GHz and 19.7–20.2 GHz (No. 5.524) shall not claim protection from terrestrial services
- For the protection of terrestrial services with secondary allocation in 29.5–30 GHz (No. 5.542), the same conditions as for NGSO ESIM in 27.5–29.1 GHz shall apply for administrations mentioned in No. 5.542
- Due to the similarities between NGSO ESIM and GSO ESIM, the existing GSO framework for the protection of terrestrial services can be adopted for NGSO
- For the protection of space services, NGSO ESIM characteristics shall remain within the envelope characteristics of typical earth stations associated with the NGSO system
- For the protection of GSO FSS networks, the relevant epfd limits in Article 22 shall apply together with the examination by the BR under Recommendation ITU-R S.1503
- For the protection of the Earth exploration-satellite service (EESS passive) in 18.6–18.8 GHz, support pfd limits from technical studies (Annex 3 of draft Resolution)

## GSOA Recommendations

- › **Support Method B**
- › **Support finalizing a New Draft Resolution on this Agenda Item**
- › **For protection of terrestrial services in 27.5–29.1 GHz, the same technical conditions as for GSO ESIM in Resolution 169 (WRC-19) should apply (pfd limit on the ground for A-ESIM; min distance from the coast and max EIRP spectral density towards the horizon for M-ESIM)**
- › **Support the development of a methodology (Annex 2 of new Resolution) for examination by the Bureau of compliance of NGSO Aero ESIM with pfd limits on the ground and of adequate transitional measures in case WRC-23 does not finalise the methodology**

