



Article 22 EPFD limits

Spectrum Policy Forum Cluster 4

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Our fleet today

Multi-orbit, multi-band satellite network of GEO, MEO, with strategic access to LEO satellites



99%
coverage of the
world's populated
region



~150
teleports



~50
Points of Presence
(PoPs)

MEO Medium
Earth Orbit

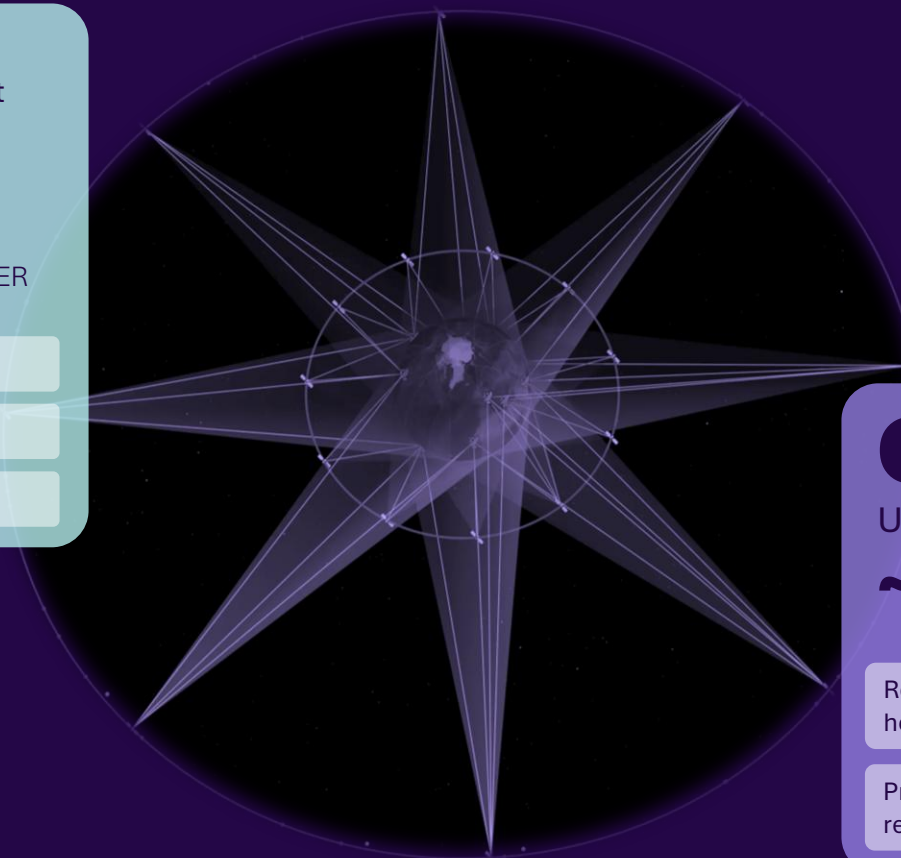
Fiber-equivalent
data connectivity

~30 MEO HTS
(O3b & O3b mPOWER)

High throughput

Low latency

Unique flexibility



GEO Geostationary
Earth Orbit

Unparalleled reach

~90 GEO

Reaching **millions** of TV
households **worldwide**

Providing comprehensive
reach to deliver **data connectivity**

The context

What is Article 22 of the Radio Regulations?

- Article 22 rules the radio spectrum sharing conditions between GSO networks and non-GSO systems
- So called EPFD limits give conditions for non-GSO systems that ensure that GSO networks do not receive interference
 - An aggregated power limit for non-GSO system operations
 - Defined on statistical basis
 - Ensures that a GSO link can meet a target availability with a given level of C/N
- WRC-23 decided to ask the ITU to study EPFD limits in order to report to WRC-27
- ITU WP 4A has done extensive studies
 - Understanding how EPFD limits were derived in the late 90s
 - > Set of GSO reference links, representative of operations in the Ku frequency band, more prospective for the Ka band
 - > Methodology and protection criterion to find technical conditions that ensure GSO protection
 - > Validation stage
 - Assessing the possible changes
 - > GSO links in the Ku band still valid, while Ka operations have largely evolved
 - > Methodology still valid and light possibility to update the protection criterion
 - > The final stage is always the validation of the limits

The possible options

State of the current discussions

- ITU
 - Several administrations have developed possible alternative EPFD limits
 - Convergence towards a reuse of the EPFD framework
 - > EPFDs provide clarity and predictability for GSO operators and their link design
 - > Some of the proposals do not give a complete limit
 - Proposals span both the Ku and Ka band
 - > In Ku, there is one proposal
 - ❑ From a GSO operator perspective, the impact on operations is very significant
 - ❑ Current operations are consistent with the ones that were studied, and there is no room for evolutions
 - > In Ka, there are four proposals in WP 4A documents
 - ❑ When tested against recent links, some of the proposals show an impact similar to the impact of the current limits, despite providing more flexibility to non-GSO systems

SES perspective on EPFD limits

The GSO protection is the cornerstone of the discussion

- Keep an EPFD framework to ensure predictability and visibility for GSO operators
- The protection needs of GSOs are not to be modified

There is no margin for relaxation in the Ku band

- Similar links as before
- No margin for relaxation
- Current proposals show a significant increase compared to the current situation

There is margin for relaxation in the Ka band

- GSO links have evolved
- Re-applying the same approach as before yields relaxed limits

Thank you