Cisco and Intel Private 5G Innovation Center

We take the complexity out of evaluating private 5G for enterprise and industrial networks

Value Statement

Cisco's and Intel's joint Private 5G Innovation Center provides a collaborative, preconfigured environment where enterprises can view, simulate, test, and validate a variety of end-to-end private 5G use cases, enabling them to pilot new technologies in a realistic setting and accelerate the adoption of 5G solutions.

The center allows customers to:

- Experiment with and evaluate emerging 5G applications like anomaly detection, autonomous retail, video surveillance, remote assistance, and collaborative workflows.
- Assess and compare different vendors' private 5G offerings side by side.
- Trial and optimize equipment and solutions with technology partners through proof-of-concept tests.
- Leverage the readily available private 5G infrastructure, rather than having to build and deploy their own testbeds.

By reducing the risk, cost, and complexity of exploring private 5G, the innovation centers make it easier for enterprises to pilot and adopt the technology to drive business transformation across industries.

Powering enterprise 5G transformation: Cisco and Intel launch innovation centers

In a strategic collaboration, Cisco and Intel have launched a global network of Private 5G Innovation Centers to accelerate enterprise adoption of cutting-edge 5G solutions. These state-of-the-art facilities serve as real-world testbeds where businesses can evaluate a wide range of private 5G use cases through pilots and prototypes before full-scale deployment.

The first of three planned innovation centers is located at Cisco's San Jose campus, with additional centers slated for Dusseldorf, Germany, and Tokyo, Japan. These local access points allow global enterprises across regions to validate 5G applications and network configurations tailored to their specific requirements.

By establishing these collaborative "sandboxes" for early testing, proof-of-concept validation, and solution customization, Cisco and Intel aim to reduce the risk, complexity, and costs associated with private 5G adoption. Innovation centers empower companies to thoroughly evaluate options, run field trials, and build robust business cases before committing to full production rollouts.

The facilities act as centers of excellence, enabling multiple vendors to bring in their 5G end devices and demo systems to validate with Cisco's leading Private 5G solution integrated with Intel's mobile edge computing capabilities. The collaboration includes partnerships with Radio Access Network (RAN) providers like Airspan and BTI to realize cutting-edge use cases for real-world applications.

Powered by the Cisco® Private 5G solution and Intel's cloud-to-edge technologies, including Xeon® processors, Ethernet adapters, and software tools, the innovation center infrastructure is designed to handle diverse workloads and specialized enterprise use cases. These range from advanced industrial automation, robotics, and large-scale IoT to real-time edge computing in industries with demanding connectivity needs, such as manufacturing, logistics, and mining.

The state-of-the-art private wireless network lab serves as an ideal environment for mobile network operators, 5G and IoT device manufacturers, and enterprise end users. By providing a managed, multivendor testing ground, the centers help partners validate equipment and processes against rigorous performance requirements to help ensure readiness for private network deployments.

Through these innovation hubs, Cisco and Intel are empowering enterprises to unlock the transformative potential of private 5G, accelerating their digital transformation journeys.

Benefits

Cisco's and Intel's Private 5G Innovation Centers offer enterprises several key benefits:

- **Real-world testing and validation:** The centers provide enterprises with prebuilt private 5G infrastructure to test and validate solutions before full-scale deployment. This allows them to pilot new technologies in a realistic setting.
- **Experimentation with 5G use cases:** The high-performance capabilities of 5G open many new possibilities for enterprises. The innovation centers serve as a sandbox where businesses can experiment with and evaluate these emerging 5G applications.
- **Vendor evaluation and comparison:** By hosting multiple technology partners, the centers enable enterprises to assess and compare different vendors' private 5G offerings side by side.
- **Proof-of-concept trials:** Enterprises can work directly with equipment vendors to trial and optimize their products for specific enterprise use cases through the innovation centers.
- **Centralized testing environment:** Rather than having to build and deploy their own private 5G testbeds, enterprises can leverage Cisco's readily available facilities to pilot and evaluate the technology.

Overall, the innovation centers reduce the risk, cost, and complexity for enterprises exploring private 5G solutions. By providing a collaborative, preconfigured environment, the centers make it easier for businesses to pilot and adopt private 5G networks.

Navigating the private 5G frontier: Key drivers and hurdles for enterprise adoption

Enterprises are increasingly turning to private 5G networks to meet their specialized connectivity requirements. A key driver is the need for dedicated, customized connectivity that offers greater control, security, and performance compared to relying on public 5G networks. Private 5G enables advanced industrial automation, robotics, and large-scale IoT deployments in sectors like manufacturing, logistics, and mining, where there are demanding connectivity needs. Additionally, the low-latency, high-bandwidth capabilities of private 5G support critical edge computing use cases, allowing enterprises to process data closer to where it is generated for real-time analytics. Heavily regulated industries like healthcare and finance are also adopting private 5G to meet stringent data security and compliance mandates by keeping traffic on-premises.

However, enterprises evaluating private 5G face several significant challenges. The complexity of implementing and managing a private 5G network requires substantial technical expertise that many organizations lack in-house. In addition, accurately estimating the total cost of ownership, from upfront capital expenditures to ongoing operational costs, can be difficult. The private 5G ecosystem is still maturing, with limited device and application availability compared to public 5G networks. Ensuring 5G device compatibility with the specific technology and spectrum used in the private network adds another layer of complexity. Enterprises also struggle to quantify the precise business case and productivity gains that would justify the private 5G investment. Finally, seamlessly integrating the private 5G network with existing IT and OT systems presents technical integration challenges.

Cisco's Private 5G solution

Cisco's Private 5G service, delivered with global partners, provides enterprise customers with a comprehensive solution for managing their private 5G networks. We enable enterprise and industrial edge use cases that will help customers across all industries to digitize their businesses and monetize their services.

With this solution, enterprises can reduce technical, financial, and operational risks associated with managing their networks. Cisco's Private 5G simplifies the financial aspect of network management, enabling enterprises to save money on infrastructure costs while easily scaling services as needed. By integrating Wi-Fi 6, Wi-Fi 6E, and 5G networks, enterprises can simplify operations and avoid the need for their IT staff to learn and operate complex carrier-class private licensed radio networks. This future-ready solution enhances existing networks and provides trusted coverage and mobility in unique business-critical environments. Cisco's Private 5G is a cost-effective, secure, and efficient way for enterprises to deploy cellular services while maintaining IT policy and identity.

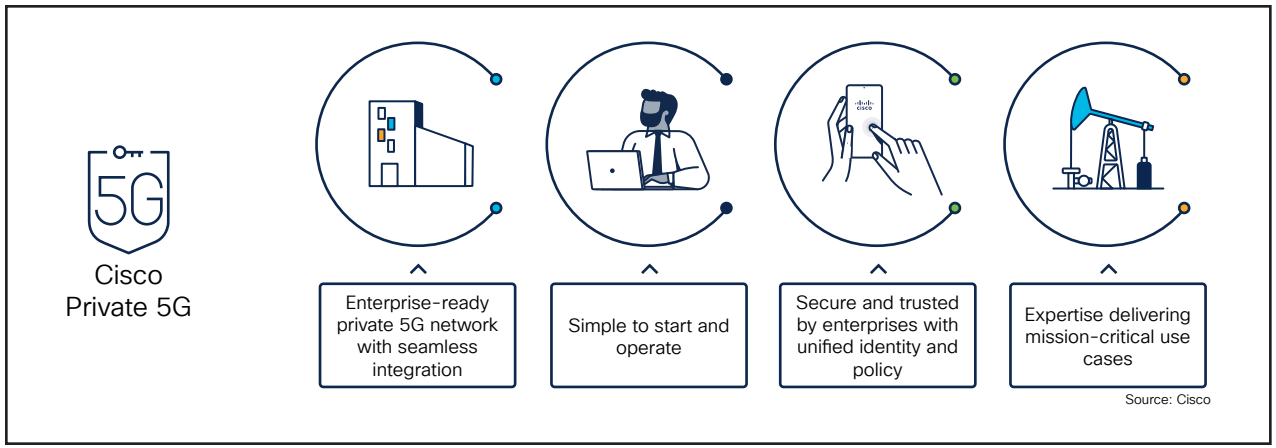

Figure 1. Benefits of Cisco Private 5G

Cisco and Intel Private 5G Innovation Centers

The Cisco and Intel Private 5G Innovation Centers are state-of-the-art facilities that display cutting-edge private 5G solutions and their transformative potential across various industries. Beyond their role as a technology showcase, the centers offers a comprehensive developer sandbox environment, enabling customers to explore, experiment, and validate their solutions in a safe and controlled setting.

Immersive technology showcase

Visitors can explore real-world use cases and experience the power of private 5G networks, from edge computing to IoT integration. The centers showcase practical applications across multiple sectors, demonstrating the versatility and potential of this revolutionary technology.

Collaborative developer sandbox

The Private 5G Innovation Centers house a fully functional Cisco Private 5G network lab environment, meticulously designed to cater to the needs of Cisco partners and enterprise customers. This isolated and controlled testing environment allows stakeholders to experiment, build, and test software applications or systems without risking or impacting their production environments.

“Private wireless focuses on business solutions, with edge AI for verticals as an integral element. Cisco and Intel share the same vision and have a long-established relationship. We are excited to collaborate with Cisco on this experience center by bringing together our Edge AI ISV ecosystem partners’ applications running on Cisco’s Private 5G solution. Enterprises can now access completely ready-to-deploy solutions for faster ROI.”

Caroline Chan
VP and GM, 5G Infrastructure Division, Network Platform Group, Intel

By leveraging the capabilities of this sandbox, customers can rigorously test and validate a wide array of use cases, applications, and devices. They can gain invaluable insights, identify potential challenges, and optimize their solutions before deploying them in real-world scenarios, helping ensure seamless integration and maximizing their return on investment.

Fostering co-innovation and collaboration

The Private 5G Innovation Centers cultivate a collaborative ecosystem, offering a vibrant environment for co-innovation and experimentation. Cisco’s partners, customers, and vendors can validate their 5G end devices and demo systems through the Cisco Mobility Services Platform, leveraging Cisco’s Private 5G technology. Multiple RAN vendors are already integrated with Cisco’s Private 5G core, enabling real-life use case testing, from indoor radio units to outdoor distributed units (using O-RAN Architecture).

Risk mitigation and cost optimization

By providing a controlled sandbox environment, the Private 5G Innovation Centers aim to mitigate the risk, complexity, and cost associated with enterprises adopting Cisco Private 5G. Customers can leverage the facilities to test early deployments, validate proofs of concept, and evaluate solutions, facilitating smoother production rollouts.

Accessing the Private 5G Innovation Centers

Customers interested in leveraging the capabilities of the Cisco and Intel Private 5G Innovation Centers can schedule a visit through their Cisco or Intel account representative.

Use Cases

Cisco's and Intel's Private 5G Innovation Centers enable customers to test their end devices, RAN, and applications with a variety of existing end-to-end private 5G use cases, including the examples in the following table.

Table 1. Private 5G use cases

Private 5G industry use case	Description
Anomaly detection	Cisco's Private 5G and Intel's Computer Vision system analyze images and videos captured at various production stages to detect unusual patterns, events, or deviations.
Autonomous retail	UST, a digital transformation solutions provider, integrated its self-checkout terminal powered by Computer Vision with Cisco's Mobility Services Platform. This UST Vision Checkout Connection over Cisco's Private 5G network makes checkout up to three times faster, improving efficiency for modern retailers.
Video surveillance	Cisco has integrated support for the General Mobile 5G IP Camera, powered by Fii (Foxconn Industrial Internet). This enables ultra-high-definition video surveillance in real time, with advanced analytics for use cases like smart cities, perimeter security, and commercial outdoor environments. The camera's LTE/5G NR (New Radio) support helps ensure low latency, high bandwidth, and reliable video transmission, making it cost-effective for private network and Multi-access Edge Computing (MEC) applications.
Remote assist and work instructions	Taqtile's wireless Manifest software leverages Augmented Reality (AR) and spatial computing to improve operational workflows. Deskless workers can document procedures, follow step-by-step instructions, remotely collaborate with experts, and analyze job history and performance in the spatial computing environment.
Webex Expert on Demand	This solution brings Webex collaboration capabilities to frontline workers through AR devices, enabling faster and smarter experiences. It provides enterprise-wide collaboration to hybrid workforces, integrating with smart glasses from RealWear to facilitate digital transformation across industries.

The Cisco and Intel Advantage for private 5G

Business customers are seeking private network solutions tailored to their unique requirements. Cisco Private 5G, delivered with global partners, is a full-service offering designed to provide maximum benefits while minimizing the work and expense associated with private network ownership. This service enables you to become a valued partner to your business customers, paving the way for further revenue growth through managed services and collaboration.

Cisco's leadership in enterprise, service provider, and cloud operator segments, combined with Intel's technology expertise, positions the two companies as the most valuable private 5G and private network partners. Cisco's service-based architecture enables new applications and business models to be implemented faster and easier.

As a Titanium partner in the Intel® Partner Alliance program and the Intel Network Builders community, Cisco is collaborating closely with Intel to help customers develop innovative solutions using Private 5G. This integrated solution brings together Cisco's networking capabilities and Intel's edge computing and analytics technologies to deliver powerful end-to-end private 5G capabilities.

The solution supports a wide range of advanced enterprise use cases, from anomaly detection and autonomous retail to video surveillance and collaborative workflows. Moreover, the Private 5G Innovation Centers provide a collaborative testing environment where businesses can experiment with these new 5G-powered applications, evaluate different vendors' offerings, and validate solutions before full-scale deployment, reducing risk and accelerating adoption.

Designed to address the specific connectivity, performance, and security needs of enterprises, the joint Cisco and Intel Private 5G solution goes beyond the capabilities of public 5G networks. Features like low latency, high bandwidth, and reliable video transmission make it well suited for critical industrial and operational use cases.

By combining Cisco's networking expertise and Intel's edge computing innovations, this powerful yet easily testable platform empowers enterprises to unlock the transformative potential of private 5G networks.

For more information

The Cisco and Intel joint solution for private 5G networks provides enterprises with a powerful, end-to-end platform that supports advanced 5G-enabled use cases while also enabling safe, collaborative testing and validation of the technology through their Private 5G Innovation Centers, delivering a private 5G solution optimized for critical enterprise requirements. By seamlessly integrating with existing networks and Wi-Fi, Cisco and Intel simplify 5G operations, reduce costs, and support pervasive mobility.

- To learn more about Cisco Private 5G, visit **https://www.cisco.com/c/en/us/products/wireless/private-5g/index.html**.
- To learn more about Intel's 5G technology, visit **www.intel.com/privatenetworks**.
- To schedule a demonstration of Cisco Private 5G and tour the Private 5G Innovation Centers, contact your Cisco or Intel sales representative.

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