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ITUEvents

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13 - 15 December 2021

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#ITUWRC

Satellite Issues

WRC-23 agenda item 1.16

Use of Ka-band FSS by Earth Stations in Motion (ESIM) communicating with non-geostationary satellites

Mario Neri
Chairman, SWG
AI 1.16

Outlines

- WRC-23 agenda item 1.16
- Resolution 173 (WRC-19)
- Background and motivation
- Organization of the work in WP 4A
- Status of the Studies

WRC-23 agenda item 1.16

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, 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 non-geostationary fixed-satellite service earth stations in motion, while ensuring due protection of existing services in those frequency bands, in accordance with Resolution ***173 (WRC-19)***

Resolution **173 (WRC-19)** – *Use of the frequency bands 17.7-18.6 GHz, 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 earth stations in motion communicating with non-geostationary space stations in the fixed-satellite service*

Responsible Group:

WP 4A

Contributing Groups:

WP 3M

WP 4C

WP 5A

WP 5B

WP 5C

WP 7B

Background and motivation

- There is a need for mobile-satellite communications, including global satellite broadband, and that part of this need can be met by allowing earth stations in motion (ESIMs) to communicate with non-geostationary FSS space stations operating in the Ka-band

- A consistent approach to the deployment of non-geostationary ESIM will support important and growing global communication requirements and provide adequate protection to other services in the Ka-band

- Currently, there is no specific regulatory procedure for the coordination of ESIM relative to terrestrial stations for these services

- Technological neutrality between ESIM communicating with geostationary satellites (*see* Resolution **169 (WRC-19)**) and those communicating with non-geostationary satellites in the same frequency bands

Organization of the work in WP 4A

WRC-23 Agenda item 1.16:

SWG 4A1b

Main activities:

- *Development of the* ***Working Document towards WRC-23 Agenda item 1.16*** *(4A/522 Annex 16);*
- *Development of the* ***Working Document towards draft CPM text and draft new Resolution for WRC-23 agenda item 1.16*** *(4A/522 Annex 26);*
- *Update the* ***AI 1.16 Work Plan*** *in each meeting, considering what happend in the meeting and what is expected for the next meeting (4A/522 Annex 32);*

Status of the studies

- *A number of studies have been carried out to estimate the conditions under which terrestrial services (FS and MS) could be protected from the possible interference caused by aeronautical and maritime ESIM. For the former all studies propose the adoption of pre-determined PFD limits on the ground, while for the latter they propose a minimum distance from the coastline along with a maximum EIRP sd towards the horizon as relevant measures to be included in a WRC Resolution. This issue requires more work and analysis by WP 4A.*

- *A number of studies have been carried out to identify whether OOB emissions from satellite transmitters in the 18.6-18.8 GHz band are needed to protect the EESS (passive) operating in that band. Some studies conclude that such limitations are not needed while other studies conclude that they are, instead. This issue requires more work and analysis by WP 4A.*

- *There seems to be a convergence on the fact that some guidance could be offered to administrations wanting to operate non-GSO ESIM on how to protect secondary terrestrial services operating in the 29.5-30.0 GHz in the territories of those administrations mentioned in No.* ***5.542***

- *The draft CPM text and Draft New Resolution need careful review, consolidating compatible proposals and identifying options on those topics where consensus does not seem to be achieved at this time*

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Thank you!

Any questions?
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