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Agenda Item 1.4: FSS/BSS allocation in 17GHz to R3
2nd Preparatory Meeting towards WRC-27 (APT-ITU)



Agenda Item 1.4

FSS/BSS 17 GHz in Region 3

To consider a possible new primary allocation to the fixed-satellite service (space-to-Earth) in the frequency band 17.3-17.7 GHz and a possible new primary allocation to the broadcasting-satellite service (space-to-Earth) in the frequency band 17.3-17.8 GHz in Region 3, while ensuring the protection of existing primary allocations in the same and adjacent frequency bands, and to consider equivalent power flux-density limits to be applied in Regions 1 and 3 to non-geostationary-satellite systems in the fixed-satellite service (space-to-Earth) in the frequency band 17.3-17.7 GHz, in accordance with Resolution 726 (WRC-23);

Agenda Item 1.4 – FSS/BSS 17 GHz in Region 3 (Overview)

Objective: Explore a new primary allocation in Region 3 for FSS (space-to-Earth) in 17.3–17.7 GHz and for BSS (space-to-Earth) in 17.3–17.8 GHz. Considering the existing allocation in R2 due to AI 1.19 last cycle, AI 1.4 will look at whether to extend the agreed EPFD limits to also R3, and extend to R1.

Benefit: Harmonize interference protection by extending Region 2 EPFD limits to Regions 1 and 3.

- Established under Resolution 726 (WRC-23) to ensure global harmonization while protecting incumbent services. Did not initially discriminate between NGSO and GSO. Follows the steps of AI 1.19
- Initial discussions focused on technical studies, sharing scenarios (in-band & adjacent bands), and compatibility analyses with existing services such as GSO FSS, BSS feeder links, EESS, and radiolocation services. These discussions have developed and are outlined as items for work inside the AI.

Progress:

- Detailed technical and operational data have been compiled from multiple working parties
 - Liaison statements from several WPs (WP3M, WP5B, WP5C, WP7C).
- Revised CPM text proposals integrating extensive sharing studies and updated technical parameters.

Agenda Item 1.4 -- 17.3-17.7 GHz in Region 3 (CPM Methods)

Method A (No change)

Proposal: Retain current Radio Regulations without modification

Impact: Maintains the status quo, preserving existing allocations.

NGSO Impact: No access to the 17 GHz band for NGSO systems.

Method B (Restrictive modifications)

Proposal: Revise RR provisions (e.g., update footnotes, restrict Region 3 usage to GSO systems).

Impact: Enhances interference protection for GSO systems.

NGSO Impact: Effectively excludes NGSO operators from the band.

Method C (Harmonized & flexible allocation)

Proposal: Modify FSS allocation in Region 3 to harmonize epfd limits across Regions 1, 2, and 3; maintains focus on FSS (space-to-Earth) while leaving room for NGSO participation.

Impact: Balances interference protection with regulatory flexibility.

NGSO Impact: Offers a potential pathway for NGSO systems to access the band, subject to further technical validation.

Agenda Item 1.4 -- 17.3-17.7 GHz in Region 3

NGSO Operator Perspective:

Critical Need: Access to the band is essential for expanding NGSO services.

Preferred Option: Method C is the most promising for NGSO participation.

Next Steps:

Finalize technical studies and sharing scenarios.

Continue inter-working party coordination (reply liaison statements).

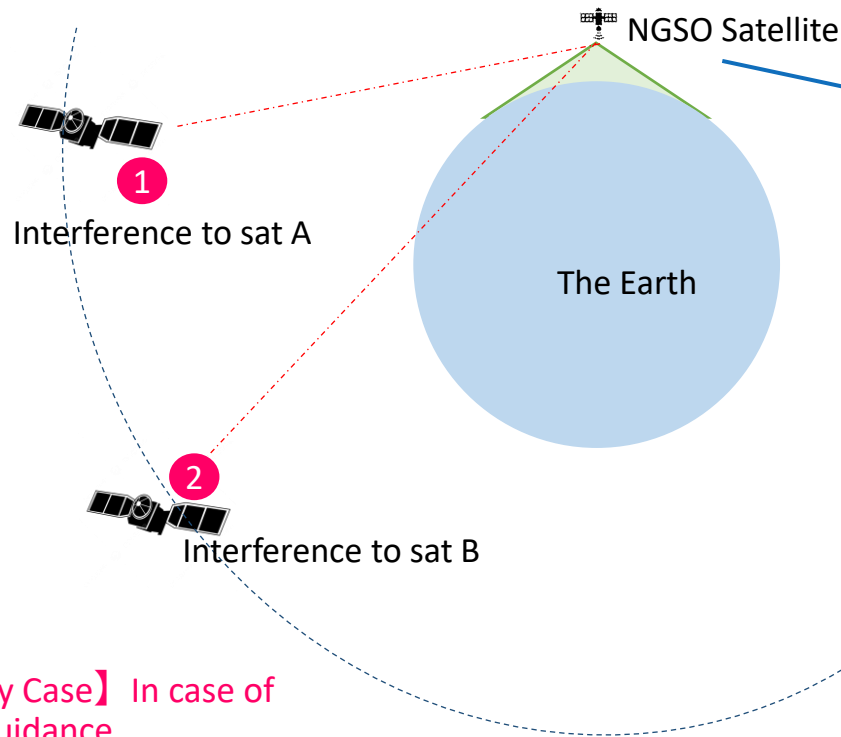
Refine CPM text proposals to incorporate NGSO interests under Method C.

Upcoming meetings will address remaining technical uncertainties and finalize recommendations.

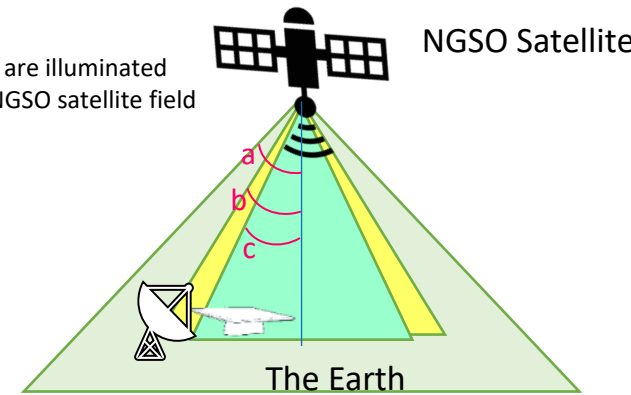
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Thank you!



Agenda Item 1.4 – FSS/BSS 17 GHz in Region 3 (Reverse band coexistence)

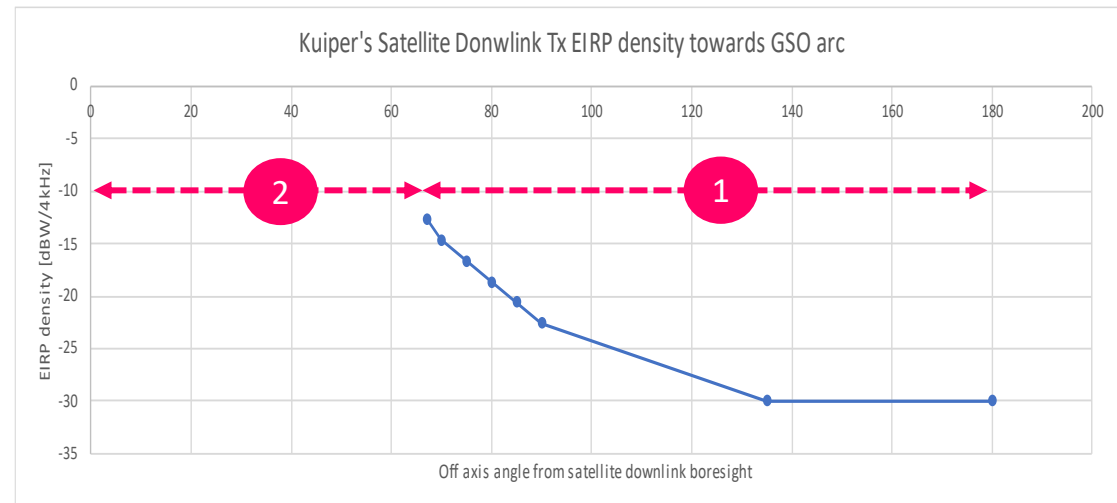


Spot beams are illuminated within the NGSO satellite field of view.



Angle a : 67 degrees = field of view of the Kuiper satellite given its orbit altitude 590km (higher satellite altitudes = smaller angle)
Angle b : 59 degrees = max scan of Kuiper Sat to serve GW at MEA of 20deg
Angle c : 48 degrees = max scan of Kuiper Sat to serve CT at MEA of 35deg

【Satellite Anomaly Case】 In case of anomaly, such as guidance navigation and control (GNC) failure, the Kuiper satellite is designed to go into a power saving mode automatically, for which it will shut off transmissions.



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