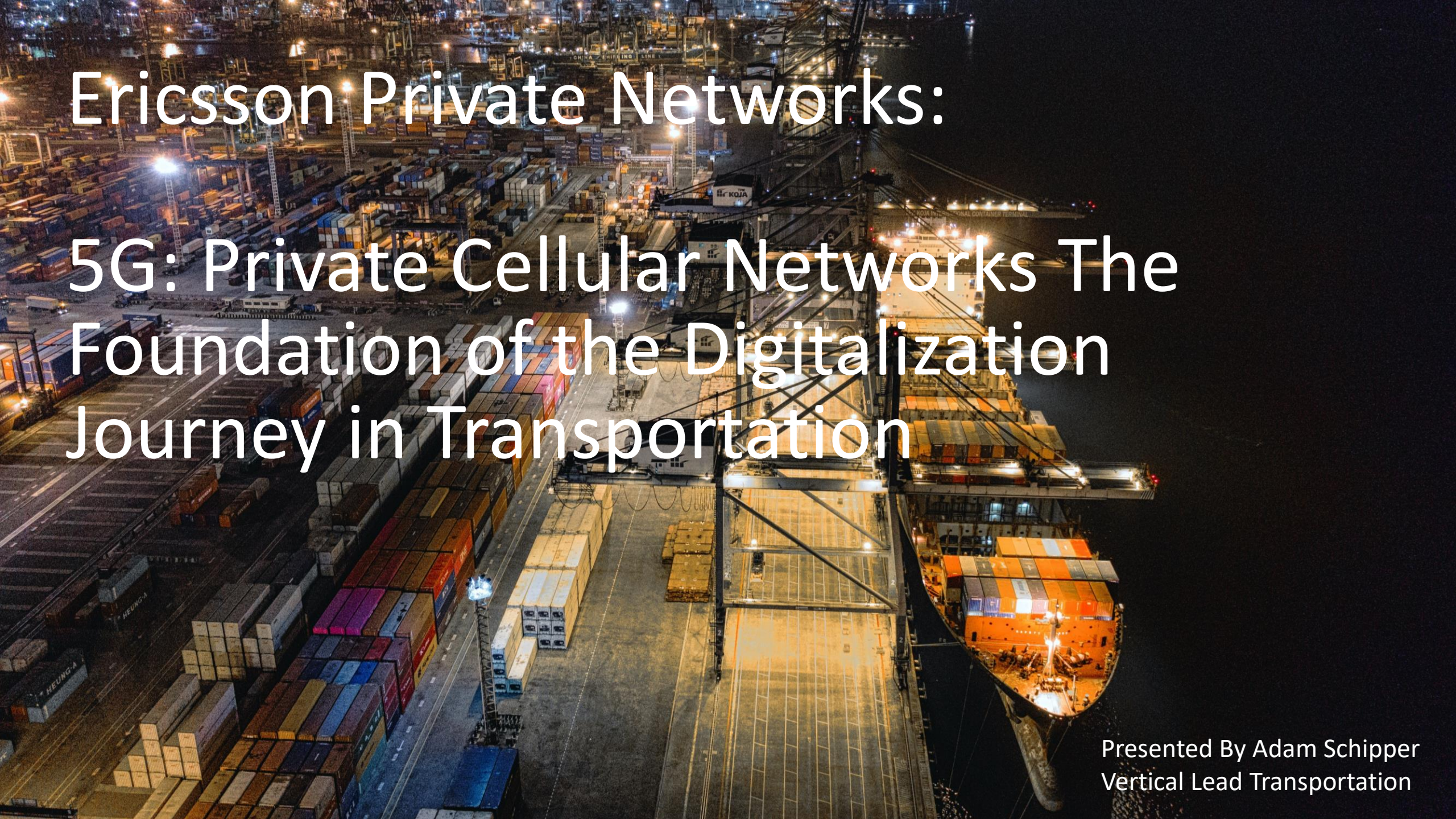
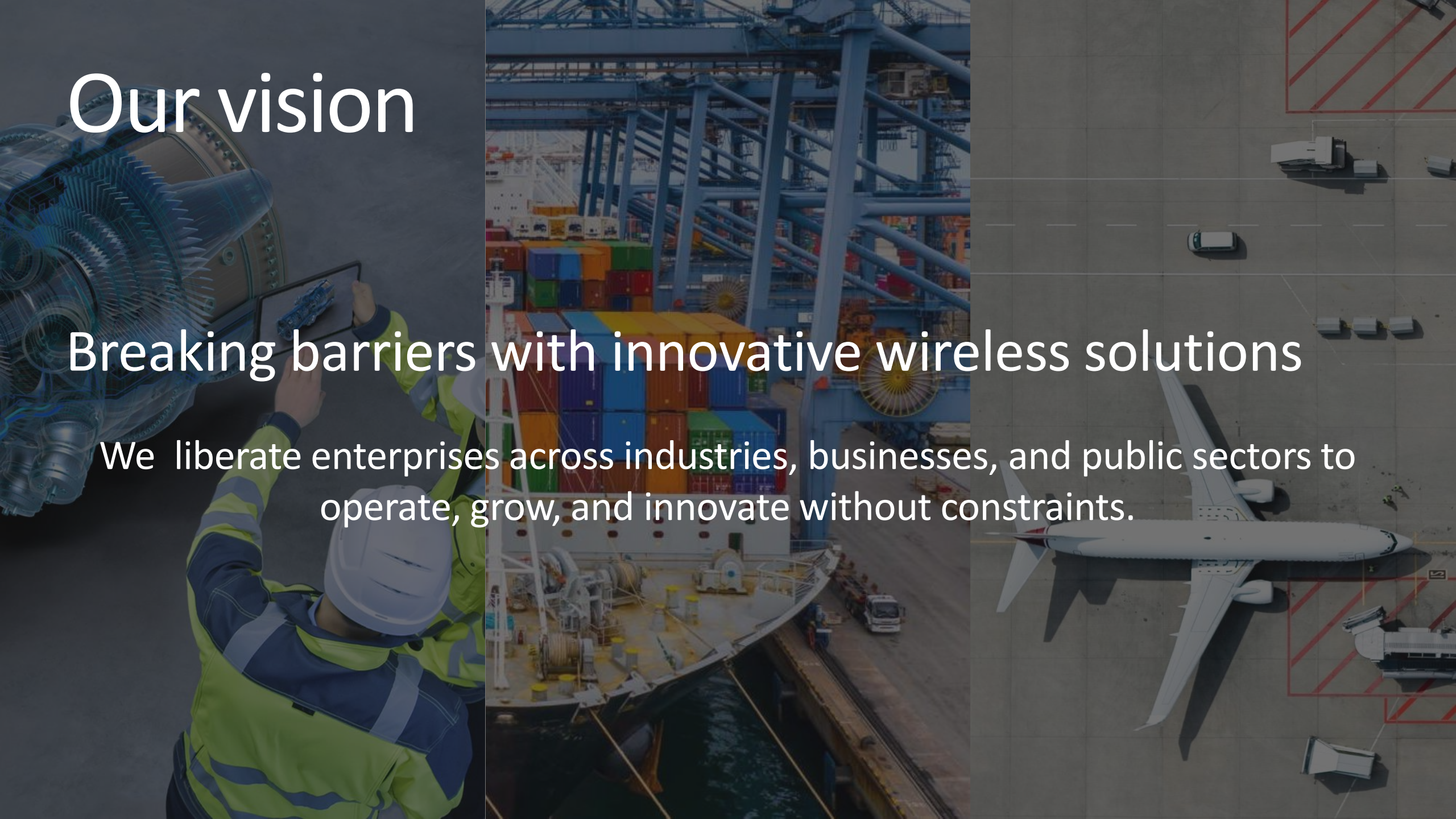


Ericsson Private Networks:

5G: Private Cellular Networks The Foundation of the Digitalization Journey in Transportation

Presented By Adam Schipper
Vertical Lead Transportation

Our vision



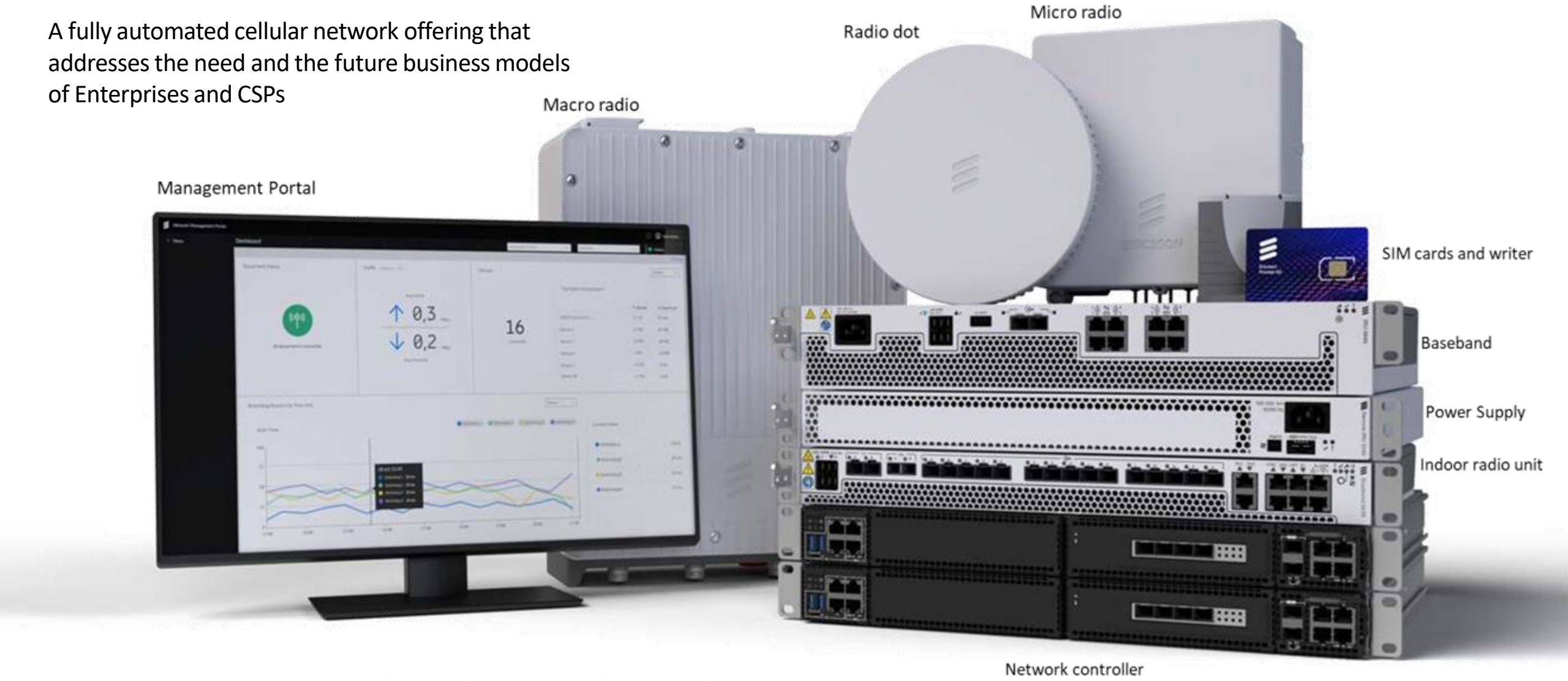
Breaking barriers with innovative wireless solutions

We liberate enterprises across industries, businesses, and public sectors to operate, grow, and innovate without constraints.

Ericsson 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



Private 5G Benefits

Coverage

Leverages industry & licensed spectrum w/ higher-powered radios

Mobility

Central network control of handover decisions for devices

Reliability

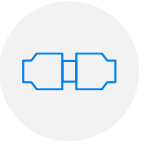
High availability and guaranteed service levels

Security

SIM-based authentication and enhanced data encryption

Scalability

Easily onboard new devices or applications and expand coverage



Integration

Leverage existing LAN infrastructure and applications

Control

End to end policy orchestration and on-premises data plane

Flexibility

Extensible deployment models on-premises or in cloud

Cost savings

Less cabling, trenching, and installation services

Ericsson Private 5G global momentum

Reference cases and ecosystem partnerships

Belfast harbor
Smart Ports of the future

Fraunhofer Digital Energie
EU's largest 5G research lab

Virginia Inter. Terminals
Replacing Wi-Fi with 5G

Toyota Material Handling
Transforming operations

Ericsson 5G Smart Factory
Smart manufacturing US

Cummins combo network
Neutral host + Private 5G

IMR & Vodafone Ireland
First 5G standalone in Ireland

Worcester Bosch
First 5G factory in the UK

Port of Tyne
Boost enterprise connectivity

ArcelorMittal
Decarbonizing steel

X-Shore
Sustainable boat factory'

Jaguar Land Rover
Embracing the future of 5G

Hitachi Astemo
Enabling smart factory

Hitachi ABB Power Grids
5G with Ericsson and AFRY

Ever growing
Industry references, installations, and proof points

Atlas Copco
Airpower gears up with 5G

Tallinn Supply Site
Private 5G for smart factory

CJ Logistics
Transforming Warehouses

Rohde & Schwarz joins Ericsson Partner Program

Epiroc
For the mine of the future

LG Electronics
5G to drive further efficiency

Prinzhorn Group
Digitalized paper & packaging

CTAG Centre Auto Tech
First cross-border connection

AgriFood Connect
Digitalization Agriculture

CEMEX first Private 5G
5G for construction material

Nestlé Brazil
Transforming operations

BMW
New 5G campus network

Porsche
Smart factory

Newcrest mine
Smart sustainable mining

Built for Enterprises With These Realities…

WITH PAIN POINTS…

Needs to connect devices in large areas
Coverage outdoors where Wi-Fi signals are weak

Data security is a high priority
Doesn't want to be the next ransomware headline

Mobile devices need to stay connected
Employees can roam with confidence & reliability

CONNECTING…


Connected Worker


Asset Management


Mobility


Automation


IoT


Kiosk


POS


Security

IN THESE ENVIRONMENTS


Warehousing and Logistics


Manufacturing


Logistics & Distribution


Retail


Ports (Air/Sea/Rail)

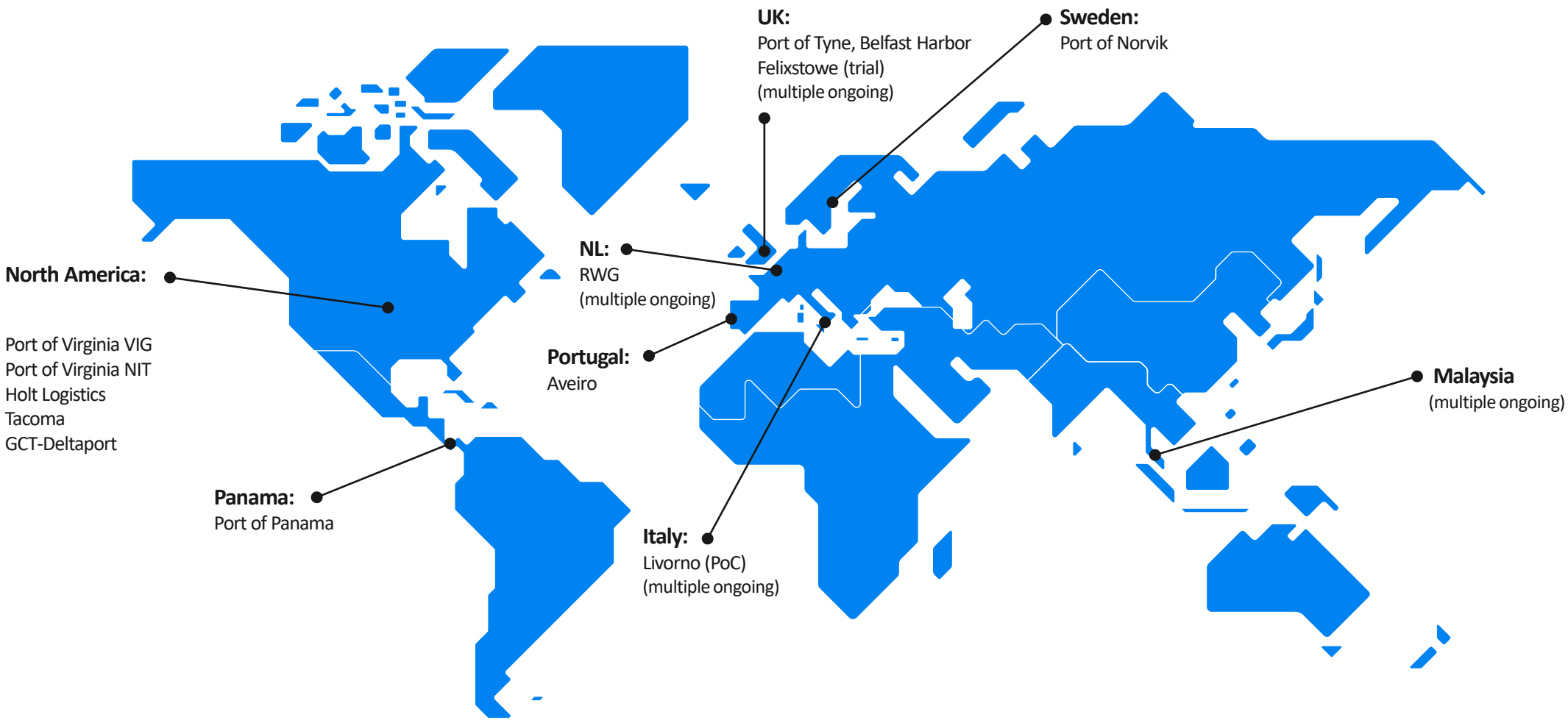

City Parks & Lots


Sport and entertainment

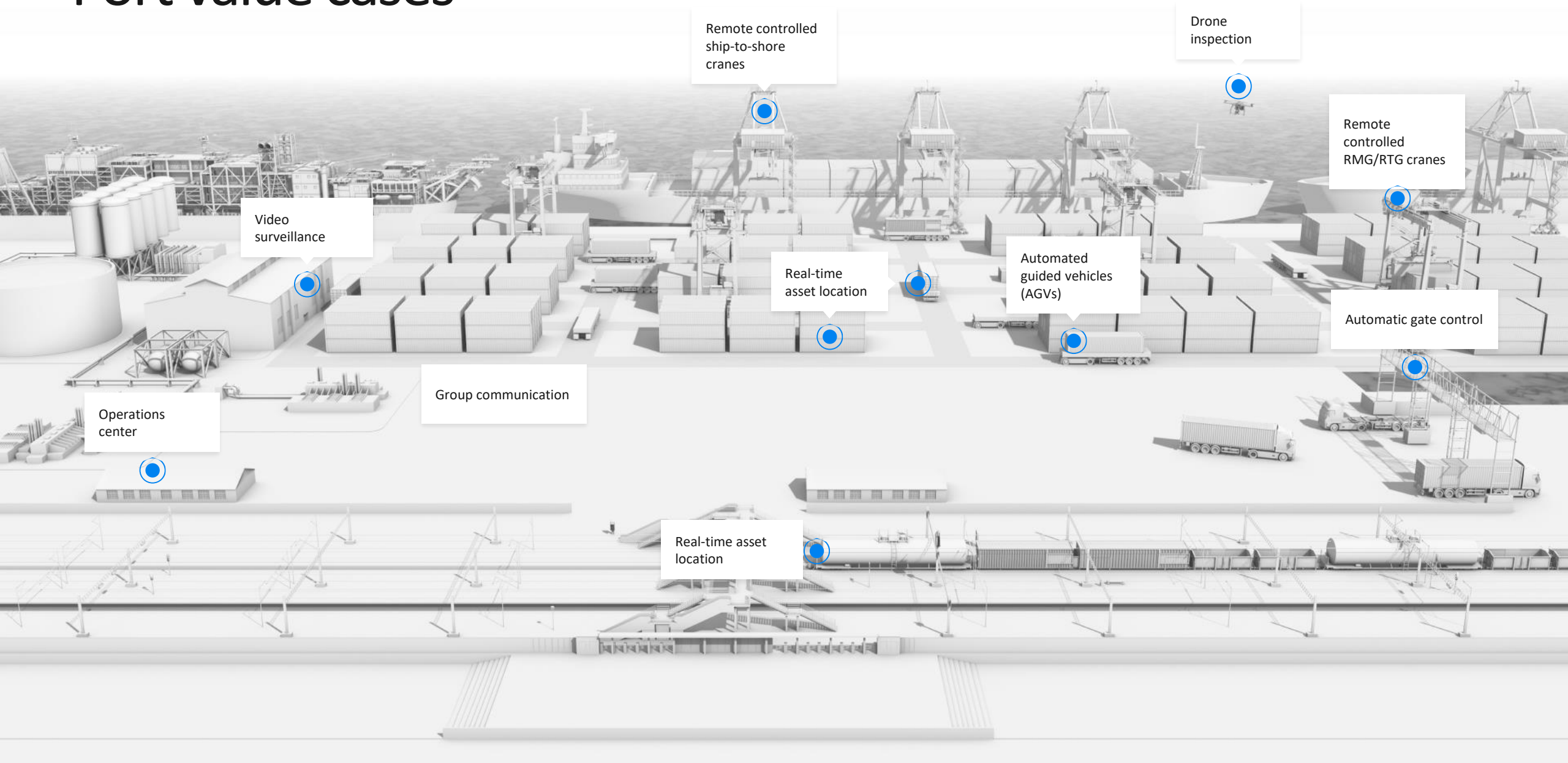

Hospitality


Campuses & Education

Private Network Deployment-Ports

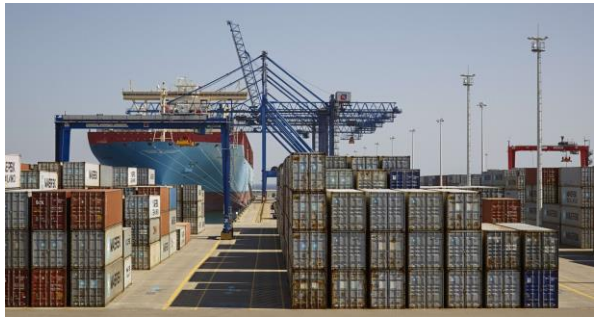


Port value cases



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

Smart Port Deployments & Use Cases

Holt Logistics – USA

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

4G usage:
Asset tracking
Asset condition Monitoring

Port of Virginia

Verizon Business has signed an agreement with Virginia International Gateway (VIG) to build a private 5G ultra-wideband network.

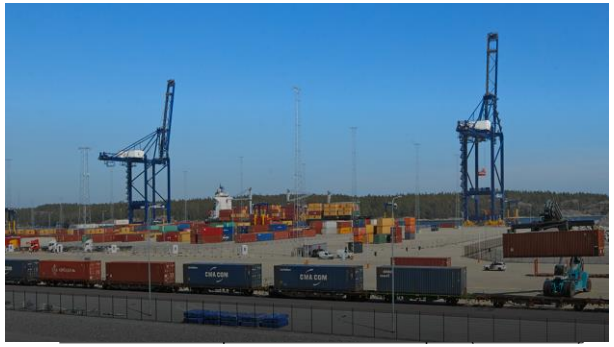
5G usage:
Connectivity-Replace Wi-Fi, IOT, AI/ML, AR/VR/Edge Compute (Future)
Autonomous trucks (Future)

Norfolk Int Terminal

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

5G usage:
Push to talk/Connectivity
Further initiatives to come

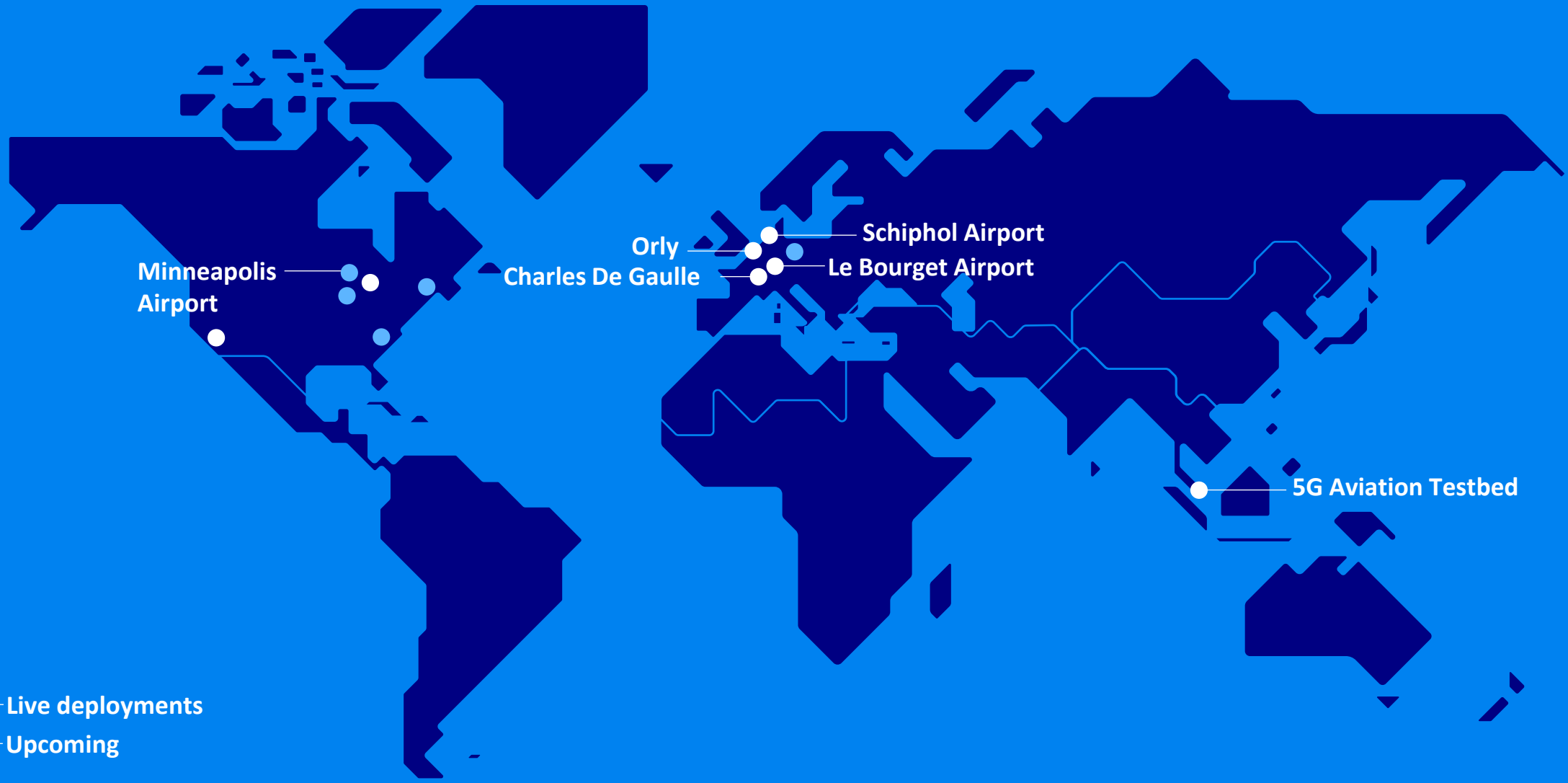
Tacoma



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

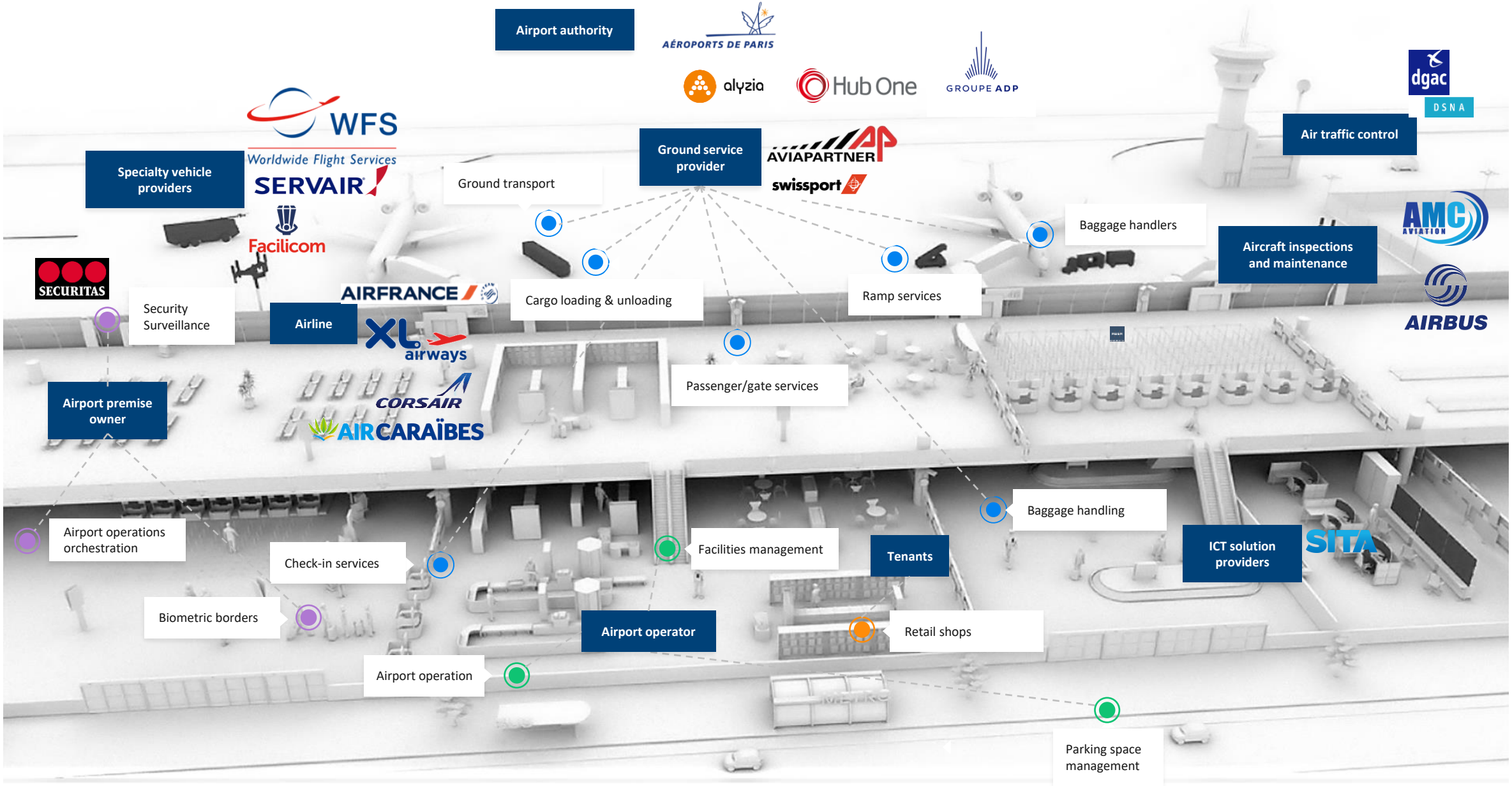
Use Cases
Condition Monitoring
Real Time View Assets
Digital Monitoring of air/idle

Ericsson Private LTE/5G Airport Deployments



Non-exhaustive

An overview of Paris Airport processes and use cases



Making the Unimaginable Possible

Airports

- Runway traffic monitoring and management
- Critical communications
- Parking management, dynamic pricing and payments
- Body cameras
- Vehicle tracking
- Baggage tracking
- Environment, safety and asset management
- Staff voice, data and video connectivity
- Video surveillance
- Passenger flow
- Cargo management

Airlines

- Ramp connectivity
- Aircraft connectivity
- Telemetry data from aircraft
- Flight operations and scheduling system
- Passenger management and customer service
- Stand automation
- Staff connectivity
- Asset management

Tenants

- Public safety, TSA and first-responder connectivity
- Emergency management
- Ground transportation
- Concession staff connectivity and operations
- Concessions' customer service and POS
- Self-serve kiosks
- Digital signage

Passengers

- Self-service and assisted check-in and bag drop
- Boarding
- Passenger mobile app
- Flight, gate and baggage information display systems
- Paging and public address system
- Customer relationships
- Terminal transportation
- Biometrics
- Security control
- Border control

Recent Aviation Proof Points

Schiphol

Schiphol & Ericsson Pilot Private 5G For A Future Ready Airport

Use Cases

- Connected Devices
- Self Driving Busses
- Self-driving and navigating wheelchair
- Flexible (security) camera deployment
- GroupTalk Push to talk
- Autonomous Luggage cart

Leading Cargo Airline

Looking to deploy at 5 airport warehouses

- Las Angeles
- Atlanta
- Chicago
- JFK
- Munich

Use Cases

- Connecting Raspberry PI
- Zebra Technologies/Scanners

Minneapolis Airport

Top 20 Busiest Airport Awards Private 5G Powered by Ericsson EP5G

Use Cases

- Public Safety Video/Safety
- Mobile Digital Displays
- Passenger Ticketing

Deployment

- Outdoor to start 2024 and to be complete by 2025.
- Indoor to start in 2025

Secure, seamless airport operations

Digitalizing Paris airports

Challenges

- Connect a professional ecosystem of over 120,000 people across three Paris airports from about 1,000 companies

Solution

- Ericsson Private Network providing the airports with a fit for purpose, high-performance, and agile private network

Results

- Perfect performance – fully digitalized network across all indoor and outdoor spaces
- Built-in security – complying with national security obligations
- Complete control – with everyone connected and communicating, operations are enhanced without impacting on UX and safety

Purdue University Lab to Life Aviation Innovation Showcase

PURDUE UNIVERSITY