

A graphic consisting of three concentric circles. The innermost circle is white and contains the text '5G' in a dark teal color. The middle circle is a medium blue, and the outermost circle is a lighter blue.

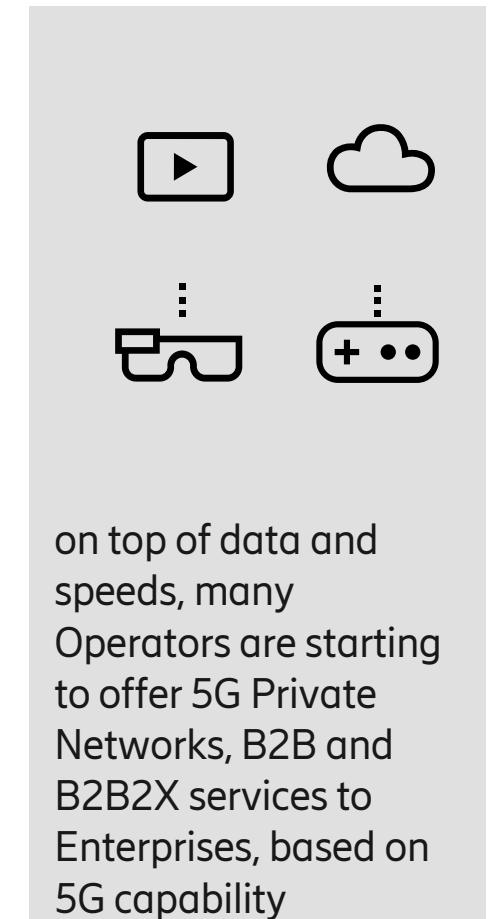
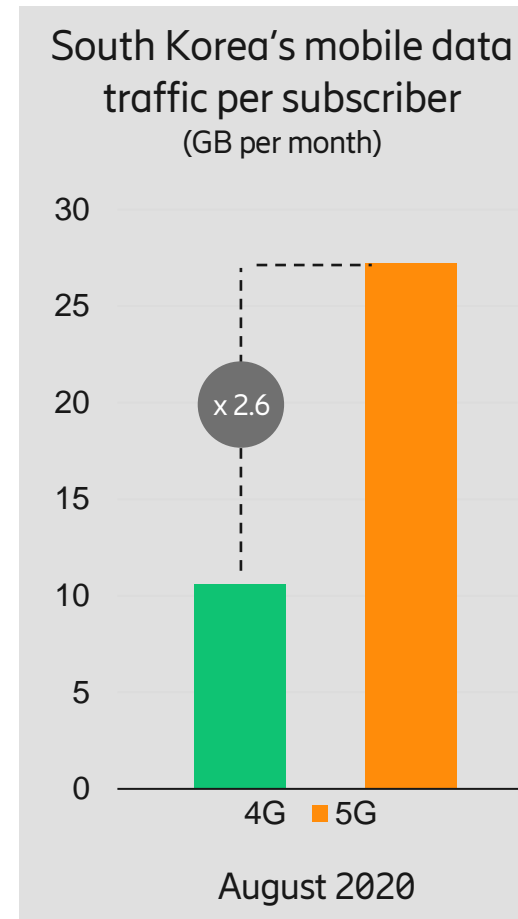
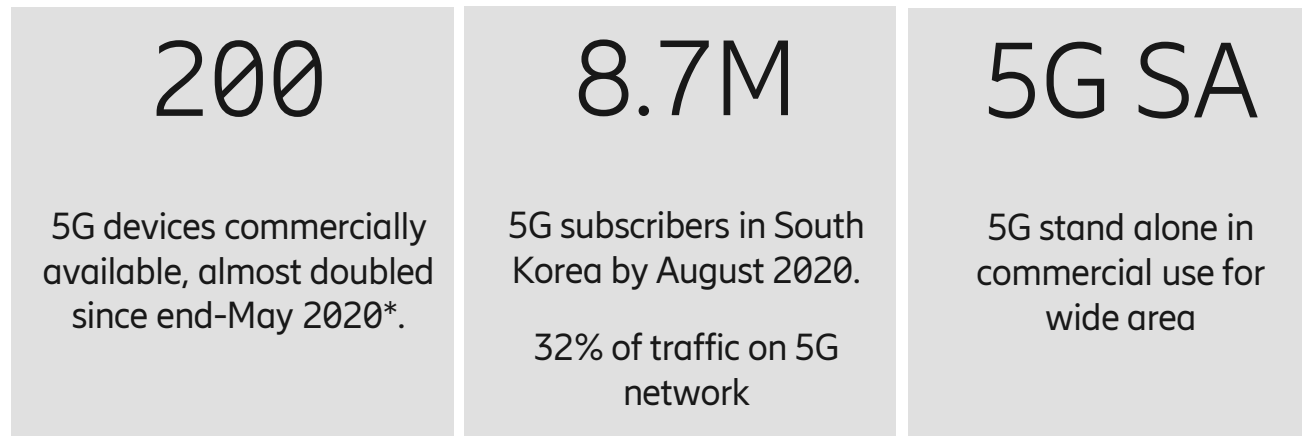
5G

5G for Industries

ITU Regional Forum for Europe on 5G Strategies, Policies, and Implementation
22-23 October 2020, Online Meeting

Silvana Apicella – Southern Europe Network Evolution Lead, Ericsson

The first 18 months of 5G in numbers



* Source: GSA

Source: Ministry of Science and IT Korea

The first 18 months of 5G for Industries



1

700 billion

Industrial digitalization
business potential by 2030
(USD)

2

5.2 billion

Cellular-IoT connections by
the end of 2025, driven by
Industry Digitalization

3

>100

Private 5G trials by the end
of 2020

4

50+

Ericsson references for
Industry 4.0

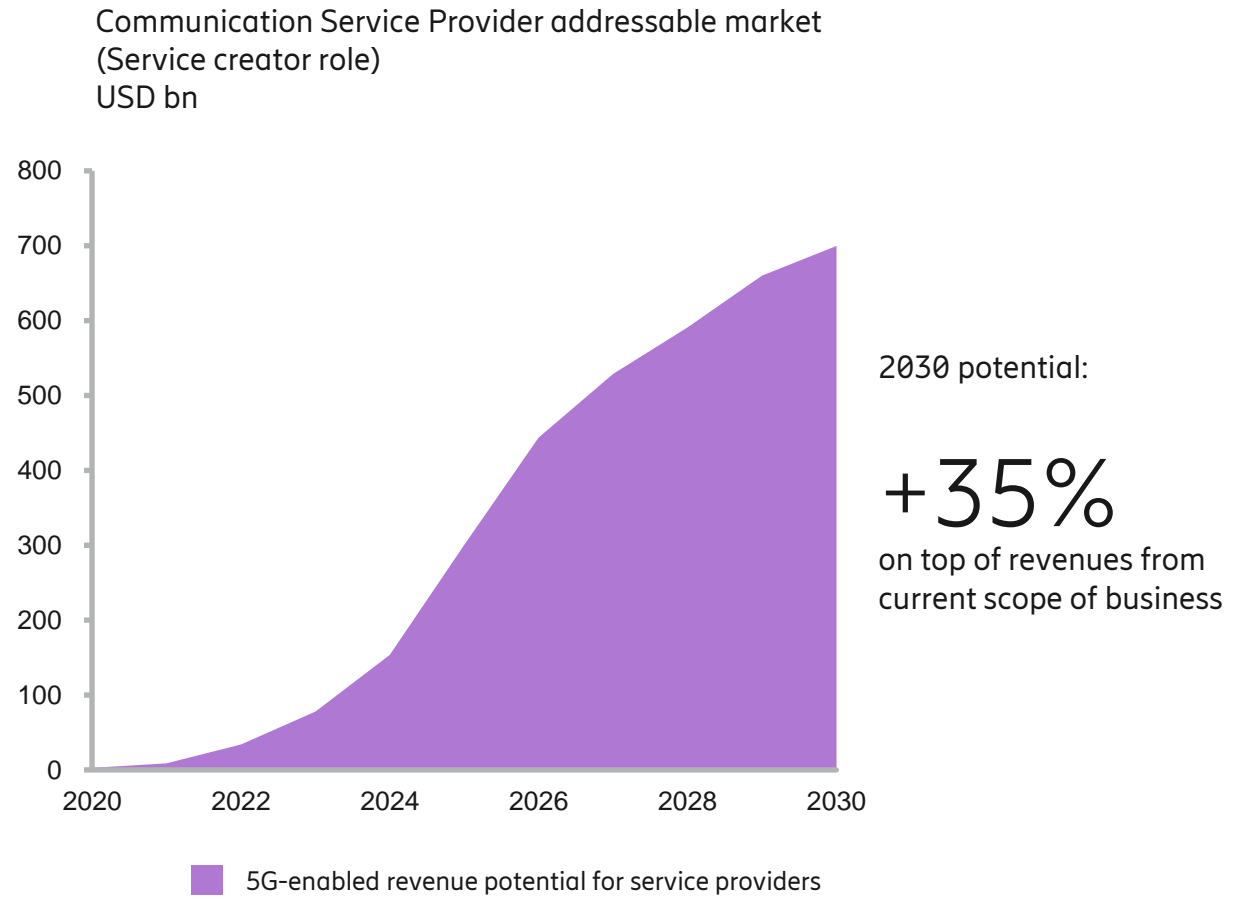
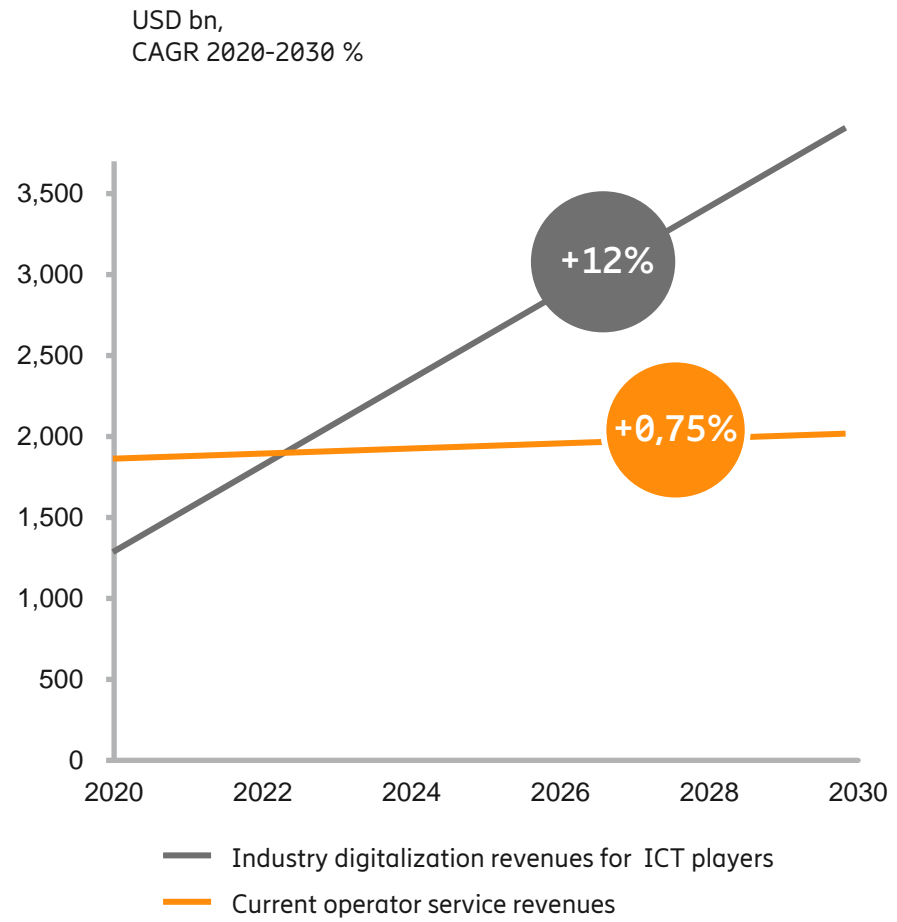
Should CSP address the 5G
industrial opportunity?

What will the 5G industrial
ecosystem look like in
2025?

How will 5G for Industries
become a commercialized
service?

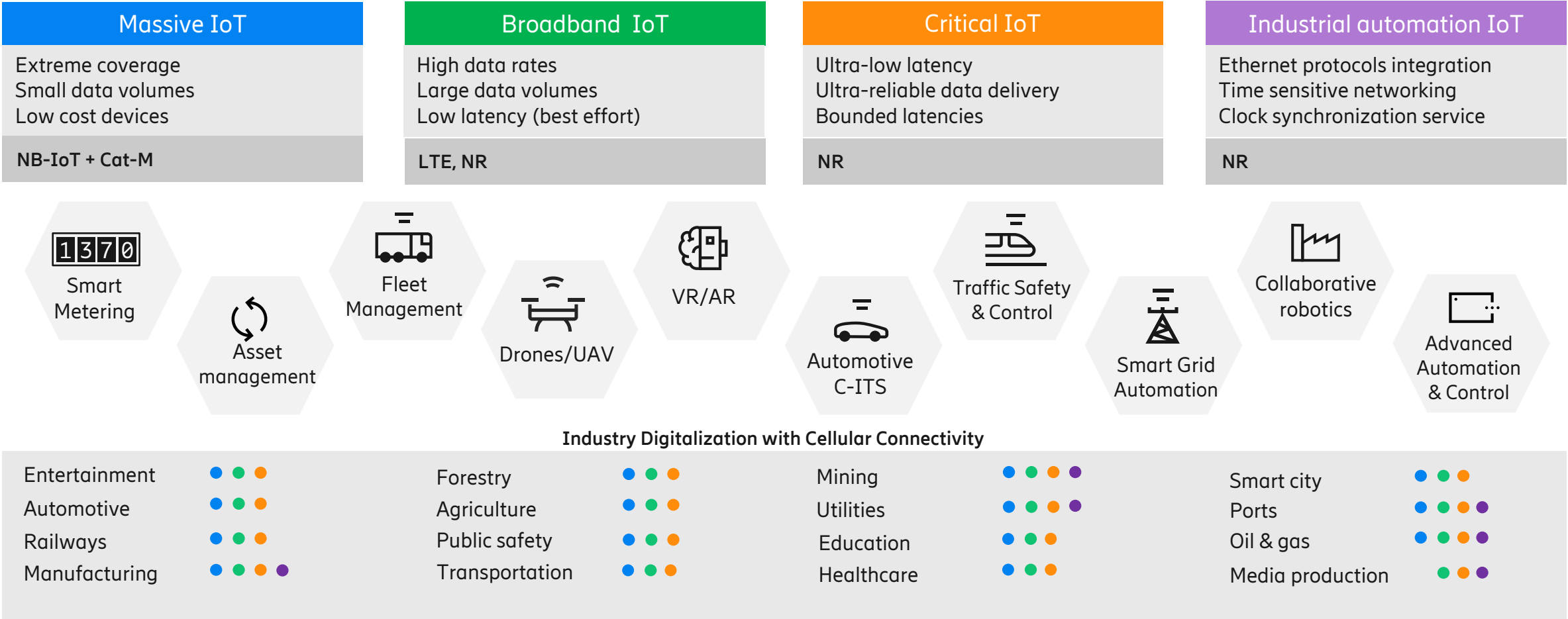
Which Industry use cases
will be the most compelling
for 5G?

1 5G Industry Digitalization Business Potential

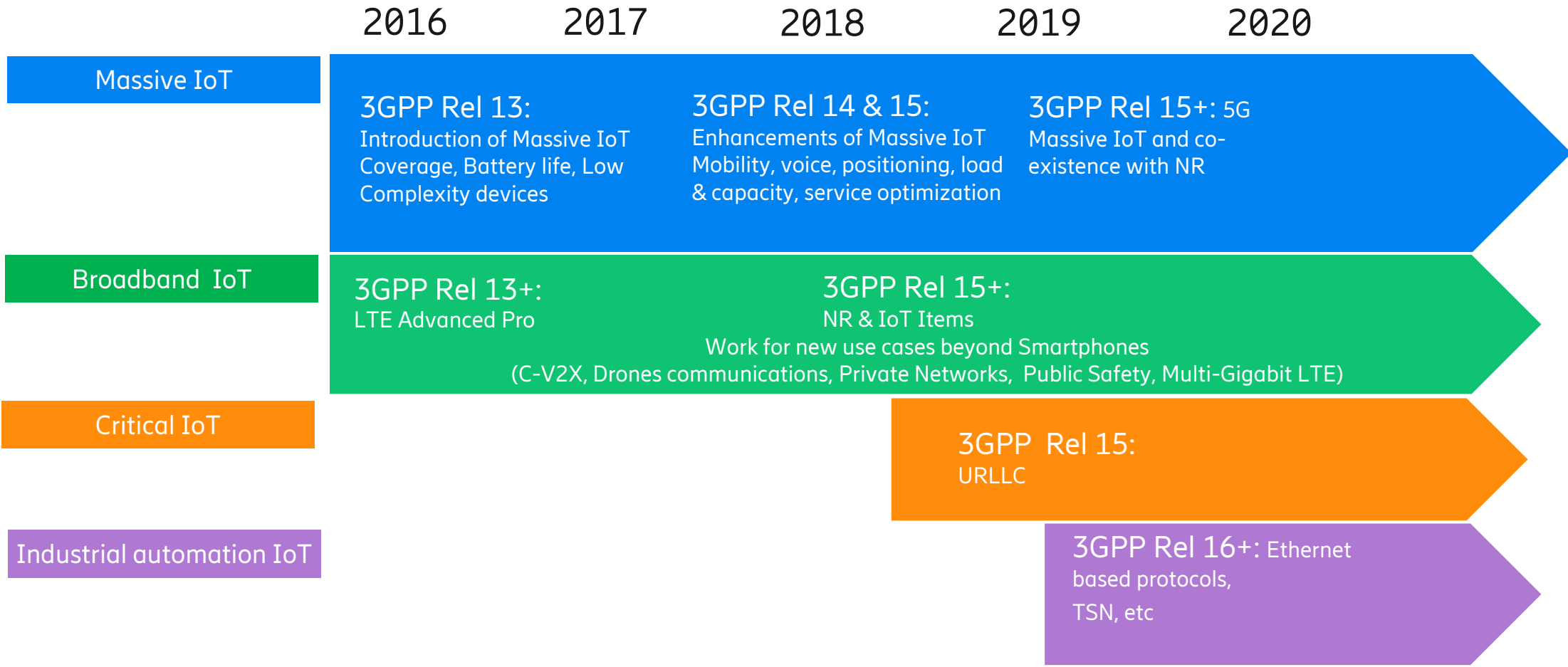


Source: Ericsson and Arthur D. Little

2 Cellular IoT – Multiple use cases, Multiple Industries



2 Cellular IoT – 3GPP Standardization Status



2 Why Cellular IoT for Industry?



Flexible Deployment



- Fully Isolated at enterprise premises (Dedicated Network, Stand-Alone)
- Fully Integrated into Mobile Operator Network (E2E Network Slice)
- Voice, Data, Video, IoT

Capacity & Coverage & Mobility



- Private licensed spectrum and/or Public National Spectrum
- Local and/or Wide Areas
- Various spectrum and bandwidth
- Interoperability with Public Mobile Networks

Low Latency and Reliability



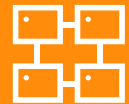
- URLLC
- Licensed Spectrum
- Quality of Service

Security



- 3GPP based security
- Secure device authentication

Thriving Ecosystem and Future Proof



- Evolving ecosystem
- Aligned with 3GPP 5G evolution



3 Private Networks – Which Spectrum?



Countries where spectrum for industries is debated or local spectrum is assigned



Mid band

Chile, China, Finland, France, Germany, Japan, Luxembourg, Netherlands, Norway, Poland, Slovenia, Sweden, UK, US

High band, mmW

Australia, Finland, Germany, Hong Kong, Italy, Japan, Malaysia, Netherlands, Sweden, UK

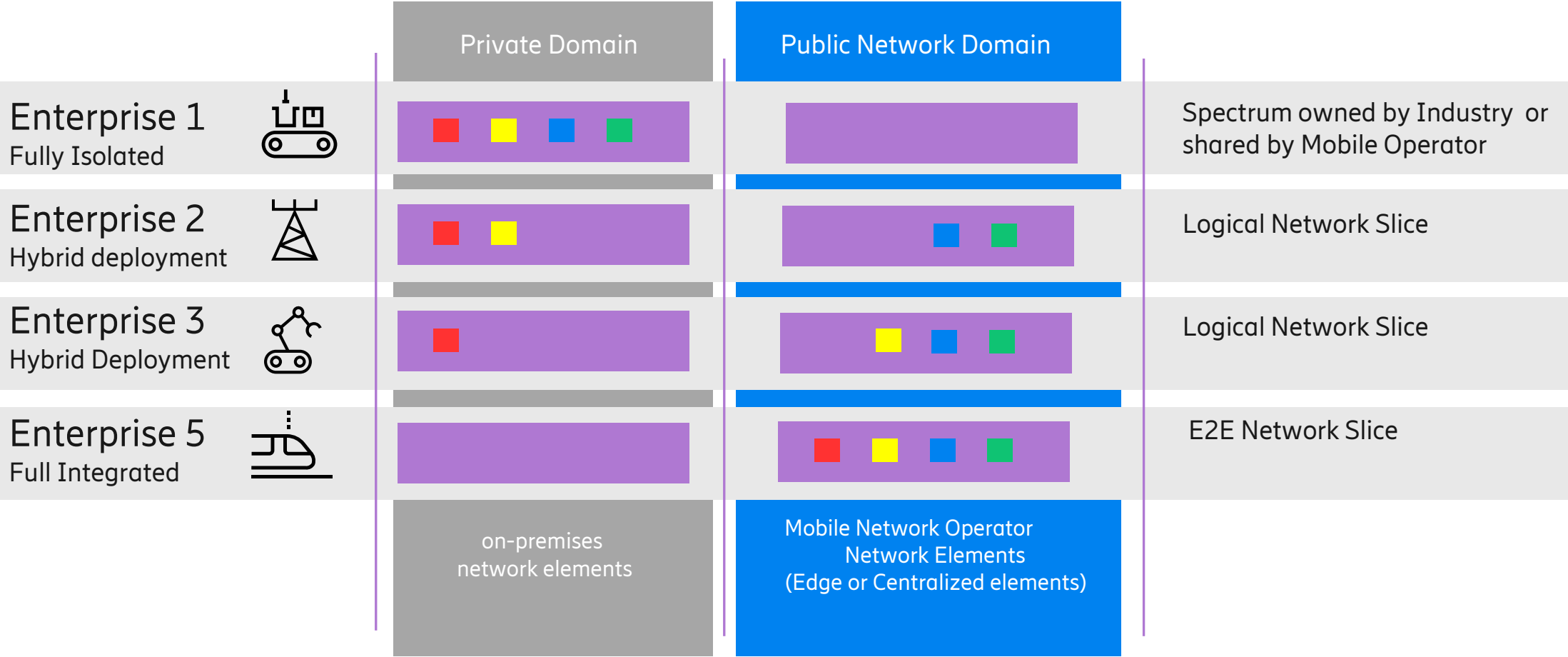
MNO Shared Spectrum	Unlicensed Spectrum
<ul style="list-style-type: none">• Short term vs long term expectations• SLAs fulfillment: i.e. production stop or safety issues• Hesitant to be “locked-in” to MNOs, Trust.	<ul style="list-style-type: none">• Useful in many applications, but it can’t offer full URLLC.• Risk for costly outages
New Regulated Spectrum	Leased Spectrum
<ul style="list-style-type: none">• CBRS• Driven by e.g. “5G ACIA”. Getting traction in e.g. EU	<ul style="list-style-type: none">• Not an established market• New rules & business case• No benefit from MNO know-how and expertise

Dedicated Spectrum for Industry: “Local” and “Real-Estate” Principles should preferably apply
Ericsson White Paper: <https://www.ericsson.com/en/reports-and-papers/white-papers/5g-spectrum-for-local-industrial-networks>

3

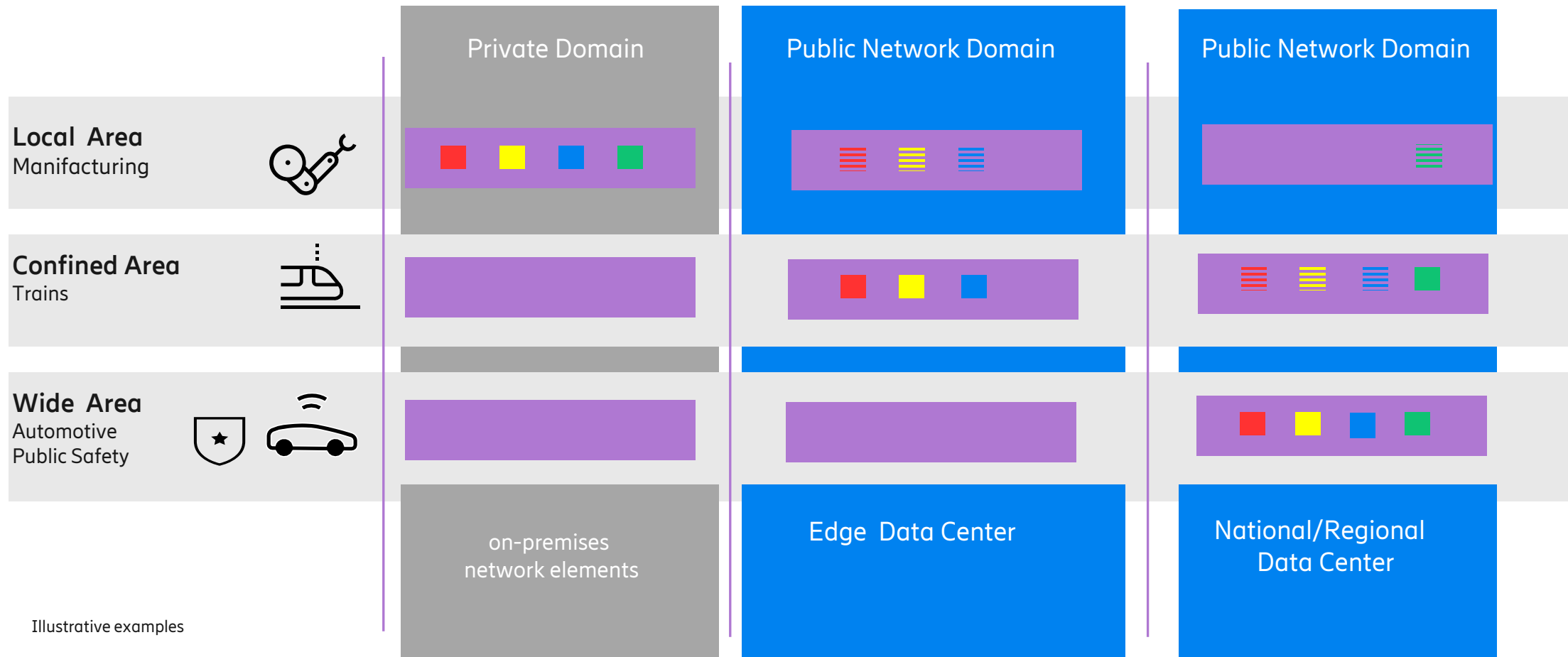
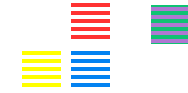
Private Networks – Deployment Flexibility

Leveraging existing Mobile Operators assets and operations



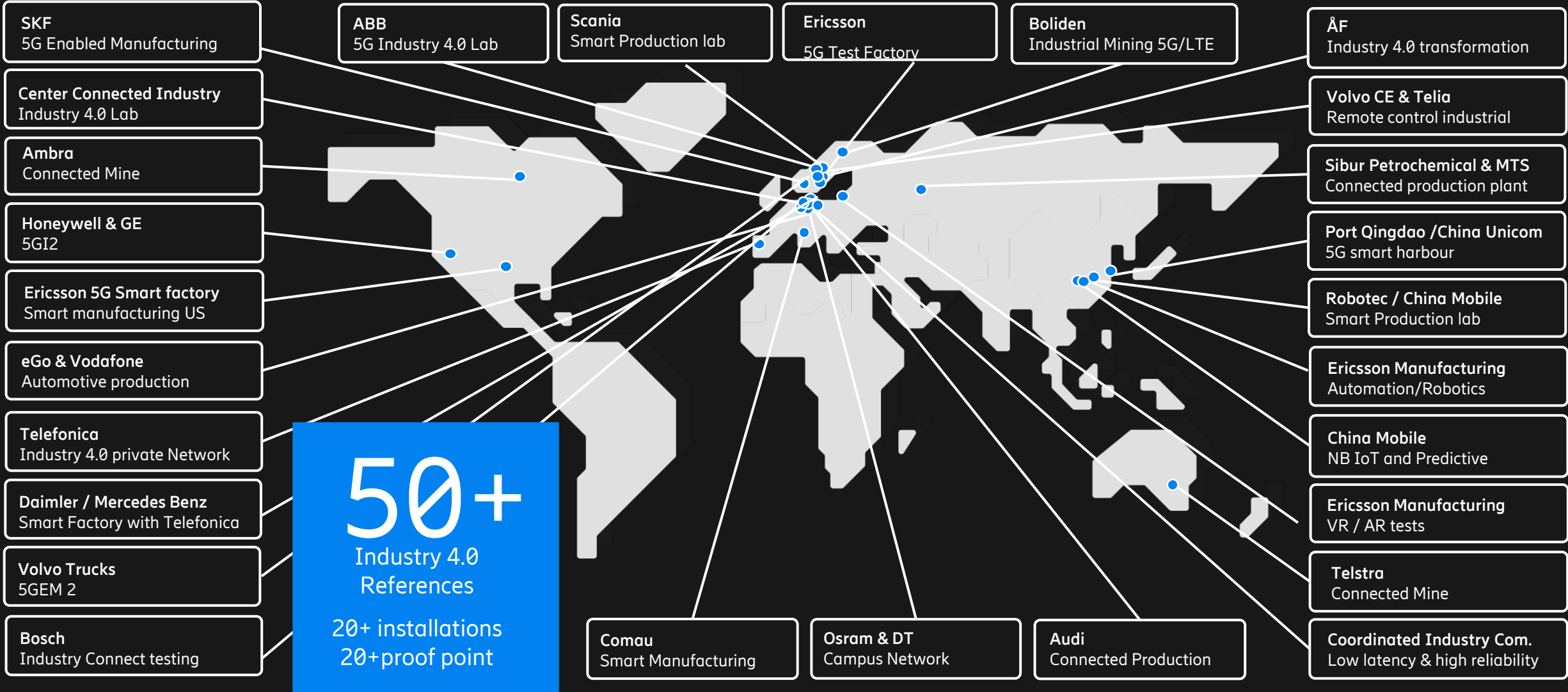
Private Networks – Deployment Flexibility

To cope with different critical needs

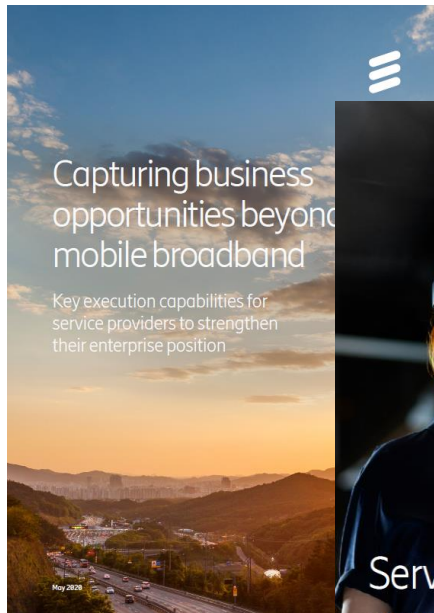


Main Enablers: Network Slicing, Distributed Cloud/Edge Computing, Orchestration

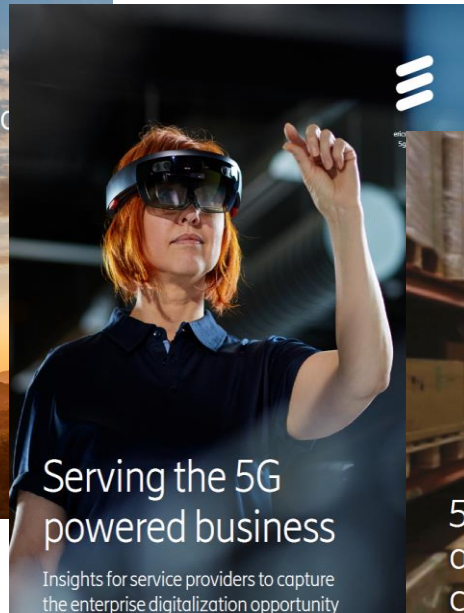
4 Industry 4.0 at Ericsson



Ericsson Studies and some References



<https://www.ericsson.com/en/5g/forms/5gforbusiness-2019-report>



<https://www.ericsson.com/en/5g/5g-for-business/serving-the-5g-business-2020-report>

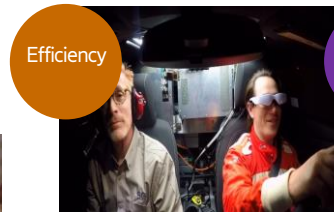


<https://www.ericsson.com/en/5g/5g-for-business/5g-for-business-a-2030-market-compass>

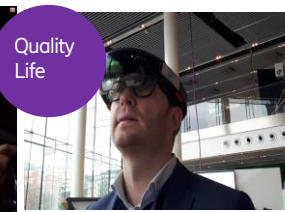
Real-time media

Virtual reality

Augmented reality



Efficiency



Quality Life

<https://www.ericsson.com/en/blog/2017/5/its-all-green-flags-for-5g-at-the-indianapolis-motor-speedway>

<https://www.ericsson.com/en/news/2018/3/5g-augmented-reality>

Mobility automation

Cooperative maneuvers

Autonomous truck



Sustainability



Growth

<https://5gcar.eu/>

<https://www.ericsson.com/en/press-releases/2018/11/ericsson-einride-and-telia-power-sustainable-self-driving-trucks-with-5g>

Remote control

Remote bus driving

Remote mining



Sustainability



Safety

<https://www.youtube.com/watch?v=IPyzGTD5FtM>

<https://www.youtube.com/watch?v=C4l0UKZ-FCc&t=7s>

Industrial control

Manufacturing jet engines

Manufacturing vehicles



Efficiency



Growth

https://www.youtube.com/watch?v=XZWC_ttiGHM

<https://www.ericsson.com/en/networks/cases/accelerate-factory-automation-with-5g-urllc>



Thank you