

COMBAT COMMUNICATIONS



Whether it be combat, peacekeeping support or humanitarian aid/disaster relief operations, armed forces depend upon enhanced levels in situation awareness in order to enable rapid decision-making. Initially designed to meet the requirements of the commercial market, Broadband communication networks including 4G and 5G provide armed forces with the means to significantly enhance situational awareness. GuardStack has been specifically designed to bridge the gap between commercially available communication infrastructures and military networks in order to satisfy the most stringent operational requirements for communication at the tactical edge.

A TACTICAL NETWORK
MUST FOLLOW THE MISSION

During a mission, armed forces must be able to quickly change locations, sometimes without notice or preparation, presenting challenges for traditional and static communication networks. GuardStack, with its patented Secure MeshFlow capability, enables the communication network to remain fully mobile and self-adjust to evolving mission requirement in terms of scale and service availability. GuardStack comprises a network of networks with each node capable of operating and delivering communication services independently or across a MANET. In a MANET configuration, services are adapted automatically to the available backbone infrastructure and available capacity. Voice services are also provided through any available backbone infrastructure.

KEY FEATURES



Group Key Method
without a Centralized
Key Coordinator



Secure MeshFlow
/ SDN for Self-
forming MANET



4G EPC
/ 5G NC



Blue Force
Tracking



Secured
Service Domain
Separation



Integrated
VoIP PBX



Decentralized
Push-to-Talk
(PTT) and
Video (PTV)



Legacy Tacti-
cal Radio
Integration



Open Transport
& Radio Archi-
tecture



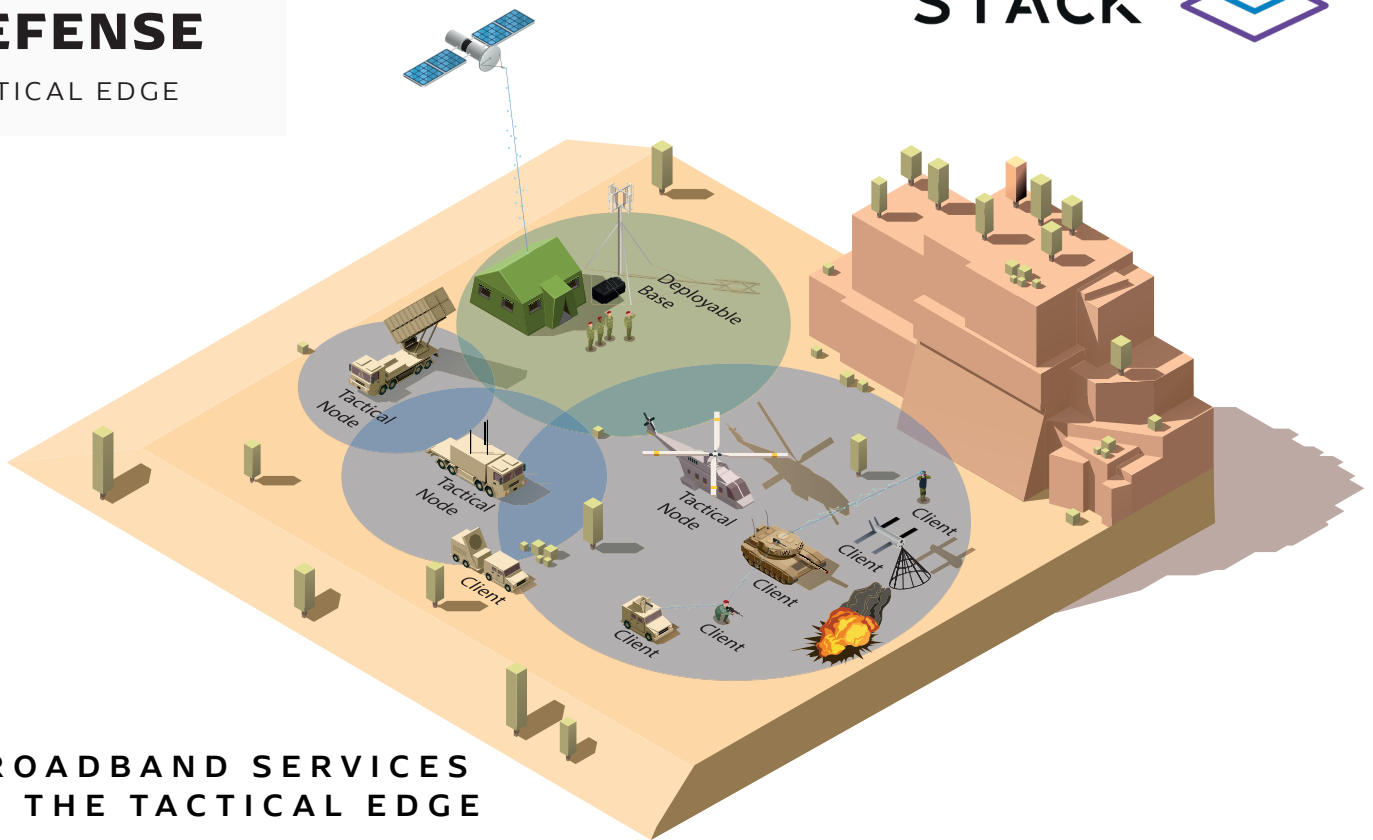
INTEROPERABILITY IS KEY

In the past, critical communications have been restricted to proprietary products and solutions, representing not only a challenge for innovation and economy of scale, but also for the operational interoperability between various wired and wireless access technologies. GuardStack is a vendor agnostic and trusted middleware, which allows the secure integration of all fixed and wireless access technologies to build a common service layer. This service layer enables communication between all nodes including legacy narrow band radio technologies and modern broadband technologies including 4G and 5G.

DEFENSE

TACTICAL EDGE

GUARD STACK



BROADBAND SERVICES AT THE TACTICAL EDGE

A POSSIBLE USE-CASE

A soldier at a forward operating base in a foreign country is having a video Skype call with his family using his commercial off the shelf Galaxy S10EE smartphone, enabled by GuardStack. Being part of a rapid response team, he is called up for an urgent mission and immediately disconnects the Skype call with his family. While he is getting prepared for the mission, he inserts a secret HW element into his smartphone. The phone automatically switches to 'Combat Mode' – a secure environment which contains all required applications and information for the mission. A group communication session is automatically enabled with other response team members as well as the tactical operations center (TOC).

After leaving the base, the TOC is able to share intelligence and video feeds with the soldiers in their vehicles as well as track the vehicles using GuardStack's embedded blue force tracking system. The ability to communicate and share situational information in real-time becomes paramount to mission success. Their vehicles stop short of the target before the response team launches a Guardstack-connected unmanned aerial vehicle (UAV) enabled by 4G / 5G communications networks. Video feed from the UAV is transmitted in real-time back to the TOC as well as other friendly forces in the area of operation. With this enhanced situation awareness, the TOC is able to make operationally-relevant decision in seconds. As the response team decides to move closer to the target, the end of the 4G / 5G coverage zone is reached. Guardstack's tactical core automatically selects another transmission medium with a better range (legacy VHF) to maintain voice communications. A helicopter with satellite backhaul is then deployed as an air-borne relay

station to re-establish broadband connectivity with the response team who successfully execute their mission with the improved situation awareness and access to real-time data. As they return to their base, the soldier removes the secure HW element from his smartphone and calls back his family with the same device used during the mission.

ABOUT GUARDSTACK

GuardStack Software Suite has been specifically designed to address the most stringent communications and information-sharing requirements facing armed forces at the tactical edge.

Providing a foundation of trusted middleware to enable mission critical communications, GuardStack Tactical Core ensures security, interoperability and network mobility using government open source code to meet national security standards.

GET IN CONTACT



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