GSOA

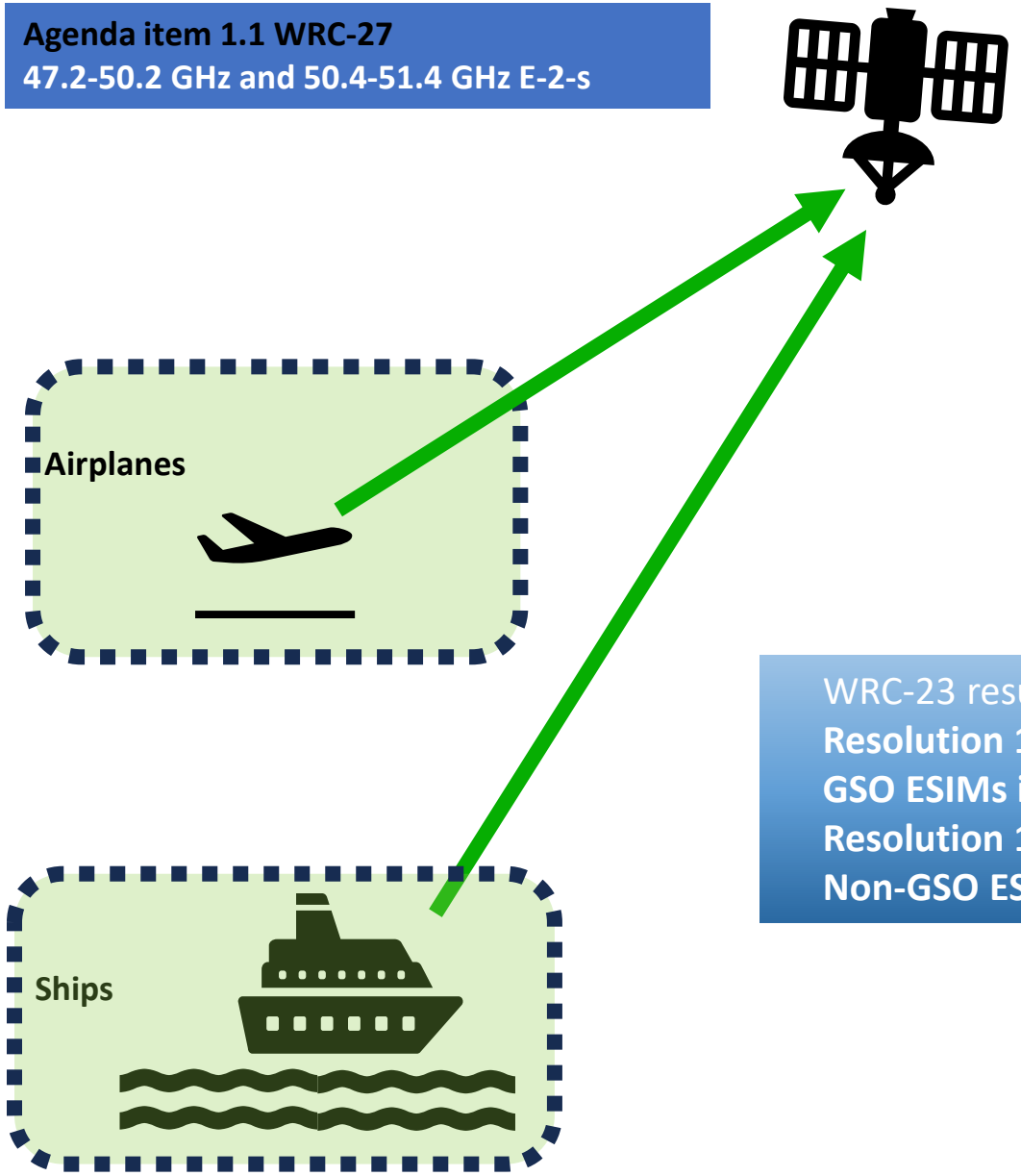
GLOBAL SATELLITE OPERATORS ASSOCIATION

WRC-27 AI 1.1

UK Spectrum Policy Forum
9 June 2025

Agenda item 1.1 WRC-27
47.2-50.2 GHz and 50.4-51.4 GHz E-2-s

Satellite communications with ESIMs in Q/V band



➢ Increased need for broadband connectivity on the move

WRC-23 resulted in **Resolution 121(WRC-23)** for **GSO ESIMs in Ku-band** and **Resolution 123 (WRC-23)** for **Non-GSO ESIMs in Ka band**.

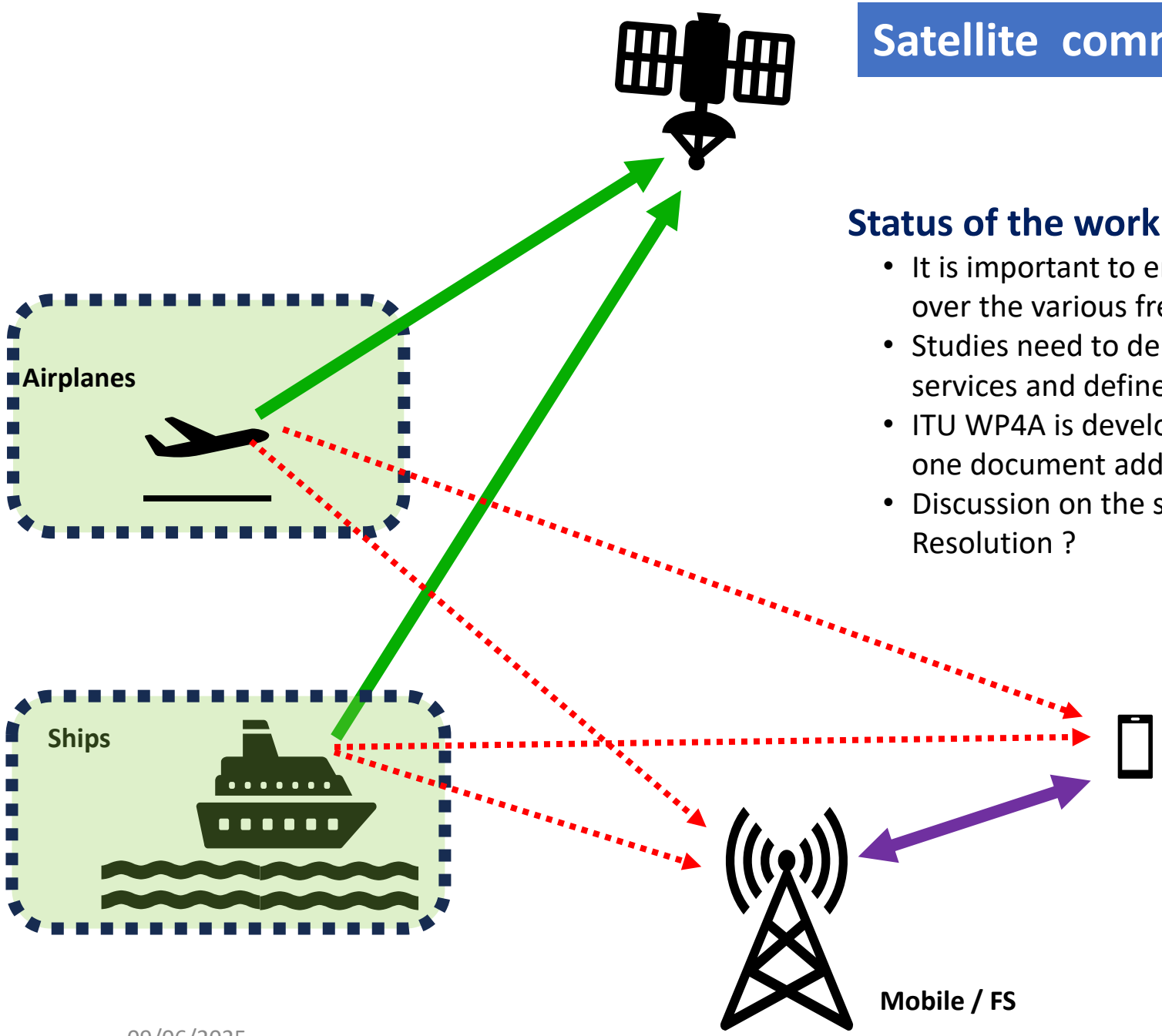
Use of Q/V bands by ESIMs would provide more spectrum and throughput for communications on-board aircrafts or vessels

Q/V band would be an asset to improve connectivity and reduce cost of communications on the move.

GSO & NGSO

*AI 1.1: Studies on the use of the frequency band 47.2-50.2 GHz band (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space), or parts thereof, by aeronautical and maritime earth stations in motion in the fixed-satellite service, in accordance with Resolution **176 (Rev WRC-23)**;*

Satellite communications with ESIMs in Q/V band



Status of the work

- It is important to ensure consistency of the ITU-R regulatory framework over the various frequency bands for ESIMs (Ku, Ka, Q/V).
- Studies need to demonstrate compatibility of ESIMs with incumbent services and define appropriate conditions for ESIMs operation.
- ITU WP4A is developing one document covering the technical studies and one document addressing the functionalities of the NCMC.
- Discussion on the status of the NCMC document: Recommendation / Resolution ?

Considerations for studies under WRC-27 AI 1.1

Allocation to services		
Region 1	Region 2	Region 3
47.2-47.5	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	
47.5-47.9 FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A MOBILE 5.553B	47.5-47.9 FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B	
47.9-48.2	FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.553B 5.552A	
48.2-48.54 FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	48.2-50.2 FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.516B 5.550C 5.552 MOBILE	
48.54-49.44 FIXED FIXED-SATELLITE (Earth-to-space) 5.550C 5.552 MOBILE 5.149 5.340 5.555		
49.44-50.2 FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C 5.552 (space-to-Earth) 5.516B 5.554A 5.555B MOBILE	5.149 5.340 5.555	
50.2-50.4	EARTH EXPLORATION-SATELLITE (passive) SPACE RESEARCH (passive) 5.340	
50.4-51.4	FIXED FIXED-SATELLITE (Earth-to-space) 5.338A 5.550C MOBILE Mobile-satellite (Earth-to-space)	

Consistency of regulatory frameworks for ESIMs

- WRC-23 AI 1.15 (Ku-band)
  ➔Resolution 121(WRC-23)
- WRC-23 AI 1.16 (Ka-band)
  ➔Resolution 123 (WRC-23)

Studies for operations of ESIMs in the Q/V band

In-band sharing analyses:
- Mobile service
- Fixed service

Intra-service analyses:
- HDFSS
- GSO / NGSO

Adjacent-band compatibility analyses:
- Earth Exploration-Satellite (passive)
- Space Research (passive)

Agenda Item 1.1
Use of the FSS Q/V band (E-s) for A-ESIMs and M-ESIMs with GSO networks and NGSO systems

*Studies on the use of the frequency band 47.2-50.2 GHz band (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space), or parts thereof, by aeronautical and maritime earth stations in motion in the fixed-satellite service, in accordance with Resolution **176 (Rev WRC-23)**;*

Background

- FSS has allocation in the considered Q/V frequency bands in article 5 of the Radio Regulation
- Increasing need for mobile communications that could be partially met with communication between A-ESIMs and M-ESIMs and FSS GSO and non-GSO networks.
- The use of these Q/V bands by ESIMs communicating with GSO or non-GSO FSS space stations would provide more spectrum and throughput for on-board users, responding to the growing demand for broadband satellite services in the air and over the seas.

GSOA position

- Supports studies aiming to develop a framework, including the technical conditions and regulatory provisions, for the use of the frequency bands 47.2-50.2 GHz (Earth-to-space) and 50.4-51.4 GHz (Earth-to-space) by A-ESIMs and M-ESIMs communicating with GSO and non-GSO networks, taking into account the protection of incumbent primary services in these frequency bands and adjacent bands.
- Ensure consistency of ITU-R regulatory frameworks for ESIMs across the bands and support the development of the **ITU-R Recommendation** for the Network Control and Monitoring Centre (NCMC) for ESIM operations that would ensure control of ESIM transmissions without jeopardizing their development in Q/V band.

Thank You

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