

NTN-6G: The View of a LEO-GEO Satellite Operator

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The network

Satellites

36 +4 in Sept '23
Geostationary

634
Low Earth Orbit

Spectrum

Diversified resources in

C, Ku- and Ka-bands

>3.5Ghz of globally harmonized premium spectrum rights for

Ku- and Ka-band

Operations centres

6

Teleports in Rambouillet (France), Turin and Cagliari (Italy), Madeira (Portugal) and Itzapalapa and Hermosillo Sonora (Mexico)

2

Network and Satellite Operations Centres in London (England) and Virginia (USA)



EUTELSAT GROUP

Eutelsat and OneWeb combine to become Eutelsat Group.

A global leader in satellite connectivity and the world's first integrated GEO-LEO operator.

One team

Staff

1100+
based all over the world (mainly in France, Italy and Mexico)

600+
based all over the world

Nationalities

c.47

c.50

Gender

Female **34%**

Female **22%**

Male **66%**

Male **78%**

Offices

96

Amman, Beijing, Cologne, Dubai, Istanbul, Johannesburg, London, Moscow, Madrid, Mexico, Milan, Moscow, Panama, Paris (4), Rio de Janeiro, Rome, Singapore, Taipei, Turin, Warsaw and Washington D.C.

US Gov

EUTELSAT AMERICA CORP
Team based in Washington D.C.

OneWeb Technologies
Team based in Texas

Network capabilities

Space Core Value

Responsible & sustainable

Responsible & sustainable

Innovation

Eutelsat Konnect VHTS
Pioneering VHTS technology to deliver high-speed broadband

GEN 1

Innovative satellite design with >7Gbps per satellite and revolutionary beam technology

Roadmap

Eutelsat Quantum
Spearheading a new generation of software driven satellites

GEN 2

Satellite constellation in design and planned to enable faster speeds and denser coverage for less cost

Route to market

B2B
Business to business

B2B
Business to business

Key products

Video Eutelsat satellites deliver more than 6,500 TV channels to over 274 million homes with over 2,000 HD channels and 22 Ultra HD channels

GEO Connectivity

LEO Connectivity

Key markets

Enterprise, Government, Maritime, Aviation, Telecoms (Cellular backhaul)

Enterprise (Cellular backhaul and community broadband) Government, Mobility Aviation, Maritime and Land

5G/6G NTN

A giant leap for Sat-kind



The promises of 5G/6G NTN

Direct to Phones

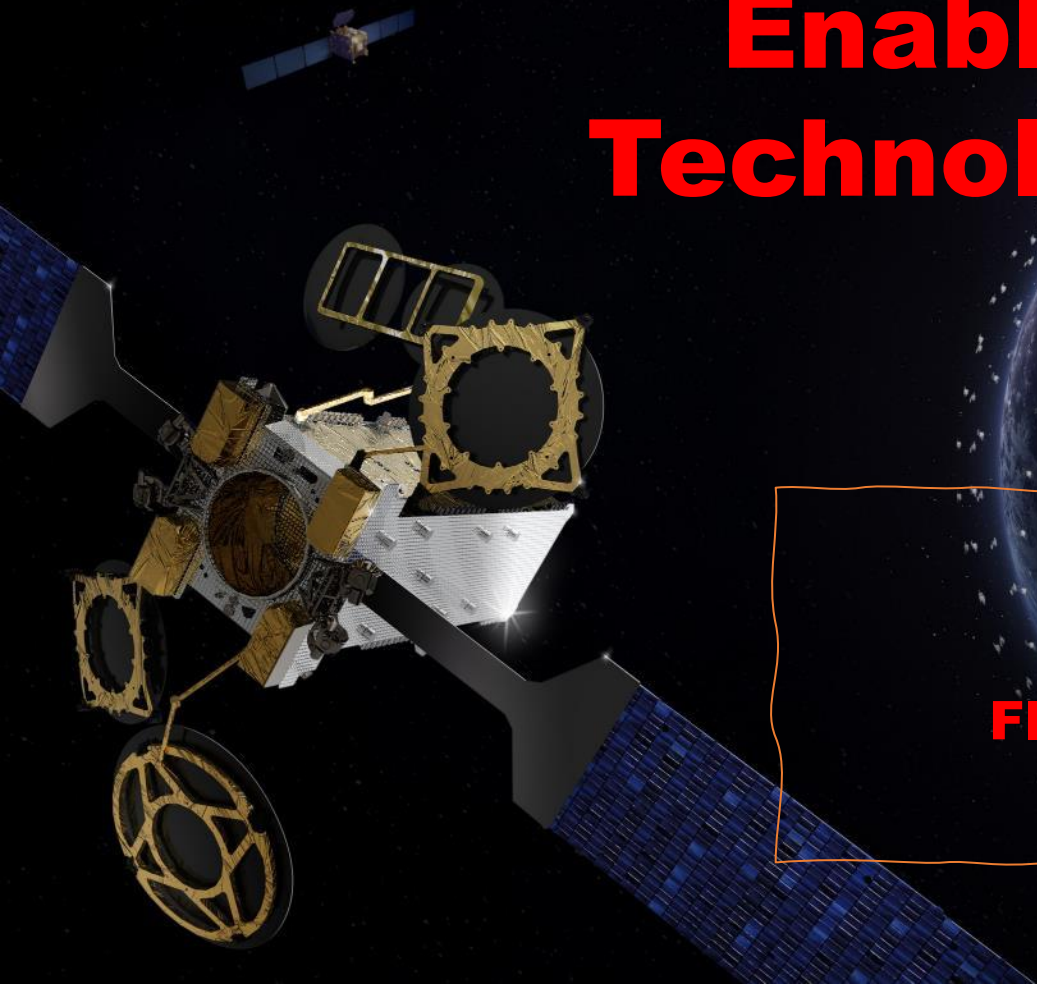
...and Broadband too!

LEO + GEO + TN : Native Integration

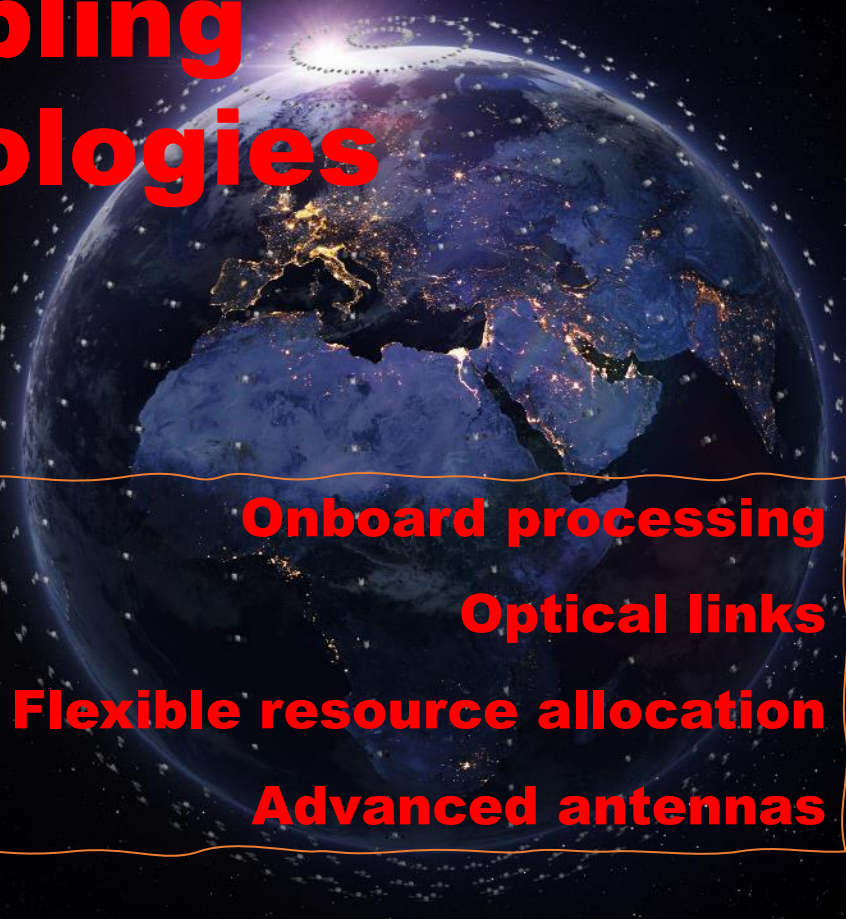
...and NTN Interoperability too!



Enabling Technologies



- Onboard processing**
- Optical links**
- Flexible resource allocation**
- Advanced antennas**



Challenges



(Power) Efficiency
Spectrum management
Interference mitigation
Sovereignty
Multi-orbit resource optimization
Sustainability

User Terminal Antennas



Wishlist

- 
- Flexible architecture**
 - Optimized antennas (e.g. for cars)**
 - Optimized waveforms: low PAPR, NOMA, ...**
 - GNSS-free operation**
 - Intelligent spectrum sharing and interference mitigation**