

5G Private Networks: Better late than later!

Dr. I. Neokosmidis
Co-founder & CEO

InCites Consulting at a glance

InCites Consulting provides specialized, top-notch, actionable advice & associated consultancy services to support ICT business leaders and policy makers make the most informed decisions on:

- winning business strategies,
- the best technology investments and
- the most impactful policies

for an all-connected digital world that will enable sustainable living on our planet.



Established
2013



Key achievements:

- [5G readiness index](#)
- [Lux 5G national strategy](#)
- [World Summit Award](#)
2015 Lux national nominee for our **TEN** educational platform



30+

Happy customers

- Governments
- Regulators
- EU DG Connect
- Mobile operators & vendors



Our team

100+

scientific publications

Today's agenda

- 5G private networks global market update
- Key considerations
- Way forward



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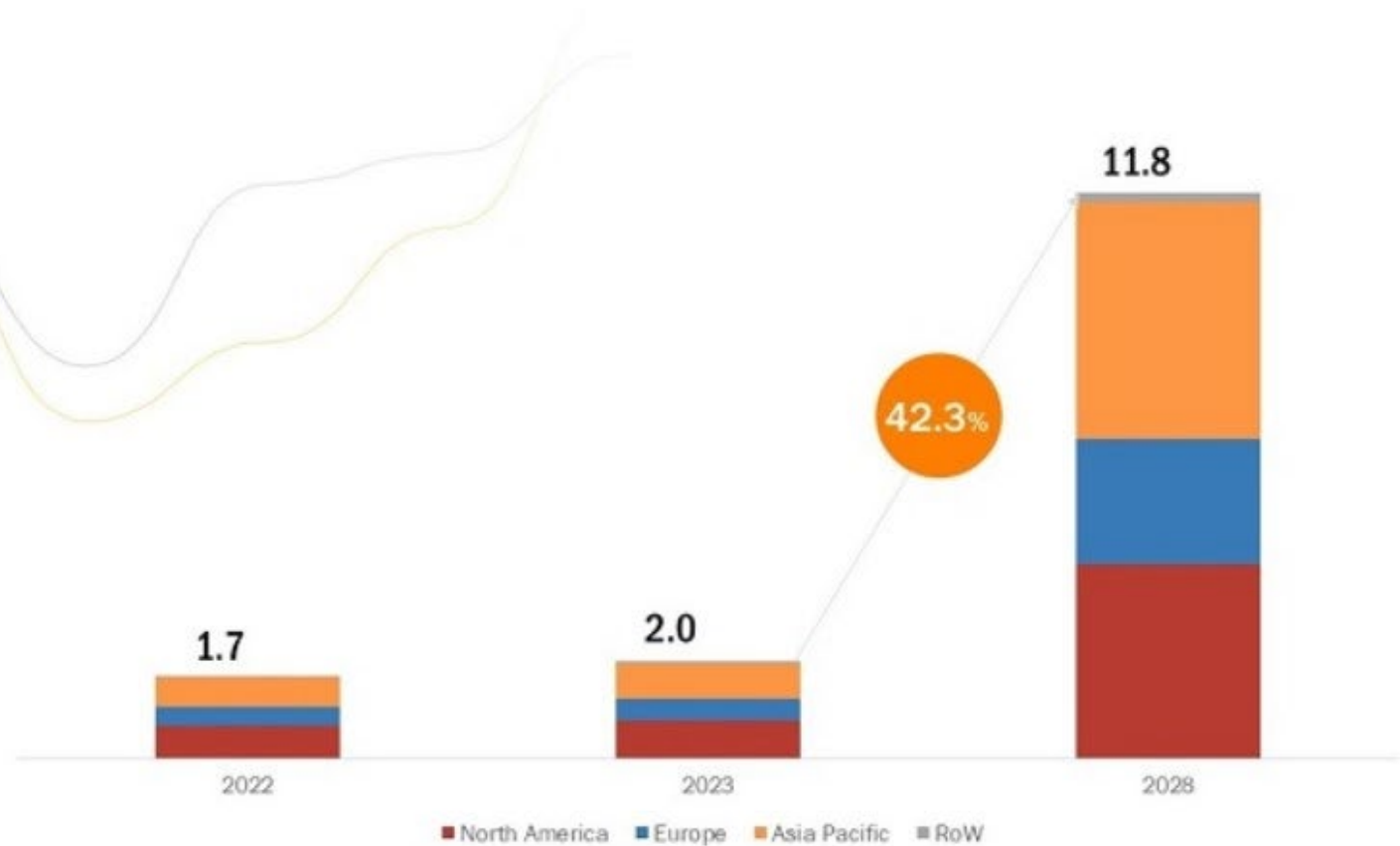


PRIVATE 5G MARKET GLOBAL FORECAST TO 2028 (USD BN)



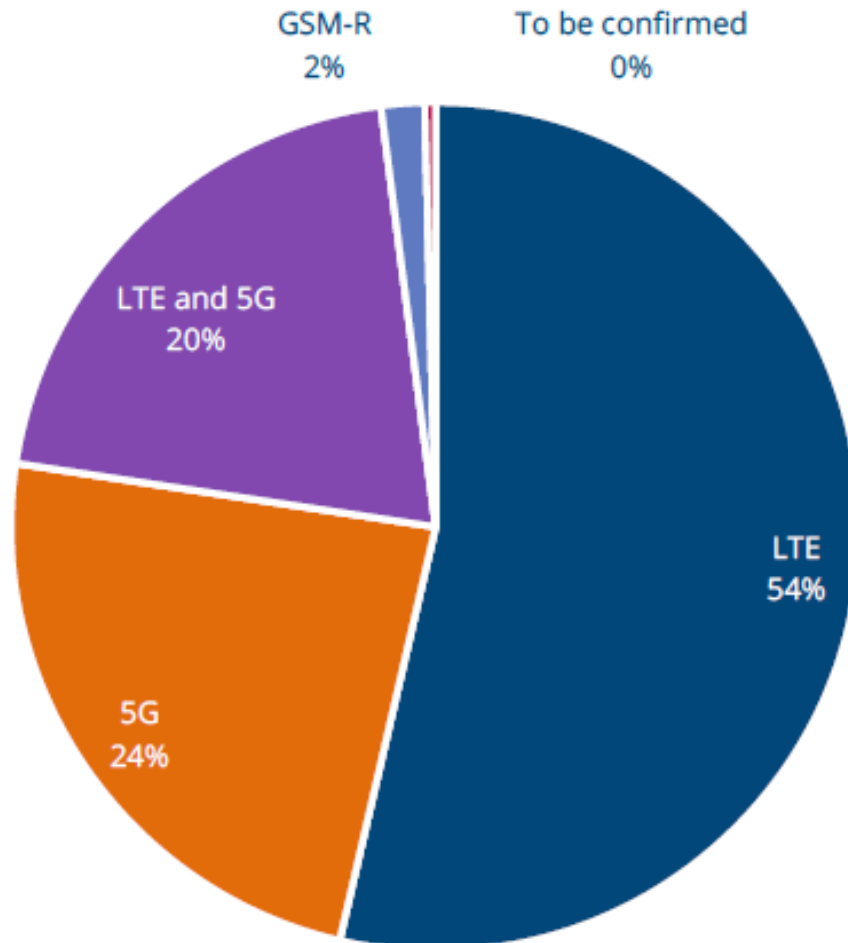
CAGR OF
42.3%

The global private 5G market is expected to be worth USD 11.8 billion by 2028, growing at a CAGR of 42.3% during the forecast period.



Source: Markets and Markets, August 2023

Market snapshot – Q2 2023

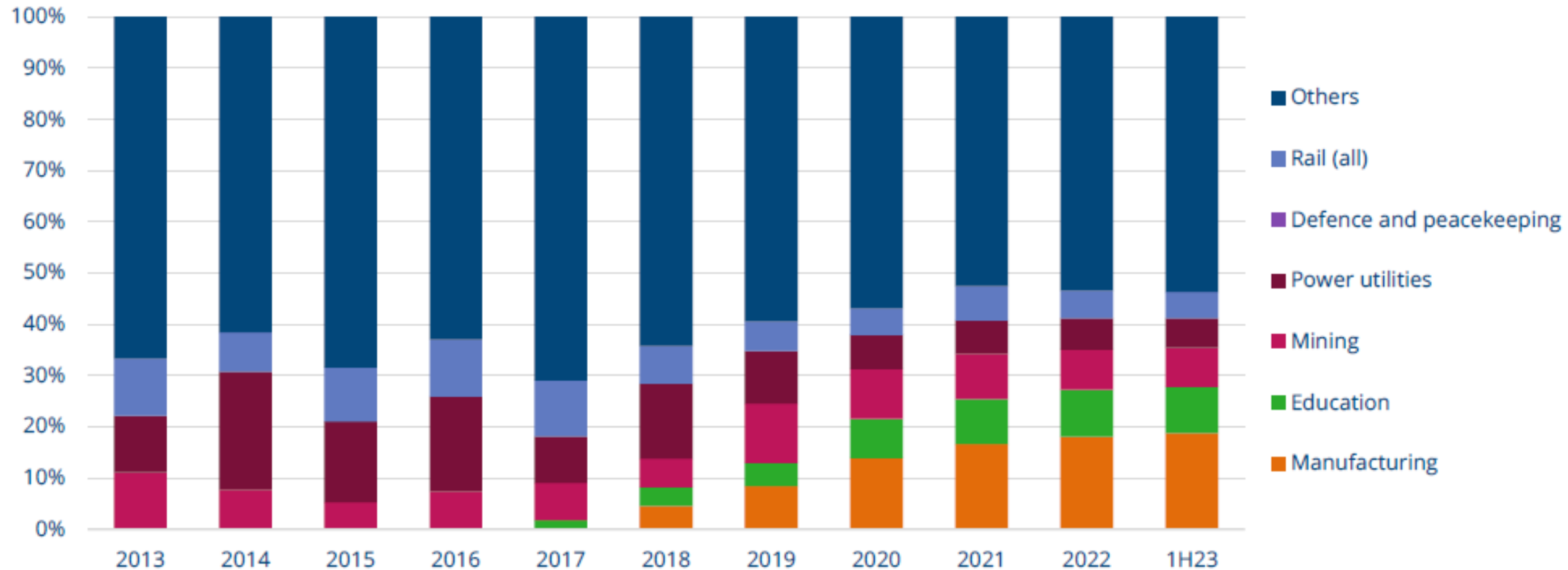


- 1212 (794) organizations in 74 (68) countries have deployed private networks based on LTE, 5G or both
- 44% (37%) of those use 5G

Source: GSA Private Mobile Networks report, Sept. 2023

*Definition:
GSA counts customer references as unique organisations or government entities deploying one or more 3GPP-based 4G LTE or 5G networks in a given country that are worth more than €100,000*

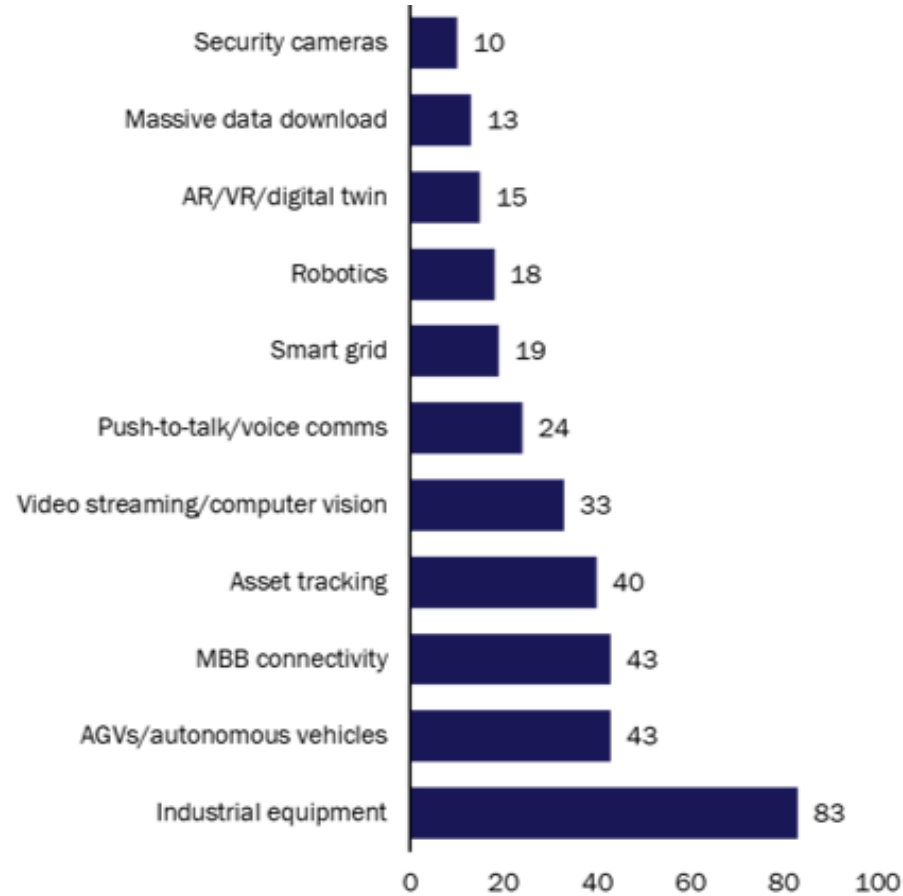
Total private mobile network customers per industry








Source: GSA Private Mobile Networks report, Sept. 2023

What are 5G Private Networks used for?

Top applications



	Typical devices	Sectors
Industrial equipment 	Connected cranes, machine tools and robotics	Manufacturing, mining and oil and gas and transport and logistics
Automated/autonomous vehicles 	AGVs and autonomous vehicles	Manufacturing, mining and oil and gas and transport and logistics
Track and trace 	Baggage trackers and monitoring tags	Public sector, mining and oil and gas and transport and logistics
Massive data download 	CCTV cameras, drones and medical devices	Healthcare and public sector
Production line inspection 	Inspection cameras	Manufacturing and transport and logistics

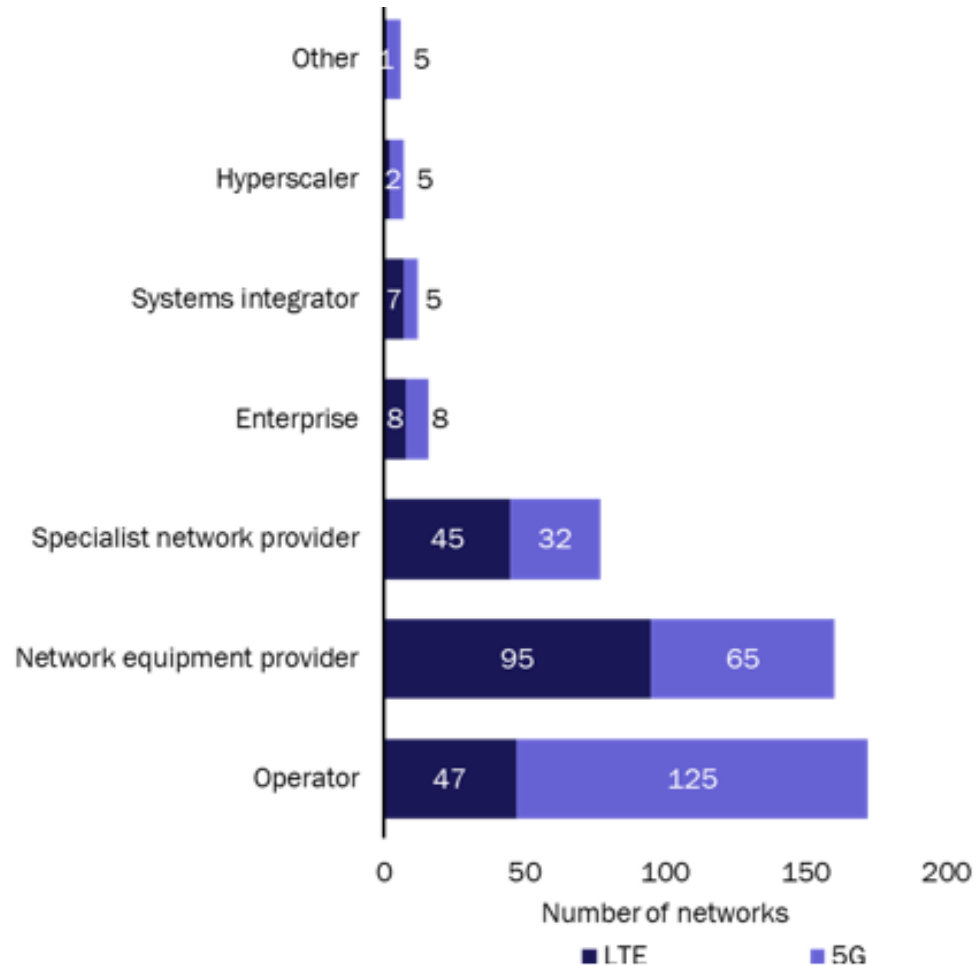
Source: Analysys Mason, Sept. 2023

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Private LTE/5G networks market players, H1 2023



Source: Analysys Mason, Sept. 2023
 Based on publicly available information *only*

Enterprise demand drivers & adoption challenges

- Efficiency improvements
- Bringing Operational Technology (OT) to the Cloud
- One network technology for all use cases/network rationalization

- Support & maintenance of a 5G Private Network
- Managing the complexity of “cloudifying” OT
- Need for a holistic security approach across all layers
- For SMEs:
 - Low technology awareness & understanding
 - High complexity & relative cost

Spectrum Allocation Methods for Private Networks



Dedicated spectrum for private networks and industrial users



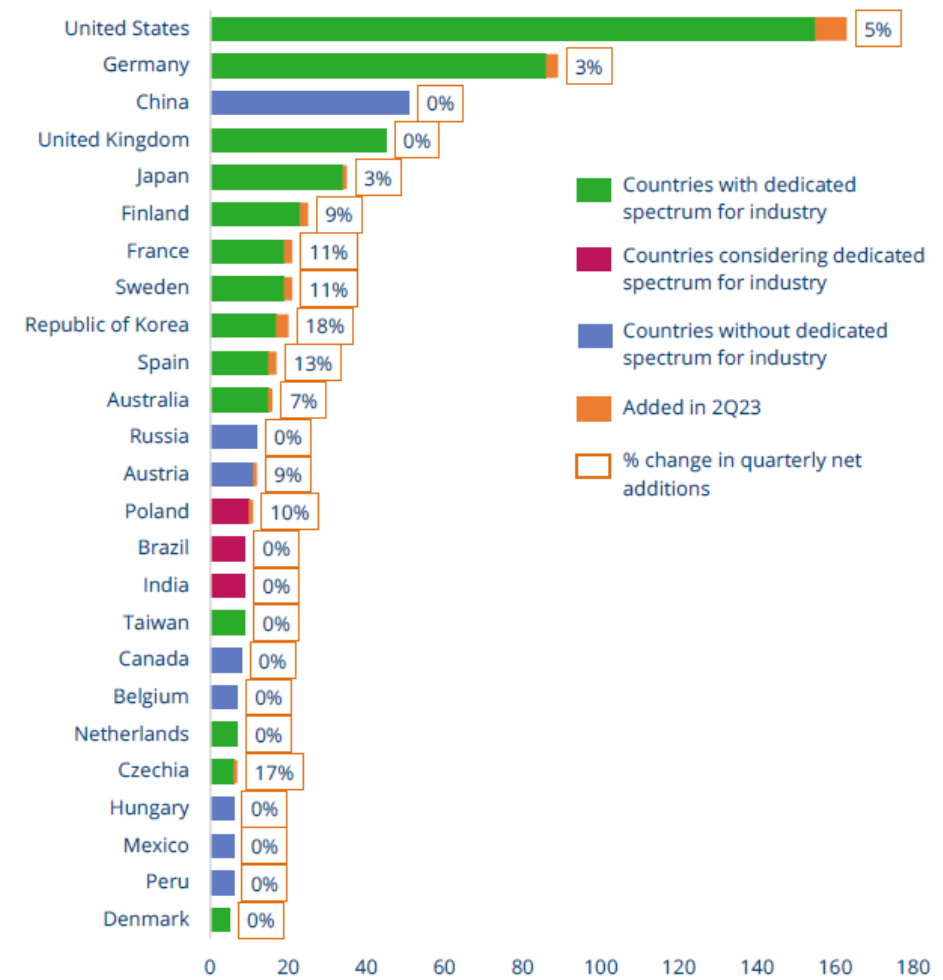
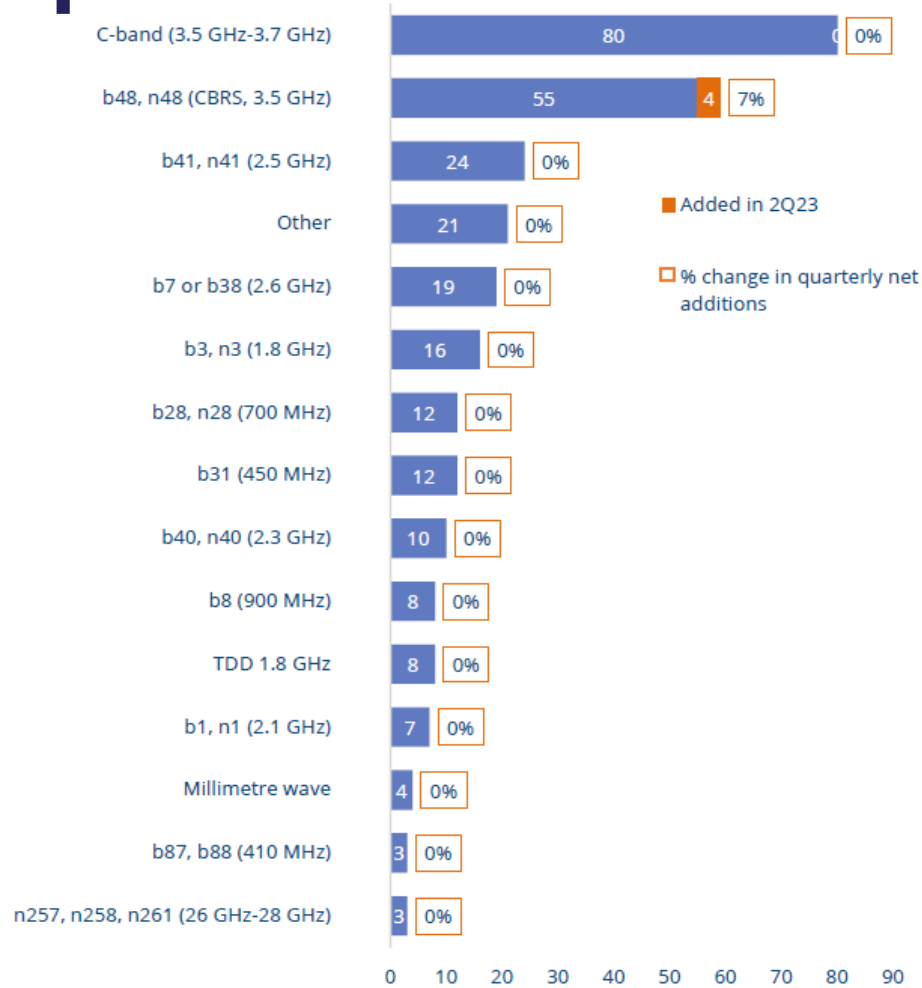
Several users access spectrum simultaneously



Operators are deploying private networks or leasing their spectrum

Number of private networks ↔ countries with dedicated spectrum

Spectrum information

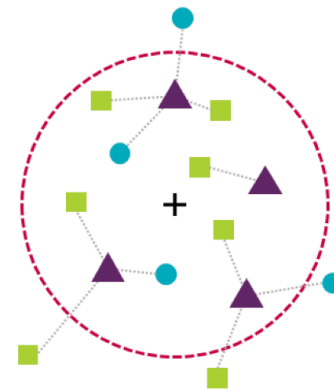


Source: GSA Private Mobile Networks report, Sept. 2023

The UK example of shared access spectrum licensing regime

Shared access licenses offer local access on a first-come, first-served basis, in predefined locations across UK, to:

- the 3.8 – 4.2 GHz band
- to frequencies not assigned to national mobile operators in the 1800 MHz, 2300 MHz bands
- plans have just been announced for the mmwave band (26 and 40 GHz) as well



Licence authorises all base stations within 50 metres of a given location (max EIRP 24 dBm), and any connected terminals.

Legend

- ▲ Base station
- Fixed/installed terminal
- Mobile/nomadic terminal

How it works



Licence authorises a base station at a given location (max EIRP 42 dBm) and any connected terminals.

Source: Ofcom

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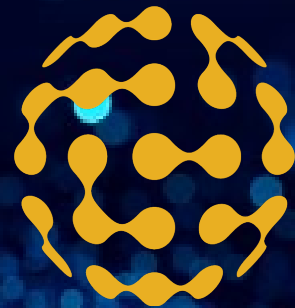


Way forward

1. Rethink spectrum licensing & competition
2. Transform & collaborate - ecosystem development
3. Educate enterprises & incentivize adoption



10 years



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Thank you!