

SAMSUNG

Technical White Paper

Private Networks Vol.1

Transforming Private Networks with Samsung 5G

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Abbreviation

AGV	Auto Guided Vehicle	MCPTX	Mission Critical Push-To-X
AI	Artificial Intelligence	MEC	Multi-access Edge Computing
AR	Augmented Reality	MIMO	Multiple Input and Multiple Output
CAPEX	CAPital EXpenditures	mMTC	massive Machine Type Communication
CBRS	Citizens Broadband Radio Service	PNMS	Private Network Management System
COTS	Commercial Off The Shelf	RAN	Radio Access Network
CPE	Customer Premise Equipment	RU	Radio Unit
CU	Central Unit	SAU	Simultaneously Attached Users
DAS	Distributed Antenna System	SCM	Supply Chain Management
DU	Distributed Unit	SDN	Software Defined Network
eMBB	enhanced Mobile BroadBand	SIM	Subscriber Identity Module
EMS	Element Management System	TCO	Total Cost of Ownership
EPC	Evolved Packet Core	UE	User Equipment
eSIM	embedded Subscriber Identity Module	URLLC	Ultra-Reliable Low Latency Communication
GUI	Graphical User Interface	USM	Unified System Manager
IMS	IP Multimedia Service	VR	Virtual Reality
IoT	Internet of Things	WAN	Wide Area Network
LoRa	Long Range		

Introduction

A private network is a dedicated network designed for enterprises such as manufacturing, energy utilities, logistics, and transportation, to support their services. Enterprises have used the private network to improved productivity, efficiency, flexibility, quality, security, and competitiveness.

In the early days, the scope of the private network application was limited to the simple telephony service. However, as the technology and industry gradually have become more advanced and complex, various data-based use cases have become increasingly important in contrast to the original simple voice services. As a result, the main application of the private network has shifted from voice to data.

With the private network, enterprises can automate manufacturing lines, reduce security risks, and protect employees from dangerous environments. As illustrated in Figure 1, private network services can encompass anything from the automated robots at manufacturing lines to real-time monitoring for pipelines at utilities, asset tracking for logistics, and finally, even ensuring group calls between first responders during emergencies.



Figure 1. Private Network Use case

Enterprises have used Wi-Fi for a private network solution, but it has limited features required for new services applicable for smart factories, smart cities, and autonomous vehicles. For instance, Wi-Fi does not satisfy the low latency required by autonomous vehicles. Moreover, Wi-Fi does not support massive Internet of Things (IoT) services due to the limited connection per channel, which also does not ensure the level of security required by enterprises. On the contrary, 5G technology satisfies the service requirement demanded by enterprises today and in the near future, such as: mobility, latency, security, reliability, flexibility, coverage, and capacity.

Private 5G Network Benefits

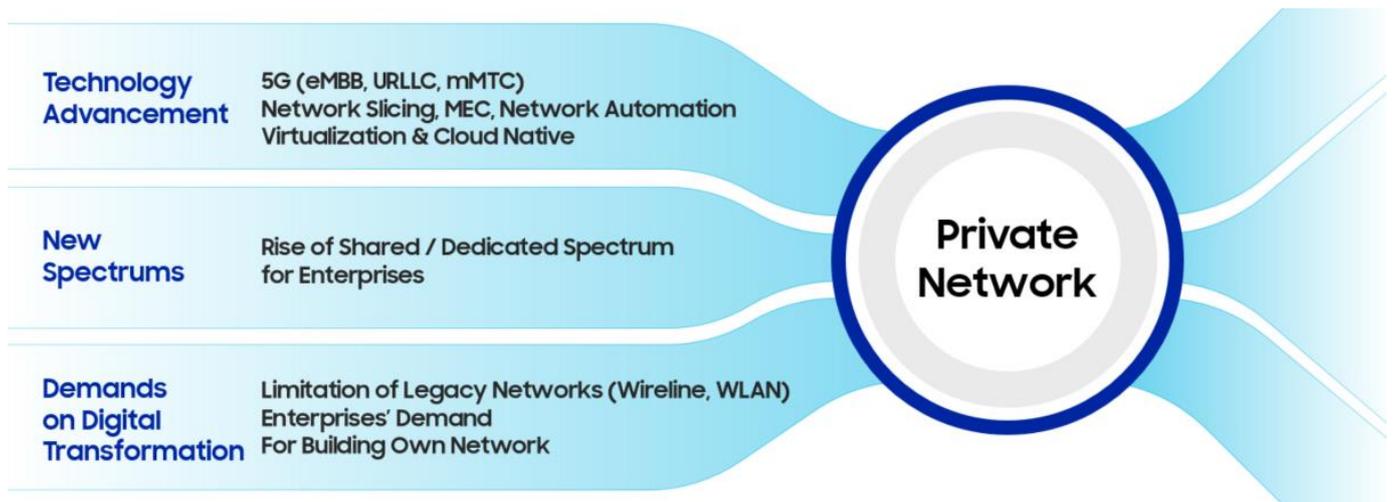


Figure 2. Benefits of Private 5G Network

A private 5G network benefits the enterprise for their digital transformation, as illustrated in Figure 2. It enables them to become more competitive, innovative, flexible, secure, and cost-effective. 5G technology features such as Ultra-Reliable Low Latency Communication (URLLC), enhanced Mobile Broadband (eMBB), and massive Machine-Type Communication (mMTC), among others, are the key enablers to drive innovation in the way we do business today and in the future.

5G technology satisfies the low latency requirements of enterprises. Latency is one of the most critical factors when dealing with industrial applications that require real-time communication. For instance, industrial automation tasks may require a latency within 1ms. 5G technology provides URLLC features to transmit responses in less than 1ms. Therefore, with the URLLC feature, a 5G network can control autonomous vehicles in real-time to prevent collision of vehicles and to optimize vehicle paths.

5G technology also provides the mMTC feature that makes possible communications with more than 1 million devices per 1km². This mMTC feature enables massive IoT services that were previously impossible in a traditional private network. Therefore, 5G network can support the service requirements needed by a smart city or smart factory, which demand communications with a massive number of devices and machines simultaneously.

Another feature of 5G technology is the eMBB, which makes it possible to transfer massive data. With eMBB, 5G network can support the training through Augmented Reality/Virtual Reality (AR/VR) glasses that require massive data, and remote monitoring from a surveillance camera with improved image quality.

Along with these features of 5G technology, a private 5G network ensures the stringent enterprise security requirement. While the Wi-Fi authenticates devices by inputting the passwords or the hardware addresses, a 5G network authenticates the device with the Subscriber Identity Module (SIM) or embedded SIM (eSIM). In addition, a 5G network provides the enterprise with a secure connection using a licensed or protected spectrum.

Also, in terms of frequency spectrum, it was big hurdle to build the private network due to frequency license. However, by rising of shared and dedicated 5G spectrum for enterprises, it is possible to deploy own network by enterprise itself. Eventually, it drives digital transformation into all business areas of enterprises.

Figure 3 illustrates the comparison between Wi-Fi 6 and 4G/5G technologies in terms of key benefits.

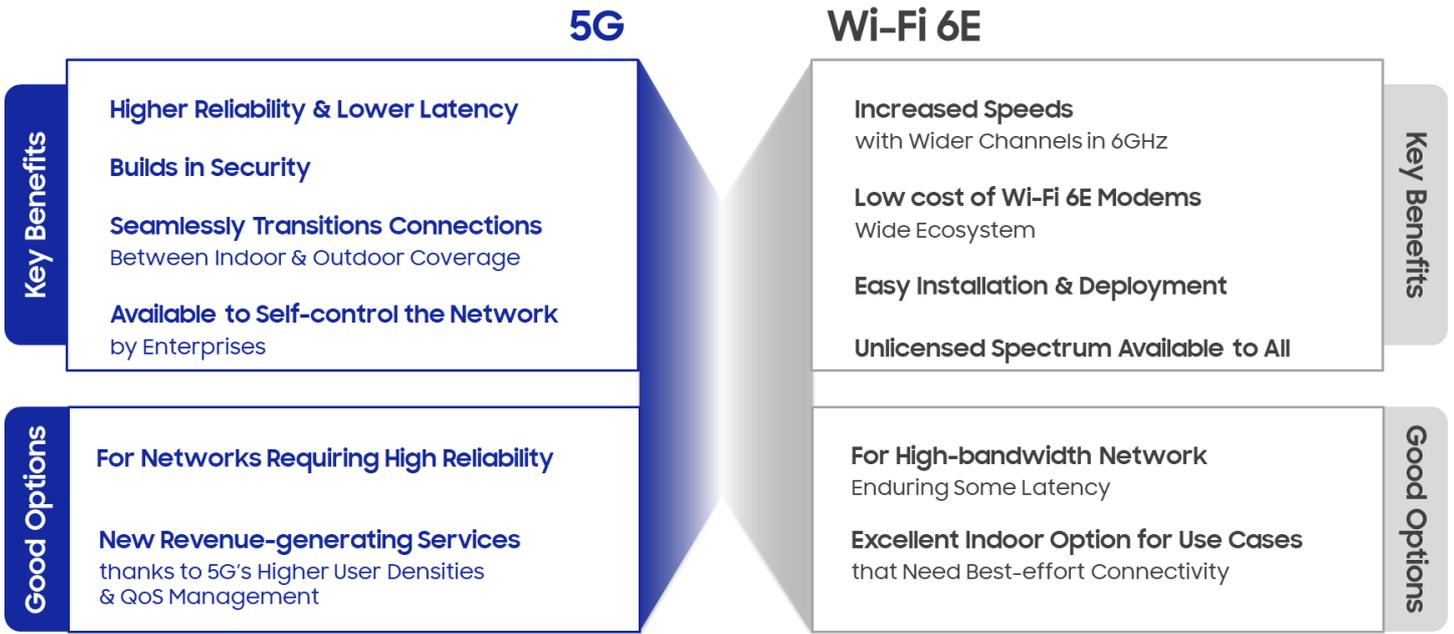


Figure 3. Private 4G/5G Compared with Wi-Fi 6

This section outlined a private network and explained its challenges, which would help start the discussion in regards to the overall contributions of a private 5G network. The benefits of a private 5G network will be explained in the following use cases illustrating why a private network needs to be transformed into a private 5G network. We will also share an overview of Samsung's private 5G solution, its portfolio to offer end-to-end connectivity, the features, and its benefits to the enterprise.

Private 5G Network

Use Cases

Smart Factory

The manufacturing industry is a market segment where the advantage of 5G technology is clearly revealed. With 5G technology, we expect a significant increase in the efficiency in the manufacturing sector and look forward to improvement in all areas related to production, including production planning, material control, production capability, and stock management, etc.

5G technology meets the brand-new and high standard of demands in the manufacturing segments that could not be satisfied with previously-existing technologies.

In the early stage of 5G technology, data-driven service with eMBB will be introduced; afterward, the URLLC feature, which is essential in equipment control, will be applied to improve production efficiency. The ability to create priority services within the network as a key performance differentiator will be applicable by providing network slices suitable for the various network services required within the factory. Figure 4 illustrates additional use cases which smart factory supports.

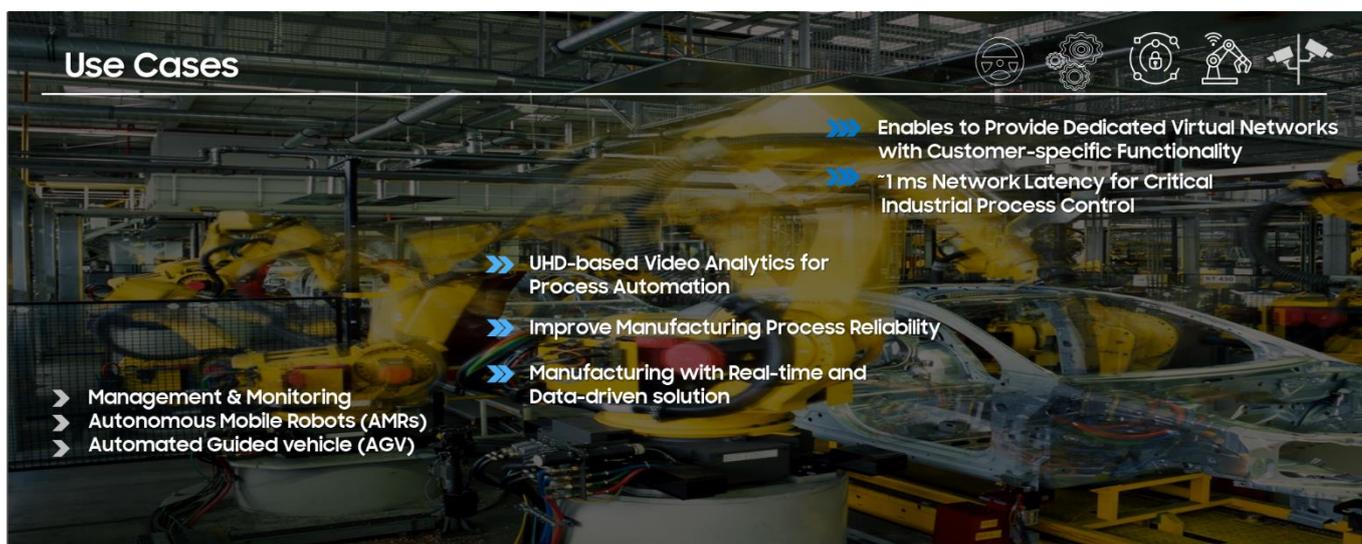


Figure 4. Smart Factory

Transportation and Logistics

5G technology creates a new framework for connected transportation and logistics, providing real-time tracking and enhanced visibility of all the assets, cargo inventories, and packages in the network. 5G technology implements hyper-connectivity by supporting a massive IoT technology that can connect up to 1 million sensors within 1km². 5G technology is suitable for use cases that require much higher density than existing IoT technologies such as Sigfox, LoRa, and NB-IoT. It is possible to implement more efficient and optimized Supply Chain Management (SCM) processes utilizing Artificial Intelligence (AI) technology. In the case of transportation and logistics, all related data is collected by the 5G network through numerous sensors that provide increased availability, connectivity, and analysis in conjunction with AI technology. In addition to hyper-connectivity, the URLLC, which is also a crucial key feature of 5G technology, can be used to control auto-guided vehicles (AGV) for logistics to improve productivity and ensure safety at the same time. Additional use cases that can be enhanced with 5G technology in transportation and logistics are shown in Figure 5.

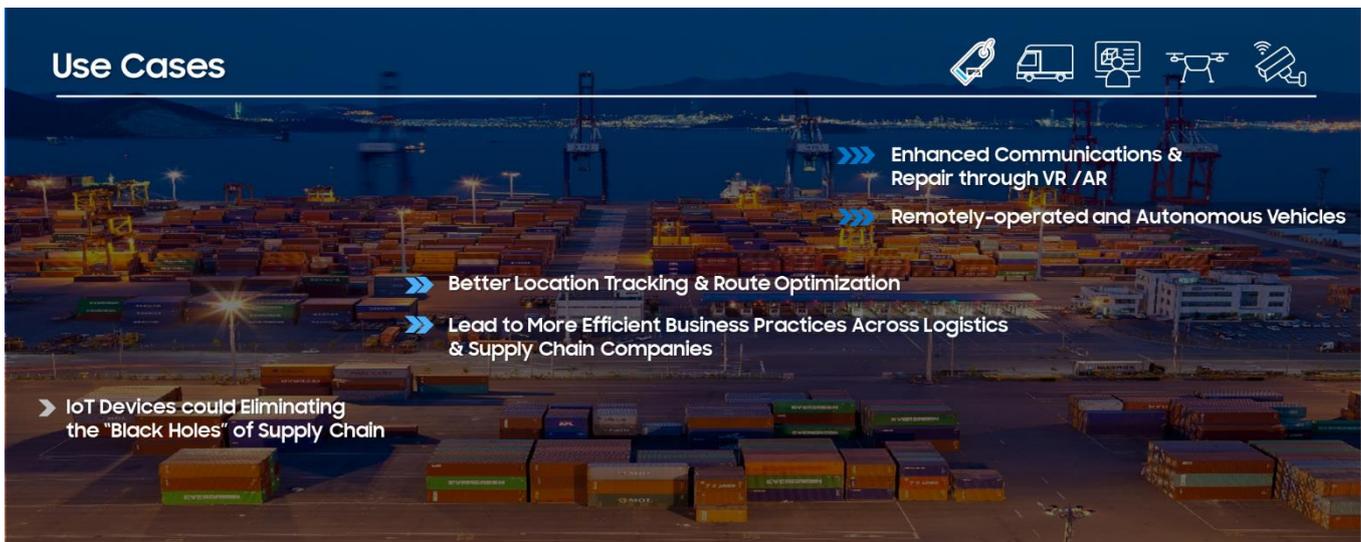


Figure 5. Transportation and Logistics

Smart City

5G technology brings new momentum to the development of a smart city. 5G network is an optimal infrastructure for an integrated urban platform for smart cities. Before 5G technology, establishing a massive IoT environment was simply not feasible, with only IoT sensors operated in some local areas. With 5G technology, a range of sensor networks covering the entire city can operate based on a single massive IoT technology, and all surveillance cameras in the city can be connected to an urban control center. This suggests the possibility of managing the entire city as a single organism. Therefore, 5G technology can increase the overall urban security, organization, and safety.

A 5G network is a major infrastructure that evolves into a big data-based AI system that analyzes data such as an intelligent video surveillance network, intelligent road traffic network, major facility monitoring network, emergency services, and weather/environmental monitoring network. Additional use cases for smart city are shown in Figure 6.

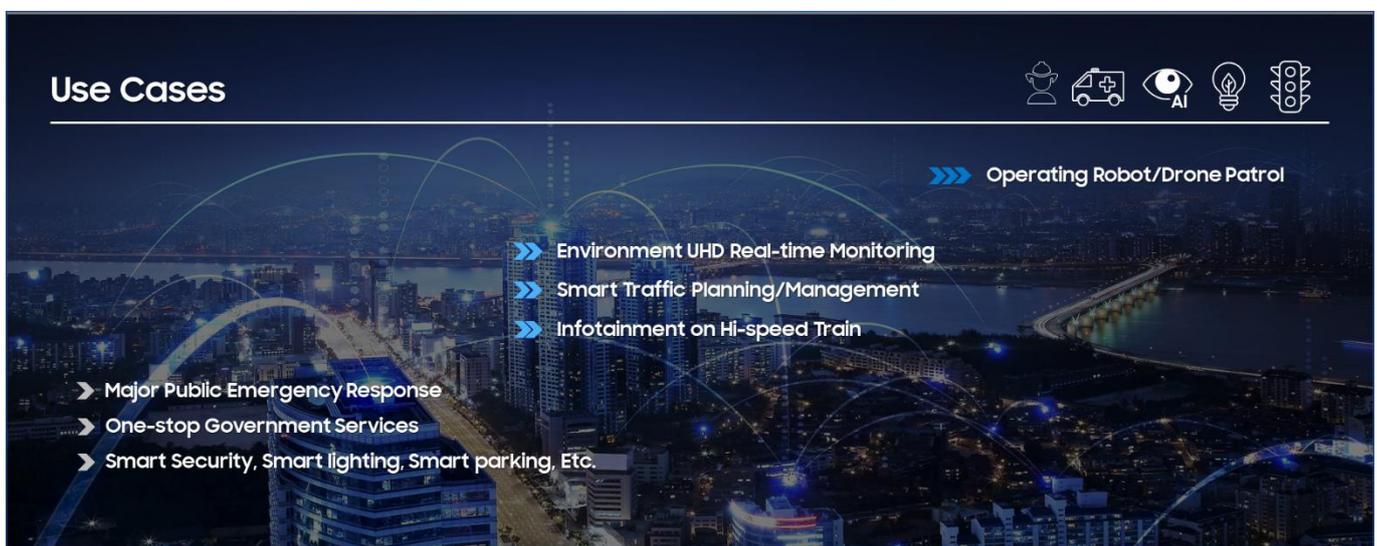


Figure 6. Smart City

Medical Service

5G technology can break the limits of time and space between physicians and patients, although there may still be some arguments on legal limitations. The future of tele-operations requires high bandwidth for high-definition video and ultra-low delay for manipulating artificial surgical arms or real-time communication between the remotely separated medical staff.

Surgery training can be performed through AR/VR glasses for medical training. In addition, doctors can diagnose a patient away from the hospital through real-time high-definition video on mobile networks.

Sensors and wearable devices specially designed for medical use can be utilized more widely in the medical field than ever with 5G's characteristics such as high reliability and low delay. Moreover, these sensors provide medical AI with vast amounts of data to be consulted and analyzed to constantly improve the overall quality of medical services. Figure 7 shows the use cases expected in medical service in the private 5G network.



Figure 7. Medical Service

As outlined above, the private 5G networks can be used in various fields, including smart cities, factories, logistics, and hospitals, among many others. But, simply scaling down the macro network products does not meet the various needs of the enterprise accordingly. A dedicated solution that meets the unique characteristics of the private 5G network is needed, which can create challenges for the network equipment vendors. These challenges that the network equipment vendors have to deal with are as follows.

Private 5G Network Challenges

Private 5G networks' coverage depends on the type of enterprise's business and its environment. Significantly, compared to the conventional macro environment, the demand for indoor solutions is much greater than outdoors; and the demand for solely distributed networks is also increasing. Therefore, the private 5G network should support a broad type of Radio Access Network (RAN) products that can serve any enterprise environment.

Along with the broad coverage of RAN, the private 5G network needs to be compact both in capacity and size. Typically, the required capacity of a private 5G network may be less than that of a macro network. In addition, the equipment size must be small since it could be installed in a confined space.

Another challenge comes from the nature of the private 5G network. The private 5G network is a dedicated network for an enterprise, not for a telco business that professionally provides communication services. Therefore, it should support operational convenience so that even an operator without telco professional experience can manage it.

Samsung's private 5G solution is a dedicated network solution that can be customized to meet any private enterprise's needs. The details of Samsung's private 5G solution will be described in the next chapter.

Samsung's Private 5G Solution

Samsung offers efficient end-to-end business-enabling solutions that can embrace any enterprise use case. Figure 8 shows Samsung's private 5G solution, which is an overall solution including RAN, core, switch, management system, and applications for the private network.

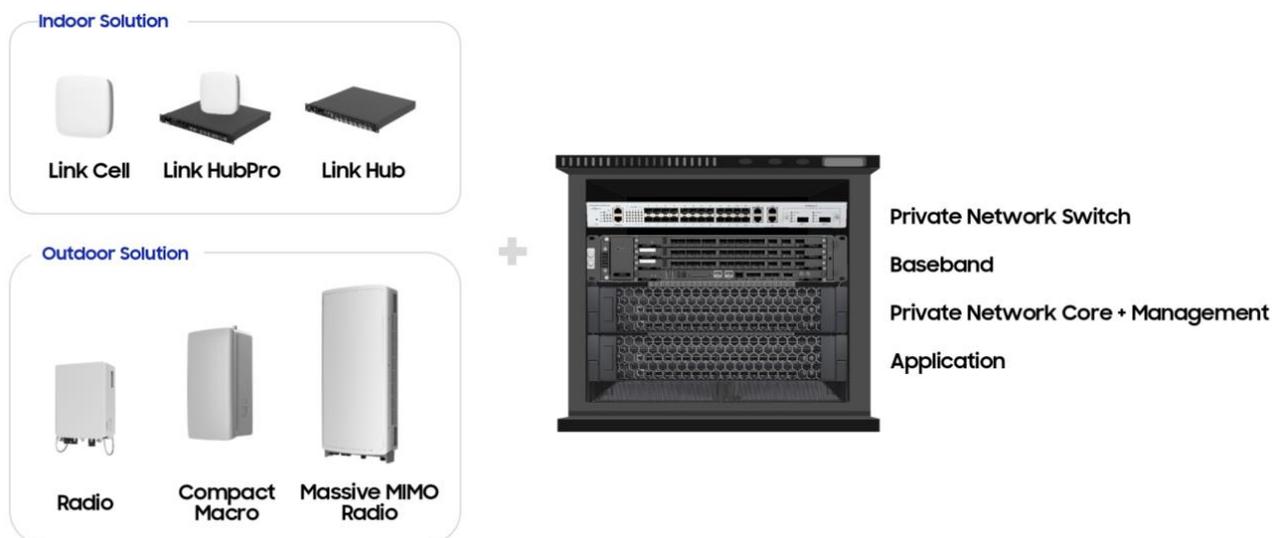


Figure 8. Samsung's Private 5G Solution

Samsung has been one of the most competitive solution vendors for 4G and 5G wireless networks. As one of the global technology leaders in 4G and 5G networks, Samsung provides a RAN portfolio enabling enterprises to build their networks with low capital expenditures (CAPEX). To this end, Samsung's RAN portfolio includes in-building radio cells, small microcell solutions, and a virtualized baseband.

Samsung's private 5G solution delivers a compact and robust wireless network to the enterprise by combining various network functions. With the combinations of these various network functions, Samsung's solution requires only a minimal number of servers, which helps the enterprise build the private 5G network while keeping the optimal cost of investment in mind.

Samsung's private 5G solution also provides a management system dedicated to a private 5G network. This management system facilitates a convenient operation for all products that make up the private 5G network.

Samsung provides various configurations based on the enterprise's needs. There is a standard configuration that reflects the requirement of various enterprises; this standard configuration provides an integrated end-to-end solution. With the standard configuration portfolio, enterprises can reduce the time and effort to build and operate the private 5G network.

The details about each product comprised the Samsung's private 5G solution will be described in the following sections.

Radio Access Network

A RAN provides wireless connectivity with 5G radio frequencies to users and devices everywhere in the enterprise, enabling new use cases in the private 5G network. Samsung's RAN can be easily deployed anywhere within the enterprise space as a part of the private 5G network.

On the baseband side, Samsung provides high-capacity Baseband and a virtualized Baseband that has been commercially proven within a network of a global tier-one operator. CDU50, referred to as Samsung's one of the representative hardware Baseband products meets the needs of 5G technology with a high-capacity architecture. It can also support Samsung's Massive MIMO Radio, which is suitable for high-capacity services in outdoor large-scale network environments. On the other hand, for more flexible and scalable deployment, Samsung's virtualized RAN (vRAN) solution brings new benefits to enterprises through software-based technologies. vRAN runs on the Commercial-Off-The-Shelf (COTS) server and can be expanded to the cloud platform.

RAN products can be placed indoor or outdoor settings. Samsung's RAN portfolio for private 5G networks is depicted in Figure 9. It offers outdoor radios that support different coverage ranges, from micro Radio to mid-band Massive MIMO Radio products. For indoor environments, Samsung's Link Cell is the optimal product for an indoor network using high frequencies. Samsung's Link Cell is a compact indoor small cell that offers robust and ubiquitous in-building 5G mmWave coverage to deliver said high bandwidth, low latency, and fast throughput needed for businesses. To meet indoor coverage demands, particularly where capacity expansion is required or anticipated in the near future, Samsung offers a 5G active Distributed Antenna System (DAS) solution called the Link HubPro. This system is especially useful in large buildings with extensive IT infrastructure; the solution includes two main components: a radio hub and indoor radio, and supports more diverse spectrums including low-band and mid-band. Finally, if the building already has an existing passive DAS system, Samsung's Link Hub acts as a radio to connecting passive antennas supporting both LTE and 5G NR.

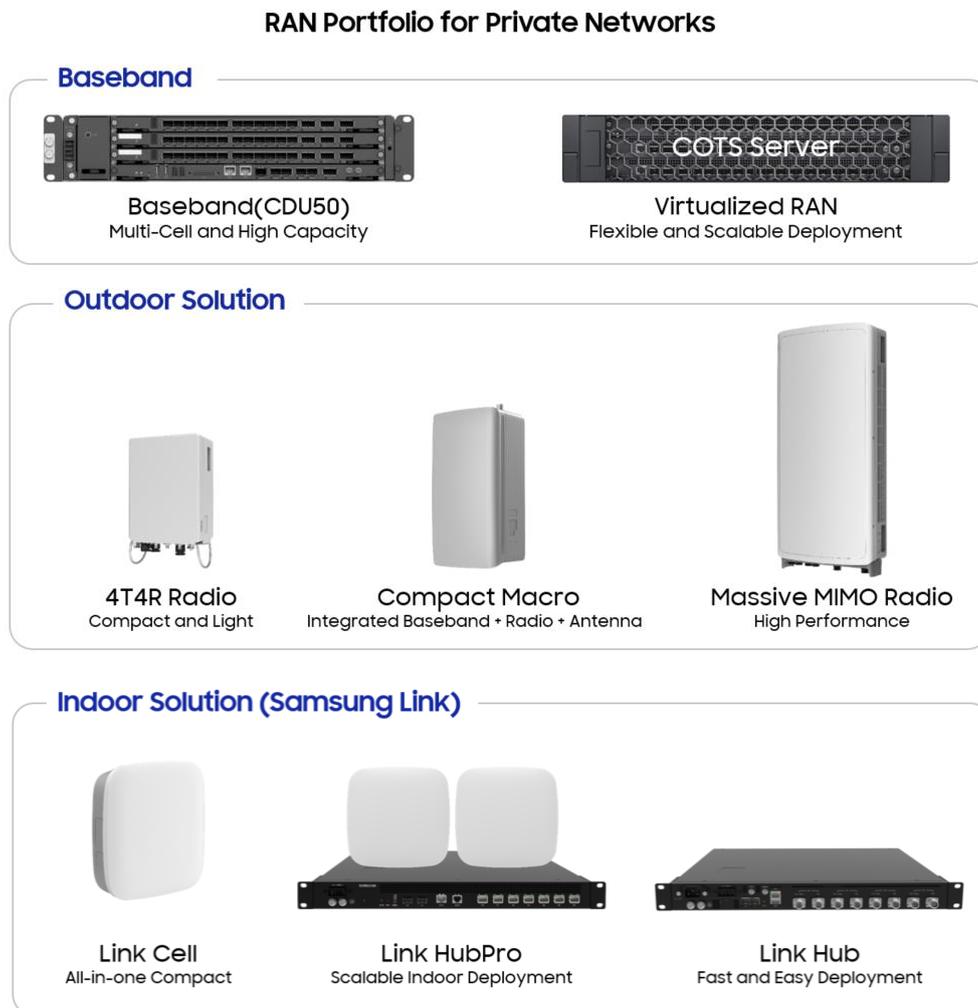


Figure 9. RAN Product Portfolio for Private 5G Solution

Samsung is committed to developing new products when viable to provide services in frequency bands for private 5G networks approved or under evaluation in countries where private 5G network demand is emerging. Considering the deployment environment and 5G local frequencies, Samsung provides several standardized RAN packages, allowing enterprises to build their networks efficiently. The RAN packages reflect the growing interest in private 5G networks in the 3.55~3.7 GHz Citizens Broadband Radio

Service (CBRS) band, as well as other frequencies 4.6~4.9GHz (n79) and 28.3~29.1GHz (n257) in several countries. Each package can be configured as Radios suitable for the desired environment. For instance, data centers for autonomous guided vehicles, which require high-capacity data transmission in the outdoor environment, may choose the package with Baseband CDU50 and prefer Massive MIMO Radio over low-power outdoor Radio. Private 5G network operators can easily deploy their networks by selecting one or multiple combinations among these standardized packages corresponding to the available frequency bands. In addition, products for U.S C-band and European bands are being planned, and other bands will be available on request.

Core Network

The primary role of the core network is authentication, authorization, mobility management, QoS enforcement, and routing functions in the wireless communication network. The Private Network Core provides a pre-configured set, as shown in Figure 10, to support various use cases of the private 5G network. The minimum configuration is a network-in-a-box system that plays the role of the core network in the private 5G networks. Although the Private Network Core is composed of a very small form factor, it contains enterprise-specific requirements while preserving the key features of the macro core network. Besides, it can be molded to fit a diverse case of private 5G networks. The Private Network Core can operate as 4G Evolved Packet Core (EPC), 5G non-standalone (NSA), or 5G standalone (SA) core while enabling a seamless migration without hardware replacements.

The minimum form factor of Private Network Core (Compact Core) integrates Central Unit (CU), which is upper layer part of virtualized RAN, core network functions, and management in a single server to reduce capital expenditure. By integrating the CU into the Private Network Core, the User Plane Function (UPF) and the CU can be located on the same server, allowing data traffic on the private 5G network not to be exposed to the outside. Another option for Private Network Core is scalability, which allows increasing the capacity when required. Therefore, it can respond flexibly even if there are more service subscribers on the local site or when new applications that require high throughputs are introduced. Figure 10 shows Private Network Core portfolios.

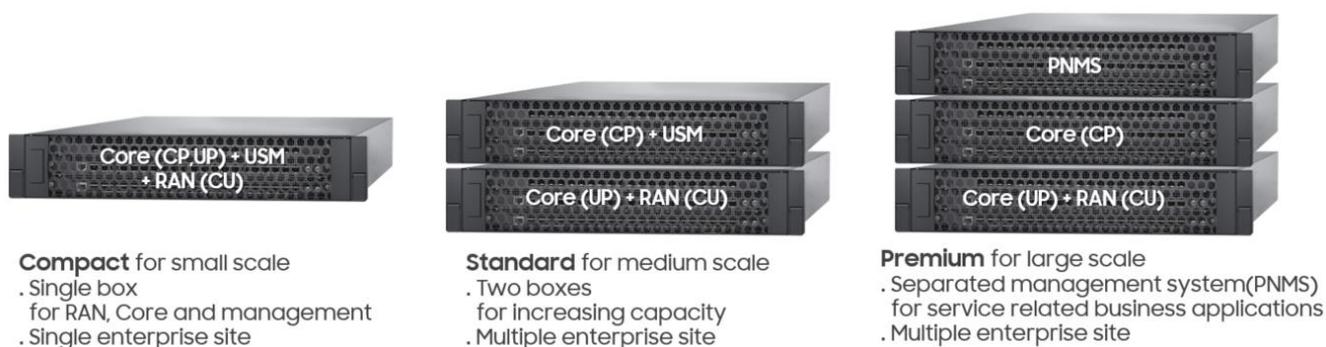


Figure 10. Private Network Core Portfolios

Transport Network

The transport network connects the core network and radio access network in the private 5G network. The transport network should also be proportional and convenient to operate like the other private 5G network products. Samsung's private 5G solution provides the connection to the transport network with the Private Network Switch (PN Switch) optimized for private networks.

The PN Switch also supports the connectivity with the external transport network for the private 5G network. In particular, PN Switch can be integrated with a baseband unit to support compact-sized and specialized hardware for cost-effective deployment.

The PN Switch supports a compact-sized data center switch to connect virtualized servers. In the enterprise environment, the PN Switch delivers the enterprise switch function that supports wired/wireless integration, including Wi-Fi. If necessary, it also supports the SD-WAN Customer Premise Equipment (CPE) function that can select tunneling paths optimized for private 5G network characteristics.

Automated network management is required to manage a transport network with various characteristics, as mentioned above. Samsung's Software-Defined Network (SDN) solution is an all-in-one solution supporting automated, integrated management of mobile transport, and enterprise's data center network equipment optimized for private 5G networks. Samsung's SDN intelligently performs network management based on Multi-access Edge Computing (MEC) or network slicing policies. Furthermore, the SDN platform is a lightweight and cloud-native architecture and can also be integrated with an Element Management System (EMS) and cloud management for a private 5G management solution.

Private Network Management System

Samsung's Private Network Management System (PNMS) provides easy distribution, easy scaling, and integrated management for various local sites. It also supports high reliability, low latency, and high performance. PNMS provides flexible architecture. If the enterprise requires minimum configuration, PNMS can be included in the Private Network Core which consists of a single server. In addition, if the enterprise requires remote management to manage multiple sites, Samsung's PNMS can be deployed as a separate system, as shown in Figure 11.

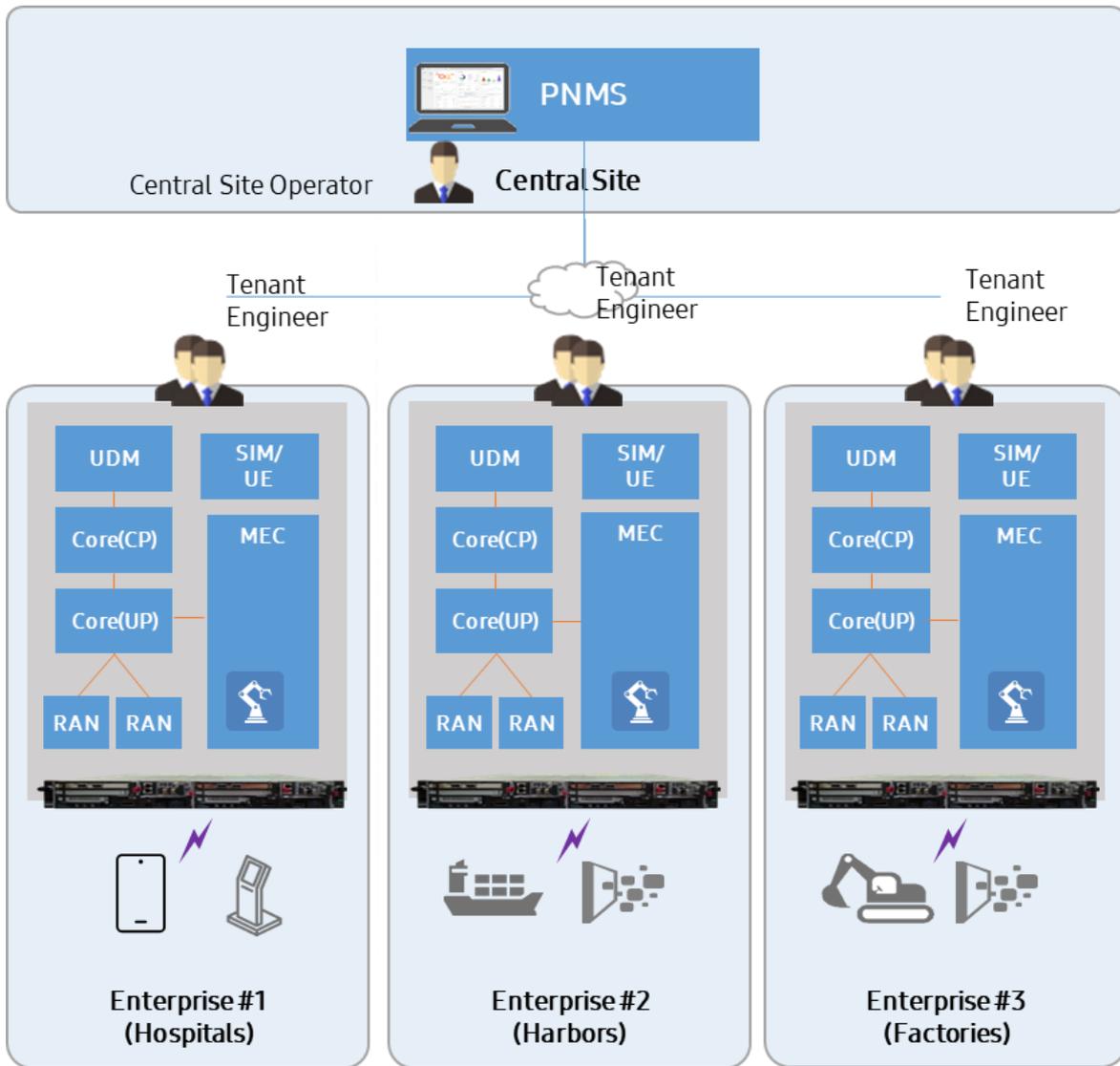


Figure 11. PNMS Remote Management Model

PNMS provides an easy and powerful portal for management. The PNMS portal gives an environment that anyone can efficiently operate in the enterprise sites. Furthermore, the PNMS portal offers a user-friendly web-based Graphical User Interface (GUI) as shown in Figure 12. It provides an integrated console board to show the number of devices, operating status, type, number of failures, usage rate, and select and configure the required items for each operator. In addition, it provides the Private Network Core configuration and software upgrade screens at all or local sites. PNMS portal shows the user's location and user status on a geographical map and reports the data usage and usage time in the format that the customer wants.

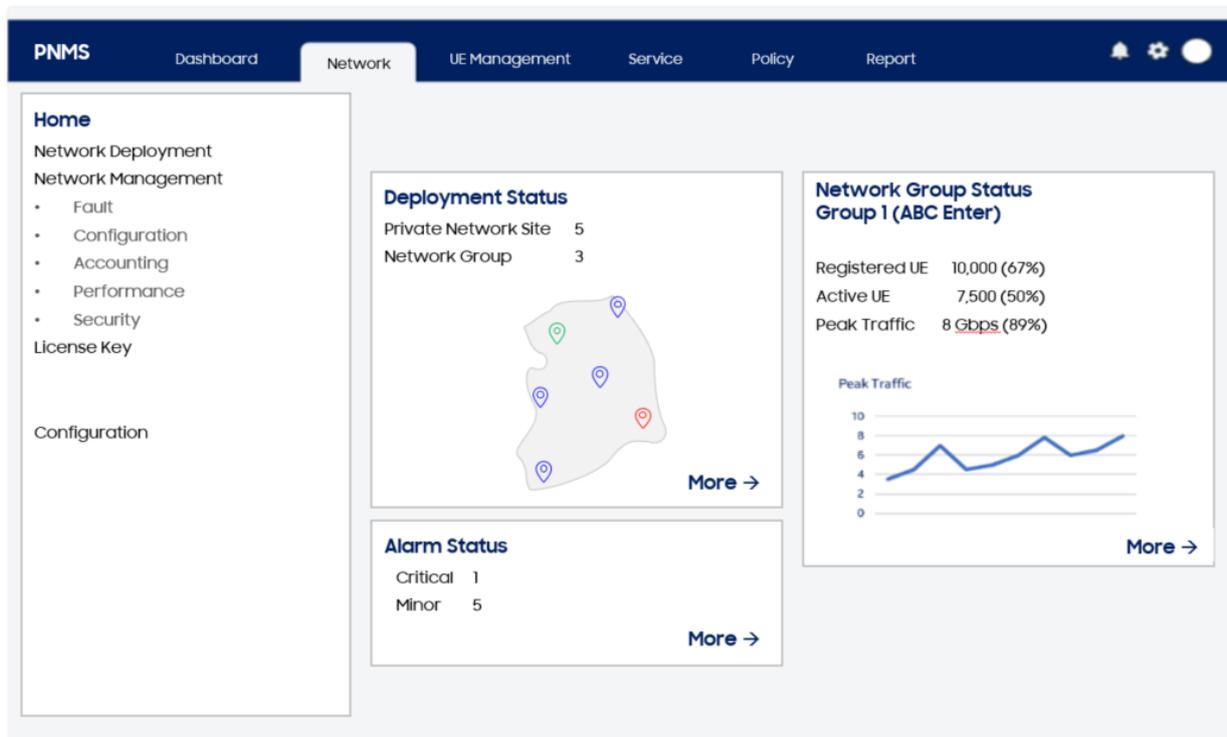


Figure 12. PNMS GUI

PNMS provides an efficient management solution for all Private Network Cores in local sites and remote sites. It gives bulk configuration, automatic audit, fault management, and statistics for Private Network Core. PNMS provides high-level security via a security protocol for equipment and terminal, policy-based access control, and JSON Web Token (JWT)-based rights management. The interface between each module and the interface with the outside provides the secure protocol as an essential basis.

PNMS also plans to provide closed-loop automation by interacting with analytics systems for more automated lifecycle management and network slicing.

Applications

The private 5G network is an enterprise-only network that needs to provide customized reliable services according to the enterprise's business needs. Therefore, a well-designed private 5G network should provide applications suitable for each enterprise to enable operations with an optimal cost for each service.

Samsung's private 5G solution delivers applications to provide various services. These applications delivered by Samsung's private 5G solution are also loaded in a single server suitable for private 5G networks, and it can be managed via PNMS. Currently, the supported applications are as follows:

- IP Multimedia Subsystem (IMS) solution for voice communication.
- Mission Critical Push-To-All (MCPTX) solutions for mission-critical voice or video group communication.
- Video surveillance platforms for monitoring and analysis of video information.
- IoT solutions for device controlling such as sensors, machines, and facilities.
- Drone solutions for controlling drones.

Samsung plans to add new applications to Samsung's private 5G solution according to enterprise's needs, and it will give various service options to the enterprise.

Samsung's Private 5G Solution Benefits

Extensive RAN Product Portfolio

Samsung is leading the industry in 5G innovation. Leveraging 5G first-to-deploy experiences, Samsung provides extensive Radio and Baseband products to offer proper solutions that meet the demands of private network operators. The extensive RAN portfolio from Samsung consists of Baseband, macro/micro Radios including massive MIMO, mmWave, small cell solutions called Samsung's Compact Macro, and indoor solutions such as Link Cell and Link HubPro, as illustrated in Figure 13.

This RAN portfolio provides maximum performance and capacity to enhance user experiences by incorporating cutting-edge technologies at various local frequencies. In addition, these components also consider the various size and installation environments of private networks, enabling rapid time to market. Thereby, Samsung's 5G RAN portfolio delivers the private 5G network that meets the enterprise market demands.



Figure 13. Samsung's RAN Portfolio

Compact and Robust Wireless Network

Samsung's private 5G solution enables enterprises to build a compact and robust wireless network. By the nature of the private network, the private 5G network should be compact physically and logically. Therefore, Samsung has scaled down the capacity while maintaining the network's capabilities, reducing the number of servers for private 5G networks. For instance, Private Network Core in Samsung's private 5G solution can provide a management system, core network, and CU function within a single server. Moreover, Private Network Core can be molded to fit a diverse private 5G networks case. Like Private Network Core, PN Switch in Samsung's private 5G solution has integrated the enterprise switch and the data center switch function. By reducing the number of servers required for the private 5G network, Samsung's private 5G solution provides a compact-sized network to enterprises and enables enterprises to build and operate private 5G networks at an optimal cost.

Standard Portfolio Reflecting Various Requirement

Generally, private 5G customers differ in demand for capacity and performance compared to telco customers. To accommodate this, a standard configuration considering the characteristics of the enterprise business is needed. Moreover, the standard configuration should meet the enterprise market's various needs.

Samsung's private 5G solution provides standard configuration options that can meet multiple private network requirements. Samsung's private 5G solution consists of 'Compact', 'Standard' and 'Premium'. 'Compact' is the cost-effective one-box solution, and 'Standard' is the solution that supports multi-site with local UPF/CU branch. 'Premium' is the solution that is expandable to control plane or user plane according to the medium or large-scale use cases.

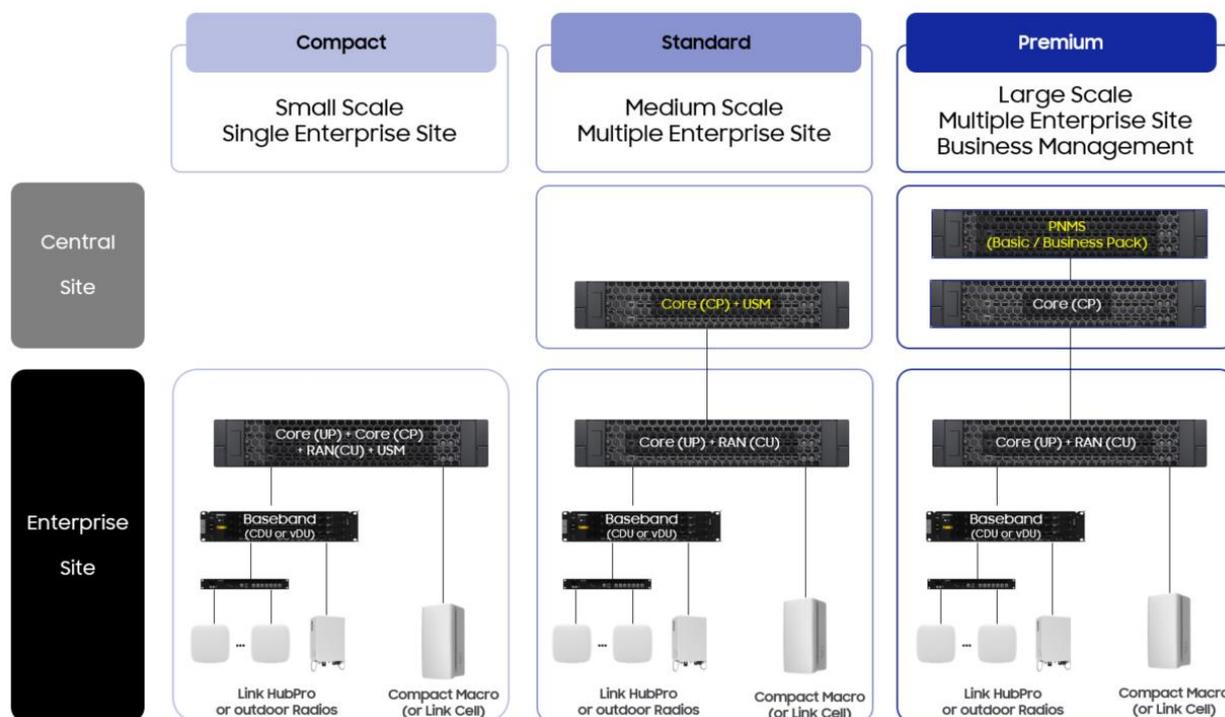


Figure 14. Samsung's Private 5G Solution Configuration

Figure 14 illustrates the standard portfolio reflecting the various requirements from enterprises, and the detailed description of each type is as follows.

'Compact' is suitable for an enterprise that requires a cost-effective small network. With the concept of network-in-a-box solution, core, central unit, and management functions are on a single server, and it supports 4G, 5G NSA and 5G SA core at the same time. Thus, it can minimize CAPEX investment with various functions on a single server. It is also appropriate for the enterprise that values the security since all network functions are located on a single server and isolated both physically and logically.

'Standard' consists of a control plane and Unified System Manager (USM) only on a central site. CU is built on a local site with UPF on a single server, and it suits mid-sized businesses that require a larger business scale than 'Compact'. And to respond to various use cases, the user plane can be expanded through a separate server optionally. USM is the network element management system, it provides unified and user-friendly management functions for the private 5G network elements.

'Premium' also supports the separation of the control plane and user plane. In addition, it expands the control plane and the user plane as needed to meet the enterprise's various requirements. The control plane and the PNMS are located at the central site, and the user plane with CU is at the local site commonly. Since the user plane is at the local site, it is suitable for the enterprise that requires latency-sensitive applications such as MEC. Moreover, it is extensible variably depending on the required capacity.

Complete End-To-End Private 5G Network Solution

Samsung's private 5G solution provides end-to-end solutions required for private network services. Samsung's private 5G solution includes Private Network Core for small-scale deployment as one-box-solution and best-in-class radio access network including vRAN and massive MIMO radio. Furthermore, it delivers the network management functions for increasing operation efficiency. Cloud management system is for the life cycle management of container-based network functions and applications, including SDN controller abilities to manage switches/routers. In addition, SIM/eSIM management functions to authenticate and control various devices for security purposes are provided for enterprises to perform terminal management.

Therefore, Samsung's private 5G solution provides enterprises the ability to create, adjust or terminate any service from a central management site.

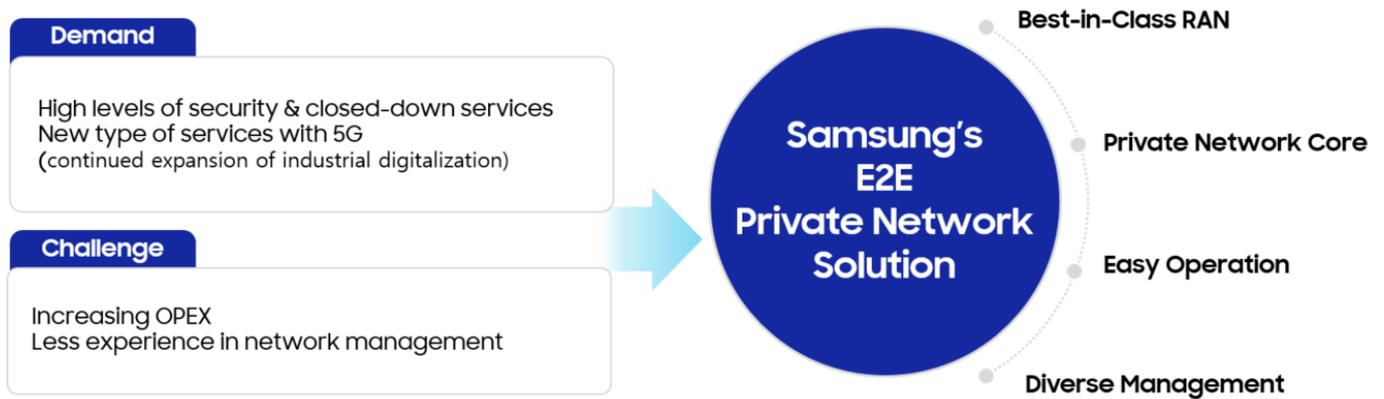


Figure 15. Samsung's End-to-End Private 5G Solution

Easy and Efficient Operation

Enterprises want to manage their private 5G networks with easy and efficient operation. Samsung's PNMS, a management system in Samsung's private 5G solution, gives centralized, flexible, and automated operation for private 5G networks. PNMS provides a single pane of glass for unified private 5G network management. Besides, PNMS can provide easy operation with a user-friendly GUI. PNMS also provides flexible deployment of Samsung's private 5G solution to fulfill the business requirements of rapid deployment of customized services. PNMS supports integrated orchestration for multiple domains such as radio access network, core network, and transport network. PNMS has a flexible architecture comprised of a basic management for communication components, and an optional business management for service-related devices, SIM, and billing. Moreover, PNMS plans to provide the closed-loop assurance interaction with analytics and the pro-active services such as fault prediction of RAN, the prevention of end-to-end network performance degradation, etc.

Various Value-Added Service for Enterprises

To satisfy the business model, enterprises request various applications to the private 5G network. In response, Samsung's private 5G solution provides an optimal environment for operating applications, and delivers various applications which satisfy the enterprise demands. As shown in Figure 16, Samsung's private 5G solution includes widely used applications from an end-to-end perspective, such as mission-critical service, analytics, IoT platform, video surveillance, and drone solutions. These applications enable the enterprise to customize its private 5G network according to its business model. Moreover, Samsung plans to provide a new application that can create new business models in line with technical development.



Figure 16. Value-added Service in Samsung's Private 5G Solution

Summary

More than ever, enterprises are demanding that private networks integrate smoothly many types of devices, which require different communication capabilities, such as robots, drones, sensors, and user terminals. In addition, most use cases associated with these types of devices require high performance in terms of availability, reliability, latency, and security, which require a high level of integration of the 5G technology into private networks.

Samsung's private 5G solution is an enterprise network solution that provides convenience in operation and continuously supports service evolution. Samsung's private 5G solution designed to fit in any enterprise's environment includes a management system, application, core network, and radio access network. Therefore, Samsung's private 5G solution will help improve the value of the enterprise by providing infrastructure that can continue to evolve.



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