



# 5G Private Networks Close the Connectivity Gap

In almost every sector, there is a push for digital transformation—from manufacturing, to healthcare, smart cities, and beyond. Fast, reliable data transfer at the network edge is essential to these efforts. But high-capacity networking is challenging in large, widespread environments or remote operating areas, where traditional wired and wireless network solutions fall short.

“Wi-Fi networks leave coverage gaps and cause latency issues,” says [Raymond Pao, Senior VP of Business Solutions at HTC, a provider of connected technology, virtual reality, and 5G networking solutions.](#) “And while commercial 5G networks undeniably offer excellent speed and bandwidth, in many cases they aren’t a viable alternative due to the need for dedicated connections, locality, or security concerns.”

The good news is that private 5G networks deliver high-bandwidth, low-latency connectivity in such scenarios. They offer dedicated, customizable, secure, and performant networks that enable a wide range of digital transformation applications in challenging edge environments. And now, private 5G solutions based on open software and networking standards can help companies deploy applications faster.

## Private 5G Enables Factory AGV Solution

HTC's deployment at a factory in Taiwan is a case in point. A maker of high-end digital displays wanted to implement autonomous guided vehicles (AGVs) in their manufacturing facility. But the proposed solution required seamless network connectivity over a large working area.

The company explored the possibility of using multiple Wi-Fi routers to build a network large enough to cover the entire factory floor. But this approach was ruled out because latency issues would often cause AGVs to stop during handoff between access points. In addition, the Wi-Fi network was not always reliable, leading to concerns over downtime.

Working with the manufacturer, HTC set up a dedicated 5G network to deliver the high-capacity, high-performance connectivity needed to run the AGV solution. Post-deployment, the manufacturer found that the network more than met their needs—and led to significant cost savings as well.

"The integration of AGVs and private 5G networking provides the real-time data needed to improve decision-making and streamline the flow of materials within the factory," says Pao. "Because of this, our client improved its operational efficiency and has substantially cut down on labor expenses."

## All-in-One Hardware and a Collaborative Approach

It would be wrong to imply that setting up a 5G network is ever easy—but all-in-one hardware offerings and the collaborative approach of providers like HTC help to simplify the process.

For example, HTC's Reign Core series, a portable networking system that the company describes as "5G in a box," provides all the necessary physical infrastructure to implement a private 5G network in a compact, 20kg hand-carry case.

The company also offers extensive support to systems integrators (SIs) and enterprises looking to develop custom 5G-enabled applications. This includes an initial needs assessment, help with building and testing a proof-of-concept system and software applications, and optimizing the solution to scale deployment.

**All-in-one hardware offerings and the collaborative approach of providers like HTC help to simplify setting up a 5G network.**

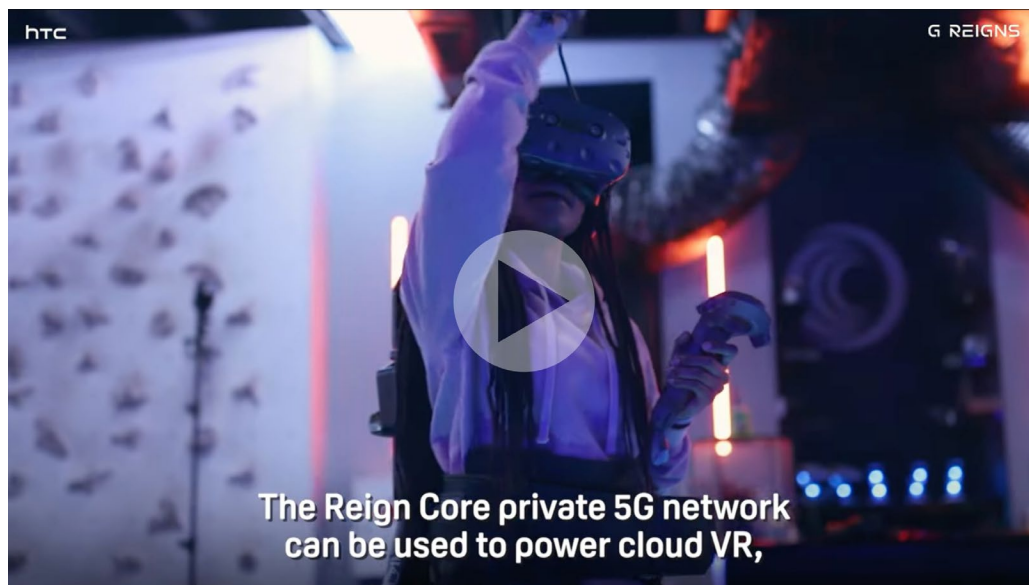
HTC's 5G Reign Core solution is also compliant with 3rd Generation Partnership Project (3GPP) mobile broadband and O-RAN ALLIANCE standards. This facilitates the incorporation of components from other vendors that build to the same standards, allowing for more flexible solution development and greater customization. For those developing virtual reality (VR) applications based on HTC's VIVE VR headsets, the company also grants access to their proprietary VIVE Business Streaming (VBS) protocol for optimized data transfer.

The combination of flexible, self-contained infrastructure, extensive engineering support, open standards, and access to proprietary protocols enables businesses and SIs to create a wide range of 5G-powered use cases—from ICT in manufacturing to VR applications in training, design, and entertainment (**Video 1**).

### Partner Ecosystem Drives 5G Transformation

Private 5G solutions enable digital transformation across many industries. In large part, this is due to the mature ecosystem of technology partnerships that support them.

HTC's partnership with Intel is a good example of this. "We use the Intel® FlexRAN™ reference implementation to handle processing in our baseband unit (BBU)," says Pao. "FlexRAN efficiently implements wireless access workloads powered by Intel® Xeon® Scalable processors, giving us flexible and programmable control of our wireless infrastructure."



**Video 1.** 5G private networks enable VR for manufacturing, training, design, and other use cases. (Source: [HTC](#))

By building within the FlexRAN partner ecosystem, HTC also gains access to a wide network of potential hardware providers, including server and radio unit vendors. This makes it straightforward for the company's engineers to develop customized solutions when working with SIs, regardless of the vertical they're selling to.

This is one reason the company foresees potential 5G networking applications in sectors such as logistics, defense, and aerospace—and a far more connected world in the years ahead.

“Digitization is happening in every sector, so wireless communication will become much more important in the future,” says Pao. “For customized use cases that demand secure, high-bandwidth, low-latency connectivity, private 5G is going to be a powerful force for digital transformation.”

Learn more about the [HTC solutions](#).

Intel and the Intel logo are trademarks of Intel Corporation in the U.S. and/or other countries.

© 2024 insight.tech. Sponsored by Intel®. [Trademarks](#).