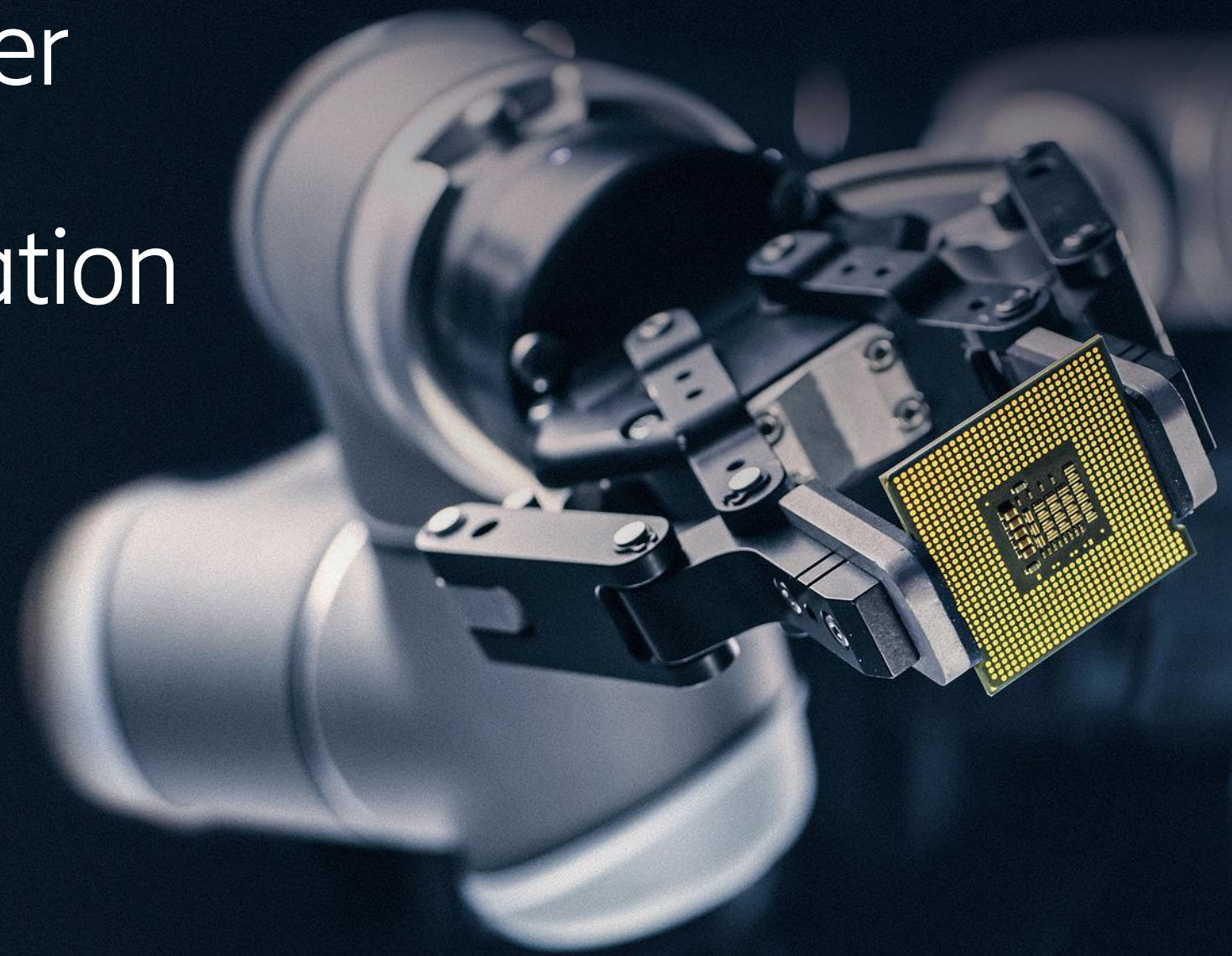
5G - Key Enabler for New Value Creation



63. Member - Apéro der asut
24. März 2021

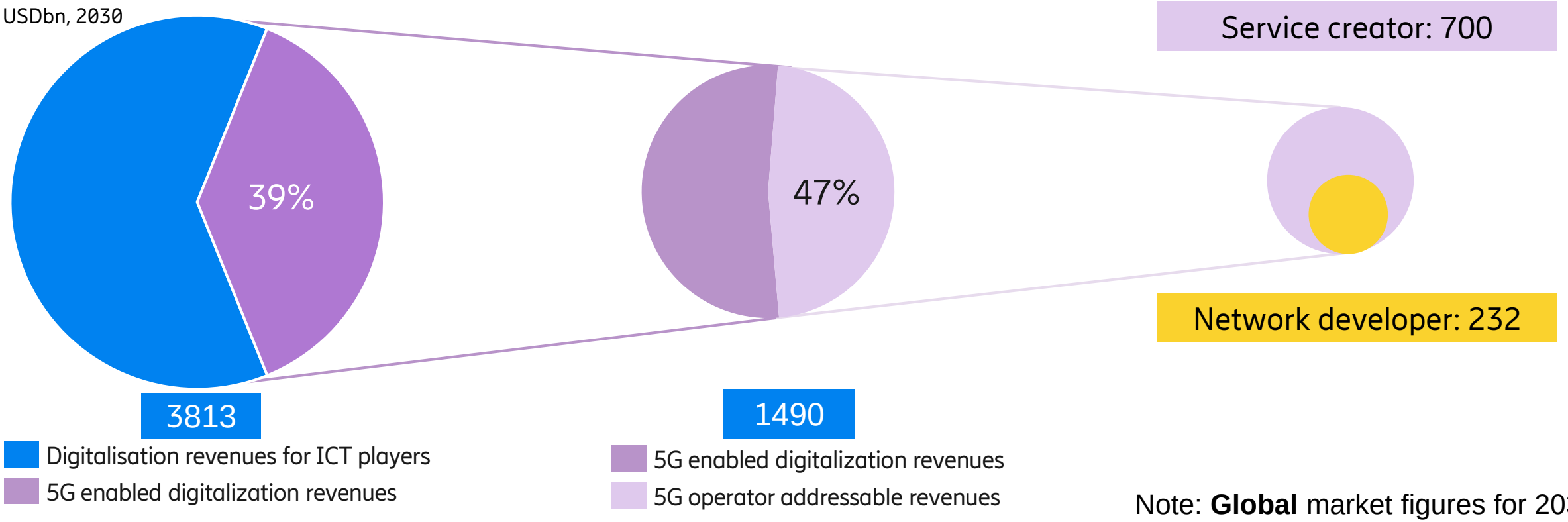
Patric Pellet
Ericsson Schweiz

Digital industry transformations will create significant ICT revenues related to 5G-enabled use cases

Digitalization revenues for ICT players

5G enabled revenues

Operator addressable revenues

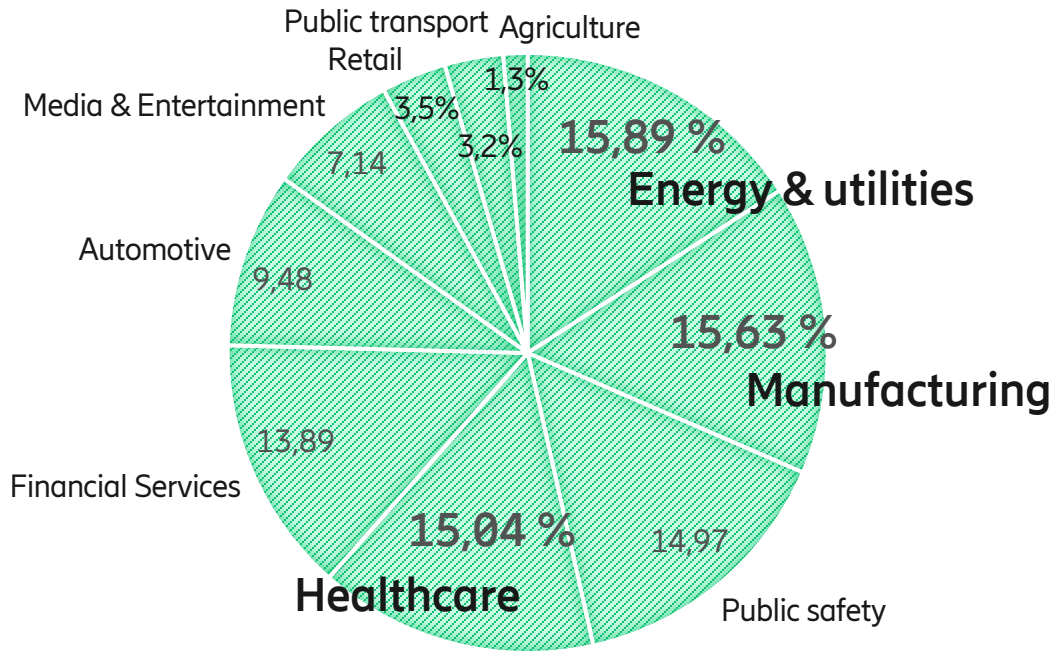


Note: **Global** market figures for 2030

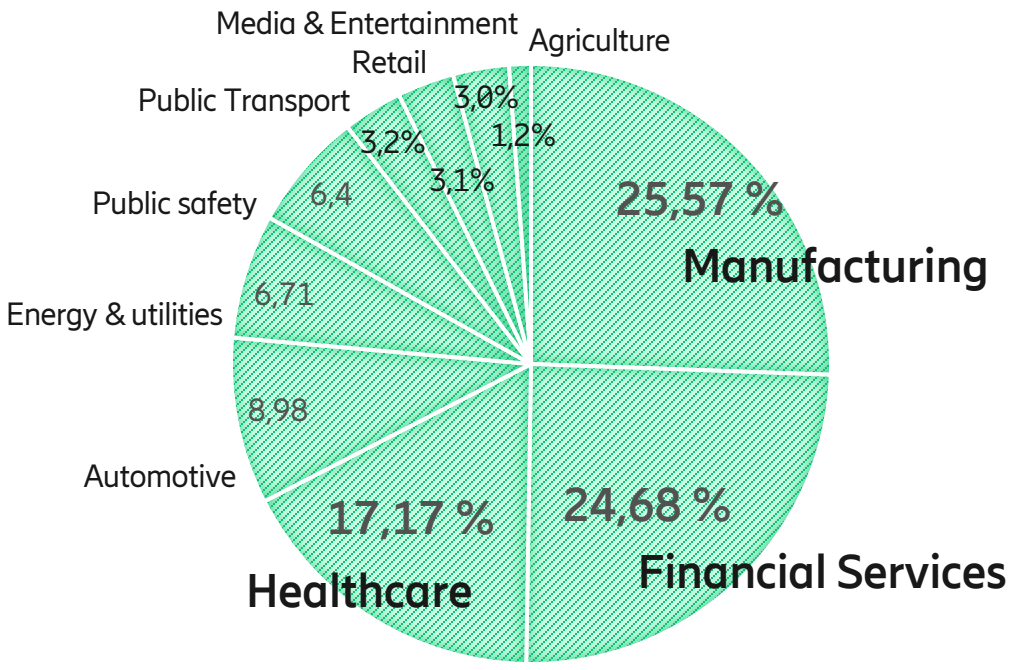
Source: Ericsson and Arthur D. Little

The distribution of industry digitalization revenues in 2030 shows differences between Switzerland and the global market (B2B)

Global market distribution of digitalization revenues

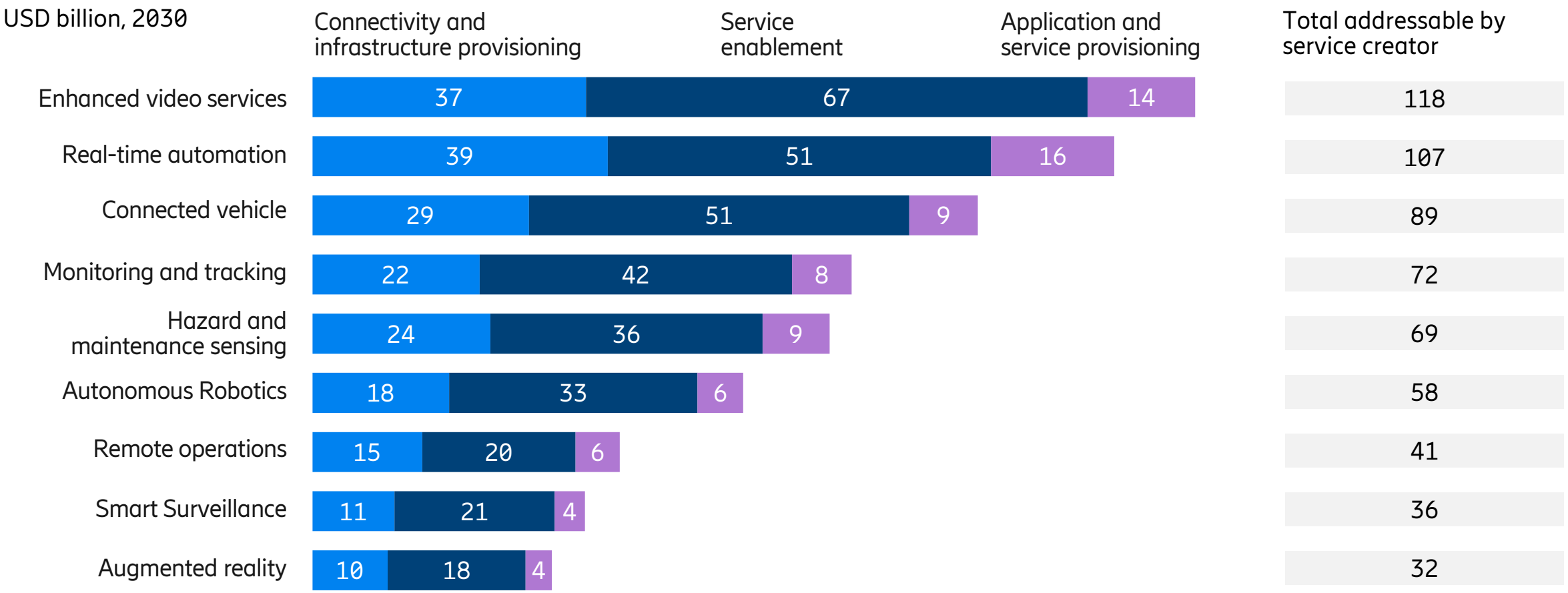


Swiss market distribution of digitalization revenues



Note: This represents total industry digitalisation, not only 5G-enabled ICT revenues

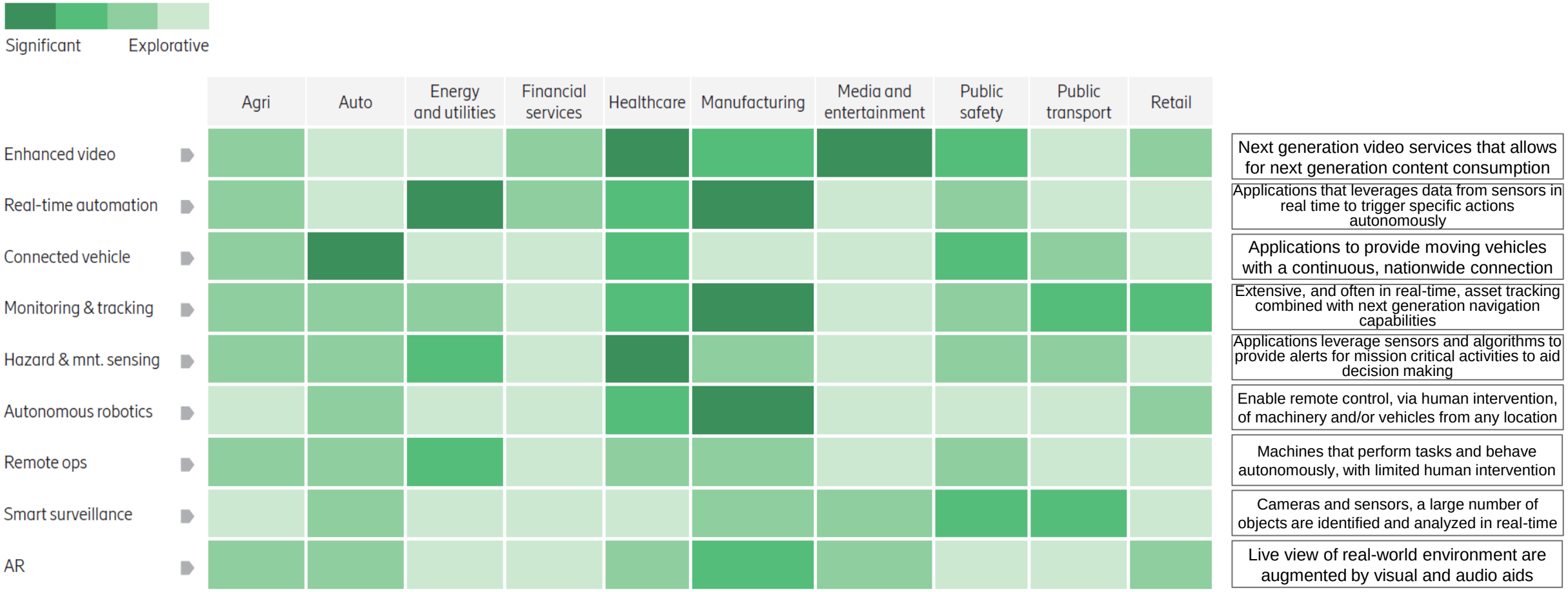
B2B Monetization by Use Case Cluster and operator role



(*) Source: 5G for business: a 2030 market compass – Ericsson and ADL

Replication of Capabilities for different industries

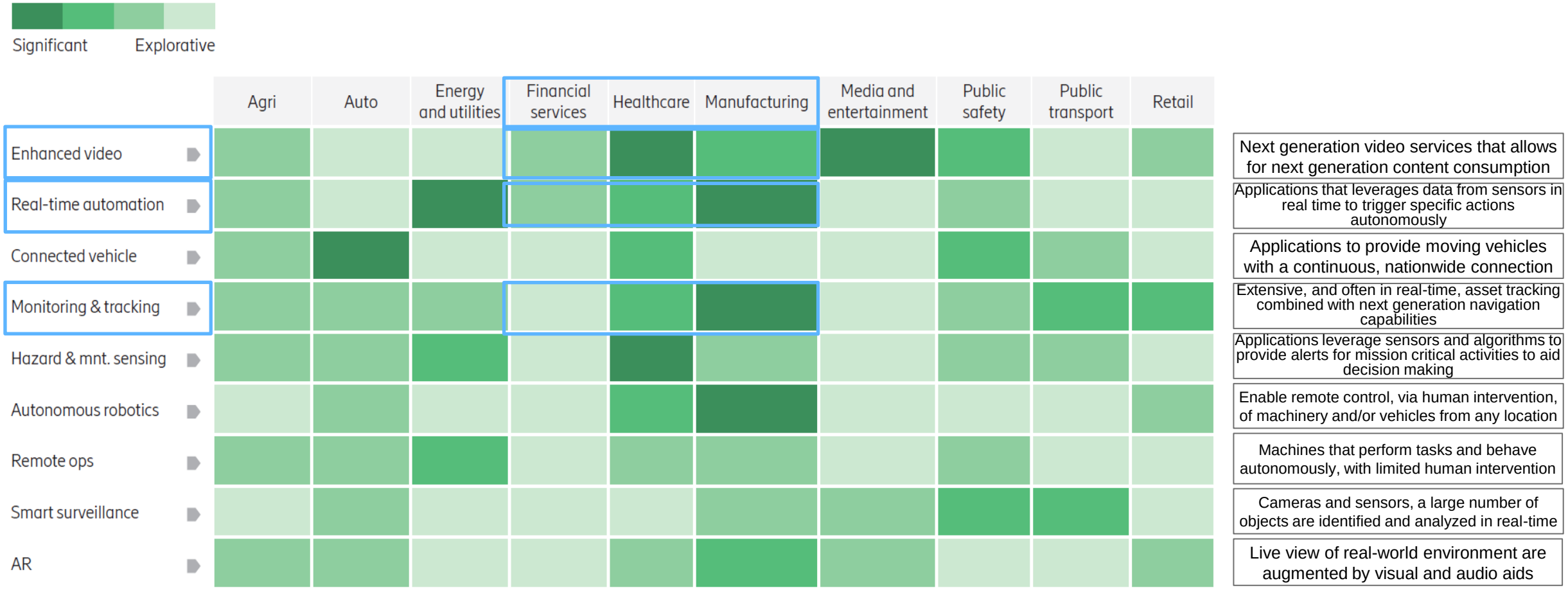
Figure 7: 5G-enabled industry digitalization addressable opportunity (telco global service creator role)



Source: Ericsson and Arthur D. Little

Replication of Capabilities for different industries

Figure 7: 5G-enabled industry digitalization addressable opportunity (telco global service creator role)



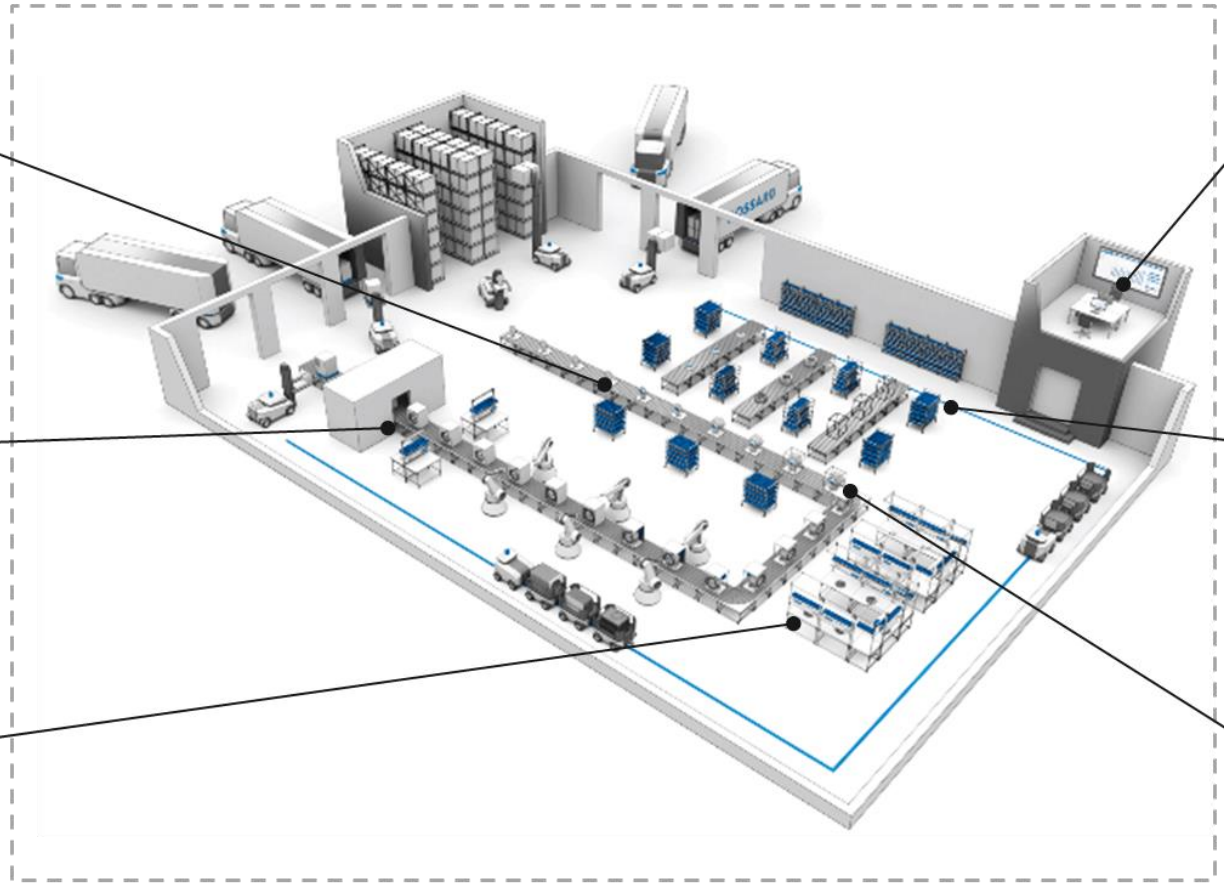
Source: Ericsson and Arthur D. Little

Use Case Driven Monetization: example of Use Cases from Manufacturing

Real-time automation
Real-time production chain automation

Autonomous robotics
Collaborative robots

Augmented reality
AR troubleshooting



Hazard and maintenance sensing
Asset condition monitoring

Monitoring and tracking
Connected screwdrivers enabling monitoring of real-time data

Enhanced video services
VR training, planning and design

Image source: ADL

https://www.ericsson.com/en/blog/2021/3/5g-futureproof-factories

Ericsson USA 5G Smart Factory recognized as 'Global Lighthouse' by the World Economic Forum, 15.03.2021

Francisco Betti, Head of Shaping the Advanced Manufacturing and Production, World Economic Forum, says:

"This is a time of unparalleled industry transformation. The future belongs to those companies willing to embrace disruption and capture new opportunities. Today's disruptions, despite their challenges, are a powerful invitation to re-envision growth. The lighthouses are illuminating the future of manufacturing and the future of the industry."

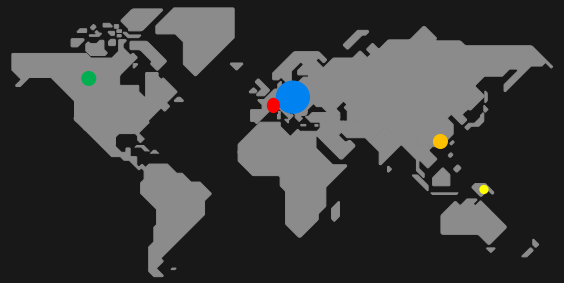
https://www.ericsson.com/en/press-releases/2021/3/ericsson-usa-5g-smart-factory-recognized-as-global-lighthouse-by-the-world-economic-forum

Industry use case references powered by Ericsson

60+

Industry use case References

6 Industries



- Manufacturing
- Energy and Utilities
- Mining
- Ports
- Healthcare
- Networking Enterprises

Cosmote AGV for warehouses	**Hexagon** Smart Wireless Manufacturing	**Ambra Solutions** 5G-ready connectivity in Mines
Comau & TIM Comau factory of the future	**Atlas Copco** Smart Manufacturing AGVs	**Newcrest, Telstra** Lihir gold mine, Papua New Guinea
Comau VR Monitoring of production lines via Digital Twins	**Hitachi, Mobile Network Operator, Global System Integrator** Smart Manufacturing	**Boliden, ThingWave, LTU Business, Telia.** Narrowband IoT for Smart Rock bolts
BMW & Deutsche Telekom Automotive, 5G Manufacturing	**Hitachi, Mobile Network Operator** Ideal energy usage	**Port Qingdao, China Unicom, Shanghai Zhenhua Heavy Industries Co.** 5G Automated Port
Ericsson and Telia Tallinn Smart Factory	**Telenor Connexion, Grundfos** Connected Pumps	**Rotterdam World Gateway** AGVs
eGO, Vodafone Germany Automotive 5G manufacturing production: eGO	**Landis+Gyr, Telia, E.ON.** Driving rapid adoption of cellular IoT in smart meters	**Arkessa, Gemalto** Brighter is building a global healthcare IoT ecosystem
Mercedes Benz & Telefónica Germany Mercedes-Benz Cars increase efficiency and flexibility	**Hitachi, Mobile Network Operator, AI/ML Provider** Improved logistics for oil and gas	**Westenergie, 450connect** LTE 450 Proof of Concept
MTU Aero Engines, Fraunhofer IPT 5G monitored manufacturing of bladed disks	**Bell Canada, BeWhere** BeWhere delivers cost-effective cellular IoT asset tracking solution	**Verizon** Virtual Network Services for Enterprise business

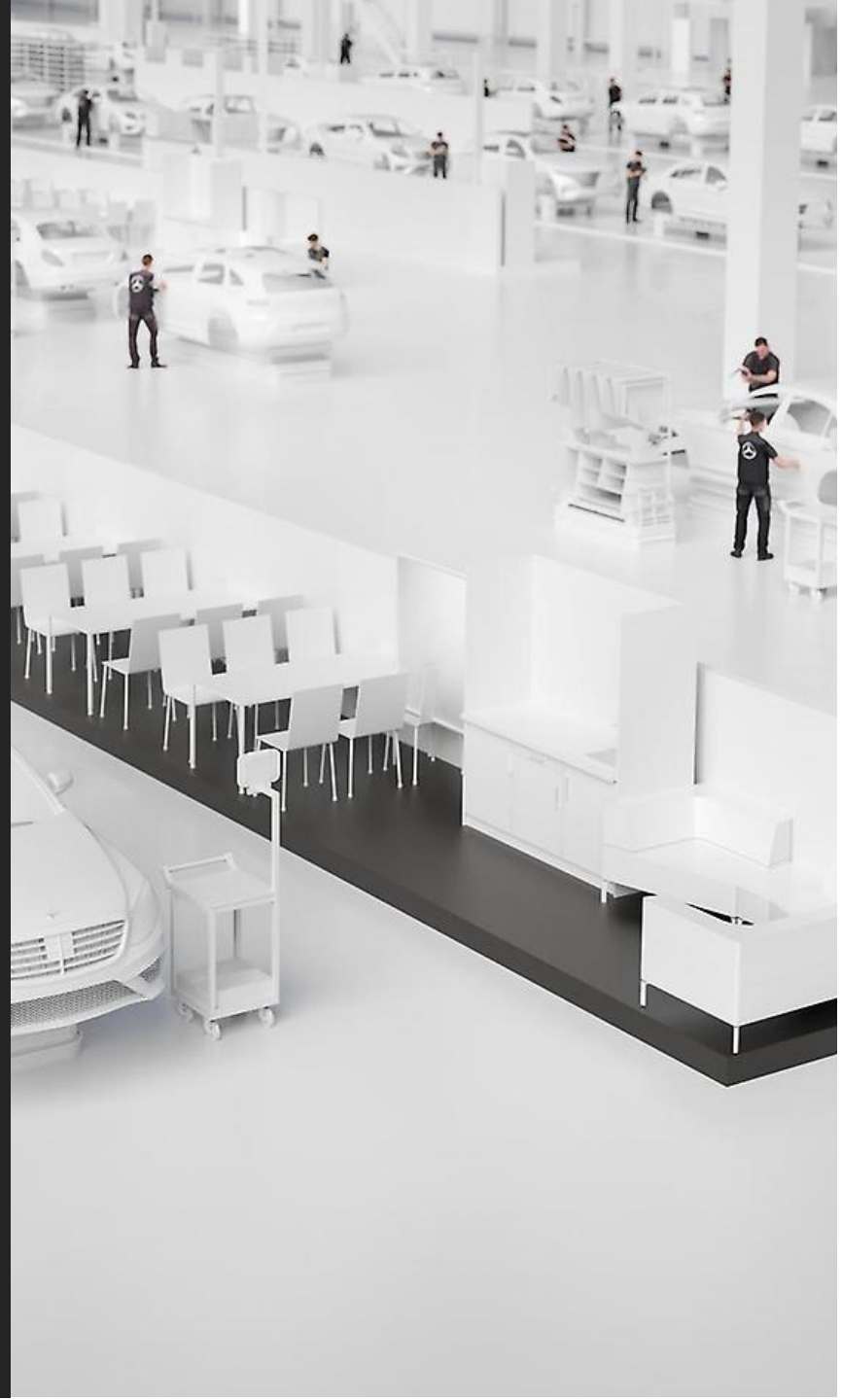
https://www.ericsson.com/en/5g/5g-for-business

Mercedes-Benz Cars significantly increases efficiency and flexibility

Case: Factory 56

The Challenge

Need for a flexible and connected infrastructure to replace traditional assembly line with driverless transport systems, in order to significantly gain efficiency and flexibility to produce large numbers of very different vehicles



The Solution

Private commercial 5G Network:

- Ericsson Private Network solution with 5G Radio Dot for high performance indoor
- First phase covers 20.000 of the 220.000 m^2 of Factory 56

The expected results

- Optimize existing production processes through data linking or product tracking on the assembly line
- Process optimization, which can be adapted on short notice
- Intelligently linking production systems and machines to support the efficiency and precision of the production process
- Sensitive production data stays on premise

Partners

- Telefónica Germany
- Mercedes-Benz

5G monitored manufacturing of bladed disks

Case: BLISK

The challenge
Innovation in aircraft engine design is limited by the growing complexity of the components.

Ensuring maximum quality for these safety-critical components and avoiding costly and energy-heavy rework enable a boost in productivity and innovation.

Partners:

Solution
Real-time monitoring and control of the production process of bladed disks for jet engine turbines, the world's first enabled through 5G New Radio, is the pre-requisite to produce more efficient aircraft engines and secure the extremely high-quality product.

Results

- Annual savings of 27M€ per factory, resulting from reduced rework due to predictable quality
- Improved engine design could lead to annual savings of 16 M worldwide metric tons* of CO_2

Partners

- MTU Aero Engines
- Fraunhofer IPT

**assuming 2% more efficient jet engines resulting from higher-quality BLISKs*

BLISK = BLade Integrated diSK

Real-time care

5G enables the UK's first remote diagnosis

With unprecedented new demands on the NHS and emergency services due to the coronavirus pandemic, the need for innovative new ways of delivering healthcare is now more critical than ever.

"We are excited by the huge potential of 5G technology and how it can help transform healthcare in the future. We believe it has the potential to create more efficient use of healthcare resources, particularly with regards to easing the burden on A&E services"

Dave Rosser,
UHB Chief Executive

The 5G difference

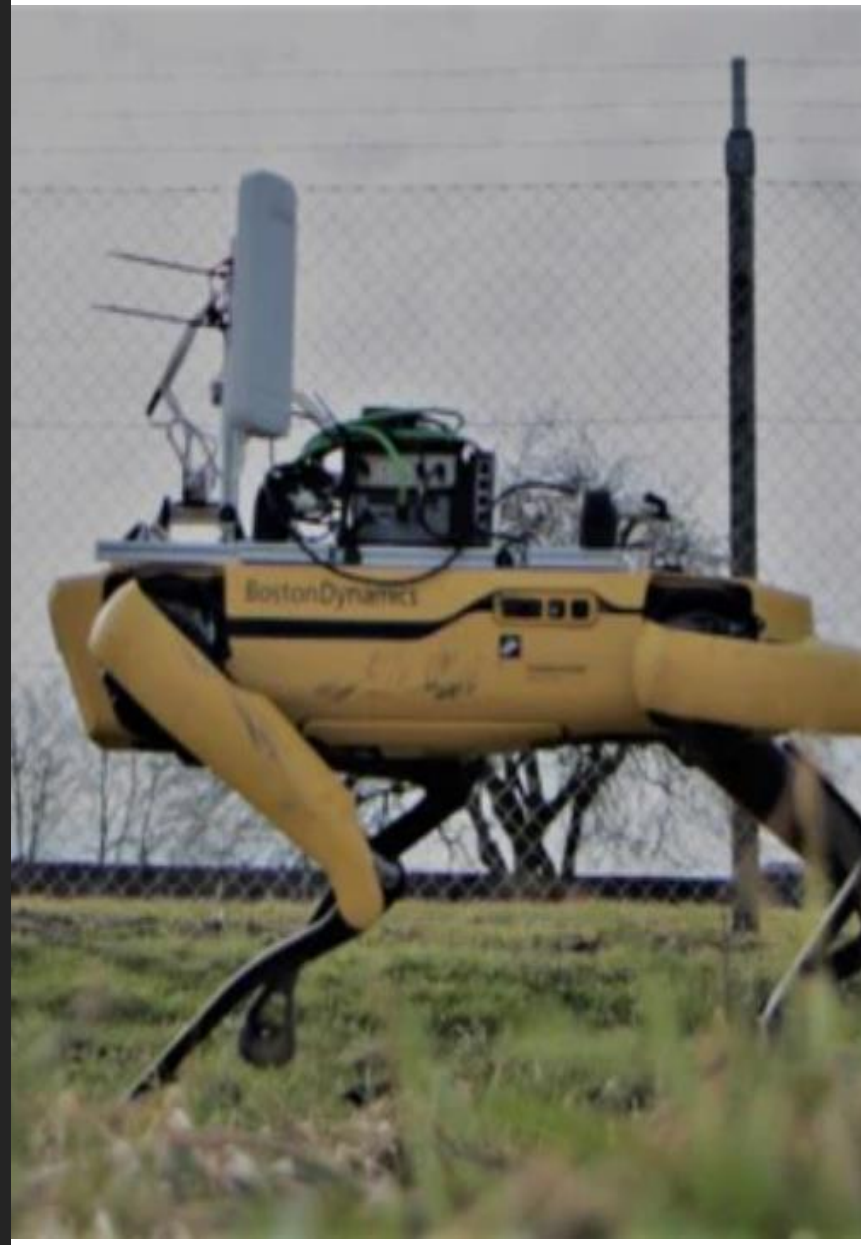
The clinician was able to perform the procedure remotely through an immersive combination of 5G-enabled technology.

A camera based in the ambulance transmits high-definition footage to the remote clinician with close to zero latency. Using a VR headset and a joystick, the clinician can then remotely guide the paramedic through a series of procedures based on haptic glove technology.

All of this allows the clinician to recognize vital signs, access medical records remotely and ultimately respond much faster.

Ericsson-powered 5G unleashes Spot the robot for airport inspection

If you flew in or out of Hans Christian Andersen airport near the Danish city of Odense recently and glanced out the window, you might have seen **a four-legged robot called Spot freely patrolling the perimeter fencing and checking for damage**. But this was no fairy tale. The robot was real and connected to TDC NET's Ericsson-powered 5G. The 5G use-case trial was a partnership with the Danish Technological Institute.

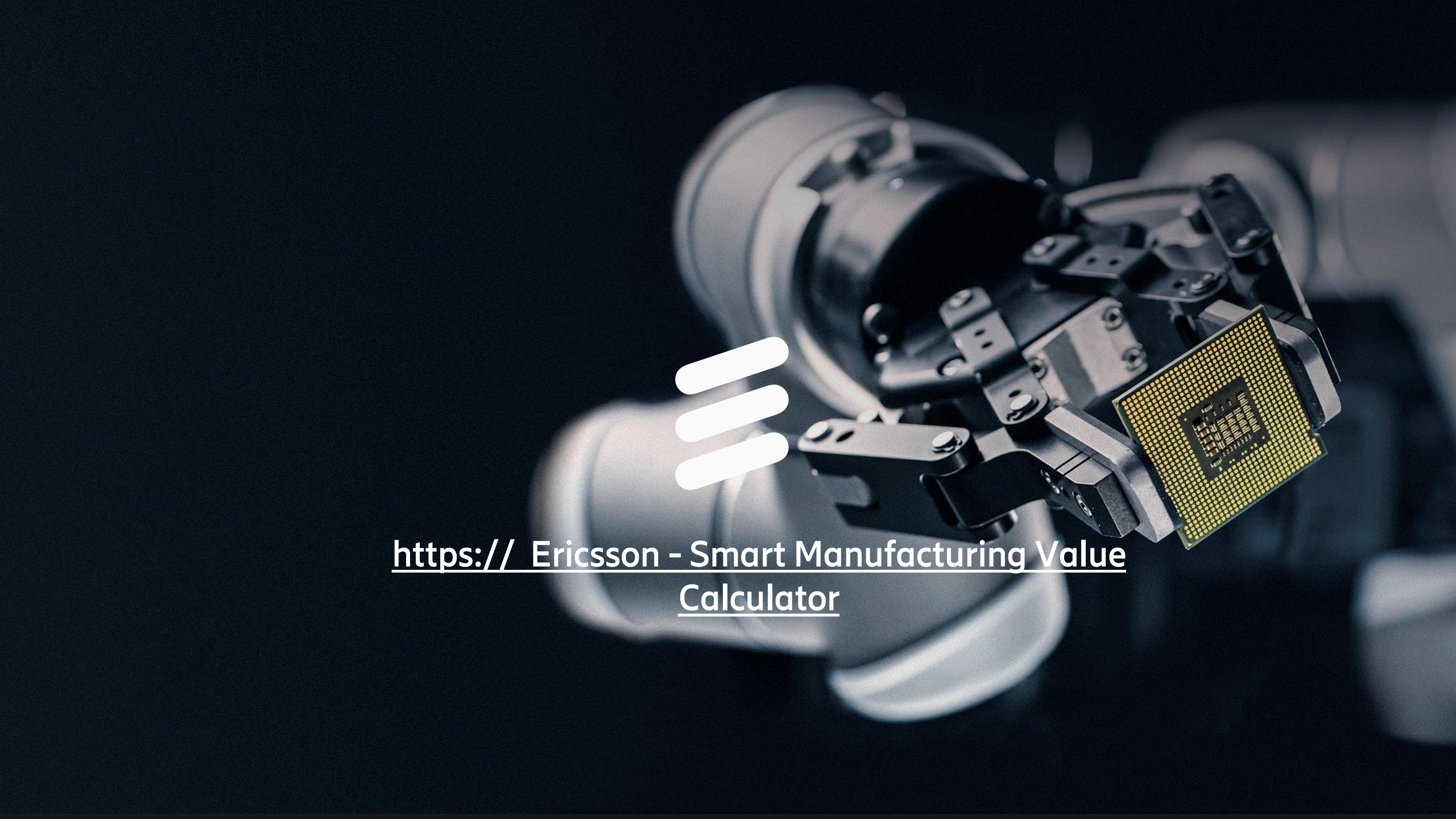


5G robotics breakthrough

In collaboration with the Danish Technological Institute, the partners focused on how to unleash Spot – the Institute's four-legged mobile robot developed by robotic company Boston Dynamics – on TDC NET's national commercial 5G network.

Spot had previously only performed tasks for the institute using Wi-Fi connectivity. This mean connectivity range was limited. Spot's operator also had to be within 30 meters.

By connecting Spot to TDC's commercial 5G network, the partners literally opened the doors to new use case possibilities for the robot. The fast speed, high bandwidth and extremely low latency of 5G provides the tools to send huge amounts of data securely from the robot across the network and back in real-time over large distances.



https:// Ericsson - Smart Manufacturing Value Calculator