Outcomes of WRC-23 and WRC-27 A.I. 1.5

TELESAT™

Telesat Lightspeed timeline

Tests & Demos → **Commercial Service**

13th September 2024 – Telesat finalized funding agreements for a C$2.54 billion with the Government of Canada and the Government of Quebec for Telesat Lightspeed

Technology demo on LEO 3 satellite

Network Emulator for service testing

Service testing with multiple pathfinder satellites

2023-2025

Launches begin Field Trials

Q2 2026

Global service begins

- **PoPs & Landing Stations**
- **User terminals**
- **Market access**

H2 2027

TELESAT LIGHTSPEED™

Fully funded, next-generation, enterprise-class LEO network delivering resilient, high-capacity connectivity everywhere – land, sea, and air

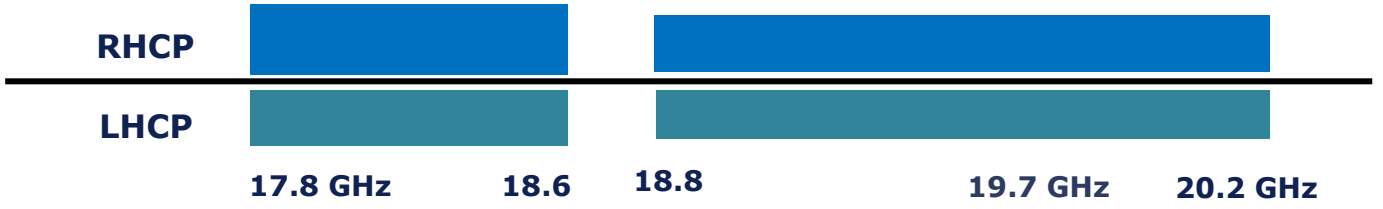
Telesat Lightspeed for Connectivity in India

- **Business-to-business: partnership with local operators** as opposed to offering direct-to-consumer
- **Designed specifically to meet the demanding needs of telecom, enterprise** and government customers with secure, high broadband data links with low latency, high resiliency and committed Service Level Agreements
- Competitive **backhauling solution** – seamless integration and service orchestration with terrestrial networks
- **Win-win approach for the extended ecosystem** and play a vital role in bridging the digital divide

Telesat Lightspeed Ka-band spectrum

Spectrum for User Terminal (service), Landing Stations (feeder) and TT&C links:

Space-to-Earth (Downlink): 2.2 GHz



Earth-to-space (Uplink): 2.1 GHz

WRC-23 Outcomes in Ka-band in relation to the Indian NFAP

▲ WRC-23 AI 1.16 on NGSO ESIM in Ka-band

- **ADD 5.517B** The operation of aeronautical and maritime earth stations in motion communicating with non-geostationary space stations in the fixed-satellite service in 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) shall be subject to the application of Resolution **123 (WRC-23)**
- **IND 17** The bands 14-14.5 GHz (Earth to space), 28.5-30 GHz (Earth to space), 10.7-11.7 GHz (space-to-Earth), 12.5-12.75 GHz (space-to-Earth) and ~~**18.7**~~ **17.7**-20.2 GHz (space-to-Earth) may be used for earth-stations on land transportations, ships …

▲ WRC-23 AI 1.17 on Inter-satellite links including the Ka-band

- **ADD 5.521A** For use of the frequency bands 18.1-18.6 GHz, 18.8-20.2 GHz and 27.5-30 GHz, or parts thereof, by space stations in the inter-satellite service, Resolution 679 (WRC-23) shall apply. …….
- **ADD 5.523DA** In order to protect feeder links of non-geostationary networks in the mobile-satellite service in the frequency band 19.3-19.7 GHz, the power flux-density values produced at the surface of the Earth for all angles of arrival by a space station in the inter-satellite service operating in this band in accordance with Resolution 679 (WRC-23) shall not exceed −140 dB(W/m2) in any 1 MHz within 150 km of any of the above feeder-link earth stations recorded in the Master International Frequency Register.

A.I. 1.5 WRC-27: Background and initial considerations

- The issue originally brought into the attention of WRC-23 is 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. It was 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)**

WRC-27 AI 1.5

Resolution **14 (WRC-23):** Studies on development of regulatory measures, and implementability thereof, to limit the unauthorized operations of non-geostationary-satellite orbit (non-GSO) earth stations in the fixed-satellite service (FSS) and mobile-satellite service (MSS) and associated issues related to the service area of non-GSO FSS and MSS satellite systems :

Resolves 1	• **studies on regulatory measures to limit the unauthorized operations of non-GSO FSS and MSS earth stations in the Earth-to-space direction** in order to address and cease such operations, taking into account technical and operational aspects, as appropriate
Recognizing c)	• **that Member States may wish to exclude its territory from the service area of the non-GSO satellite system**
Resolves 2	• **studies on regulatory measures, taking into account *recognizing c)*** with regard to nonGSO FSS and MSS satellite systems, **and the implementability of such measures, without adversely affecting the provision of service in the rest of the service area of the non-GSO satellite system**

Resolution 14 (WRC-23) vs some WP4A proposals

Res.14	Some WP4A proposals
Studies on **Regulatory** Measures	Draft New Resolution with **Regulatory and Technical** measures • Multiple NCMCs (Network control and Monitoring Centers) • No assessment on the feasibility of such technical measures
Exclusion of a country from the **service** area • Service area = territories of countries included in the ITU filing	**Explicit agreement for inclusion in the coverage area** • "Coverage area" = area "illuminated" by the satellites • Massive undertaking for the notifying administration to get explicit consent from all countries in the world (NGSO LEO systems have global coverage) • Proposed blocking of space-to-Earth transmission • Technical feasibility not assessed • Unavoidable gaps in coverage impairing continuity of services also for maritime and aeronautical purpose

Conclusions

- Very different proposals from what was discussed and agreed at WRC-23
- Unprecedented measures targeting a specific type of satellite system
- Need to strike a balance between the concerns of some Administrations and a fair treatment of all satellite systems to avoid unwarranted discriminations
- ITU regulations should not impair the deployment/development of new technologies, especially when these can help closing the digital divide
- Ensuring effective enforcement of existing measures (e.g. via earth stations geolocation capabilities)
- Possible additional measures should not adversely affect NGSO service provision, taking into account also global services such as maritime and aeronautical connectivity
- Important to analyse potential negative impacts of such measures, including increased costs and complexity for existing and future satellite systems