

ITUEvents

1st ITU Inter-regional Workshop on WRC-23 preparation

13 – 15 December 2021

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#ITUWRC

**Study of ESIM Operations in
the 12.75 - 13.25 GHz band**

WRC-23 agenda item 1.15

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WRC-23 agenda item 1.15

- Agenda Item 1.15 – studies on the use of the frequency band 12.75-13.25 GHz (Earth-to-space) by earth stations on aircraft and vessels communicating with geostationary space stations in the fixed-satellite service globally, in accordance with Resolution **172 (WRC-19)**;
- Resolution **172 (WRC-19)** – Operation of earth stations on aircraft and vessels communicating with geostationary space station in the fixed-satellite service in the frequency band 12.75-13.25 GHz (Earth-to-space)
- Responsible Group: WP4A
- Contributing Groups: WP 3M, WP 5A, WP 5B, WP 5C and WP 7C

Background

- GSO FSS satellites have delivered services on aircraft and vessels for over a decade in non-planned Ku-band FSS spectrum.
- Allowing aeronautical and maritime operations in the 12.75-13.25 GHz planned Ku-band spectrum would provide additional capacity for the provision of these services.
- Given that the band under study is subject to Appendix **30B**, a global FSS Plan, adds additional complexity and requires specific technical and regulatory provisions to ensure the protection of the Plan allotments, assignments in the Appendix **30B** List and those submitted under Articles 6 and 7 of Appendix **30B** and Resolution **170 (WRC-19)**.
- Subject to meeting new technical and regulatory provisions, existing operational GSO Appendix **30B** FSS space stations would be able to provide these services.
- Operation in FSS Appendix **30B** Ku-band spectrum of these earth stations would allow additional application be provided as well as augment the capacity to provide services to end users on aircraft, cruises and other moving platforms.

Status of studies in WP4A

Appendix 30B FSS (in-band)

- Developed procedures for administrations and the BR for submitting/notifying e/s on board aircraft and vessels and protection of allotments in the Plan, assignments in the Appendix 30B List and those submitted under Articles 6 and 7 of Appendix 30B and Resolution 170 (WRC-19)

Fixed Service (in-band)

- Earth station on vessels – study showed that minimum distance from the low-water mark as officially recognized by the coast State of 190 km was needed
- Earth station on aircraft – PFD mask has been evaluated for e/s on aircraft at cruising altitude and further studies are needed for aircraft at lower altitudes as well as regarding short-term protection criterion of FS
- Need to liaise studies with WP5C

Non-GSO FSS (in-band)

- Study provided to WP4A on-going

Status of studies in WP4A

Mobile Service (in-band)

- Earth station on vessels– studies conducted showed shorter distance than for the FS
- Earth station on aircraft – studies still required
- Studies on earth station on vessels have been liaised to WP5A: waiting for reply at the next WP4A
- Studies on earth station on aircraft will be liaised to WP5A when provided

Earth-Exploration Satellite Service (active) (adjacent band)

- Study provided to WP4A and liaised to WP7C
- Awaiting reply in May 2022

Aeronautical Radionavigation Service (adjacent band)

- Study conducted for ARNS and earth station on aircraft on same aircraft
- Liaised study to WP5B
- Requested guidance from WP5B on scenarios to be studied

Summary

- Although AI 1.15 is a very complex agenda item WP4A has been progressing its work
- Work on CPM text is on-going and WP4A has received inputs on most sections
- Two methods to satisfy the agenda have been identified:
 - NOC
 - Footnote in Article 5 and associated Resolution
- Work on draft Resolution is advancing
 - Agreement on an Annex that includes regulatory procedures for administrations and the BR for submitting/notifying e/s on aircraft and vessels and protection of allotments in the Plan, assignments in the Appendix **30B** List and those submitted under Articles 6 and 7 of Appendix **30B** and Resolution **170 (WRC-19)**
 - Other Annexes require conclusions from compatibility studies
- Further work is needed to address the responsibilities of different administrations involved in the operation of e/s on aircraft and vessels and a methodology for BR examination of aeronautical earth station PFD limits.

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Thank you!

Any questions?
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