

# Telesat Lightspeed and satellite licensing in India

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# Telesat Lightspeed is the World's first enterprise-class LEO network

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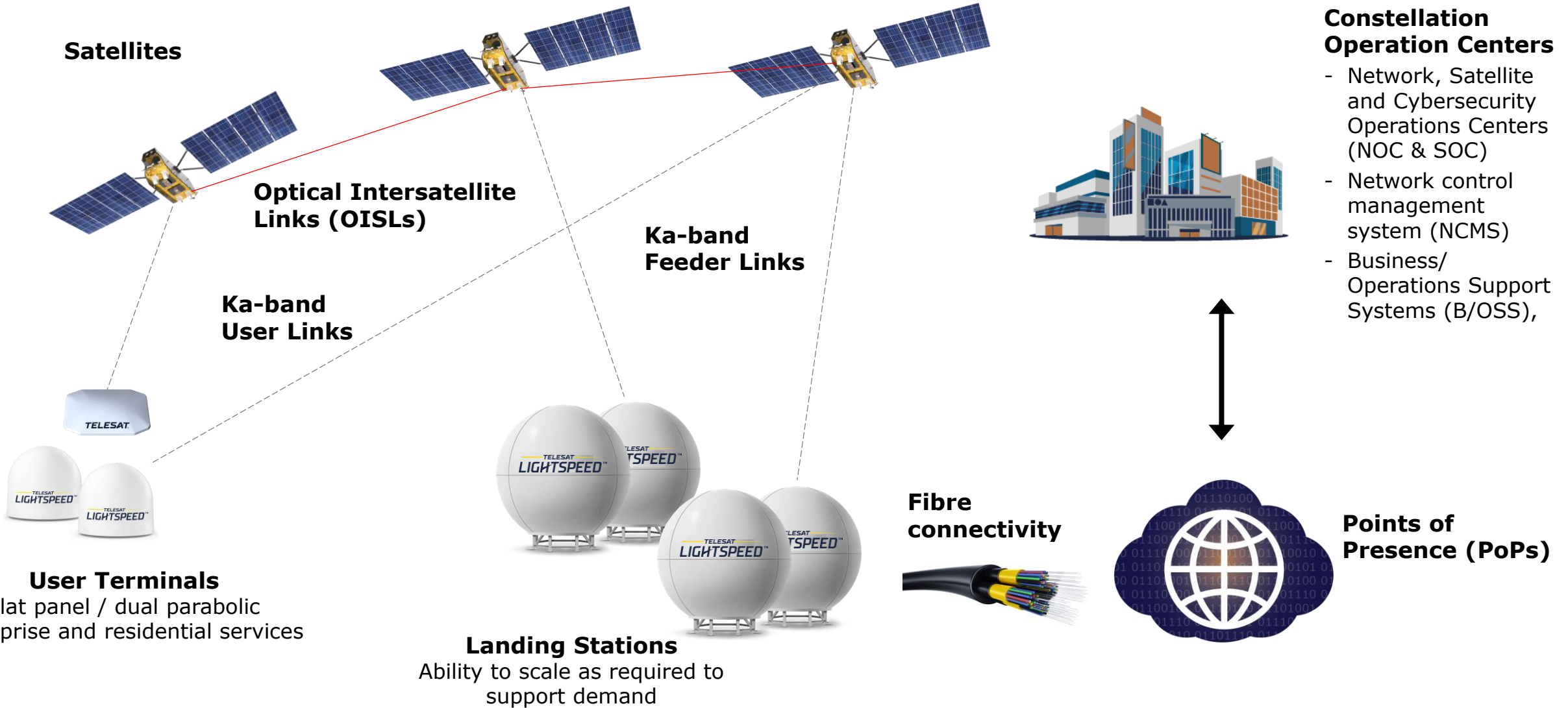
**Not all low earth orbit networks are designed the same**

**Consumer-first LEO networks are not designed to meet enterprise requirements**

**Only Telesat Lightspeed is designed from the ground up to meet the most demanding user requirements of enterprises for reliable, secure, high-throughput, and low-latency connectivity everywhere, while also serving residential consumers**



# Telesat Lightspeed system overview



# Telesat Lightspeed timeline

Tests & Demos

Commercial Service

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
- Q4 2027

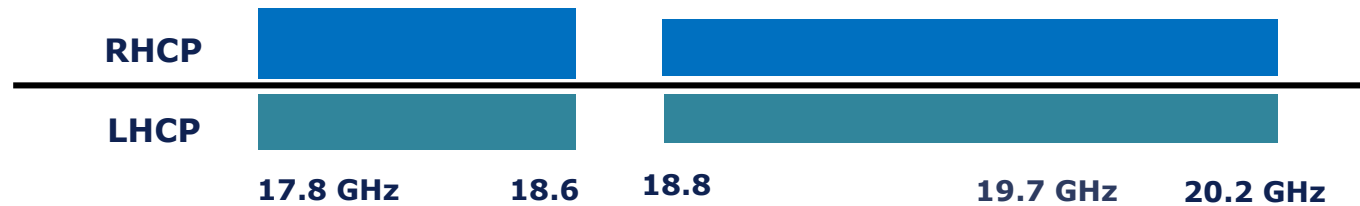
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# Telesat Lightspeed Ka-band spectrum

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*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





# Satellite licensing framework in India

# Satellite licensing framework in India

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- ▲ In the last five years or so there have been several rounds of consultation and revisions of the satellite regulatory framework by DoT/ISRO/TRAI
  - aiming at streamlining/updating the applicable regulations and allowing the introduction of novel applications/systems
  - satellite industry comments have been taken into consideration

## ▲ **IFMC policy 2018**

- In-Flight Maritime Connectivity policy in 2018 opening the possibility for connectivity provisions to Indian and foreign transiting aircraft and vessels

## ▲ **Revised NFAP 2022**

- Adopting applicable updated provisions from the Radio Regulations

## ▲ **Satellite Communication Reforms 2022**

- See next slide

# Satellite Communication Reforms 2022

## THE REFORM

To propel growth and to accelerate provisioning of affordable services to the citizens, Government has taken the following steps for Ease of Doing Business in the fast emerging area of satellite-based services.

- NOCC charges of Rs 21 Lakh per transponder per year removed for Satellite TV Broadcasters w.e.f. 1st Oct, 2022. This reform shall result in savings of about Rs 34 crore every year for the broadcast industry.
- Mandatory Performance Verification Testing (MPVT) charges of Rs. 6000/- per antenna for testing of satellite antenna(s) also removed.
- Enhanced the scope of the satellite licenses including Commercial VSAT authorisation to enable the provisioning of:
  - ◆ User terminal stations on moving platform(s).
  - ◆ Satellite-based M2M/ IoT devices.
- Guidelines framed for establishing satellite-based communication network for ease of understanding of users/applicants.
- Automated and contactless online processing of all the applications through 'SaraSanchar' portal.

## b) What will be its implications for the citizens?

A liberal simplified framework is likely to lead to expansion of the satellite-based services especially in hitherto uncovered and difficult-terrain areas.

## PROCEDURE SIMPLIFICATION

To simplify the existing processes, vital changes have been made for streamlining satellite-related clearance processes.

- Apex committee → Renamed as Inter-Ministerial Committee for Satellite Network Clearance (IMC-SNC) → Single platform to issue in-principle clearance for satellite-based network(s) → to expedite the clearances, it consists of all the relevant Departments/Units.
- Application filed with Satellite Division of DoT → DoS/NSIL to carry out allocation of space segment → NOCC to grant carrier plan approval → WPC issues spectrum assignment.
- Existing process takes about 6 to 8 months → Proposed to do it in 6 weeks.
- Instead of multiple-level scrutiny by NOCC and WPC, single scrutiny by each unit is envisaged for Ease-of-Doing-Business.
- Clear timelines prescribed
  - ◆ DoS → space segment allocation letter → 1 week
  - ◆ NOCC → carrier plan approval → 1 week
  - ◆ WPC → Frequency assignment including Lol, decision letter, SACFA clearance and WOL → 4 weeks
- These reforms by the DoT are likely to pave way for enhanced use of satellite-based services in logistics and other sectors and attract more investment thereby creating more job opportunities.
- This booklet outlines the importance of Satcom, explains the associated terms and outlines the reforms undertaken by DoT



# Satellite licensing framework in India - 2023

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## ▲ Opening of the Saral Sanchar portal

- Unified portal to issue licenses in a more simplified, efficient and transparent manner

## ▲ TEC/DoT Standards for Interface Requirements

- Technical Requirements documents to cover both GSO and NGSO user terminals, including maritime and aeronautical Earth Stations in Motion, in a number of frequency bands

## ▲ Gateway licensing

- Previous model in the Unified License required each service provider to establish a gateway earth station - infrastructure redundancy and non cost-effective solutions
- Revised to “detach” the gateway license from the unified (service provision) license

## ▲ IN-SPACE Guidelines for Authorizing Space Activities

- Streamlined document including also NGSO systems and the use of non-Indian capacity

# Microwave spectrum assignment for satellite services by auction?

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- ▲ Contradictory message with respect to the positive ones conveyed in the last few years coherently with the spirit of the 2022 Satellite Communication Reforms document
- ▲ Auctions are useful in assigning resources that cannot be shared
- ▲ GSO and NGSO satellite operators do currently share the same microwave frequencies in the same location - Coordination based on ITU rules is used when necessary – No need for auction!
- ▲ Shared spectrum does not mean de-licensed spectrum, as examples of all other countries show
- ▲ Auction mechanism for microwave satellite spectrum will be damaging

# Why a spectrum auction would be damaging

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- ▲ Will create 'gatekeepers' who control the spectrum and can artificially prevent the entry of other operators, thus creating an anti-competitive environment
- ▲ Satellite operators would have to negotiate a private contract agreement in a non-transparent process, in order to be able to use spectrum that could be shared among satellite operators in the first place
  - Monopolistic or semi-monopolistic situation, hampering competitiveness
  - Some satellite operators will be excluded entirely
- ▲ Detrimental to public interest as choice of services will be artificially limited and the quality of services reduced by limiting the amount of spectrum usable, therefore reducing the system performances
- ▲ Gaps in service provision over India (in the case of spot beam coverage with fixed spectrum channel allocations, unless the operator manages to "win" all relevant spectrum channels)
- ▲ Negative precedent internationally by contradicting the basic and essential principle of efficient spectrum use, also imbedded in the ITU constitution
- ▲ None of the above is ultimately beneficial to society, bearing in mind that satellites services are meant to fill the gaps in terrestrial provision by reaching the unreachable

# Can microwave spectrum use for satellite services be compared to mobile terrestrial one?

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- ▲ Any purported analogy between terrestrial and satellite access spectrum is unfounded, as the two services, while both providing connectivity, are intrinsically different in
  - the physics of the link (i.e. sharing feasibility)
  - in the economic and societal aspects
  
- ▲ While terrestrial mobile is a service reaching billions of customers with corresponding revenues, satellite service provision is, in comparison, a niche, but indispensable, market filling in the gaps in terrestrial service provision to guarantee safety, meaningful connectivity and equal opportunity
  - There are orders of magnitude of difference in terms of the number of customers and revenue. As such, the idea of equating spectrum, including pricing, between the two types of service does not stand
  - In addition to maritime and aeronautical services, satellite services will primarily address areas on land that terrestrial services cannot or do not wish to reach, even for service provision directly to consumers (there is no reason to buy a satellite terminal if sufficiently good terrestrial connectivity is available!)

# Spectrum fees – what is the “real value” of spectrum?

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- ▲ *“Thus, in order to reflect true value of satellite spectrum, the auction design/model should create some sort of scarcity in case where supply is non-rivalrous and shareable”.*
- ▲ This shows how the indicated “price discovery process” via auction would be artificial and lead, rather than to the “true value” of satellite spectrum, to an inflated price, which only some operators could afford
- ▲ While microwave satellite spectrum is always assigned administratively at international level, the cost of spectrum can vary significantly from country to country
- ▲ In the Indian context, as a priced discovery process, **it could be reasonable to use a % of the AGR** (e.g. 1% as suggested). This is a good reflection of the true value of spectrum, as directly linked to the actual spectrum use/revenue in the country

# Thank you!

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