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29TH WORLD RADIOCOMMUNICATION SEMINAR
30 November - 11 December 2020

ITU-R Study Group 4 Satellite Services

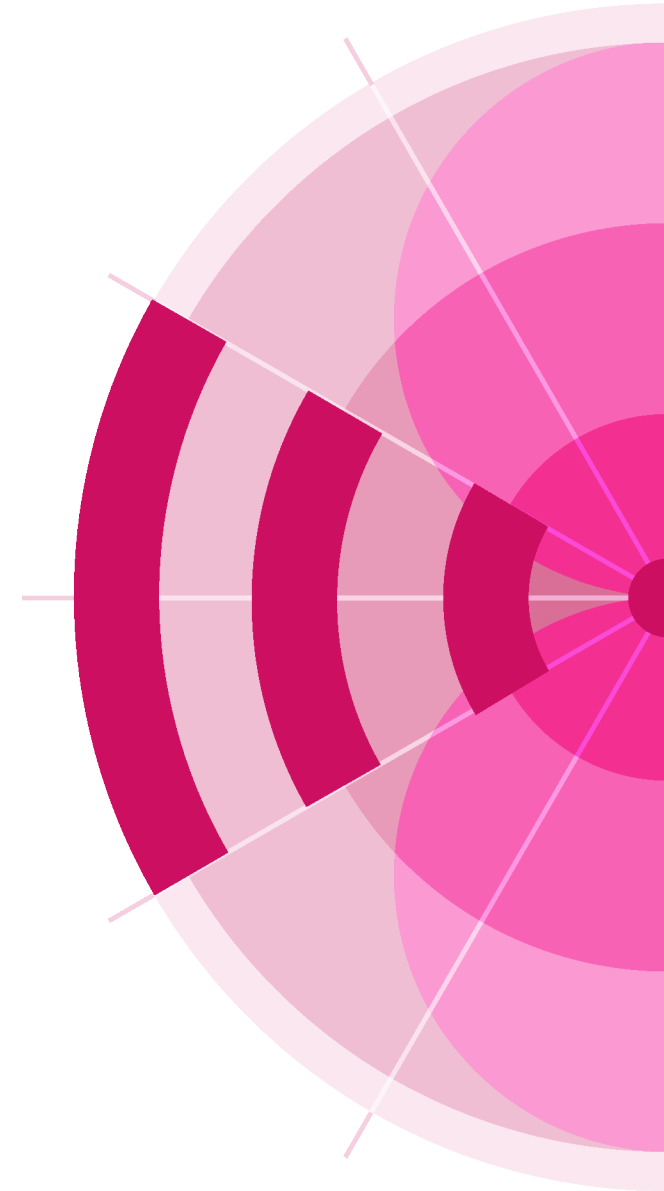
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BR/SGD

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Hot Topics in ITU-R Study Group 4

- Systems, air interfaces and performance in FSS, BSS, MSS and RDSS
- Efficient orbit/spectrum utilization for FSS, BSS, MSS and RDSS
- IP global broadband Internet access via satellite
- Integration of satellite systems into Next Generation Access Technologies (5G)
- Early warning and relief operations
- Systems and networks in the RNSS



Non-GSO satellite systems

- WRC-19 adopted a new regulatory framework (technical, operational issues and regulatory provisions) for non-GSO FSS systems using the 50/40 GHz frequency bands, including provisions for sharing between GSO and non-GSO satellite systems.
- WRC-19 also adopted a new regulatory framework, including the bringing into use and a milestone-based approach for the deployment of non-geostationary satellite constellations (non-GSO) in specific frequency bands and services.
- The regulatory framework will enable mega constellations of satellites - hundreds to thousands of spacecraft in low-Earth orbit - to rapidly come to fruition ensuring the operation of as many systems as possible.
- This will ensure more affordable means of connectivity is provided to rural and remote areas, thus providing innovative solutions to bridging the digital divide as well as providing broadband for all.

Non-GSO satellite systems

- These non-GSO systems will have to deploy 10% of their constellation within 2 years after the end of the current 7-year regulatory period for bringing into use, 50% within 5 years, and complete the deployment within 7 years.
- The approach will help ensure that the Master International Frequency Register is aligned with the actual deployment of non-GSO satellite systems.
- WRC-19 struck a balance between the prevention of spectrum warehousing, the proper functioning of coordination, notification and registration mechanisms, and the operational requirements related to the deployment of non-GSO systems.



Earth stations in motion (ESIM)

- WRC-19 defined the regulatory, operational and technical conditions under which the frequency bands 17.7-19.7 GHz (space-to-Earth) and 27.5-29.5 GHz (Earth-to-space) can be used by ESIM communicating with geostationary-satellite orbit (GSO) space stations in the fixed-satellite service (FSS) in all Regions.
- The decision on ESIMs will increase the use and further development of ESIMs, while protecting other GSO networks and non-GSO systems as well as terrestrial services.
- It will enable broadband connection of people on ships (maritime ESIM), aircraft (aeronautical ESIM) and land vehicles (land ESIM) and ensure their safety, security and comfort while in motion, extending the possibility offered by WRC-15 for ESIM in the bands 19.7-20.2 GHz and 29.5-30 GHz in all Regions.



Agenda for WRC-23



► Resolution 811 (WRC-19)

- **1.15:** Operation of earth stations on aircraft and vessels communicating with geostationary space stations in the fixed-satellite service in the frequency band 12.75-13.25 GHz (Earth-to-space)
- **1.16:** 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
- **1.17:** Study of technical and operational issues, and regulatory provisions for satellite-to-satellite links in the frequency bands 11.7-12.7 GHz, 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz



- **1.18:** Studies relating to spectrum needs and potential new allocations to the mobile-satellite service in the frequency bands 1 695-1 710 MHz, 2 010-2 025 MHz, 3 300-3 315 MHz and 3 385-3 400 MHz for future development of narrowband mobile-satellite systems
- **1.19:** Primary allocation to the fixed-satellite service in the space-to-Earth direction in the frequency band 17.3-17.7 GHz in Region 2
- **7:** to consider possible changes, in response to Resolution 86 (Rev. Marrakesh, 2002) of the Plenipotentiary Conference, on advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks, in accordance with Resolution **86 (Rev.WRC-07)**, in order to facilitate the rational, efficient and economical use of radio frequencies and any associated orbits, including the geostationary-satellite orbit

ITU-R Study Group 4: Satellite Services

Not yet a member?

- Study Group 4 is essential for developing and maintaining ITU-R Recommendations, Reports and Handbooks on satellite services, which are used worldwide.
- Topics of discussion and study are contribution driven and are based on the priorities set by the Radiocommunication Assemblies and World Radiocommunication Conferences.
- ITU-R Members have the opportunity to impact the development of recommendations targeted towards satellite services and participate in the preparatory work for World Radiocommunication Conferences.

Thank you!

ITU – Radiocommunication Bureau

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