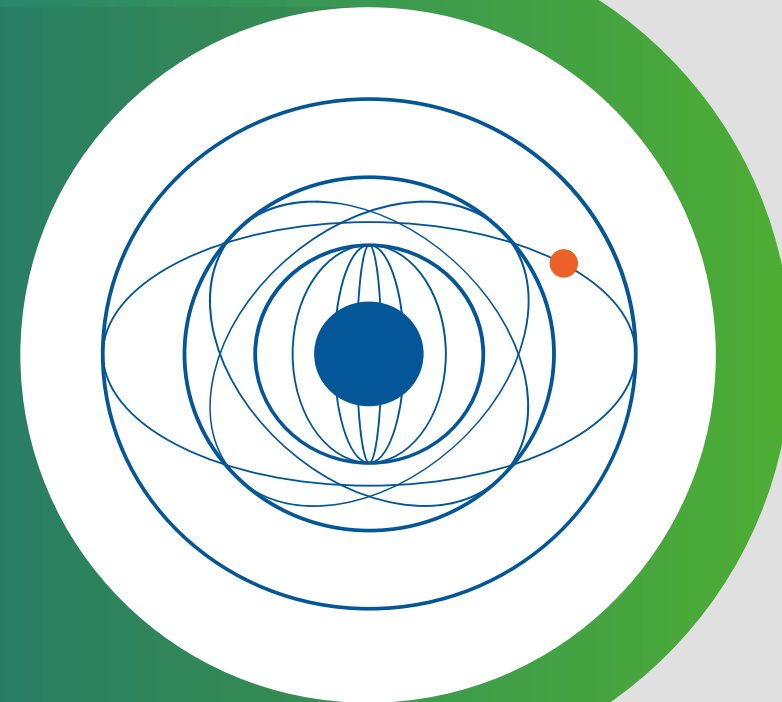# The Changing Space Segment, a view from International Organization

**Andrey Kirillovich**
**Director of Strategy, Marketing & Business Development**

NatSatTel 2023 Online Conference
01 June 2023

# Intersputnik Facts

Intersputnik International Organization of Space Communications established **in 1971**

Full members of Intersputnik
**26 sovereign states**

Governing bodies – **Board** (Intersputnik Members) and **Operations Committee** (Intersputnik Signatories)

Intersputnik Agreement registered with the **UN Secretariat**

**25 Signatories**
appointed by Intersputnik Members from among national telecommunications entities and/or Telecommunications Administrations

National Satellite Operators

National Satellite Teleports

National Telecom Authorities

National Telcos

*Cooperation with International Organisations*

UNOOSA

SPACE4SDGS

INTERNATIONAL ASTRONAUTICAL FEDERATION

IMSO INTERNATIONAL MOBILE SATELLITE ORGANIZATION

EUTELSAT igo

ITSO

PCC

GSOA GLOBAL SATELLITE OPERATORS ASSOCIATION

INTERSPUTNIK

# Intersputnik: Space Sustainability & Connectivity Guidelines

## Space Sustainability

- COPUOS permanent observer status
- International Astronautical Federation Member
- Participation in the industry documents elaboration
  - Report on the LST Guidelines implementation
  - World Economic Forum and McKinsey reports
  - Space Debris Statements
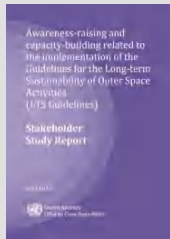
- Cooperation Satellite Procurement Model
  - Shared satellite option for developing nations using consolidated Intersputnik orbital resource

## Connectivity

- ITU-R, ITU-D Membership
- UN SDG support
  - Telemedicine
  - Distant Learning
  - Remote communities
  - Infrastructure development
  - Precise Farming
- Least Developed Countries
  - National Social Insurance Fund of Madagascar
  - Access to social digital services is provided to rural population

# Intersputnik Combined Satellite Fleet

Based on the satellite systems operated by the Organization's Signatories and Partners, Intersputnik offers satellite bandwidth on a vast variety of GEO satellites covering almost all continents and waters around them

**IK - Intelligent Konnectivity Everywhere**



Satellites (top labels): IK-11W, IK-36E, IK-49E, IK-52E, IK-55E, IK-65E, IK-80E, IK-90E, IK-103E, IK-145E, IK-163.5E

Satellites (bottom labels): IK-14W, IK-4W, IK-4W-A, IK-17E, IK-40E, IK-51.5E, IK-53E, IK-56E, IK-75E, IK-75E-A, IK-96.5E, IK-140E, IK-140E-A, IK-183E

**25 IK** satellites

**14W–183E** Orbital arc
Europe, Latin America, Africa, Middle East, Asia and Pacific

**C, Ku, Ka** Bands
Standard, Extended and Planned (Appendix 30B)

# Intersputnik Consolidated Ground Facilities

A geographically distributed network of satellite teleports, operated by Intersputnik Signatories and Partners, provide a unique opportunity to implement any kind of connectivity or broadcasting projects in almost all regions of the world

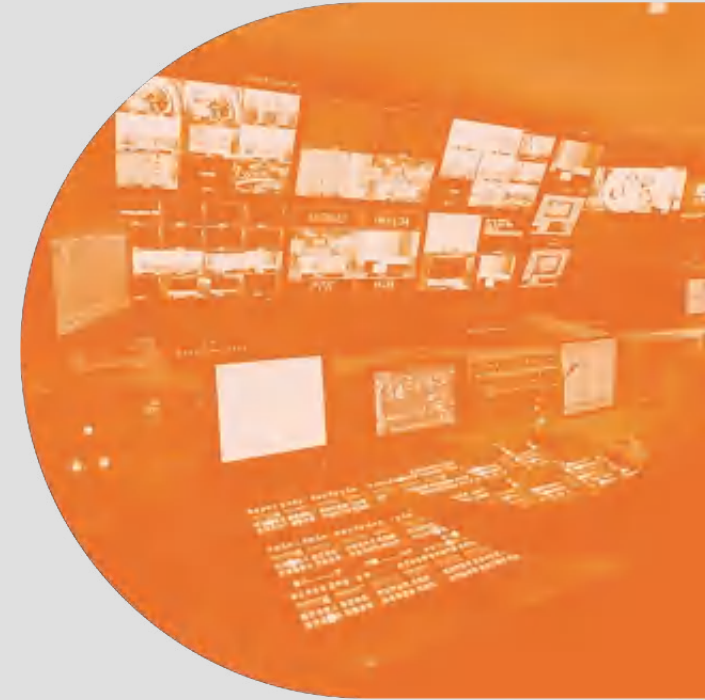**25+ Teleports**

**West & East GEO Arc Satellites Accessibility**

**Regional Internet Backbone Connectivity**

**VSAT, SCPC, VNO, ISP Packages**

# International Cooperation in Space Segment Procurement

## ORBITS, FREQUENCIES, SATELLITES

- The status of an intergovernmental organization (a group of telecommunications administrations) allows Intersputnik to file satellite networks to the ITU for their use both independently and together with interested partners

- Support and consultancy on spectrum resource for national satellite programs, under development or planned

- Consolidated portfolio of spectrum resource frequency assignments to national administrations of Members and Signatories

- Shared satellite option for Members, Signatories and 3-d parties under cooperation model



Multi-core processing
for fast, actionable data

Adaptable beam footprints
for mission changes

Adjustable bandwidth that responds to user demand

# Non-GEO vs. GEO: Numbers

## Basic systems

**SPACEX**
>4 300 launched

**OneWeb**
618 launched

**O3b mPOWER**
4 Launched

**amazon | project kuiper**
Q1 2024

## >38,000 BB Sats filed

| | |
|---|---|
| ASTRA | 13 620 |
| amazon project kuiper | 7 774 |
| OneWeb | 6 372 |
| BOEING | 5 789 |
| HUGHES | 1 440 |
| TELESAT | 1 373 |
| SPINLAUNCH | 1 190 |
| INTELSAT | 216 |
| inmarsat | 198 |

Credit: Milbank

## ≈600 GEO Sats

# GEO vs. Non-GEO: Issues

## Updating regulatory framework at International and National levels

- Satellite technologies are significantly ahead of the development of regulations on the use of the radio-frequency spectrum and satellite orbits
- Call for sustainability, equitable access and rational use of GSO and non-GSO orbit/spectrum resources
- Need for improving the international regulation
  *(ITU-R Workshop "ITU in Service of Space" 29.06.2023)*
- Update of regulations at the national level and recommendations for licensing the use of global services of satellite operators.

## National satcom markets development

- National GEO sat program vs. national Non-GEO infrastructure deployment
- Pros & Cons
- Non-GEO business models
- Landing rights issues

8

# GEO vs. Non-GEO: Questions to be asked by at National level

- Planning 1-st national GEO sat?

- Planning replacement and/or 2-nd national GEO sat?

- Invest in national infrastructure for Non-GEO?

- What is more important – to have a "plug and Play" solution with low costs, or have full control?

- Inter Satellite Links – a threat or an opportunity?

- Is there enough applications requiring low latency?

- Can one orbit support all national applications?

- Is the local regulatory framework ready?

- What can be the GEO/non-GEO Mix?

*Relevant consultancy is required!*

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THANK YOU
FOR YOUR ATTENTION!

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