



Technical overview

# Private 5G: Enterprise-grade private wireless solution

We provide the first commercially available, private LTE/5G network-as-a-service full stack solution delivered on-premises, at the edge or as a cloud service, with flexible deployment options.

**Private 5G is an end-to-end solution for speed, control, security and total coverage.**

## Challenge

Public and enterprise wireless networks are increasingly under pressure to deliver the demands of digital transformation in the enterprise today. Enterprises require faster, more reliable, more secure mobile connectivity to deliver on the low latency and highly-adaptive requirements of transformation. Private 5G for the exclusive use of the enterprise has all the components needed to meet these stringent requirements, and as such, has been gaining momentum in the market.

Our private LTE and 5G wireless solution helps enterprises deliver on the promise of Industry 4.0, effectively connect IoT technologies to increase data acquisition and automation, ensure worker safety and security, and improve the client's experience to achieve new levels of quality, all while maintaining full control and data ownership.

## Solution

Private 5G is an industrial-grade private cellular network enabling enterprises to deliver connectivity for digital transformation. This is achieved through Private 5G's capabilities which provide performance, range, security, control of data, mobility and integration, all packaged in a CIO-friendly pricing model. Our solution is a full-stack service offered via a consumption model, based on a flexible operating expense (OpEx) subscription service. This model is inclusive of hardware, software, SIMs and licenses, all wrapped in our Managed Services.

In the United States, FCC has approved commercialization of CBRS (Citizens Band Radio Service) for private shared spectrum applications, while other countries and regions have either already, or are in the process of, making private 5G spectrum available to the enterprise market. We're the first in the industry to offer the entire hardware and software stack required to deploy and operate private 5G networks in a highly automated manner – without compromising the powerful features of the cellular wireless technology.

The solution offers four areas of unique differentiation in the market:

- Fully-managed, integrated and secure end-to-end private mobile network architecture
- Only solution that truly integrates with an existing enterprise network
- Completely subscription-based solution meaning no initial large capital outlay, and the ability to grow as you need
- KPI-driven operational model that focuses on app experiences beyond infrastructure

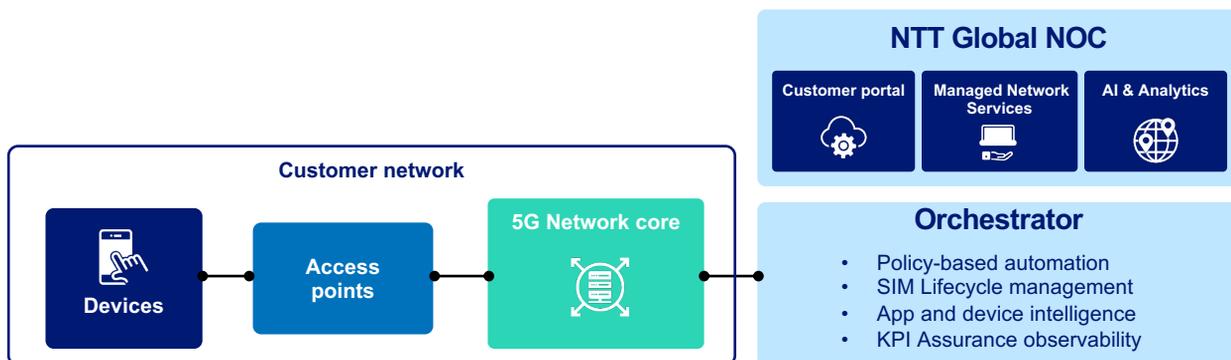


Figure 1: Simple three-tier architecture, integrated with the enterprise network

## Architecture

Our Private 5G solution is deployed via a simple three-tier architecture, with the 5G network core and access points being deployed into the customer network. Orchestration and network management is delivered through a software-as-a-service (SaaS) based Orchestrator platform integrated into the existing NTT platform-based management portal.

This deployment provides the customer with full control of the solution and network traffic. Application based quality of service is provided through micro-slicing technology allowing individual application traffic per device to be prioritized and protected.

The network core can either be deployed on customer 'black-box' hardware or delivered via on-premises or cloud managed virtual environments, while the access points can be supplied in either indoor or outdoor units.

Global connectivity is provided by our SIMs that can be configured to operate on the private 5G network as well as operator public networks providing seamless coverage both on and off the private network.

## Example use cases

Private 5G empowers enterprises to deploy and control large scale, secure and predictable wireless connectivity services – complementing scenarios where Wi-Fi or public LTE are sub-optimal. Private 5G inherently enables flexible deployment options to meet the, often competing, needs of various use cases. For example, the demanding requirements for high-priority, low-latency applications can seamlessly be met, while at the same time massive density IoT device connectivity can be provided and all over the same physical 5G infrastructure.

### Use cases in manufacturing, logistics and warehousing

-  **Communications:** Guaranteed latency and jitter for voice/push-to-talk
-  **Automated guided vehicles (AGVs):** Infrastructure control for mobility events
-  **Automation:** Automated robot command and control
-  **Physical security:** Guaranteed bandwidth for video surveillance
-  **Rugged tablets:** Wireless coverage in challenging environments

### Use cases in education and healthcare

-  Video surveillance indoors and outdoors
-  Campus-wide connectivity for staff operations
-  Clinical staff apps for data entry and video comms
-  Access to mission critical applications on the go
-  Patient room tech and smart sensor infrastructure

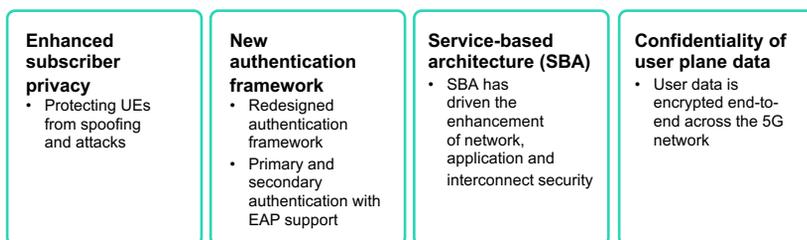
## Securing private 5G mobile networks

We're one of the world's largest managed network services providers. Our mission is to provide global enterprises with a consistent and reliable end-user experience for applications and technology through an optimized and intelligent software-defined network-as-a-service. Our end-to-end security infrastructure and operations management are purpose-designed to keep your business safe and compliant.

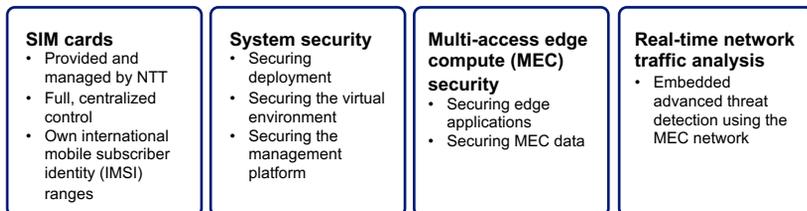
While 5G as a technology introduces many security enhancements above existing enterprise wireless technologies, these new features still need to be integrated with the existing enterprise security strategy.

We're perfectly positioned to provide this holistic, integrated approach to securing not only your new 5G environment, but integrating this solution into your existing security landscape.

### Security inherent in 5G (3GPP)



### Enhanced security from NTT



## Getting started

Since 5G is a relatively new technology, the following questions can be used as a guideline as to whether it's a good fit for the enterprise:

- Are there any apps/devices in the environment that are still on the wired network today since they demand low latency or an SLA guarantee?
- Are there large outdoor areas that require mobile connectivity for autonomous guided vehicles (AGVs), staff collaboration and safety or for other mission-critical use cases?
- Does the organization have devices that demand fast/seamless handover between radios of the wireless infrastructure for uninterrupted service?
- Are there requirements for enhanced wireless security for mobile use cases?
- Is there an increasing number of IoT devices being added to the network that require connectivity from diverse areas of the organization or plant?

### Get in touch

If you'd like to find out more about our services, speak to your client manager or

[visit our website](#)