

WRC-27 A.I. 1.5

TELESATTM



A.I. 1.5 WRC-27: Background and Initial Considerations

- ▲ The issue originally brought into the attention of WRC-23 was associated with reported challenges faced by some member states in relation to the unauthorized operation of some NGSO user terminals
- ▲ The issue of “unauthorized user terminals operation” is not new
 - Studied also during the study cycle leading to WRC-19 for all types of FSS earth stations and the outcome was Resolution **22 (WRC-19)**
- ▲ Telesat, which is both a GSO and NGSO satellite operator, has significant concerns towards some of the proposals put forward at the last WP4A meeting, as they depart significantly from the provisions and the intent in Resolution **14 (WRC-23)**

Resolution 14 (WRC-23) vs Some WP4A Proposals

Res.14

Studies on **Regulatory** Measures

Exclusion of a country from the **service** area

- Service area = territories of countries included in the ITU filing
- Only the countries that may wish to exclude their territory from the service area of the non-GSO satellite system would be involved

Some proposals submitted to WP 4A

New Draft Resolution with **Regulatory and Technical** measures

- Multiple NCMCs under a CCM (Centralized Control and Monitoring) centre
- Technical feasibility not assessed

Explicit agreement for inclusion in the coverage area

- Massive undertaking for the notifying administration to get explicit consent from all countries in the world (NGSO LEO systems have global coverage)
- Regulatory burden for countries that wish to be included
- “Coverage area” = area “illuminated” by the satellites
- Could imply blocking of space-to-Earth transmission
- Technical feasibility not assessed

Multiple Network Control and Monitoring Centres (NCCMC) under a Centralised Control and Monitoring (CCM) Centre

- ▲ This proposal would translate into a complex technical requirement, rather than a regulatory measure
 - It is therefore **outside the scope** of this AI as per Res **14 (WRC-23)**
- ▲ From a technical perspective, typically the NCCMC in a given NGSO system is unique, as it manages and orchestrates the entire functioning of the constellation relying on complex software and including the global optimization of available resources (e.g. power/spectrum)
- ▲ **It is therefore not feasible to distribute the NCCMC functionalities across multiple entities.**

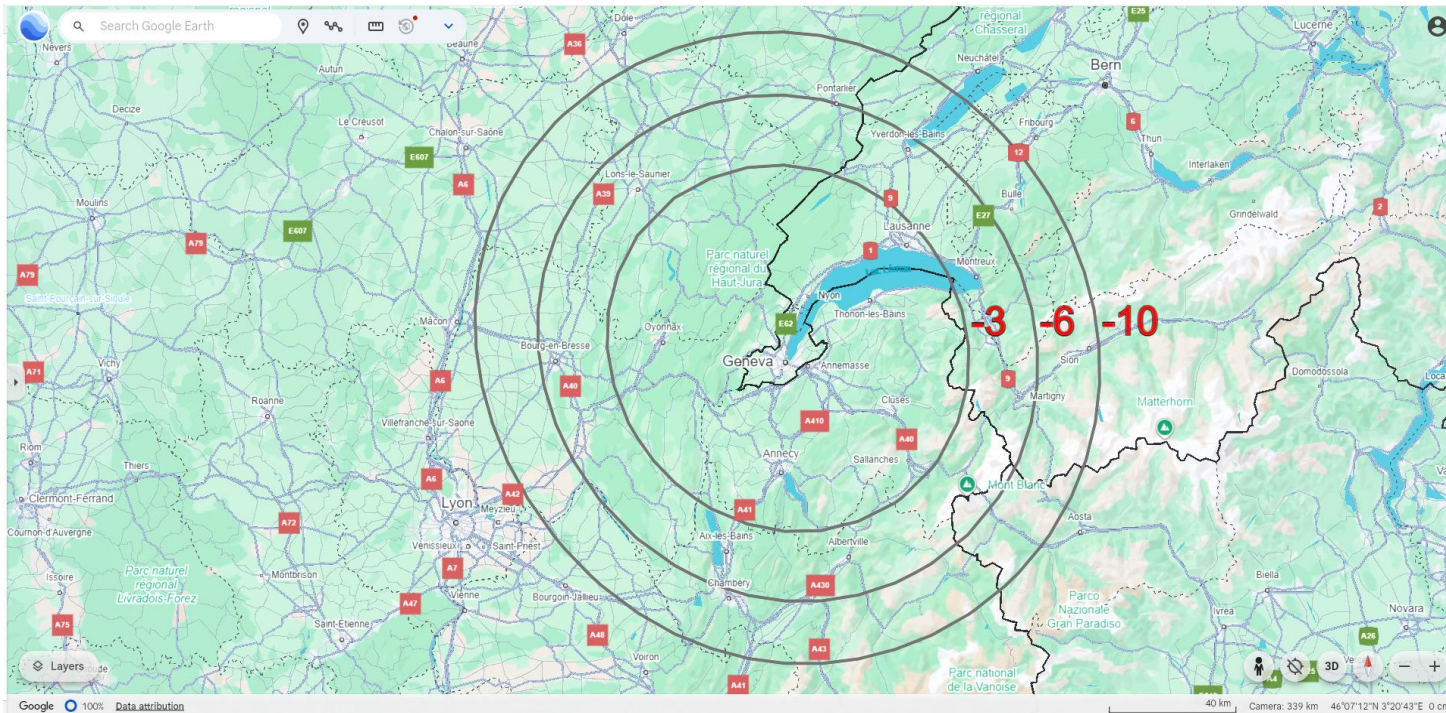
Explicit Agreement for Inclusion of the Territory of a Country

- ▲ Resolution **14 (WRC-23)** refers to the wish to exclude a territory from the service area of the non-GSO satellite system
- ▲ Obtaining “explicit agreement” for “inclusion” of the territories of various administrations is a completely different concept
 - The notifying administration of a NGSO system needs to undertake an extensive exercise requiring an action from presumably the majority of countries in the world, which do not have any issue with NGSO systems service provision
 - Gaps in service provision due to delays in completing the process and not by the desire of a country not to be “included”
- ▲ **In addition to being outside the scope of Resolution 14(WRC-23), a significant burden will also be imposed on the countries open to receiving services from NGSO systems**

Coverage Area and Space-to-Earth Transmission (1/2)

- ▲ *Resolves 2* of Resolution **14 (WRC-23)** refers only to the service area and reflects the need to not ***adversely affect the provision of service in the rest of the service area of the non-GSO satellite system***
- ▲ Any reference to the coverage area
 - is outside the scope of Resolution **14 (WRC-23)**; and
 - alludes more explicitly to limitations in the space-to-Earth transmission that are not technically feasible for some NGSO systems
- ▲ Furthermore, it is impossible to exclude the territory of a country in terms of space-to-Earth transmission, without inevitably affecting the service provision in neighboring countries, which is also contrary to the provisions of Resolution **14 (WRC-23)**.

Coverage Area and Space-to-Earth Transmission (2/2)



eirp contours with roll off at -3, -6 and -10dB at nadir for a satellite beam

It is apparent that even the smallest contour of -3dB impacts service provision in neighboring countries

▲ Any reference to the “coverage area” falls outside the scope of Resolution 14 (WRC-23)

▲ Limitations in the Space-to-Earth transmission

- are technically impossible for some non-GSO satellite systems
- would have an inevitable impact on service provision in the rest of the service area thereby further contradicting the provisions of Resolution 14 (WRC-23)

Exclusion from the Service Area in the Earth-to-space Direction

- ▲ Non-GSO service provision encompasses a variety of services, beside broadband provision to end users on land, e.g.:
 - Multi-Gbps backhaul connectivity for terrestrial operators; and
 - Maritime and aeronautical service provision which is global in nature
- ▲ While it is within the sovereign right of all states to authorize services provided in their territories, the exclusion of a territory from the service area of an NGSO system would render all services unauthorized, thereby also creating gaps in the provision of aeronautical and maritime services

Differentiation from GSO Earth Stations Provisions

- ▲ Possible requirements under this agenda item would lead to a differentiation from GSO networks for provisions of nearly identical telecommunication services to similar or even the same earth stations
- ▲ Current synergy between GSO networks and NGSO systems
 - Several mergers/acquisitions/agreements between satellite operators leading to multi-orbit operations
 - Existing earth stations (e.g. ThinKom Introduces Ka-Band COTM Phased-Array Satellite Antenna) are capable of switching seamlessly between the two types of orbits
 - No clear physical distinction between “GSO” and “NGSO” FSS earth stations
- ▲ **A paradox would arise if the same earth station is subjected to more restrictive regulations when transmitting to a NGSO satellite, but relieved from such restrictions when transmitting to a GSO satellite from the same country/location**

Thank you!