Introduction to Private Cellular Networks

Private cellular networks have undergone a significant evolution, transforming from a once niche concept to becoming a critical and indispensable solution for a wide array of industries and government sectors alike. This evolution has been marked by a transition from initial trials to the demonstration of substantial and tangible business outcomes. Organizations across sectors are increasingly considering the deployment of private LTE or 5G networks to meet their growing connectivity needs. In doing so, they are confronted with numerous questions regarding the operational intricacies of these networks and the comparative advantages they hold over traditional alternatives such as Wi-Fi. These inquiries span considerations of network reliability, security, scalability, and the ability to support mission-critical applications in diverse and challenging environments. The shift towards private cellular networks underscores a strategic move towards enhancing operational efficiencies, enabling seamless connectivity across sprawling facilities, and ensuring robust and secure communications infrastructures that can adapt to evolving technological demands and regulatory requirements.

Understanding Private LTE and 5G Networks

Private LTE and 5G networks, often referred to as "non-public networks" by 3GPP (the mobile telecommunications standards organization), utilize licensed, shared, or unlicensed wireless spectrum and LTE or 5G cellular infrastructure. These networks facilitate the transmission of voice and data to edge devices such as smartphones, embedded modules, routers, and gateways.

LTE (Long-Term Evolution) represents a 4G cellular technology that offers secure, reliable, and fast connectivity, widely used for everyday activities such as calling, emailing, gaming, and streaming videos. On the other hand, 5G is the latest advancement in cellular network technology, providing significantly faster data transmission, lower latency, and the capacity to connect a larger number of edge devices.

Benefits of Private Cellular Networks

A private cellular network is exclusively dedicated to a specific business or organization, encompassing cell sites and core network servers tailored to meet its cellular connectivity needs. Unlike public cellular networks, which are shared among users, a private network provides dedicated and reliable coverage throughout the organization's operational footprint. This is particularly crucial in remote areas lacking public cellular coverage and in complex environments such as warehouses or ports, where Wi-Fi signals may be obstructed by physical structures like shelves or containers.

Moreover, private networks enhance security by tightly controlling access and implementing additional layers of security measures beyond what is typically available in public networks.

Cellular Private Network Use Cases

Organizations worldwide are increasingly adopting private LTE and 5G networks to meet their specific connectivity needs, enhancing reliability and security in various environments. These networks support critical voice and data communications, facilitating essential operations across industries.

Examples of cellular private network use cases include:

MANUFACTURING

Manufacturing firms have the opportunity to leverage 5G private networks to bolster the efficiency of autonomous robots operating within factory premises. These networks facilitate seamless communication, even in environments rife with electronic interference, extensive metallic machinery, and dense infrastructure. Moreover, 5G private networks empower swift transmission of production data to local edge computing centers, facilitating instantaneous processing within the factory setting.

TRANSPORTATION HUBS INCLUDING SHIPPING PORTS AND AIRPORTS

Transportation hubs have emerged as focal points in conversations surrounding supply chain backlogs. These hubs are actively seeking methods to enhance efficiency, reduce expenses, and bolster monitoring and safety measures. To achieve these objectives, shipping ports are exploring various avenues such as remote-controlled ship-to-shore cranes, automated gantry cranes, autonomous guided vehicles, equipment condition monitoring systems, and drones for surveillance and delivery purposes. The successful execution of these initiatives hinges on the adoption of 5G private networks.

WAREHOUSES

With a private LTE or 5G network, online retailers and warehouse operators can deploy robotic product picking, tracking, and other IIoT warehouse applications without concerns about dead spots or high network maintenance costs.

RICON Private Cellular Network Router

RICON S9925i Router is designed and manufactured by Ricon Mobile Inc. based on fixed and wireless termination interfaces with integrated 5G and 4.5G optional cellular network capability. The router is widely used in multiple cases like ATM connections, branch office access, data collection or vehicles etc.

S9925i Router integrated with dual port radio interfaces which supports 5G SA, 5G NSA and LTE with multiple variations on a single box. As well as 5G, 4.5G interfaces support a wide range of Category classes depending on the bandwidth requirements such as CAT1M, CAT4, CAT6, CAT12, CAT16, CAT18 provides up to 1.000Mbps download speed and 300Mbps upload speed with various carrier aggregation capabilities.

About RICON

RICON is an international company specializing in mobile connectivity solutions for businesses since 2002. Ricon's high-quality cellular routers and machine-to-machine (M2M) management software ensure fast, secure and reliable interconnectivity, failover backup, remote monitoring and maintenance. Ricon is supporting enterprises in over 500.000 business locations worldwide.

RICON

Founded in 2002 Ricon is relentlessly innovative and driven to address the technical challenges of businesses. Its advantage as a privately-held company is in its flexibility to customize its hardware and software to client needs.
Today, Ricon supplies large European telecommunications enterprises including Vodafone, Telefonica, Turkcell, Türk Telekom, TIM, WINDTR, Telus, Rogers and others. Major clients in other business sectors include GE Healthcare, Scientific Games, IGT Corp., International Gaming Technology, Intralot, Sisal and many others.

(0212) 346 26 00
Ricon İletişim AŞ | Reşitpaşa Mah. İTÜ ARI 3 Teknokent, No:4-Z101 Maslak / İstanbul / Türkiye
riconturkiye@riconmobile.com - www.riconmobile.com