5G Private Networks: Enabling Ports & Logistics Automation

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The 5G private network opportunity: ports & logistics

Pain Points
- Ports are large and complex, with multiple concurrently running processes
  - Signal blocked by complex surroundings (containers, cranes, trucks)
- Disruption to the supply chain is common, with machine downtime or faulty operations
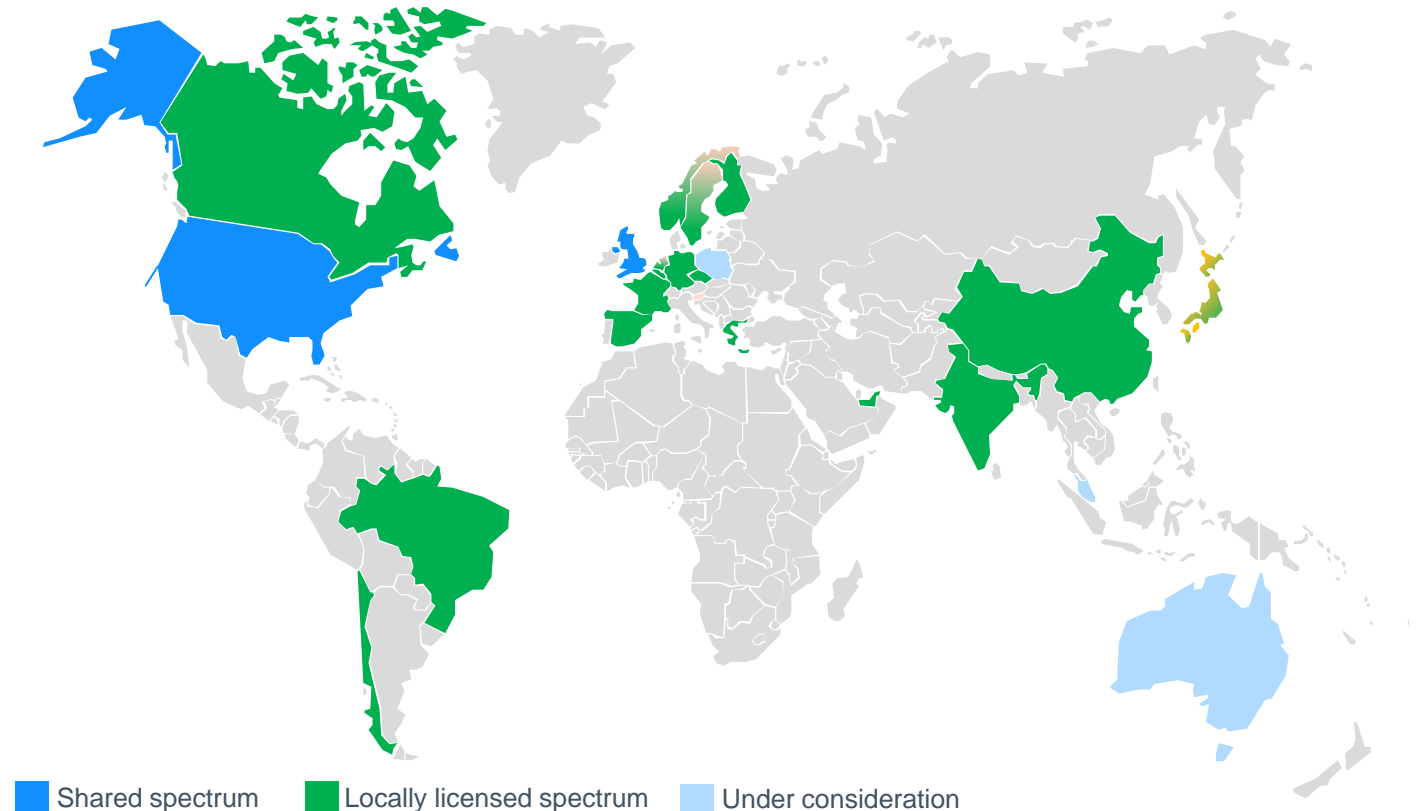
5G Private Network Opportunity:
- Support latencies required for real-time operation of vehicles, no more than 30 ms
- Increase productivity through automation and remote control
  - Move more containers per hour with lower cost per move
  - Track and monitor shipments like refrigerated good
- Gain transparent visibility into the entire terminal
- Extend coverage across the entire port, indoors and outdoors including moving machines
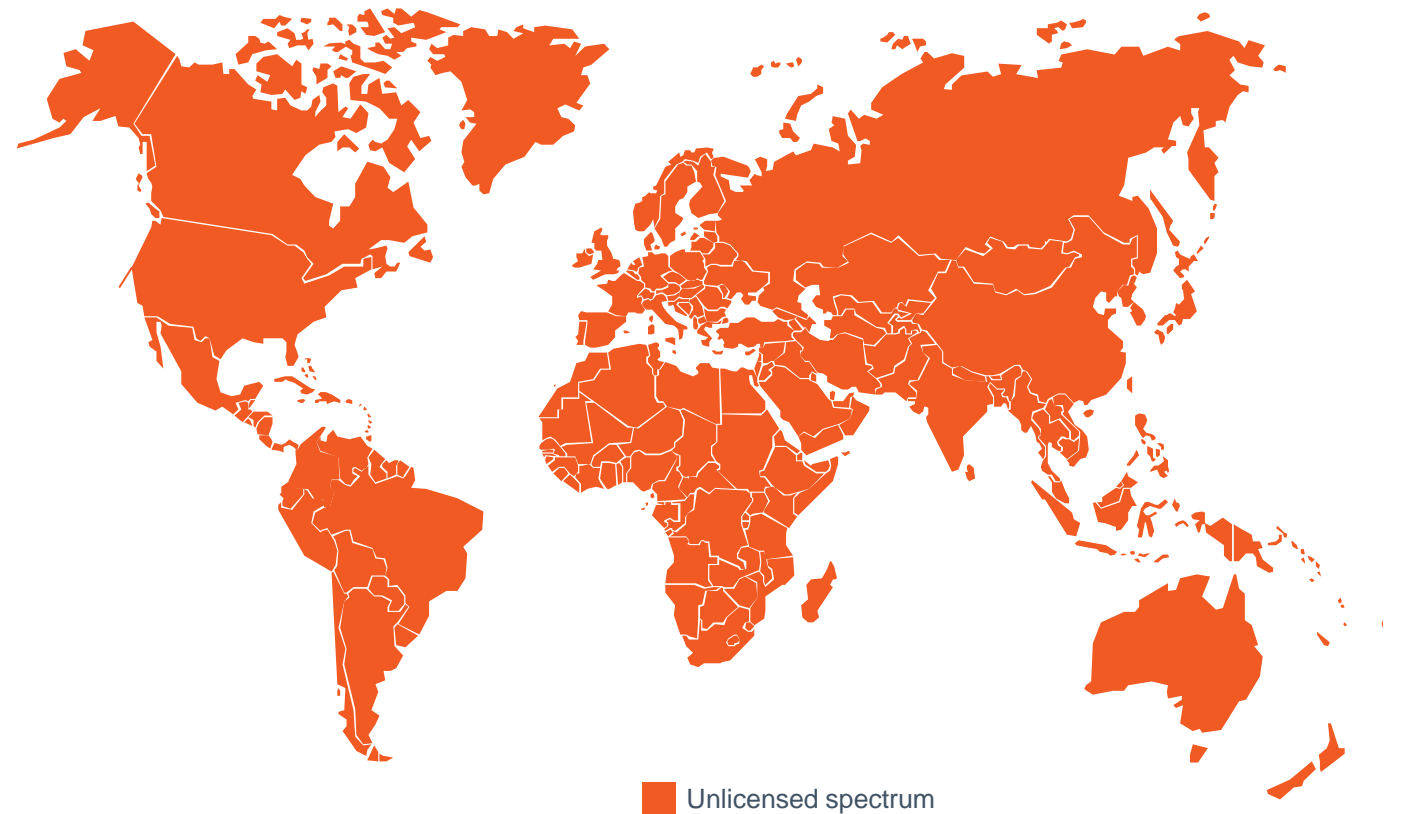
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The unlicensed spectrum opportunity

- Different initiatives to broaden enterprise access to mobile network spectrum:
  - Spectrum sharing between public authorities & enterprises (e.g., CBRS)
  - Spectrum sharing between CSPs & enterprises (e.g., spectrum sharing in the UK)
  - Spectrum sharing on the 1.9 GHz band (e.g., Japan)
  - Locally licensing spectrum for Enterprises (e.g., 3.6 – 3.7 GHz in GER)
  - **5 GHz unlicensed spectrum available globally today**

■ Shared spectrum   ■ Locally licensed spectrum   ■ Under consideration

Source: ABI Research

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■ Unlicensed spectrum

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Introducing Uni5G and MulteFire

The role of MFA

- MFA (MulteFire Alliance) is an international organization that is championing the global industry adoption of private cellular networks using MFA-defined MulteFire specifications for LTE and Uni5G technology blueprints for 5G.

- With Uni5G or MulteFire, enterprises can deploy their own optimized, reliable and secure private network in unlicensed spectrum or complement their existing private network deployment inn locally licensed or shared spectrum.

Support technology standardization and evangelization

Build out new use cases and business models, such as private IIoT networks

Enable a robust ecosystem of certified interoperable devices

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Introducing MulteFire and Uni5G

- **MulteFire®** is a **4G/LTE-based technology** that **operates standalone in unlicensed or shared spectrum**, enabling industry verticals to deploy their own private wireless network with Wi-Fi-like deployment simplicity and LTE-like performance.

- **Uni5G™** is a **technology blueprint** that leverages 3GPP 5G standards to define **profiling and classification requirements**, enabling industry verticals to efficiently deploy their own optimized, reliable and **secure 5G private network** in unlicensed spectrum.

Summary

- 5G private networks will be an important enabler for ports
    - Unlicensed spectrum provides global connectivity for different logistics sites, specifically for countries with no spectrum liberalization initiatives
    - Uni5G and MulteFire operating in unlicensed spectrum offer an alternative opportunity for ports to utilize their own private network and complement existing deployments in locally licensed or shared spectrum
- MFA enables an interoperable ecosystem for private cellular networks
    - Delivering Uni5G technology blueprints that will outline the 5G NR profiling and classification requirements that enable ports to efficiently deploy their own 5G private network
- Visit www.mfa-tech.org to sign up to receive updates on Uni5G and MulteFire solutions

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