

Achieving Field Deployable, Secure Edge Communications with Legacy Equipment...Across Any Network Type



Challenge: Communications in a Contested Environment

Military operations without communications are impossible. IMPRES solutions are purpose-built for C4ISR challenges and can access a functioning tactical communication environment anywhere and at any time. Our seamless, installable data and voice systems are based on commercially available IT components. This makes them easy to implement and use – even with modern devices such as smartphones. With our RIDUX system, we guarantee a secure communication point and operability by the administrator on site.

Solution: Portable Integration Delivering Comms to the Edge

In today's world, armies are faced with the challenge of having to react quickly to changes in operations. GuardStack designs and configures complex IT landscapes always with the customer's needs in mind. Operability and IT security are just as much a focus as the use of the latest technologies. GuardStack integrates field deployable cellular networks with full support for legacy and future RF, VHF, UHF, Satcom, and Ethernet base infrastructure.

The result is a secure, portable, fully independent IT network and communication platform that combines cellular data network with legacy radio and satellite signals that delivers:

- Fully Secured 4G (LTE)/5G Ready Network with a VoIP PBX Telephony
- Real Time Common Operational Picture (COP) Display and Tracking in Map View
- Information Exchange via tactical radio or MCCPTT in the narrow band
- Deployed in minutes by forward operators
- Secure MeshFlow/SDN for Self-forming, Mobile Ad-Hoc Networks (MANET)
- Fully Integrated Push to Talk (PTT) and Push to Video (PTV)
- Secure platform, high bandwidth demands (Bodycams, FMV, sensor feeds, data bases)
- Removes the needs for proprietary EUDs
- Reduces size, weight, signature of operator by routing all radio traffic through EUD App

Rapid Deployment Network

Hardened networks have become indispensable for today's armies. Deployable networks of GuardStack must be able to be transported quickly from one place to another. Hardened hardware and software form the basis for this. These networks, which reach their target area in the country of operation within a very short time, must correspond to the current state of operations and be implemented with military-grade specifications. Fast activation and commissioning have top priority, stability of the hardware, compliance with the highest security standards and simple administration are basic prerequisites for successful use.

Tactical Edge Network

Forces that operate on the tactical level are characterized, among other things, by a high degree of mobility. In addition, they are exposed to extreme external conditions, such as enemy weapon action and electronic combat measures. Nevertheless, these parts also have a high need for information to make their contribution in the context of networked operational management. In addition, they are often a source of information that is essential for operational planning and control at higher levels of command. To make this possible, an information and communication network must be established at the tactical level, which in its entirety and through its subsystems depicts special capabilities.

As a solution, RIDUX provides a mobile tactical platform service that connects the military communication systems on the one hand and the operationally critical applications (i.e., Battle Management System) on the other. The software realizes an abstraction layer and provides cross-sectional essential functionalities in the areas of information security, network awareness, sensor integration and adaptive information distribution.

Soldier Systems

To effectively use the different capabilities of different transmission systems that the dismounted soldier carries with him, a central platform as an integrating component of personal equipment is essential. The Personal Body Hub (PBH) is a palm-sized device that is worn directly on the body and consolidates all interfaces for power supply, sensors, IT, and communication equipment as well as other peripheral devices. This enables optimized cabling as well as cross-sectional manufacturer-independent use of all connected devices. The individual components can thus benefit from a central energy supply – in relation to the soldier – which in turn promotes a reduction in size and weight. This contributes significantly to usability.

Tactical end-user services (BMS, voice and data communication) are merged on a system platform (smart device) also connected to the PBH, which provides the functionality of a universal user interface. The smart device is equipped with a hardened operating system. The Personal Radio Adapter (PRA) should also be highlighted as a component of the Soldier System. It realizes the ability to continuously use old radios for both voice and data communication in an otherwise state-of-the-art digitized system network. The soldier system was designed according to the highest military standard, is radiation tested and developed for the soldier in action.

Customer Success: KNW Project Delivering Comms to the Edge

As part of the KNW project, a total of 76 backpack systems based on the MUP were supplied as a WLAN voice and data transmission solution. The KNW is an independent communication platform for up to 50 users. It is easy to transport and ready for use within a few minutes. The system is managed via our RIDUX software platform and thus enables simple administration without in-depth IT knowledge. A second generation of the KNW (KNW2) is currently being worked on. Here the use of LTE / 4G as transmission technology and the new generation of MUP (MUP2) are to come into play. Various modules such as switches, routers or cryptographic devices can be integrated via modular insertion options on the back of the backpack.

Let's start a conversation

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