

Private Wireless PR® Transforming Sls and MSPs into Private Wireless Experts

Industry Report

Private Cellular and Neutral Host Network Deployments 1H 2024

Tracking the rapid growth and expansion of private cellular and neutral host networks across the globe



















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Introduction

The first half of 2024 has seen continued rapid growth and expansion of private cellular and neutral host networks across industries globally. As organizations increasingly recognize the potential of dedicated, high-performance wireless connectivity, private LTE and 5G deployments have become a cornerstone of digital transformation strategies.

These networks are enabling enhanced operational efficiency, improved safety and security, and innovative new use cases that were previously difficult or impossible with traditional wireless technologies. In the US, the availability of free and lightly licensed Citizen Band Radio System (CBRS) spectrum has accelerated adoption across all sectors.

The manufacturing sector remains at the forefront of private cellular adoption, accounting for over one-third of the deployments we've covered. The reliability, low latency, and high bandwidth of private LTE and 5G networks are proving critical for supporting advanced manufacturing applications like industrial IoT, autonomous mobile robots, and Al-powered quality control systems.

Beyond manufacturing, we're seeing accelerating uptake across diverse sectors including education, healthcare, energy, logistics, and smart cities. Multi-operator neutral host networks, solving indoor public cellular coverage issues, and fixed

wireless access (FWA) networks that bring internet access to under-served and unserved communities, expand the use cases of private cellular network beyond industrial applications. As the technology matures and ecosystem partnerships strengthen, organizations are finding increasingly compelling business cases for investment in private cellular infrastructure.

This report illustrates key private network and neutral host deployments from the first half of 2024, highlighting innovative use cases, emerging trends, and the evolving vendor landscape. Through these real-world examples, we see how private cellular is driving digital transformation and creating new competitive advantages across industries.

PLEASE NOTE: The information on deployments included in this report is derived from publicly available information in the first half of 2024, originally published on our media platform, PrivateLTEand5G.com. If you would like to share your deployment story, please send us details, which will be published on PrivateLTEand5G.com and incorporated in future versions of this report.







Application: Broadcasting

Location: France

Ecosystem: Orange, Samsung

Private Network: 5G

Orange's private 5G network for the Paris 2024 Olympics promises to revolutionize sports broadcasting by providing high-speed, low-latency, and secure connectivity for real-time HD video transmission, while also showcasing the technology's potential to millions of viewers.



Application: Broadcasting

Location: Germany

Ecosystem: Deutsche Telekom

Private Network: 5G

RTL Deutschland's private 5G campus network, deployed in partnership with Deutsche Telekom, revolutionizes TV production by offering enhanced flexibility, faster data processing, improved wireless capabilities, and heightened security, while setting a new standard for broadcasting in Germany.

PGA Championship

Application: Broadcasting

Location: USA

Ecosystem: Sony, T-Mobile

Private Network: 5G

The first 5G private network at a major U.S. golf event, the PGA Championship, promises to revolutionize the fan experience and broadcasting capabilities, offering enhanced connectivity for spectators and enabling unprecedented production flexibility with wireless 4K cameras.



Application: Broadcasting

Location: USA

Ecosystem: Comcast Business

Private Network: 5G

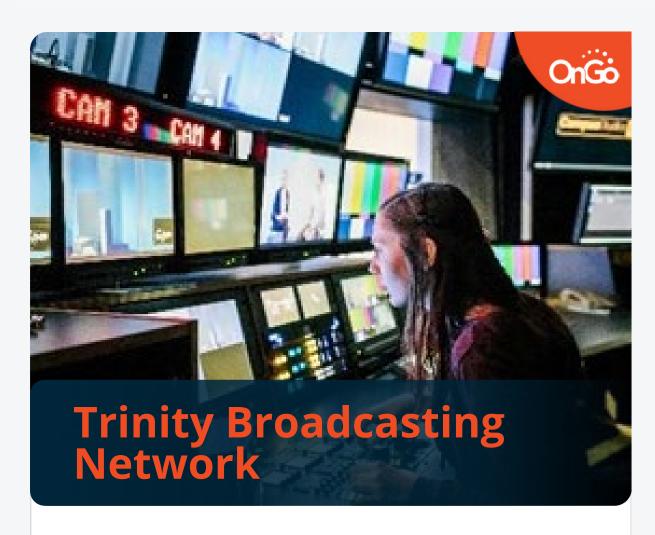
The Players Championship deployed a private 5G network and upgraded Wi-Fi at TPC Sawgrass, offering enhanced connectivity for tournament operations and an improved digital experience for fans, showcasing how advanced networking technology can revolutionize major sporting events.

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Application: PTT, enhanced communications, digital content capture

Location: USA

Ecosystem: Trinity NextGen, Ericsson, Microsoft

Private Network: CBRS-based 5G

Trinity Broadcasting Network has implemented a private 5G network in its studios, leveraging CBRS spectrum and edge computing to enhance production capabilities, enable wireless workflows, and support next-generation broadcast formats, ultimately transforming its operations to deliver improved faith-based programming.









Application: Enhanced coverage, IoT, autonomous vehicles

Location: USA

Ecosystem: Toyota, Nokia, Baicells

Private Network: **5G**

The University of Nebraska-Lincoln is deploying Husker-Net, a private 5G network across its campuses to support innovative research in various fields, making it one of the first U.S. universities to provide such extensive, independent 5G infrastructure for academic and experimental purposes.



Application: Industry 4.0, AGVs

Location: Germany

Ecosystem: IS-Wireless

Private Network: 5G

IS-Wireless will deploy a private 5G network at Fraunhofer HHI in Berlin for the CampusOS project, enabling advanced Industry 4.0 applications and fostering an open 5G ecosystem that promises to upgrade industrial operations across Germany and Europe.

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Application: Neutral Host Network

Location: USA

Ecosystem: Kajeet, Druid Wireless, Internet2

Private Network: CBRS-based LTE/5G

Kajeet and Druid have collaboratively launched a neutral host network at the University of Virginia, significantly enhancing in-building mobile coverage for over 25,000 students and faculty. This deployment not only ensures seamless connectivity but also reinforces safety measures and unlocks opportunities for academic innovation, ultimately improving the overall campus experience.

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Application: Neutral Host Network

Location: USA

Ecosystem: InfiniG, Cox Private
Networks

Private Network: CBRS-based LTE

Arizona State University solved its longstanding cellular coverage problem in the University Services Building by implementing a Neutral Host-as-a-Service solution, dramatically improving connectivity for students, staff, and visitors while overcoming economic barriers that had previously prevented upgrades.







Application: Neighborhood broadband connectivity

Location: USA

Ecosystem: Alef

Private Network: LTE/5G

With support from the Community
Foundation for Mississippi and funds from
the W.K. Kellogg Foundation, Alef deployed
a reliable private 4G/5G Network solution,
ensuring affordable and rapid internet
access for students at their residences.



Application: Robotics

Location: Mexico

Ecosystem: AT&T Mexico, Ericsson, Endeavor

Private Network: 5G

Mexico's first private 5G network promises to revolutionize Mexican industry by enabling innovative robotics projects, increasing productivity, reducing emissions, and enhancing safety across various sectors.

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Application: Precision agriculture

Location: USA

Ecosystem: GXC, ACNH Industrial

Private Network: CBRS-based 5G

Ohio State University is deploying a private 5G network at OSU's agricultural center, enabling advanced precision agriculture research including autonomous farming equipment, real-time IoT sensor data collection, and autonomous vehicles, with the goal of accelerating the adoption of digital agriculture technologies to improve productivity and sustainability in farming.









Solution: Enhanced automation, connectivity, safety

Location: UAE

Ecosystem: e&

Private Network: 5G

ADNOC's partnership with e& to build the energy industry's largest private 5G network promises to revolutionize oil and gas operations by enabling AI integration, enhancing automation, improving worker safety, reducing emissions, and generating significant economic value through realtime data processing and advanced asset management across its vast operational area.

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Application: Reliable coverage for voice communications

Location: France

Ecosystem: Ericsson, Thales, Sequans

Private Network: LTE

EDF Energy is accelerating its private LTE network deployment across French nuclear power plants, enhancing secure connectivity, improving operational efficiency, and enabling innovative applications like drones and video.

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Application: Electric power, load control, distribution automation

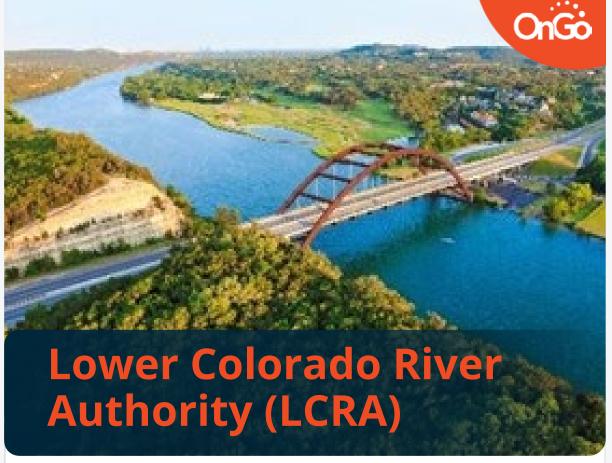
Location: China

Ecosystem: China Unicom, Huawei, TD Tech

Private Network: 5G

State Grid, China's largest utility, has developed a private 5G network solution, enabling advanced smart grid capabilities that promise to revolutionize power distribution, enhance maintenance efficiency, and improve overall grid reliability.

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Application: MCPTT, data, video

Location: USA

Ecosystem: Anterix, Nokia, Ericsson, Sonim, Cisco, Samsung

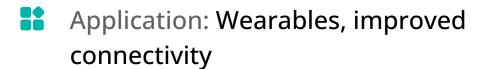
Private Network: LTE

The Lower Colorado River Authority is testing a private LTE network using 900 MHz spectrum, which promises to significantly enhance communication capabilities, improve data transmission, and increase resilience across its extensive service area, ultimately benefiting over a million Texans with more reliable water and electricity management.









Location: Finland

Ecosystem: Boldyn Networks, WIOCAR Technologies

Private Network: 5G

Europe's first private 5G network in a functioning hospital, at Oulu University Hospital in Finland, is enabling innovative wearable solutions that promise to revolutionize patient care by enabling doctors to make faster diagnoses, reduce computer time, and increase quality faceto-face patient time.

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Application: Remote monitoring and surgery

Location: Belgium

Ecosystem: Proximus NXT

Private Network: 5G

AZ Groeninge Hospital are partnering to pilot Belgium's first private 5G network in a hospital, aiming to enhance patient care and operational efficiency through advanced digital health applications like remote consultations, real-time monitoring, and augmented reality-assisted surgeries, while also addressing potential privacy and security concerns.











Application: Smart rail logistics

Location: Hungary

Ecosystem: Huawei, Vodafone

Private Network: 5G

The East-West Gate Intermodal Terminal leverages a private 5G network to enable advanced automation and remote control of its operations, offering unprecedented capacity and efficiency in rail freight logistics between Asia and Europe while utilizing green technologies for sustainability.



Application: Computer vision

Location: Malaysia

Ecosystem: U Mobile, Enfrasys Solutions, ZTE

Private Network: 5G

Transocean Logistics' successful proof-ofconcept demonstrates how private 5G networks and AI can dramatically improve efficiency in logistics, reducing container inspection time by 70% while enhancing data processing and supply chain transparency.

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Application: Improve efficiency, improve safety, lower power consumption, digital twins

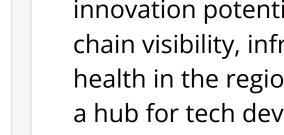
Location: Indonesia

Ecosystem: Huawei, Telkomsel

Private Network: 5G

Indonesia unveiled its first 5G smart warehouse and innovation center, showcasing advanced automation, realtime data processing, and IoT integration to optimize supply chain management.

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Application: Expanded coverage, data sharing, supply chain visibility

Location: USA

Ecosystem: 5G Open Innovation Lab, **Edge Cluster**

Private Network: 5G

The Tacoma Tideflats has launched a private 5G network pilot project, developed through collaboration between multiple organizations, to support five maritime enterprises and showcase 5G innovation potential in improving supply chain visibility, infrastructure, safety, and health in the region, while positioning it as a hub for tech development and high-wage job creation.







Application: AGVs, QI, analytics, robotics

Location: Thailand

Ecosystem: Huawei, AIS, China Unicom

Private Network: 5G

Thailand is embracing the future of intelligent manufacturing with the launch of Southeast Asia's first private 5G fully connected smart factory. Key solutions include: Real-Time Monitoring & Analytics, 5G Automated Guided Vehicles, Al-Powered Quality Inspection, and Remote Robotic Arm Control.



Application: Robotics, AR/VR, computer vision, IoT sensors, neutral host

Location: USA

Ecosystem: Verizon Business, Ericsson

Private Network: 5G

The networks will provide comprehensive connectivity across the massive 2 million square ft. facility, enabling both secure private 5G capabilities for Cummins' industry 4.0 initiatives as well as a neutral host network to allow employees and visitors to access improved public cellular coverage.

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Application: Industry 4.0 advanced tooling, assembly and machine vision systems

Location: USA

© Ecosystem: Ericsson

Private Network: 5G

Ericsson deployed a private CBRS network in its Texas 5G radio factory, playing a crucial role in its sustainability efforts, reducing energy consumption by 25% and water consumption by 75%. Real-time monitoring and systems optimization of factory floor operations has improved the factory's overall performance and environmental impact.

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Application: Smart, automated manufacturing

Location: USA

Ecosystem: MultiTech, Nokia

Private Network: CBRS-based LTE/5G

With the need for a massive number of sensors, machines, and other industrial assets, John Deere deployed a private CBRS network for autonomous mobile robots, computer vision for quality control, integrated edge computing for machine learning, robotic welding, and more.







Application: Industry 4.0 advanced tooling, assembly and machine vision systems

Location: UK

Ecosystem: Ericsson

Private Network: 5G

Swedish industrial machine maker Atlas Copco has deployed a private 5G network in its UK facility, creating a showcase and training hub for its advanced tooling, assembly systems, and machine vision solutions. A replica factory demonstrates 5G-enabled tool control software, inspection and error-proofing systems, and 3D laser technology.

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Application: AGVs, inventory management

Location: Germany

Ecosystem: Deutsche Telekom

Private Network: 5G

A sprawling private 5G network for paper and packaging manufacturer Hamburger Containerboard, boasts more than 120 antennas that deliver standalone 5G connectivity across 350,000 square meters of indoor and outdoor spaces. The network today connects scanners and forklifts, track spare parts, and in the future AGVs, and real-time monitoring applications.

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Application: Improved reliability and connectivity

Location: Germany

Ecosystem: Ericsson

Private Network: 5G

Tesla has become one of the first automotive manufacturers to deploy a large-scale private 5G network at its Gigafactory in Berlin, Germany. The ultra-fast, low-latency private 5G provides seamless connectivity as vehicles and equipment move around the factory and surrounding areas. This allows Tesla to remotely coordinate machines, track logistics, and wirelessly update software on assembled vehicles before they ship.

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Application: Advanced robotics & incubation hub for 5G innovation

Location: USA

Ecosystem: Hughes Network

Private Network: 5G

This cutting-edge 140,000 square foot center will produce Hughes' satellite modems, terminals, and other hardware that powers networks for consumers, enterprises, and government agencies around the world. EXM will also serve as an incubation hub for developing private 5G network solutions. Hughes plans to use the facility as a testbed for new private 5G services tailored for enterprise and military use cases.







Application: Al, IoT, robotics

Location: USA

Ecosystem: Ericsson

Private Network: CBRS-based 5G

Recognized as a 'Lighthouse Factory' by the World Economic Forum for its innovative integration of advanced Industry 4.0 technologies, this million-square-foot factory implemented private 5G to operate 166 AGVs and AMRs for materials transport, assembly, and welding.



Application: Industry 4.0

Location: Global across 32 countries

Ecosystem: NTT, Celona

Private Network: 5G

A global chemical manufacturing concern is deploying a private 5G LAN to securely connect all its global factories to enable better data visibility, control, and security, as well as indoor/outdoor connectivity and PTT at local sites.



Application: Industry 4.0

Location: USA

Ecosystem: UScellular, Rockwell Automation

Private Network: 5G

Designed to simulate real-world manufacturing use cases, companies can use Rockwell Automation's Industrial Automation to validate new technologies. With the addition of a private 5G network, the center can now test remote operations, predictive maintenance, and real-time monitoring of industrial processes.

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Application: Industry 4.0

Location: Japan

Ecosystem: Cisco, Mitsui Information, KDDI Engineering

Private Network: 5G

This collaborative testbed will allow manufacturers to trial and validate industrial use cases using private 5G technologies, including AGVs, industrial robots, machine vision systems, and smart factory applications.

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Application: Industry 4.0

Location: USA

Ecosystem: Ericsson

Private Network: CBRS-based 5G

To cover its 200,000-square-foot factory, Toyota upgraded their Wi-Fi network to a CBRS-based private 5G network to support augmented reality, advanced automation, AI, HD video analytics, and real-time sensor monitoring, which have led to major improvements in productivity, efficiency, and safety.



Application: Edge computing, enhanced coverage and capacity

Location: Germany

Ecosystem: NTT Data, Schneider Electric

Private Network: 5G

This dedicated on-premise network offers advanced features like micro-slicing for granular QoS policies, and faster insights from edge data centers for predictive maintenance and supply chain optimization.



Application: Al-based video for quality and increased operating efficiency

Location: China

Ecosystem: Unicom, ZTE

Private Network: 5G

Midea has already shown significant ROI from precision robotics guided by real-time AI, reduced production lead times, energy efficiency, and predictive maintenance, all while improving worker safety.



Application: Enhanced throughput, improved security, precision optimization

Location: Germany

Ecosystem: Ericsson, Mugler

Private Network: 5G

This network will enable SMS Group to test and develop new digitalized metallurgical processes in areas such as automation and autonomous transport. One use case involves AGVs transporting red-hot materials and the network's low latency allows for precision control and monitoring.

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Application: Improve operational efficiency

Location: Spain

Ecosystem: Vodafone

Private Network: 5G

Ford relies on its private 5G network to instantly adapt to changing conditions on the assembly line, capacity for sensors and machines to share significantly more data in real-time, and processing images and videos at the network edge for rapid feedback on its manufacturing processes.







Application: Improved communication, safety, productivity

Location: Brazil

Ecosystem: Nokia, Alcon

Private Network: LTE

Sigma's private LTE campus network at its Grota do Cirilo lithium mining site in Minas Gerais, Brazil will connect 200 employees and enable a range of smart mining applications powered by industrial edge computing.



Application: Increased automation, enhanced video, remote control devices

Location: Russia

Ecosystem: MTS

Private Network: LTE

Fertilizer producer EuroChem has built a dedicated private LTE network at their Kovdorsky GOK mine in northern Russia. The new high-speed wireless network aims to digitally transform operations at the open-pit apatite, baddeleyite, and iron ore mines.

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Application: Improve capacity and connectivity

Location: UK

Ecosystem: Airspan, Boldyn Networks

Private Network: 5G

The smart city network uses outdoor small cells, discretely incorporated into existing street furniture to provide high-performance, high-capacity 5G connectivity. This first phase saw the successful rollout of next-generation connectivity in Sunderland, laying the foundation for progress in key sectors such as smart homes, digital skills, education, and Industry 4.0.









Application: Improved coverage and capacity, trial new applications

National Hockey League

Location: USA

Ecosystem: Verizon Business

Private Network: 5G

The NHL is piloting private 5G networks in select arenas, promising to enhance the fan experience with features like instant replays and augmented reality stats, while also improving game operations through advanced connectivity for referees, coaches, and staff.











Application: 5G application and device testing

Location: Germany

Ecosystem: Panasonic

Private Network: 5G

Panasonic has launched a private 5G network testing environment at its Customer Experience Center in Munich. This facility allows Panasonic, its customers, partners, and third-party developers to explore the benefits and applications of private 5G networks.





Application: Improved logistics, communications, maintenance

Location: USA

Ecosystem: Booz Allen

Private Network: 5G

Booz Allen is developing private 5G networks for the U.S. Navy in the Indo-Pacific region, including Pearl Harbor Naval Shipyard and Naval Base Guam, aiming to enhance communication, logistics, maintenance, and secure operations while supporting faster decision-making and information sharing for military commanders.

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Application: Improved coverage and capacity

Location: USA

Ecosystem: Bearcom

Private Network: CBRS-based LTE

The Poarch Band of Creek Indians deployed a private LTE network on CBRS spectrum, providing the tribe with digital sovereignty, enhanced connectivity, and control over their network infrastructure, thus bridging the digital divide and empowering their community with improved access to education and economic opportunities.

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Application: Test V2X, safety, voice, video

Location: Germany

Ecosystem: Verizon Business, Nokia, AWS, Smart Mobile Labs

Private Network: 5G

Audi has deployed a private 5G network at its German test track, simulating global network conditions to accelerate development and testing of advanced vehicle technologies, including autonomous driving and vehicle-to-cloud communications, giving Audi a competitive edge in the rapidly evolving automotive industry.



Have a private network or neutral host deployment that you want us to cover in our report and the online publication?

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PrivateLTEand5G is the industry's only B2B media publication for everything related to Private Cellular Networks. The publication provides network operators, telecom vendors, service providers, and enterprises with critical insights to commercialize private LTE and 5G networks. It regularly shares significant enterprise private wireless deployments around the globe.

The publication hosts the podcast "Alynment" to have engaging discussions with industry leaders on the supply as well as demand side, revealing their thoughts and plans for wireless connectivity, as well as other diverse yet related topics, including IoT security, the distributed edge, CBRS, and navigating the myriad choices available for private networks.

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PrivateWirelessPro.com is dedicated to equipping system integrators with the expertise needed to excel in the rapidly evolving field of private 5G networking. Recognizing the gap in cellular solutions knowledge among system integrators, we offer comprehensive training, thought leadership, and expert guidance to empower them to meet their clients' growing demands for private 5G deployments. Our services cover every aspect of the industry, from identifying market opportunities and selling private 5G solutions to mastering installation, deployment, and providing tailored solution recommendations, ensuring integrators are well-prepared to lead in this cutting-edge technology space.

For more resources and guidance for system integrators and private cellular networks, visit us at: PrivateWirelessPRO.com

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