

The opportunity of 5G





Our vision

A world where limitless connectivity improves lives, redefines business and pioneers a sustainable future



First two and a half years of 5G in numbers




+1.5m (↑)
5G nodes global


- Over last two years (>1m in China)
- Rate of coverage growth is more than 2x that seen with 4G LTE

+1330 
models

- FWA CPE, routers, tablets, USB dongles, other (drones, robots, TVs, cameras, etc.)
- ASP ~ \$650
- 425 m 5G phones shipped 1st 9 months 2021; 60% of sold in 2022 will support 5G


5G 
Standalone


- Impressive momentum behind 5G SA: 20 operators in +15 countries
- 119 operators identified as investing in 5G SA


1 in 7 

- 5G technology in 4 sectors could create annual emissions savings of 55–170MtCO₂e by 2030.
- That's equal to taking 1 in 7 cars off EU roads

172 Commercial 5G agreements 

121 Live networks (incl. Portugal) 

#1 Essential 5G patents 

#1 Leader in the 2022 Gartner® Magic Quadrant™ for 5G 











Understand 'how' horizontal industry-wide 5G use case clusters can be efficiently deployed



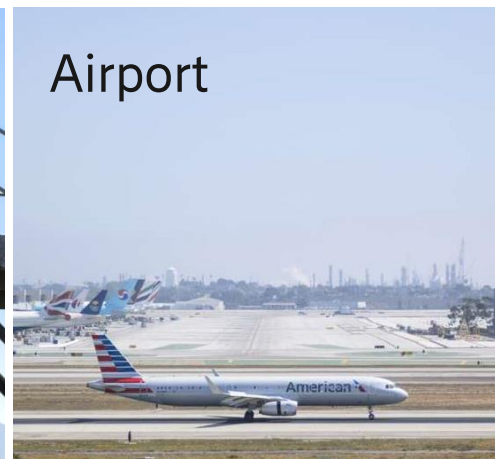
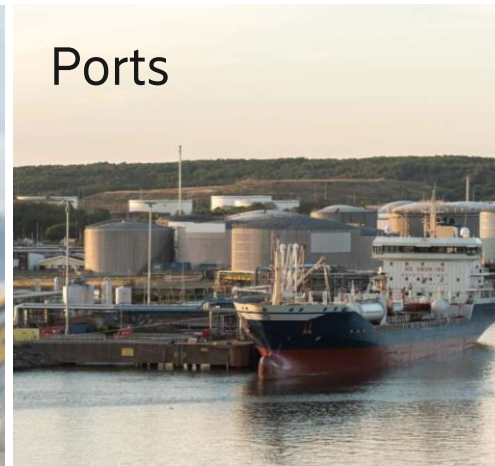
Source: Ericsson, ADL

Addressable market for telcos (2030, \$ b) ---

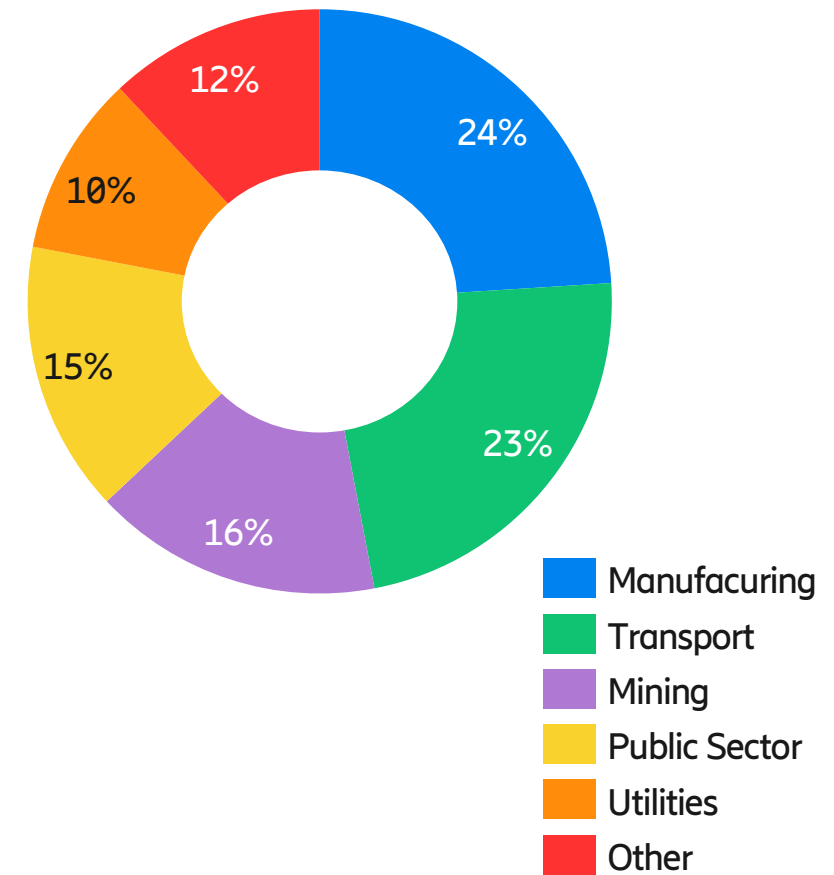


	 Agro	 Auto	 Energy & Utilities	 Financial Services	 Health	 Mfg.	 Media & Entmt.	 Public Safety	 Transport	 Retail	
Enhanced video	Green	White	White	Green	Orange	Yellow	Red	Yellow	White	Light Green	118
RT Automation	Green	White	Red	Green	Yellow	Orange	White	Green	Orange	White	107
Connected vehicle	Green	Red	White	White	Yellow	White	White	Yellow	Orange	White	89
Other	White	White	Light Green	Orange	Green	Light Green	Yellow	Orange	Yellow	Green	78
Monitoring & tracking	Green	Green	Green	White	Yellow	Orange	White	Green	Orange	Orange	72
Hazard & mnt. sensing	Green	Light Green	Orange	White	Yellow	Yellow	White	Light Green	Green	White	69
Autonomous Robotics	White	Light Green	White	White	Yellow	Orange	White	White	Orange	Light Green	58
Remote Ops	Green	Green	Orange	White	Yellow	Yellow	White	Green	Light Green	White	41
Smart Surveillance	White	Light Green	White	White	White	Light Green	Green	Yellow	Orange	White	36
AR/VR	Green	Light Green	White	White	Light Green	Yellow	Green	White	White	Green	32
Total	11	81	86	37	147	132	73	73	32	27	700

Private Networks across verticals



Publicly announced private LTE/5G networks, by sector



The power of 5G

The empowering platform



Climate Change
Sustainability
Digitalization

Connectivity
the foundation to
digital
transformation

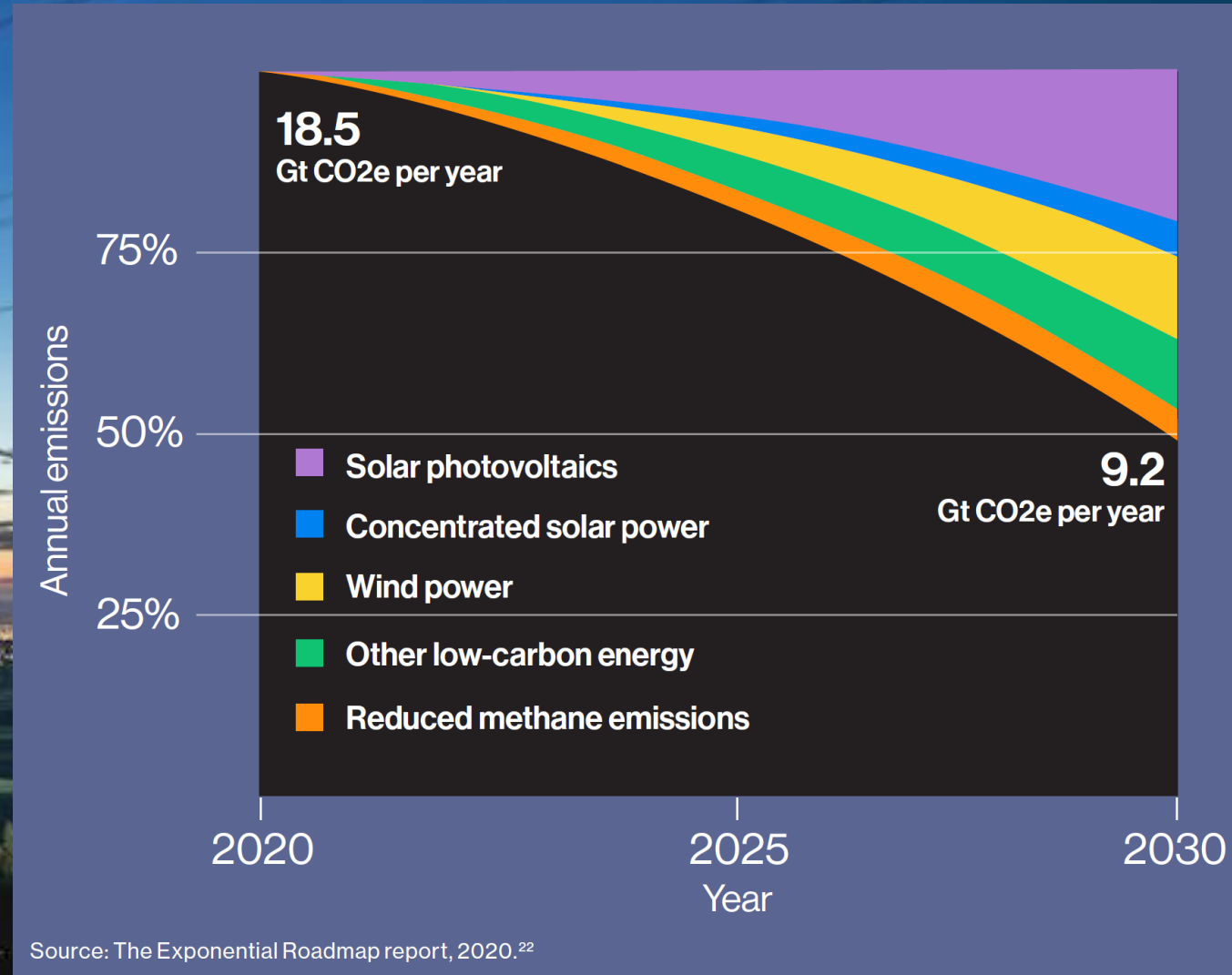
Scalable
Secure
Empower Innovation

Health & Safety
People Performance
Remote inspection
Remote monitoring
Preventive Maint.
Predictive management



Accelerate your Digitalization transition
High-performance, private cellular networks provide security, and control for business process automation

Potential reduction of total emissions in energy sector by 2030

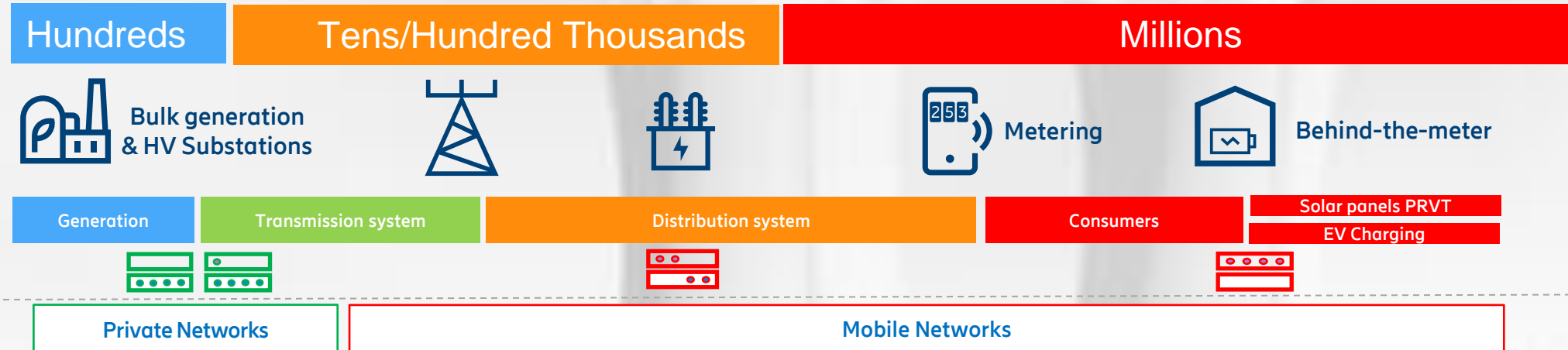







“5G-enabled cellular networks are a clear enabler for each of the so-called ‘four Ds’ of renewable energy: decentralization, decarbonization, digitalization and democratization”

Antonello Monti, Professor, RWTH Aachen University

Energy Market Value chain

Industry Perspective



Nuclear 
 Hydro 
 Wind Farm 
 Solar PV. 
 High Voltage Substations 

Peak Shaving – Less losses due to overload

Monitoring the Power grid – Avoid overload of transformers and power lines

Smart Electricity meters – Faster data on consumption

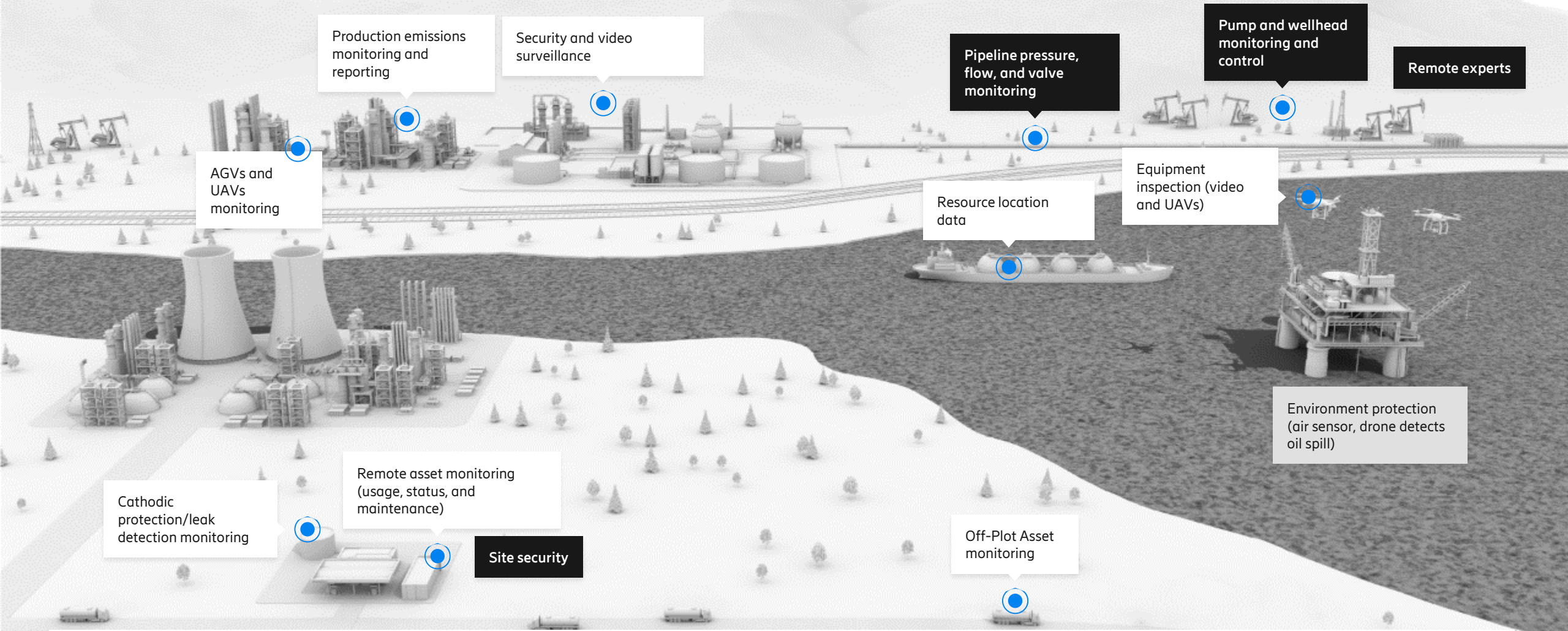
Faster Troubleshooting – Detection of short circuits our other faults

Real Time Data – Improve Network Quality

Digitalization – More Sensors

Oil & Gas digitilization

Extend life & utilization of existing assets & deploy new technology applications



Production emissions monitoring and reporting

Security and video surveillance

Pipeline pressure, flow, and valve monitoring

Pump and wellhead monitoring and control

Remote experts

AGVs and UAVs monitoring

Resource location data

Equipment inspection (video and UAVs)

Environment protection (air sensor, drone detects oil spill)

Cathodic protection/leak detection monitoring

Remote asset monitoring (usage, status, and maintenance)

Site security

Off-Plot Asset monitoring

- Private LTE/5G
- Automation
- Digital Twin
- AI/ML
- Robotics
- AR/VR
- Data Analytics & Management
- 3D Printing
- EDGE Compute

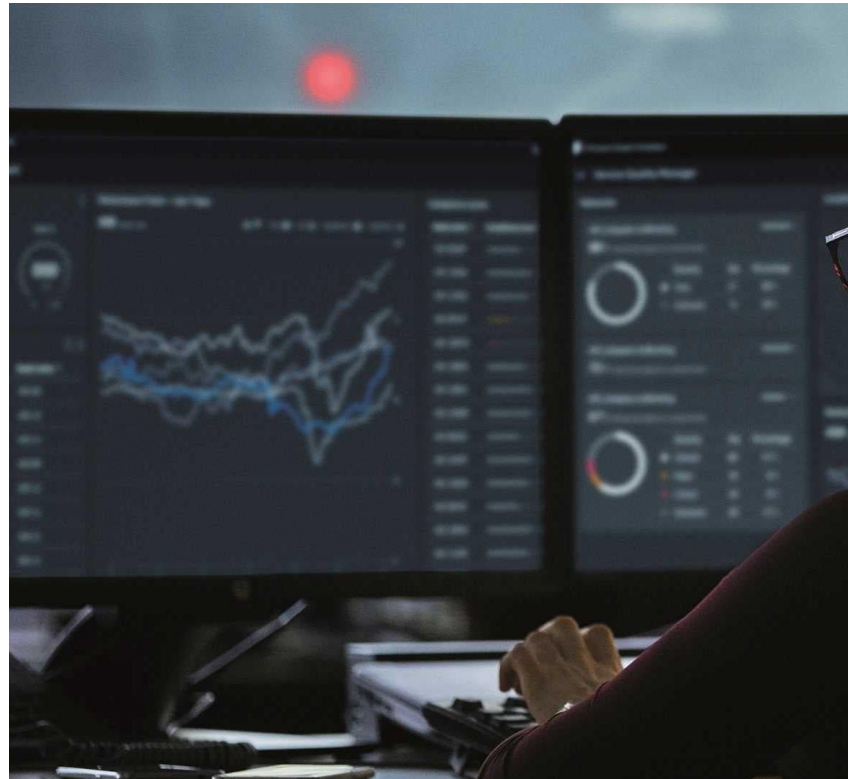
Through applying asset condition monitoring to pumps and compressors, OPEX and downtime can be reduced

Situation

Today, 70% of companies lack awareness of when assets are due for maintenance

The most common approach today is basing maintenance on a schedule and experience rather than actual need

With this approach, maintenance cycles are sub-optimal, with parts being changed in excess of need



Opportunity

25%

Reduction in number of maintenance sessions needed per asset per year

80%

Reduction in number of asset monitoring workers needed

32%

Reduction of unplanned downtime rate from applying a planned maintenance method

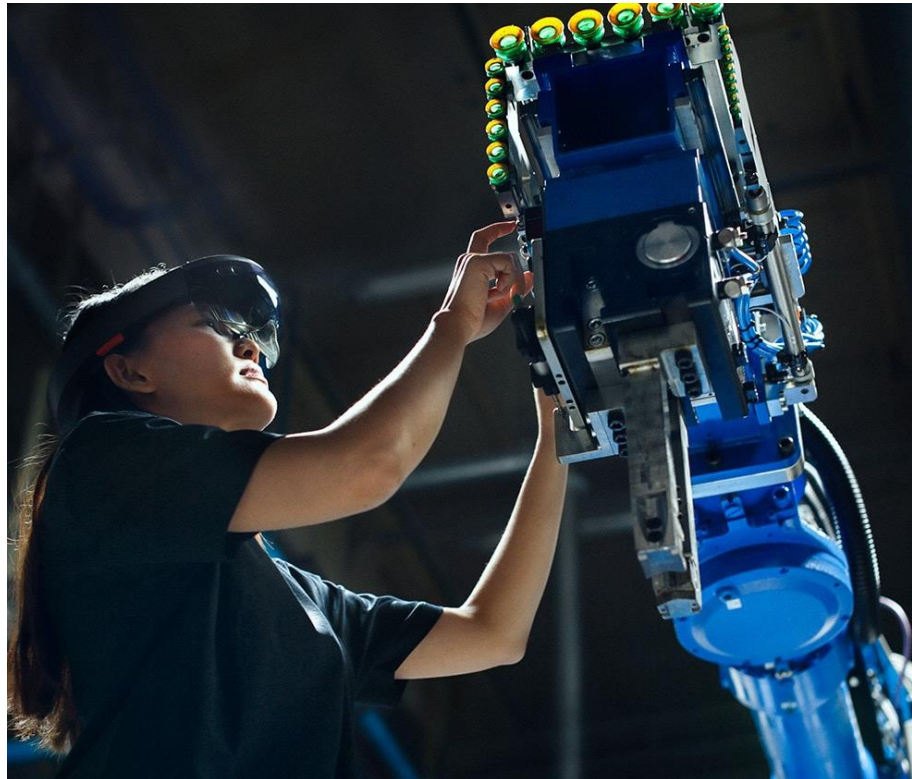
A digitally enabled workforce will have a multitude of effects for all type of workers within the industry

Situation

In the Oil & Gas industry, the workforce is constantly exposed to **hazardous** environments

Using mobile accessible schematics and push-to-video, on- and off-site work will become more efficient

In total, research show that digital wearables are expected to **increase productivity** by levels by up to 8.5%



Opportunity

66%

Reduction in number of roll-outs needed per service call

25%

Reduction in non-site inspection related incidents

8%

Reduction in operational spend due to increased effectiveness of a connected worker



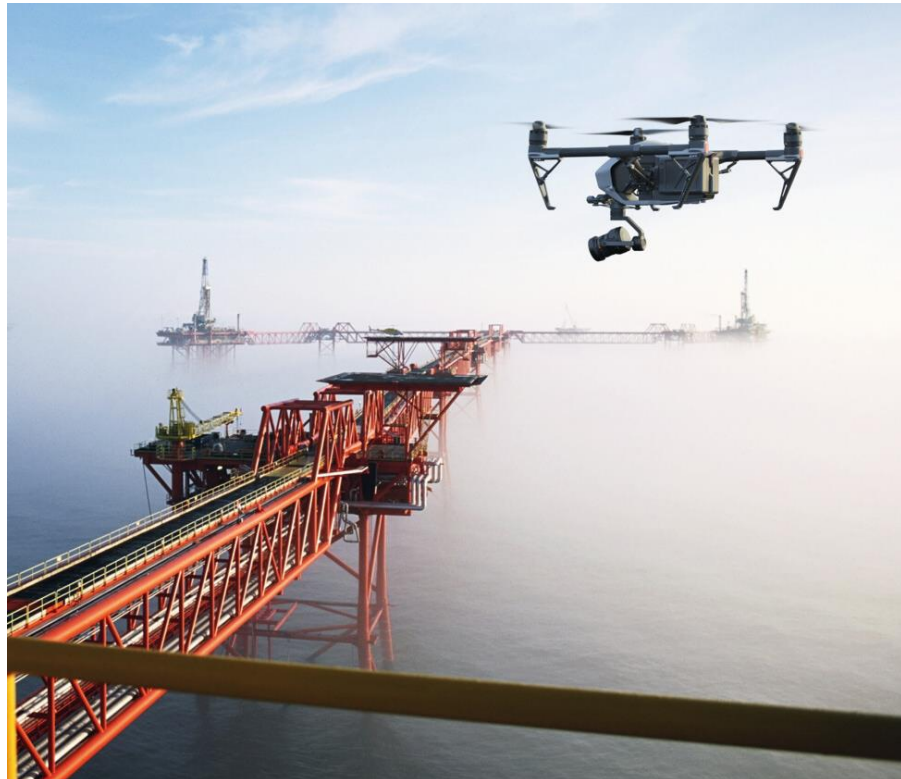
Digitalizing hazardous inspections opportunities in downtime and OPEX reductions

Situation

Conducting **manual** site inspections of oil platforms is today one of the most hazardous tasks in the industry

Manual inspection of an oil platform is in addition time-consuming, entailing **downtime** and **loss of production**

With cost and health & safety pressure growing, switching to drone inspections will be impactful



Opportunity

75%

Reduction in need for manual inspections

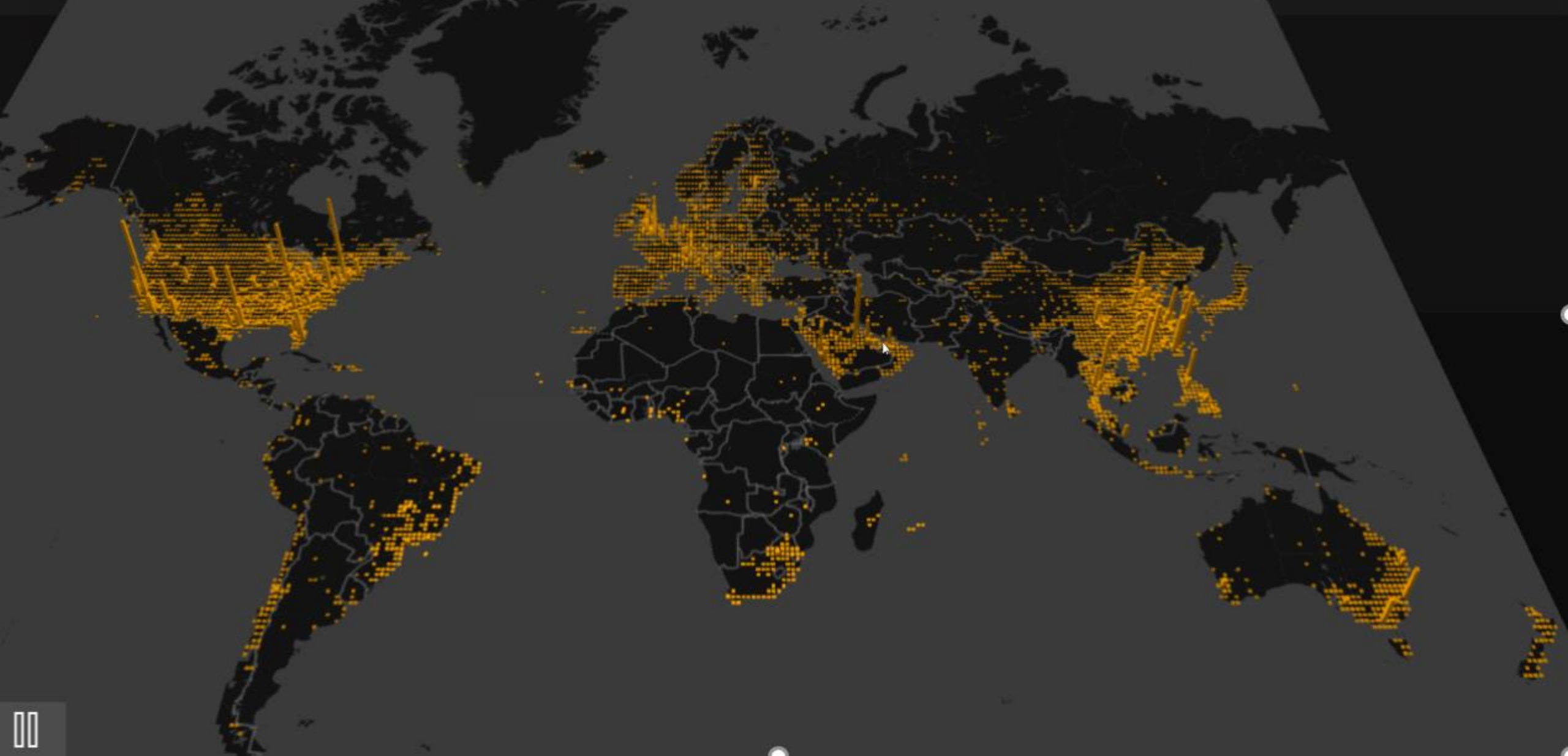
75%

Reduction of incidents related to site inspections

90%

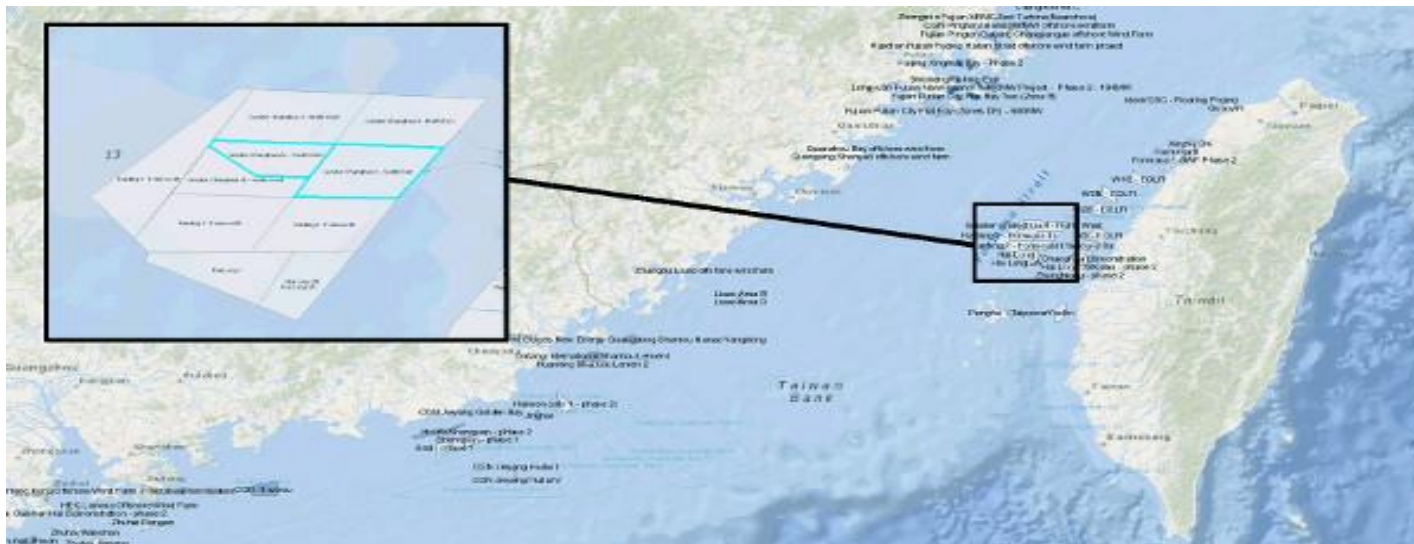
Reduction in time consumed to carry out an inspection

Some real world cases



Offshore Wind Farm in Taiwan

- Located off the coast of Changhua, it will have a total capacity of approximately 900 MW
- CHT and Ericsson, to construct LTE private networks, will enable engineers to enjoy high-quality connectivity and optimized workplace communications for daily operations
- To be upgraded to 5G extend the services to include control and automation for SCADA, surveillance for protection of critical infrastructure, field force management, and fleet tracking.



Digitalization of High Voltage Substations

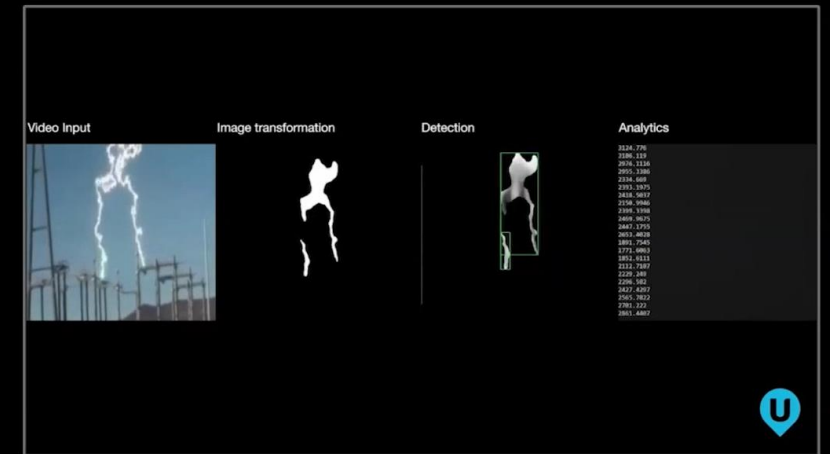


National Grid introducing a Risk Based Maintenance Program that will enable Predictive approach in maintenance and operation

- Sensors and monitors that will be installed in massive volumes. Practically this require a wireless solution.
- High requirements on Security and reliability
- The initial application to be tested would be to connect sensors for data collection. Then Video applications enabling remote inspection and video surveillance, as well as Connected worker related applications.
- For innovation purposes applications include AR, VR, AGV, Positioning,...

Transmission substation Automation

- General connectivity
- SCADA devices
- Security/surveillance
- Enterprise LAN
- VoIP
- Switchgear fault/arc detection
- Fire detection



Centrica Storage, 5G Private Network



Challenge

- Manual processes, all paper and poor data coverage
- Specialized equipment

Solution

- RAN, Core, Deployment Services, Service Continuity including support, Push-to-Talk
- On-prem, standalone redundant solution
- Outdoor Radio

Result

- Connected, safe worker
- IoT Asset Monitoring
- Drone Detection as a Service
- PPT



Imagine Possible

ericsson.com/careers