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5G, the biggest innovation platform ever



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Executive Summary

Several technologies shape today's and tomorrow's intelligent mobile network platform. By evolving these technologies, not only the telecom industry will change, new opportunities for other industries will be created and radically new business models will be introduced. Traditional business processes will be re-engineered based on intuitive human-machine interactivity and realized through real-time, autonomous and inherently secure platforms. Thus, the 5G network platform can fundamentally change the way societies innovate, collaborate, produce, govern and live sustainably.



The interplay of disruptive technologies will be the catalyst for global transformation

The combinatorial force of disruptive technologies such as ubiquitous high performing mobile connectivity, distributed cloud and edge computing, IoT, AI, security and automation technologies are evolving the traditional communication service providers

network platforms into an innovation platform. However, to realize the full potential, sustainable collaborations across the public and private space, across consumers and industries should be re-enforced and expanded. New eco-systems need to be

formed and re-shaped and new value chains need to be established. In doing so, we will unleash an era of accelerating innovation, with the mobile network platform at the very epicenter of this transformation.

Connectivity is the starting point

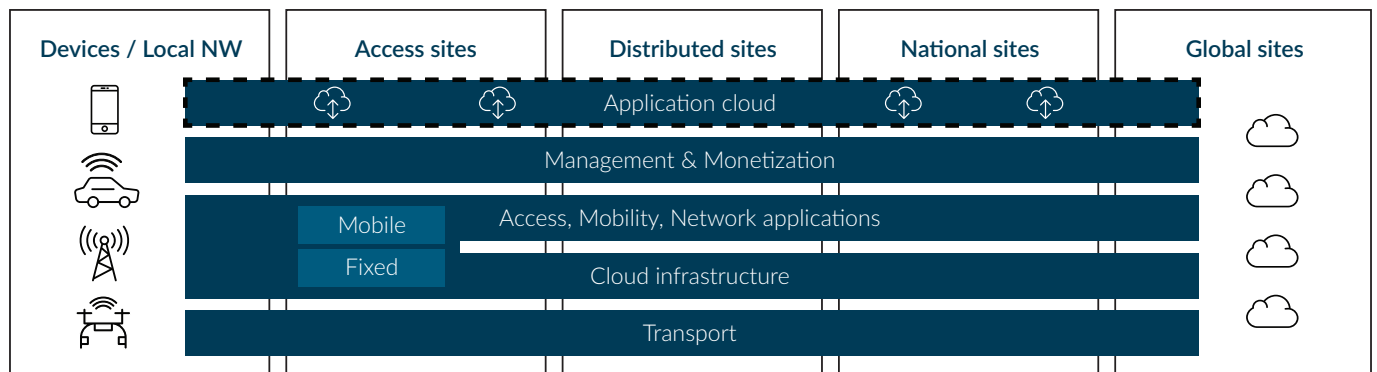
At the core of these disruptive technologies is mobile connectivity. As a fundamental enabler of the other key technologies, ubiquitous connectivity can help us to address the evolving needs of industry and society and support new communication paradigms between humans and things. By enabling all things to be connected where it is economically motivated and feasible to do so, we can enable the sharing of data anywhere and anytime, for anyone and anything. This will mark a fundamental shift for mobility, across both consumer and industry markets. This is the fundamental starting point for digitalization of the economy and society.

Today with the introduction of 5G, the telecom eco-system with technology vendors such as Ericsson and communication service providers are not only in the communication business, we are rather in the business of secure and reliable ultra-high-performance connectivity between everyone and everything. 5G is designed to serve the needs of the digitalized society while ensuring privacy, trust, decentralization, openness, inclusion, and business cooperation. It has the capacity to instantaneously meet the needs of any application – real-time critical to non-critical, predefined to flexible air interface, present to

adaptive routing, and all manner of needs related to uplink and downlink transmission.

As such, the 5G innovation platform will radically re-engineer how we live, work, travel, innovate, learn, manufacture, transport and perform just about any task. The interplay of key disruptive technologies will prove decisive in leveraging the full value of 5G. This innovation platform will allow for traditional communication service providers and other players to assume new roles in the value chains and in the eco-system.

Figure 1: The 5G innovation platform architecture



Source: Ericsson

The interplay and interdependence of these key disruption technologies such as AI and automation, distributed cloud and edge computing, and IoT is driving the transformation of key industries such as logistics, manufacturing,

mining, automotive and even industries that may not exist yet. The transformation is opening the door to a new cyber-physical world that is built on a foundation of millisecond-latency, high-bandwidth, and resilient compute

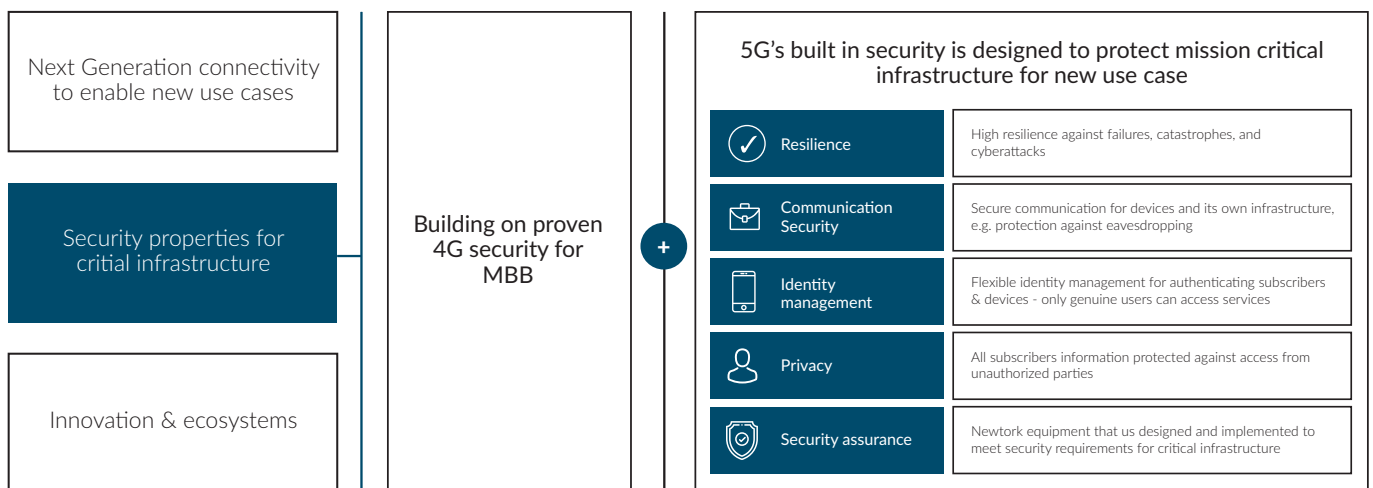
and storage capacity at the network edge, and is increasingly enabling real-time, intelligent and autonomous decision-making across growing numbers of use cases and use places worldwide.



Security assurance and privacy technologies will play an increasingly critical role

Mission-critical use cases and regulatory demands, as well as cloud and edge computing, are driving the demand for advanced trust and assurance technologies. The evolved mobile network security ensures a strong baseline security for all connected use cases, based on a fusion of connectivity and cloud, and characterized by high end-to-end trustworthiness in all major dimensions: trusted computing, assurance, resilience, privacy, security, reliability and safety.

Figure 2: Security properties for enabling mission critical 5G based use cases

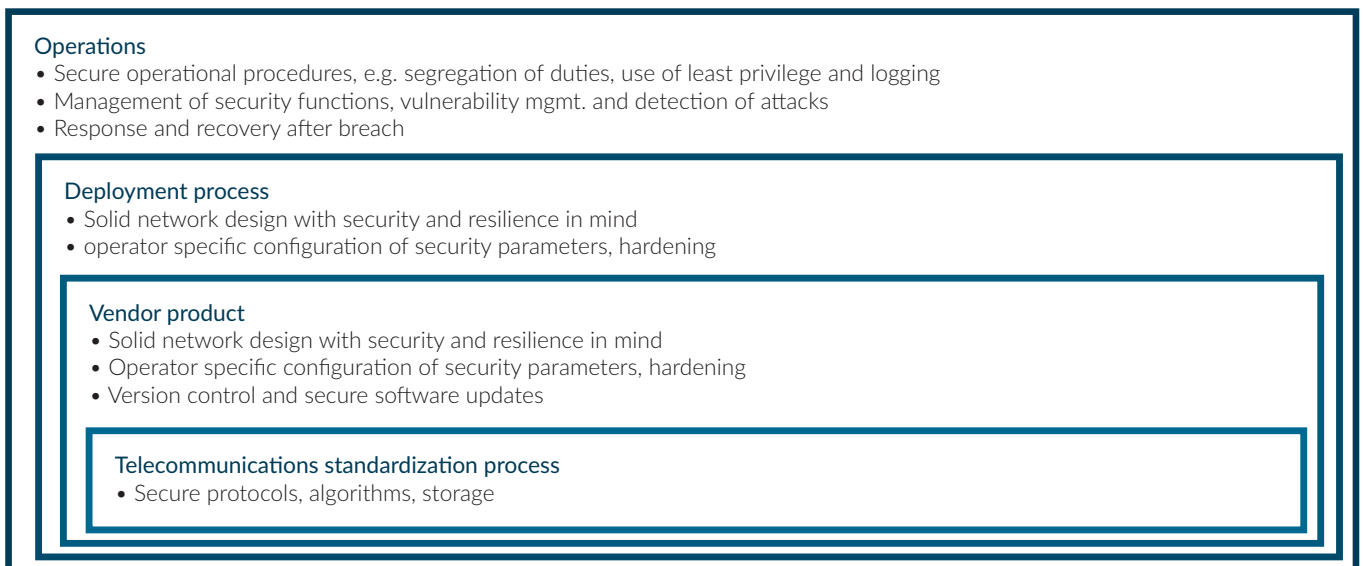


Source: Ericsson

However, a secure mobile network is not only created by adhering to security and privacy in the mission critical use-cases. A truly holistic approach to 5G security is needed. The approach needs to consider all aspects from standards through to product development, network deployments and operations as outlined in the picture below.



Figure 3: Four aspects of security of live mobile networks



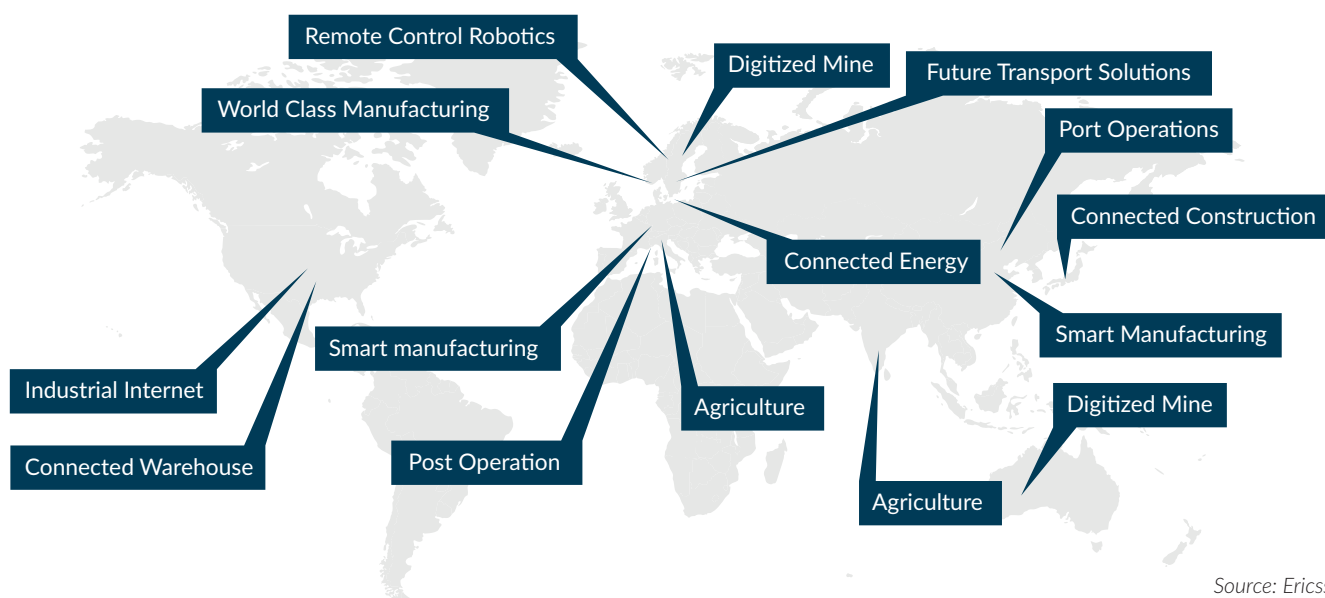
Source: Ericsson

As we move forward, AI and machine learning (ML) will continue to be integral to the development of the technologies and processes relating to security and privacy, such as in enabling the automation of assurance and compliance verification across the mobile network platform. Ericsson's continued leadership in this space will ensure we remain the market's most trusted partner when it comes to ensuring the trustworthiness and privacy of the mobile network platform.

Evolving technologies through unique global collaborations

We're moving from consumers to enterprises and industries. We are bringing about that change, industry by industry. At Ericsson, we will continue to set the 5G technology agenda worldwide. Based on a bedrock of industry-leading research and development, Ericsson have developed one of the most extensive networks of leading, academia, industry partners, third-party products and open multi-vendor interfaces.

Figure 4: Ericsson Industry collaborations



Source: Ericsson

Our industry collaborations contribute to a best-of-breed solution for our customers, in addition to increased value through a clear time-to-market advantage for disruptive technologies and solutions. Today, our researchers play a decisive role in shaping the technology landscape of the distant future, by leading efforts toward new computing paradigms and advances in radio, cloud, security and AI technologies.

Ericsson collaborates with leading customers in different congregations such as

standardization organizations (3GPP, ITU, ONAP, Linux Foundation), customer-initiated initiatives such as ORAN and joint development project initiated with EU for instance. Apart from those, we also engage in several industry consortiums such as 5G Alliance Connected Industries Automation (5G-ACIA), Industrial Internet Consortium (IIC), Automotive Edge Computing Consortium (AECC) as well as vast range of research collaborations with academia, the latest addition being Massachusetts Institute of Technology (MIT).

As industrial collaborations continue to drive the evolution of key technologies, we will continue to evolve the 5G as an innovation platform. However, we know that 5G alone will not create tomorrow's intelligent, sustainable and connected world. It's essential that we collaborate with partners across the different ecosystems to ensure the interplay of disruptive technologies and thereby business opportunities evolve in the most efficient and effective way. This is how we bring greater value to our customers and continue to drive advancement across societies and industries.



Erik Ekudden

Senior Vice President,
Chief Technology Officer and
Head of Group Function Technology

As Group CTO, Erik Ekudden is responsible for setting the direction of technology leadership for the Ericsson Group.

His experience from working with technology leadership globally will influence the strategic decisions and investments for example in mobility, distributed cloud, artificial intelligence and Internet of Things. This builds on his decades-long career in technology strategies and industry activities.

Erik joined Ericsson in 1993 and has held various management positions in the company, including Head of Technology Strategy, Chief Technology Officer Americas in Santa Clara US, and Head of Standardization and Industry. He is also a member of the Royal Swedish Academy of Engineering Sciences (IVA) and holds a Master of Science degree in Electrical Engineering from the Royal Institute of Technology in Stockholm, Sweden



Ericsson enables communications service providers to capture the full value of connectivity. The company's portfolio spans Networks, Digital Services, Managed Services, and Emerging Business and is designed to help our customers go digital, increase efficiency and find new revenue streams. Ericsson's investments in innovation have delivered the benefits of telephony and mobile broadband to billions of people around the world. The Ericsson stock is listed on Nasdaq Stockholm and on Nasdaq New York.

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