5G Security at
#EngineeringNXT

5G security engineering

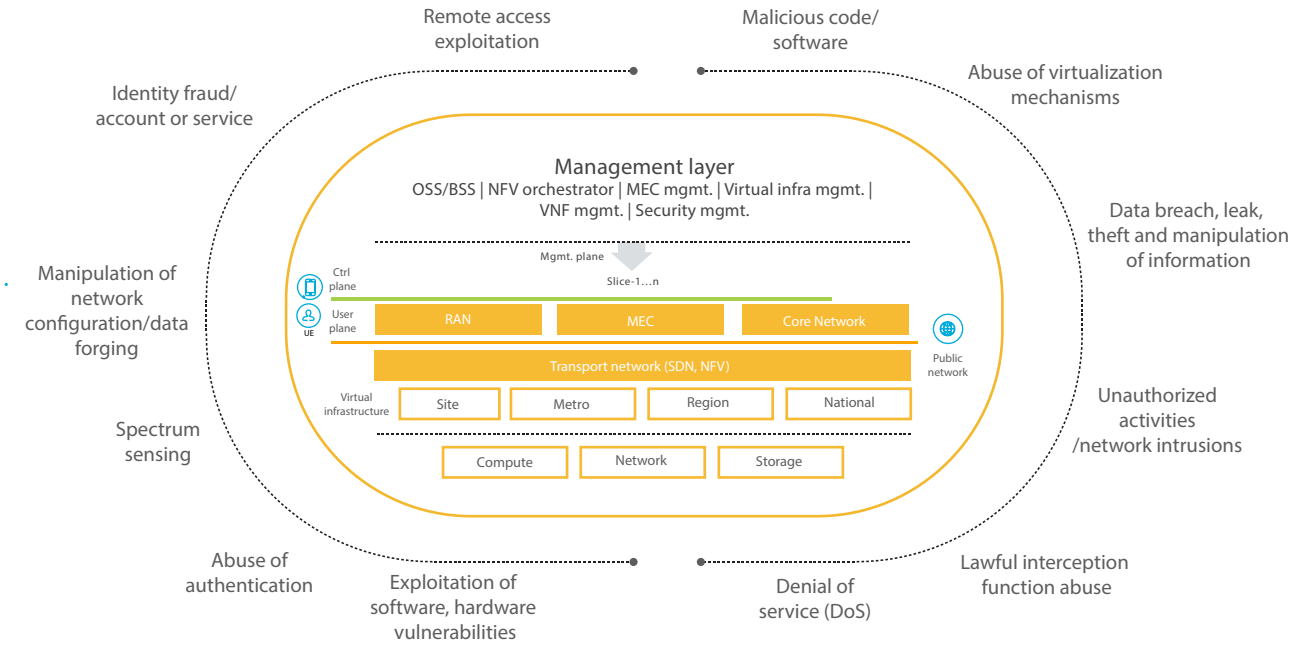
As telecom companies move to adopt 5G the focus will change from consumers to enterprise. 5G will not be about providing a faster mobile network, but more about how interconnected devices will operate and create a new set of opportunities and business streams for various industries.

With newer business opportunities in industries, new architecture, newer ways of business operations and newer technologies, the 5G business environment will present greater challenges for security and privacy protection. The 5G networks will require evolution of the entire network - the core and management systems, as well as all protocol layers ranging from radio to applications. This is likely to create security risks across the spectrum of the 5G network. Cloud, virtualization technologies and XAAS will be used by telecom providers to reduce costs, and to deploy and optimize services at a faster pace.

This approach of telecom networks will expose application programming interfaces (APIs) toward users and third-party service providers to a higher degree, resulting in programs being executed on shared hardware platforms alongside dedicated telecom software, thus creating a potential security risk. In addition, remote updates of software, open architecture, virtualization and multiple devices, APIs and vendors will create more security issues.

Wipro combines its expertise of cyber security, deep domain understanding and engineering excellence to offer an End to end, trustworthy and resilient connected solution. Leveraging the "Secure by design" approach, our 5G security engineering solutions enables you to leverage and monetize the capabilities of 5G. Wipro – your trusted partner strives to deliver an engaging digital customer experience while delivering secure solutions.

Connected ecosystem: Security challenges



Data integrity & confidentiality risk	SW assets integrity risk	Service & system unavailability	Un-Authorized access	Compromised supply-chain HW/SW	Privacy & compliance risk

Figure 1: Connected ecosystem - Security challenges

Connected products and platform: IT/OT

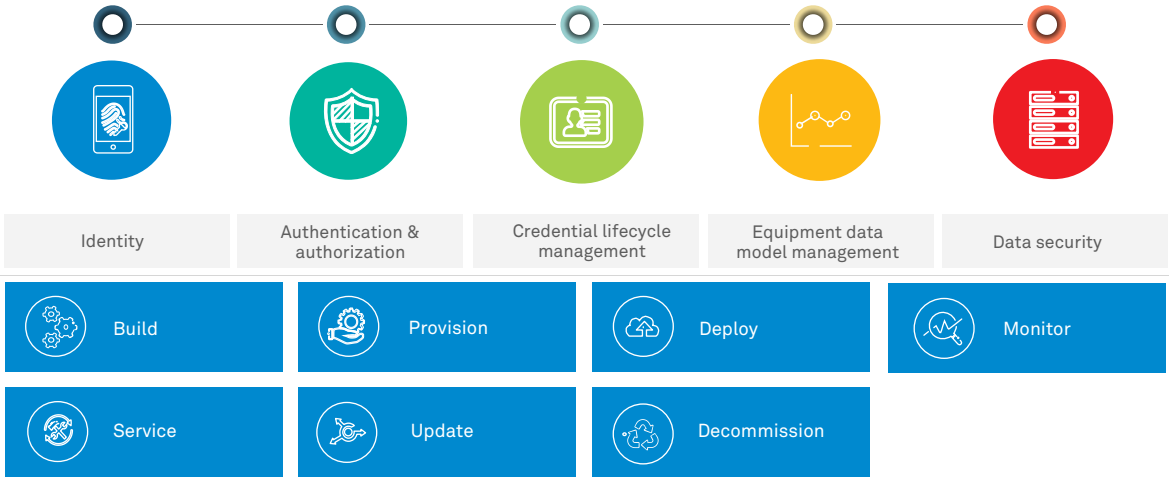


Figure 2: Trust based lifecycle management

5G networks will use virtualized hardware in a Cloud-based environment. The hardware used in 5G will run programs from multiple vendors, within the same physical box, to perform multiple network functions.

This increases the risk multi-fold as there is no physical separation between core and edge functions. In addition, the latency requirements and network load of 5G will change the traditional ways of deploying RAN equipment by pushing core functions on RAN antennae.

This poses a serious risk to 5G cyber security as it will no longer be possible to distinguish between critical and non-critical parts of the network.

Supply chains for 5G network components are also long and complex. Increased globalization and a network of subcontractors makes it extremely difficult to track the origin of the product

While building a secure system, it is important to take a holistic view and not just focus on security of individual apps, devices or sensors.

Wipro's Industrial and Engineering service helps customer to design, engineer and build products/platforms with inherent trust and resilience, while enabling security assurance as part of product life-cycle management.

5G security NXT: Reference model

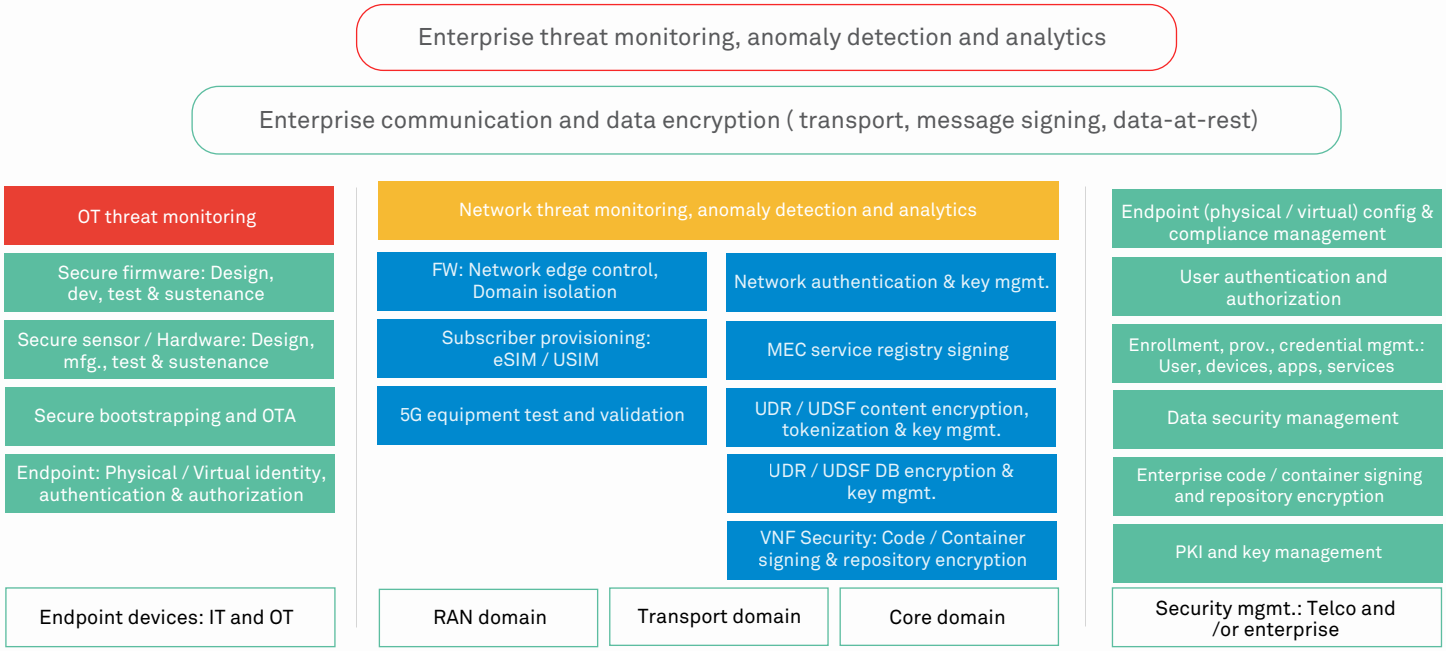
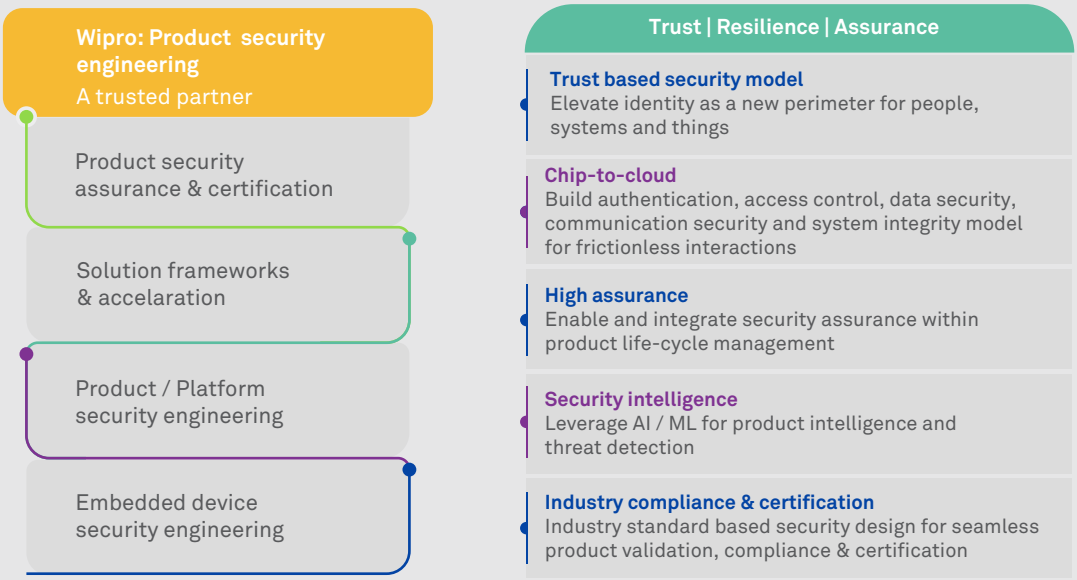


Figure 3: 5G security NXT - Reference model

Service and solutions



Wipro's **EngineeringNXT** is a set of offerings that enable innovation at scale to build products, platforms & technologies.

It leverages our maturity of:

- Product development methodologies
- Our engineering DNA
- Specialized talent
- Access to a diverse ecosystem

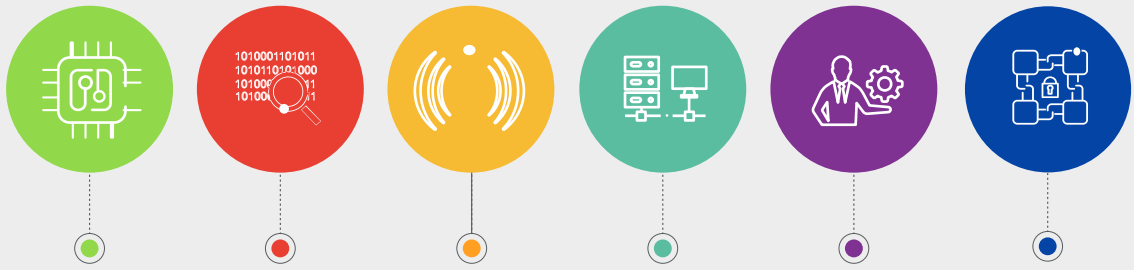
35+
Years of strong engineering DNA

5000+
Products engineered

25
Global development centers, with 20,000+ engineers

400+
Global customers across 10 industries

Building blocks of EngineeringNXT program



VLSI & system design

Software

Wireless

Data platforms

IoT & industry 4.0

Product & platform security engineering

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For more information, please write to us at **info@wipro.com**

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