



TECH INSIGHTS

# THE CONNECTIVITY CHALLENGE

**FISCHER KEYSTONE HUBS:**  
SIMPLE EDGE CONNECTIVITY FOR  
NEXT GENERATION COMMAND AND CONTROL

*“Technology will never replace a commander’s judgment. But we can absolutely use it to help them get the data they actually need at the times when and in the places and formats where they can use it to make more decisions faster and better.”<sup>1</sup>*

—  
Maj. Gen. Patrick Ellis

Fischer KEYSTONE™ tactical hubs help operators at the tactical edge move data to and from commanders – simply, reliably and instantly. KEYSTONE simplifies the soldier experience and makes Next Generation Command and Control (NGC2) easier for soldiers and commanders.

## MAKE IT SIMPLE: SOLDIER EXPERIENCE IS THE KEY TO SUCCESS FOR NGC2

The NGC2 environment creates a radically new and complex soldier experience. Wearable sensors, autonomous vehicles, wearable computers and new communication options add physical and cognitive loads to already-burdened soldiers at the tactical edge. In the sophisticated NGC2 information environment, soldiers need simple, reliable, wearable digital tools to move the data they need.

New tools provided by NGC2 confront soldiers with two new sources of complexity:

### Data Everywhere: Higher Speed, Bandwidth and Volume Add Complexity

Under NGC2, the U.S. Army expects to move 10 to 15 times the volume of digital data exchanged in today’s environment. In this swirling cloud of potentially relevant data, how will soldiers and commanders decide what is relevant, and what to contribute?

Higher bandwidths and speeds allow more complex data types to move across the NGC2 environment, including high-resolution video and control procedures for semi-autonomous vehicles (e.g. UAS and tactical robots). Soldiers need to transmit and act upon these new data types, without wasting time and effort on communication technology and process. No one has time to think about connecting sensors, radios and digital gear to the network.

### AI and Analytics Everywhere: Processing Adds Complexity

The Army is building new AI and analytics tools to exploit NGC2 data, and soldiers will encounter these tools for the first time.

AI and analytics can enable better decisions if (for example) soldiers can move data from soldier-worn devices up and across the network to improve situational awareness. Unless the soldier can do this easily and in real time, the digital data processed by AI

can be obsolete or even misleading. Wearable cameras, environmental sensors, radars, target designators and drone controllers can provide data for NGC2's analysis capabilities – but only if the edge soldier can reliably move this data into the network with a simple, low-effort approach.

## **NEW COGNITIVE AND PHYSICAL OVERLOADS WILL CHALLENGE SOLDIERS AT THE EDGE**

Data, analytics and AI support are the heart of NGC2, and they complicate the soldier experience. NGC2 places new burdens on soldiers operating at the tactical edge. These burdens include massive cognitive demands, as well as new physical challenges.

### **Cognitive Overload: Complex New Devices**

Complex NGC2 digital sensor and communication technology adds to soldiers' cognitive burdens. Radios, sensors and effectors that require extensive training or technical configuration may work in headquarters with big tech support staffs, but these technologies can be counterproductive at the edge. [Army Chief of Staff Gen. Randy George](#) expressed his frustration with edge-level technical complexity:

*“Nothing is more frustrating to me [...] seeing people struggling more with time to get the network to work than actually fighting the enemy.”<sup>2</sup>*

Minimizing device complexity to ease the cognitive burden is a key task for the Army's technology partners. “Keep it simple” is a key design element for the NGC2 soldier experience.

### **Physical Overloads: More Ammo, or More Batteries?**

New digital cameras and sensors, UAS controllers, tactical phones, radios and wearable edge computers add speed and value to NGC2. But at the tactical edge, these new technologies must be carried by soldiers, along with power supplies. If every digital device needs its own power supply, then soldiers may need 50 or more batteries for one or 2-day missions.

Conformal batteries help, but how can a soldier manage power for a wide range of devices with different power requirements? More batteries cannot be the answer. Soldiers need a simple, reliable power management tool that handles power requirements in the background.

## **KEYSTONE HUBS SOLVE NGC2'S EDGE CONNECTIVITY CHALLENGES**

Fischer KEYSTONE™ tactical hubs meet the challenges posed by NGC2. KEYSTONE enables NGC2 edge users to create exactly the right combination of digital

devices and power supplies to accomplish missions in the NGC2 environment.

### **Simple Data Management**

KEYSTONE uses standard NettWarrior connections to create the edge user's wearable network of devices. Connecting radios, sensors, UAS controllers and power supplies requires only standard cables and connectors. No user training or device configuration is required. KEYSTONE users say: “It just works.”

### **Simple Power Management**

KEYSTONE's open architecture helps edge users minimize the physical burden of digital devices by powering all soldier-worn devices from a single wearable battery, or by connecting these devices to a vehicle power supply. No need for multiple battery types, and a simple app allows the edge user to monitor battery status throughout the mission.

### **Flexible Support for Edge Computing and AI Integration**

NGC2's approach emphasizes edge computing and AI integration. Not every soldier will need to run AI applications. So KEYSTONE eliminates the requirement for soldiers to carry bulky wearable computers on a hub, or to deal with multiple wearable devices (e.g. radios, drone controllers and others) each equipped with its own embedded computer. If the soldier requires AI edge processing for video compression, radio management or device operation, then the soldier can connect a single wearable AI processor through the hub.

### **Easy Interoperability**

NGC2 will equip commanders to connect Army systems with those of other services and coalition partners. At the tactical edge, soldiers can use KEYSTONE to help non-Army users connect their wearable devices and enter the NGC2 environment without training or specialized skills. Any digital device can be added to the NGC2 environment with a simple physical connection.

## **FISCHER KEYSTONE: THE SIMPLE EDGE SOLUTION FOR NGC2**

NGC2 accelerates and enhances decision making and creates new challenges and burdens for soldiers. Fischer KEYSTONE™ tactical hubs “just work” – connecting digital equipment, moving data and power, and reducing cognitive and physical loads. Soldiers equipped with Fischer KEYSTONE™ hubs can operate at the speed required by NGC2, while enjoying a simple, reliable digital communications experience.

## THE US ARMY'S PARTNER FOR SOLVING SOLDIER CONNECTIVITY CHALLENGES

Making the power and data connections that enable Next Generation Command and Control is the core skill of Fischer Connectors (a unit of Conexivity Group).

From simple, reliable connectors and cables meeting strict military requirements to KEYSTONE tactical hubs connecting Soldier-worn sensors, radios and power supplies, Fischer Connectors provides real solutions for the challenges of Next Generation Command and Control.

Fischer Connectors has the **innovation skills** to capture the military advantages of Next Generation Command and Control, the **agility** to work on accelerated Army timelines, and the rigorous **attention to detail** in design and manufacturing to meet the most stringent Army requirements.

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## FISCHER KEYSTONE CONTACTS

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## SOURCES

1. See Ellis “How the Army Is Putting the Commander Back in Command and Control”, War on the Rocks, June 17, 2025, available at <https://warontherocks.com/2025/06/how-the-army-is-putting-the-commander-back-in-command-and-control/>
2. Cited in Ellis, op. cit.