Beyond 5G symposium

Denis Fauconnier | 30 November 2023

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A few words about myself

- Most of career in Telecom
- 10 years in 3GPP (RAN2 Chair), 15 years building products
- Move to Eutelsat to « Make a BTS fly »

Two market-focused business units

EUTELSAT GROUP

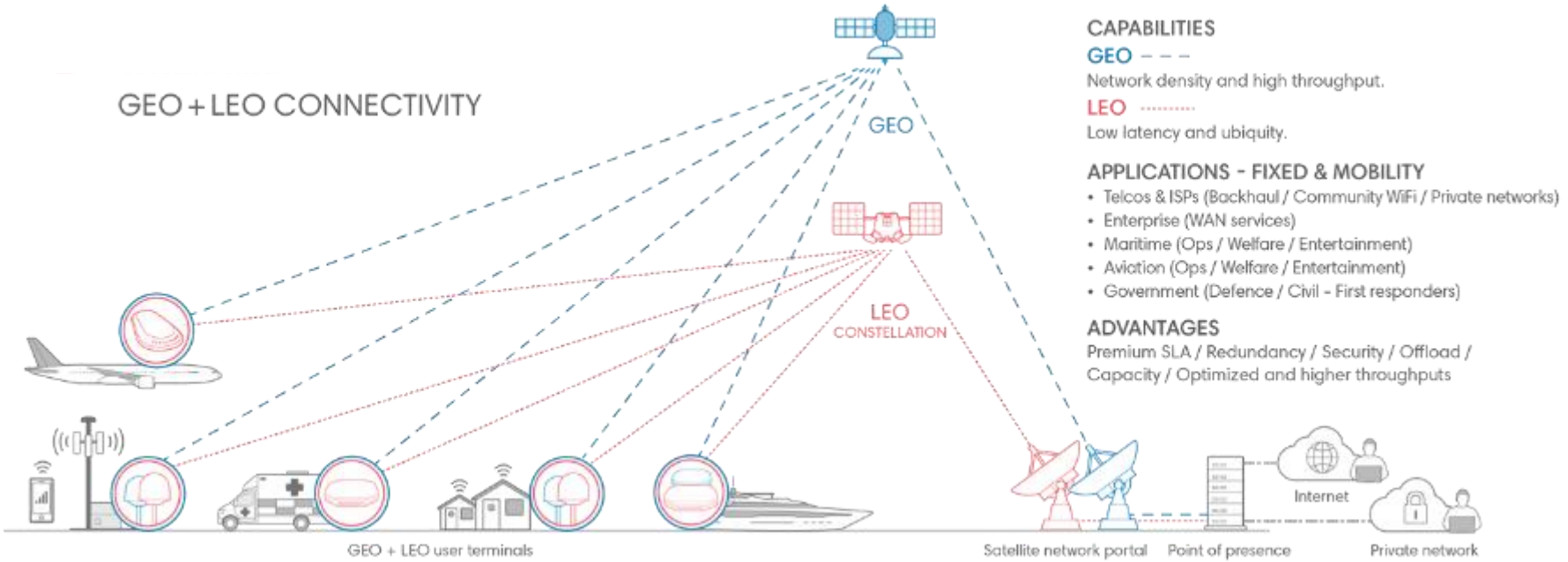
EUTELSAT
EUTELSAT GROUP

- 6,500 TV channels
- 2,130 HD channels
- 1 billion viewers
- Delivering content to terrestrial networks and Direct-to-Home reception
- Enriching the viewing experience with satellite multiscreen and revolutionary FTA services

EUTELSAT ONEWEB
EUTELSAT GROUP

- Formed from the merger between Eutelsat and OneWeb in 2023
- Mobile, Fixed and Government connectivity services
- Worlds first GEO+LEO one stop shop
- Live services down to the 35th parallel and fully global services from 2024
- 3X usage growth in 2023

Combining GEO+LEO for guaranteed performance



CAPABILITIES

GEO – – –

Network density and high throughput.

LEO .....

Low latency and ubiquity.

APPLICATIONS - FIXED & MOBILITY

- Telcos & ISPs (Backhaul / Community WiFi / Private networks)
- Enterprise (WAN services)
- Maritime (Ops / Welfare / Entertainment)
- Aviation (Ops / Welfare / Entertainment)
- Government (Defence / Civil - First responders)

ADVANTAGES

Premium SLA / Redundancy / Security / Offload / Capacity / Optimized and higher throughputs

Summary – new advantages for our partners and their customers

<table>
<tr><td>Launching a new hybrid connectivity offer for LEO+GEO</td><td colspan="3">Trusted partners for global satellite connectivity</td><td>True B2B business model with sustainable margins for distribution partners</td></tr>
<tr><td>An exciting new entrant - LIVE and ready to connect</td><td colspan="3">  </td><td>The enterprise-grade network- SLAs, CRIs and committed availability</td></tr>
<tr><td>A choice of user terminal form factor approved hardware from leading manufacturers</td><td>Seamless and secure IP and digital integrations</td><td>24/7 customer support</td><td>A range of service plans for ultimate flexibility</td><td>Global reach to the hardest and most remote places on Earth.</td></tr>
</table>

Distribution Partner in Japan

Eutelsat OneWeb and SoftBank signed a Distribution Partnership Agreement to deliver satellite communication services across Japan

eutelsat ONEWEB
eutelsat GROUP

Stable communication service
High-speed/Low-latency/Bandwidth guarantee

SoftBank

Assumed Use Cases

Sea vessels

Construction

Disaster recovery

Forestry (Mountainous areas)

Remote area infrastructure

There are several ways on how satellite interacts today with 3GPP

	Cellular spectrum **smart phones & objects**	L/S band **smart phones & objects**	KA/KU **VSATs**
Proprietary		Verticalised	GEO & MEO : DVB, LEO: OFDM
4G Smartphones	Telco partnership for spectrum		
NTN Rel 17	Telco partnership for spectrum	Telco roaming	
NTN Rel18+			Satcom & Telco roaming

Risk and opportunities of 3GPP for Satellites

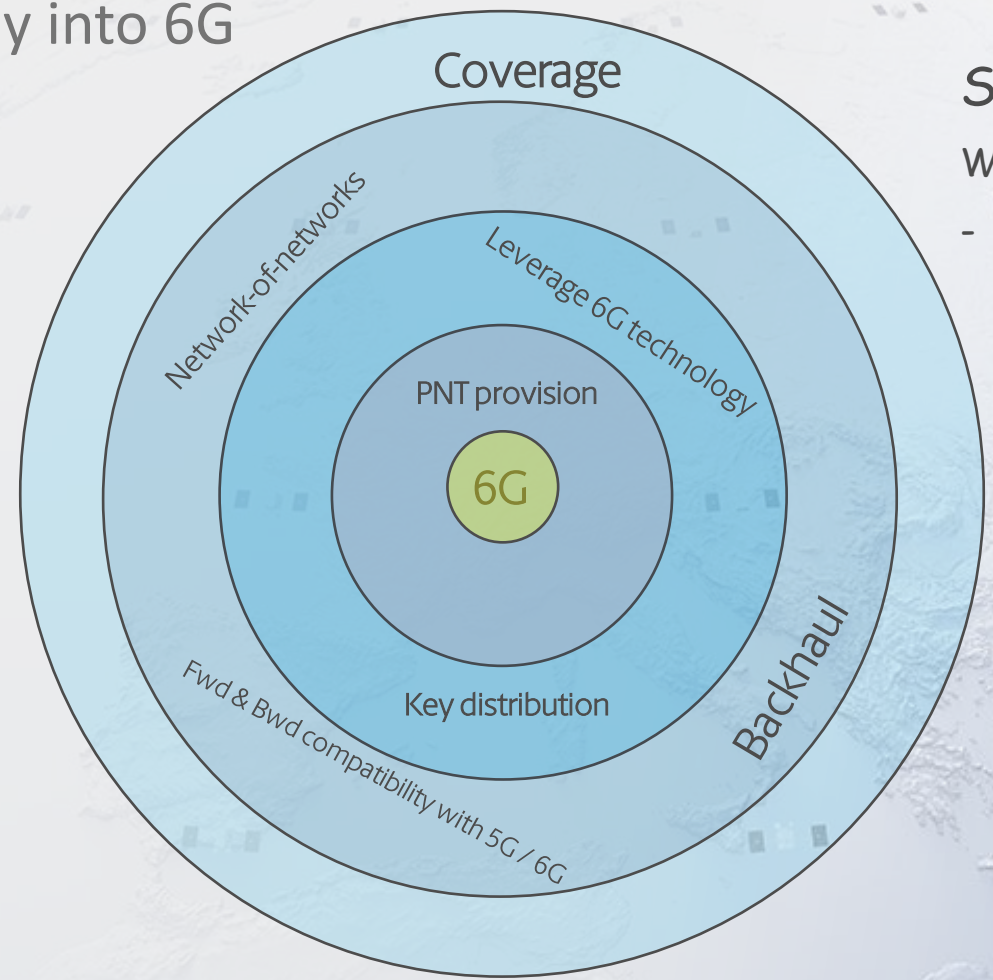
Opportunities

- Avoid lock-in of terminal to infra, in particular for regenerative satellites
- Leverage of 3GPP Hardware and Software ecosystem
- Benefit from feature rich 5G telecom roadmap
- Roaming between satellite operators and between satellite & terrestrial
- Enable new verticals e.g. connected cars

Risks

- Custom development on top of the standard
- Lack of expertise from satellite industry

Satcoms play into 6G

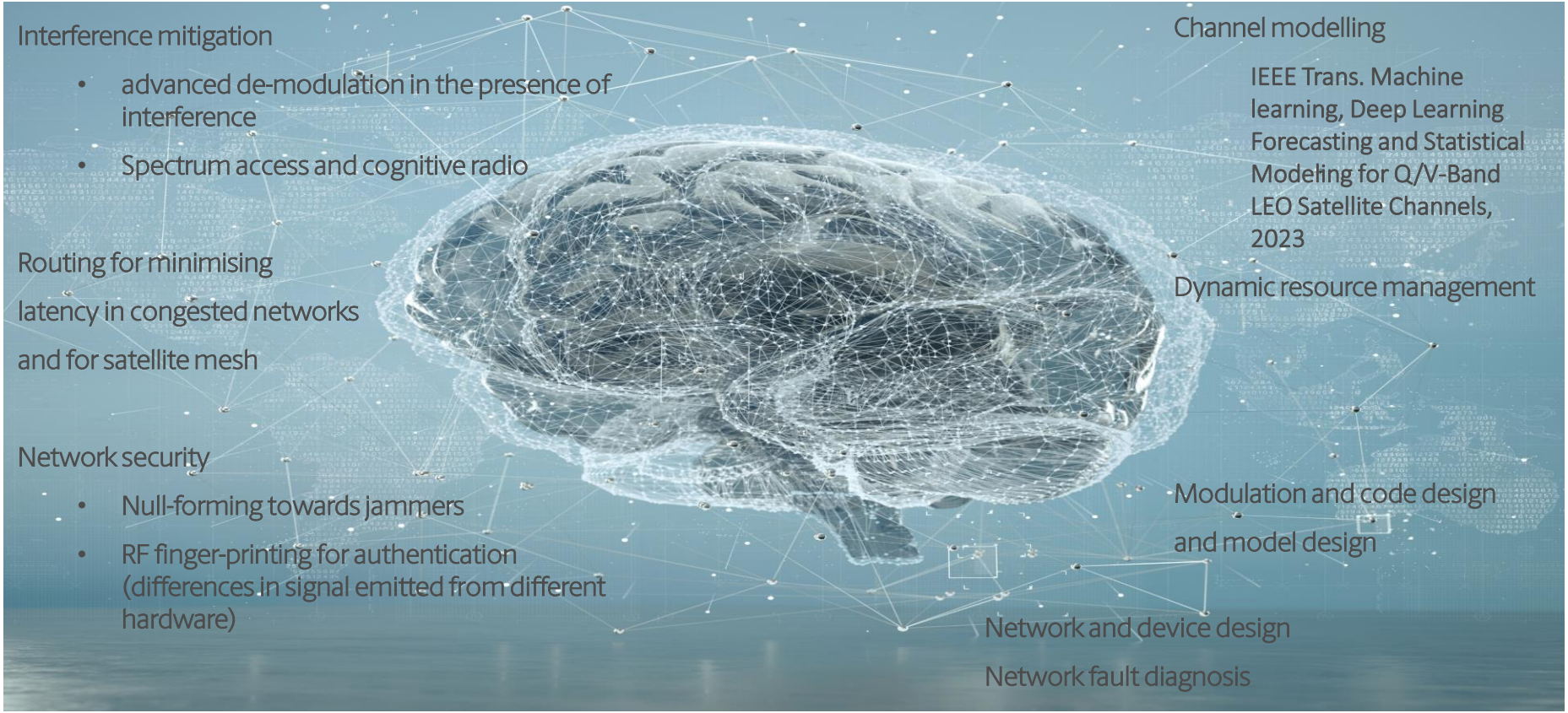


Spectrum

Will impact (nearly) everything

- New bands

AI will also be essential for future satcoms networks



Summary of perspectives for 6G

Current phase is ‘integrating’ satellite into 5G networks, 6G should target unification of TN and NTN for both D2D and VSAT

Satellite from day one

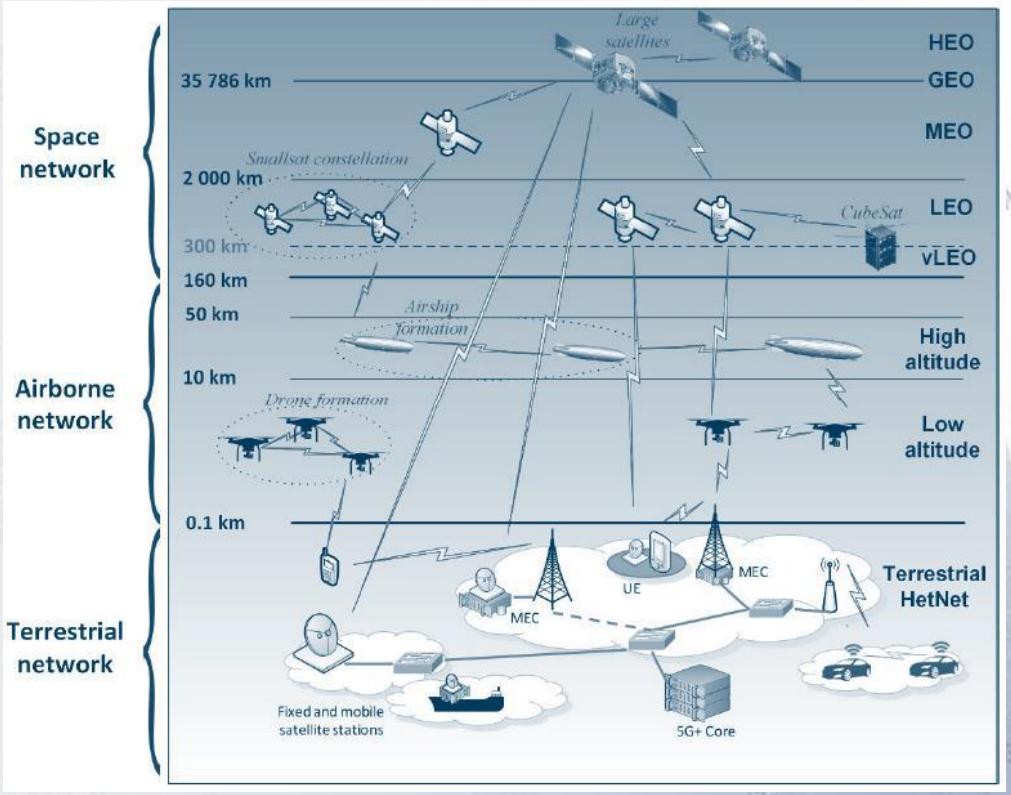
- All chipsets NTN enabled
- Harmonised access to spectrum and TN/NTN Coexistence
- Unified Air Interface
- Unified positioning and timing (PNT)
- From roaming to seamless handover

More technology synergies to build satellites and terminals cost effectively

- Chipsets
- Antennas

Key 6G enablers

- AI across the network
- Open networking



NTN space network as part of 6G

Questions?

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