Private 5G in Ports: Proven Use Cases and Deployment Highlights

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Ericsson Private 5G global momentum

Reference cases and ecosystem partnerships

Belfast harbor
Smart Ports of the future

Purdue Commercial Airport
CBRS-EP5G

Jaguar Land Rover
Embracing the future of 5G

Port of Philadelphia (Holt)
Private Cellular Network

Hitachi ABB Power Grids
5G with Ericsson and AFRY

Paris -Orly
Airport Private Cellular

Fraunhofer Digital Energie
EU's largest 5G research lab

Tallinn Supply Site
Private 5G for smart factory

Virginia Inter. Terminals
Replacing Wi-Fi with 5G

CJ Logistics
Transforming Warehouses

Toyota Material Handling
Transforming operations

Rohde & Schwarz joins Ericsson Partner Program

Ericsson 5G Smart Factory
Smart manufacturing US

Epiroc
For the mine of the future

Cummins combo network
Neutral host + Private 5G

LG Electronics
5G to drive further efficiency

Schiphol Airport Amsterdam
Private 5G-Went Live Sept 1st

Prinzhorn Group
Digitalized paper & packaging

Worcester Bosch
First 5G factory in the UK

CTAG Centre Auto Tech
First cross-border connection

Port of Tyne
Boost enterprise connectivity

Paris-Le Bourget
Airport Private Cellular

Ever growing
Industry references, installations, and proof points

Port of Rotterdam
Ericsson Private Cellular

CEMEX first Private 5G
5G for construction material

Paris-Charles de Gaulle
Airport Private Cellular

BMW
New 5G campus network

Porsche
Smart factory

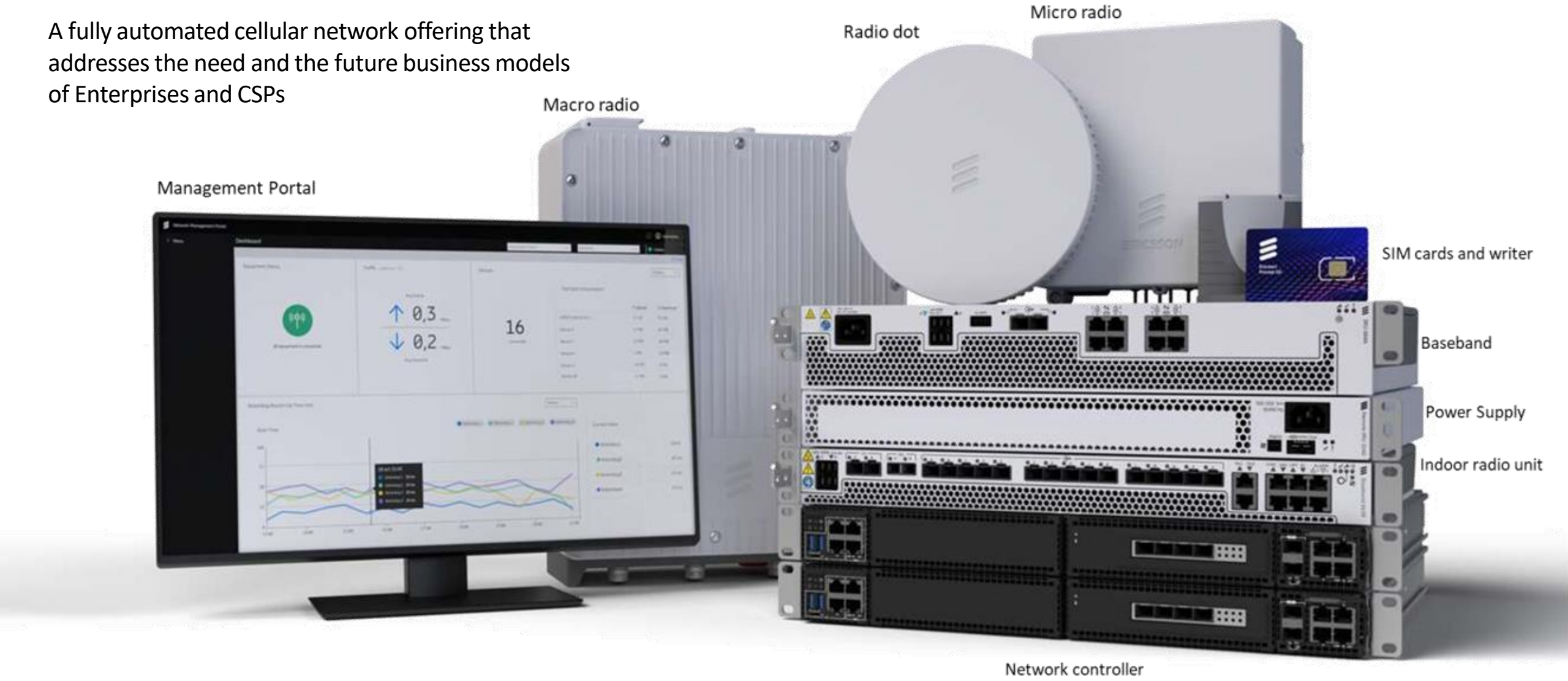
Newcrest mine
Smart sustainable mining

Information Classification: General

Private 5G product offering

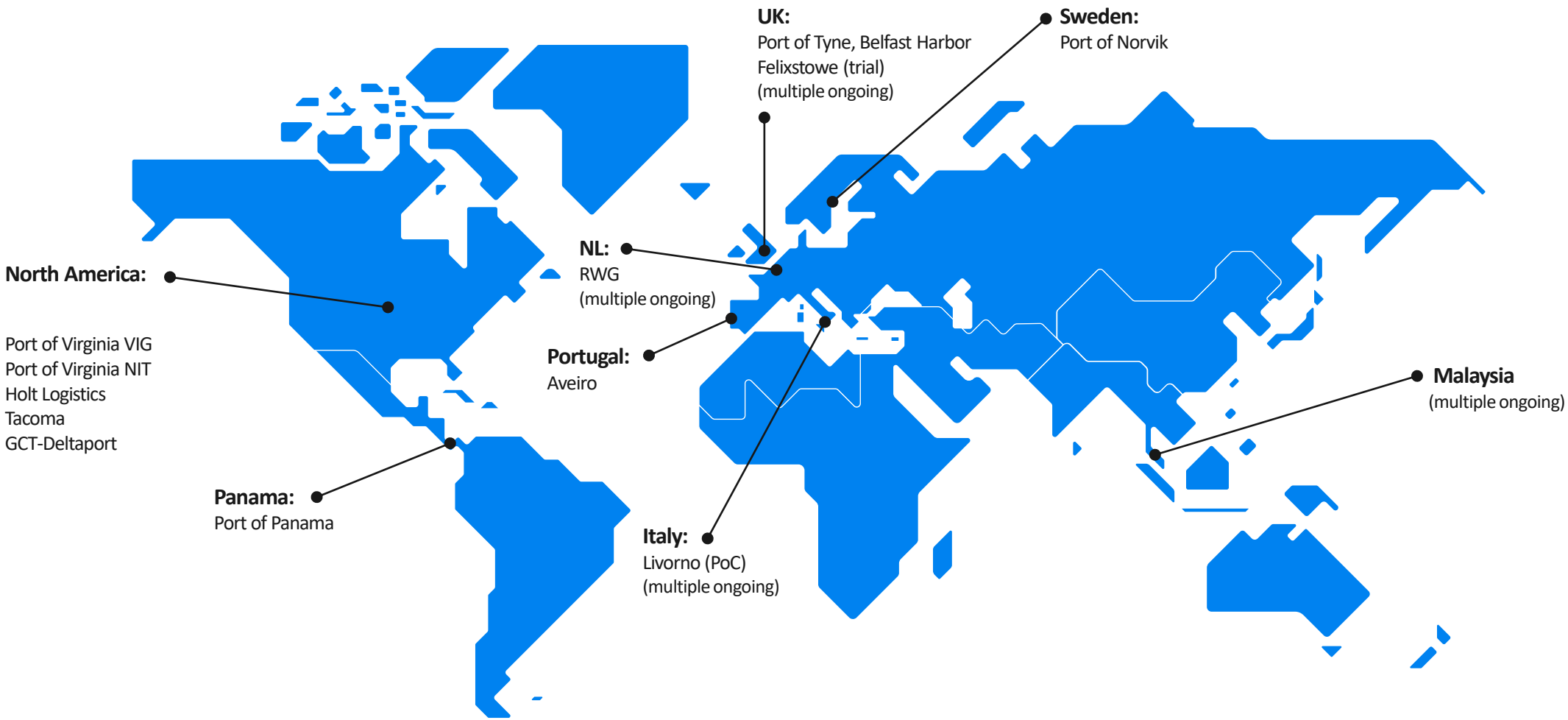
5G sized for industry. Fast to deploy. Easy to operate. Lifecycle assured.

A fully automated cellular network offering that addresses the need and the future business models of Enterprises and CSPs



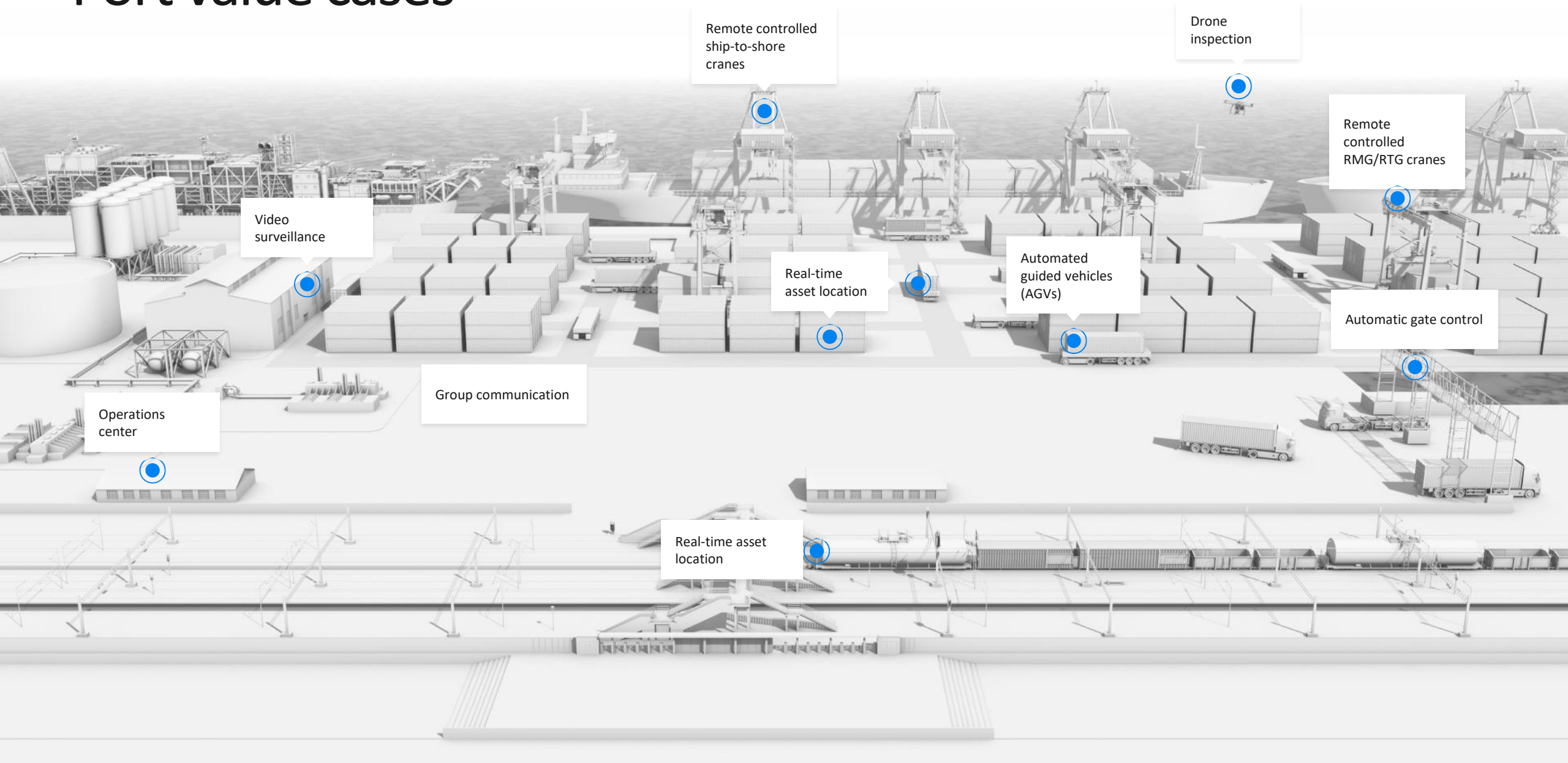
Information Classification: General

Private Network Deployment-Ports

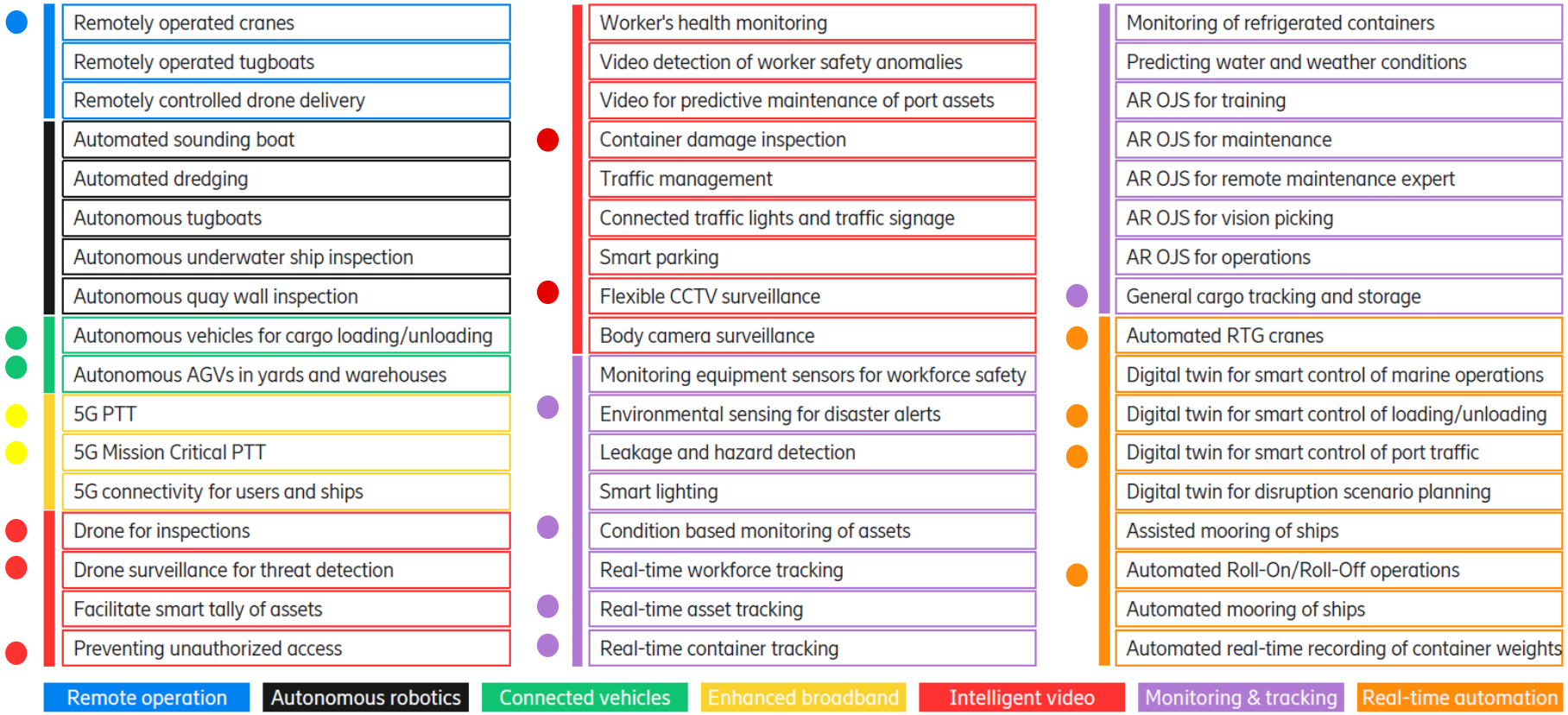


Information Classification: General

Port value cases



5G use cases in a port environment



While there are a lot of applications in a port environment that can benefit from the capabilities of a (private) 5G network, each port has its own digital agenda, priorities and stage of maturity.

Potential use cases need to be evaluated with the port based on the ports short-, mid- and long-term requirements and capacities

Use Case examples by complexity

Ready to deploy
(Connectivity/Starters)

- Communication
  - Tablet/Phone
  - Laptop
  - Push To Talk
  - Router (Access Point) Cradlepoint
- Connected vehicle (Asset Tracking)
- Cameras/Videos
- Bar Code Scanner/Reader

Advanced

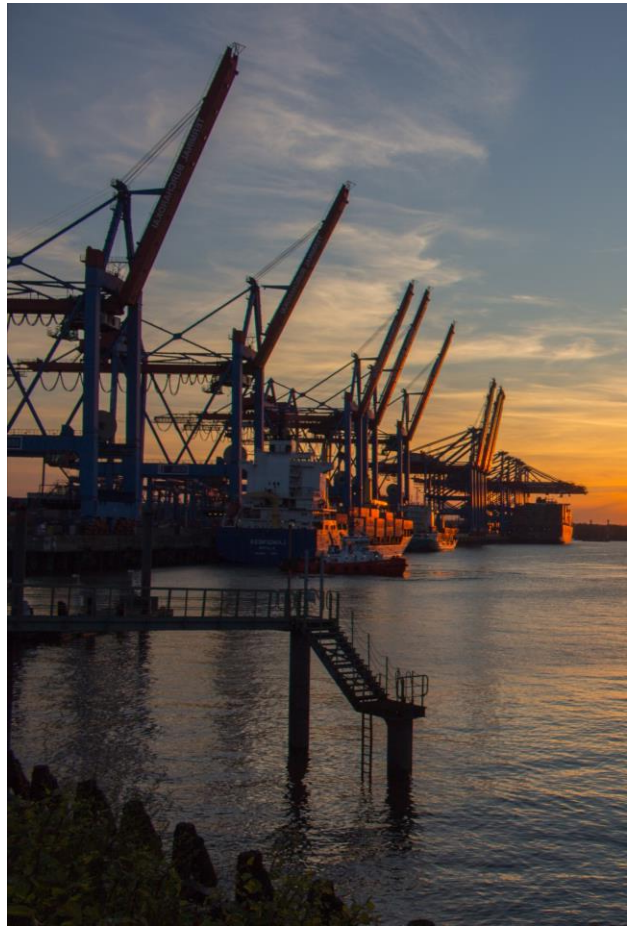
- Sensors/Condition monitoring (Integration/IFM)
- Port Gate Management
- Surveillance/Monitoring with AI
  - E.g. foreign Object Detection
- Connected Worker (On Job Support)
- Digital twin

Expert

- Ship-to-shore cranes (STS)
- Rubber Tired Gantry (RTG)
- Semi Automated Vehicles
- Drones
- Semi-Autonomous snow removal and street cleaning

Remote operation
Semi-Autonomous Devices
Connected vehicles
Enhanced broadband
Intelligent video
Real-time automation

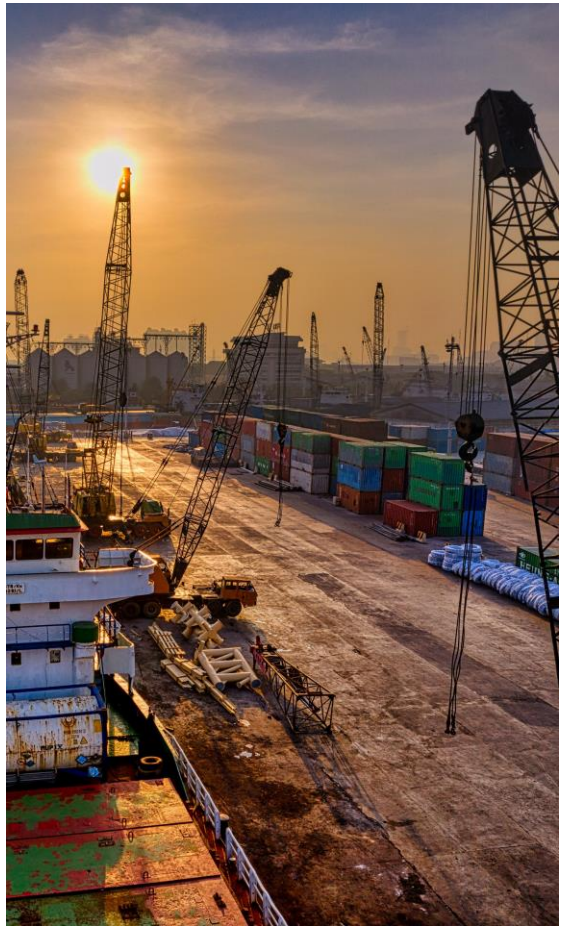
Use Cases



UC 1: Automated RTG cranes

UC 2: Remote control of STS cranes

UC 3: Cellular connected AGVs



UC 4: Condition monitoring

UC 5: Drones for surveillance and deliveries

Business case scale-up

Information Classification: General

Port Connectivity

5G wireless network

Expansion with **wireless integration**

moneo| edgeConnect

Growth with **intelligence**

moneo| Industrial AI Assistant

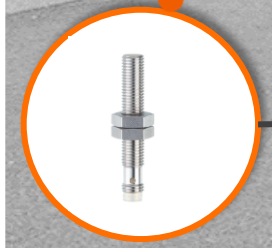
Growth with **performance**

moneo| RTM

Entry with **basic**

moneo| configure

moneo| blue



Information Classification: General

Seaport Private Network Deployments

Holt Logistics – USA

Verizon Business Signs Second US Port In Philadelphia. Looking to help with connectivity and enabling worker optimization/AGV's.

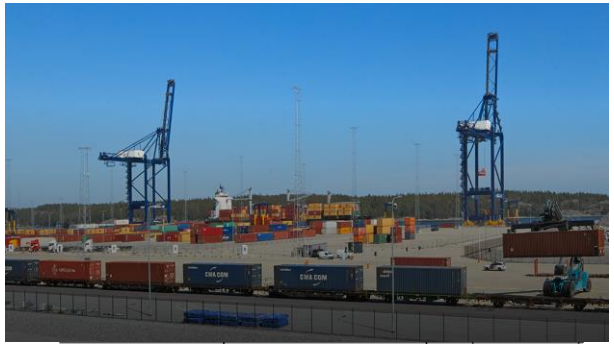
Port of Virginia

Verizon Business has signed an agreement with Virginia International Terminals (VIT) to build a private 5G ultra-wideband network at one of the Port of Virginia's main container terminals.

Norfolk Int Terminal

Verizon Business goes for number 3 in US. With a use case of connectivity

Tacoma



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Port of Tacoma-Looking to move forward after a long proof of concept.

4G usage:
Asset tracking
Asset condition Monitoring
AGV's

5G usage:
Connectivity-Replace Wi-Fi, IOT, AI/ML, AR/VR/Edge Compute
Autonomous trucks (future)

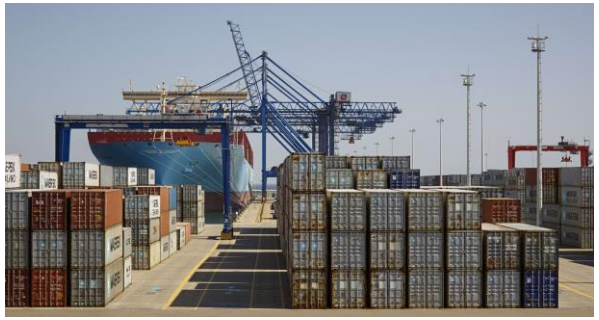
NIT-Port of Virginia
Push to talk/Connectivity
Further initiatives to come

Use Cases
Condition Monitoring
Real Time View Assets
Digital Monitoring of air/idle

Info nation Classification: General

Smart Port Deployments & Use Cases

Port of Panama



Source:https://www.ericsson.com/en/blog/2022/1/safety-and-more-efficiency-with-port-automation

Ericsson has built a 4G Network in the Port of Panama replacing the WiFi network used for WFM using regulator assigned spectrum avoiding vessel waiting times and fines through network performance degradation and outages.

4G/5G usage:
Workforce management

Port of Livorno - Italy

Source: Video https://www.ericsson.com/en/cases/2019/increasing-the-efficiency-of-port-operations

Ericsson as part of a COREALIS project has deployed a 5G network in Port of Livorno and has developed a port focused Digital Twin solution prototype

5G usage:
Improve bulk & container operations, Digital Twin, overall port digitalization

Belfast Harbor – UK

Source: https://www.ericsson.com/en/press-releases

BT UK has deployed a 5G network in Belfast Harbor, initially targeting CCTV and environmental use cases but expanding the scope to a large variety of use cases for operational improvement

5G usage:
Surveillance, environmental sensing
Advanced ACM (ops improvements)
AR/VR (and many more)

Rotterdam World GW

Source: Rotterdam World Gateway

Ericsson has built a 4G Network in the DPW terminal in Rotterdam replacing the WiFi network used for fleet management and WFM using regulator assigned spectrum.

4G/5G usage:
Fleet management
Workforce management
IoT

Information Classification: General

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