

INDUSTRIAL

DEDICATED NETWORK



DEDICATED NETWORKS



Dedicated communications networks are independent, purpose-built networks which are privately owned and operated. This eliminates external dependencies, reduces operating costs, and significantly enhances the network’s security level.

While the technology for private mobile network deployment has already been available with previous generations of mobile communications standards, the lack of spectrum availability has historically limited the actual deployment. With the introduction of 5G technology, this is now changing, and complementary options are available to the industry.

BUSINESS-CRITICAL SOLUTIONS

Mobile Network Operators are adapting to new business models, such as Network Slicing and providing spectrum lease options to the industry. More and more countries around the globe allocate the mobile spectrum for private licensing to accelerate 5G deployments within their borders. Today, the industry can access this spectrum and therefore build and operate a self-contained, secure 5G communications network without any external dependencies. Once implemented, you can administer and orchestrate your company network independently.

GuardStack provides a vendor-agnostic integration platform, which allows industry verticals to integrate 5G NR technology to their existing backbone and access infrastructure. The platform contains 4G/5G SA Core functions and has been designed to hide the complexity of heterogeneous networks from the operator by providing a single intuitive user-interface that does not require a telecommunication engineer to operate the network. Designed for military use-cases at the tactical edge, the GuardStack network provides a state-of-the-art security concept and offers true network mobility and reliability by providing a self-healing mesh topology.



KEY FEATURES



4G EPC
/ 5G C



Highly Mobile
Network
Solution



Secured
Service Domain
Separation



Self-Sufficient
Network
Administration



COTS Devices
for Various
Applications



Cost-Optimized
and
Future-Proof



Open Trans-
port & Radio
Architecture

ABOUT GUARDSTACK


GuardStack Platform provides a secure, interoperable, and self-controlled digital end-to-end service middleware for highly mobile and dynamic critical communication services. The platform performs tactical routing functions, is vendor agnostic, and contains embedded cellular 4G and 5G SA functions. Providing a foundation of trusted middleware to enable business-critical communications, GuardStack Platform ensures security, interoperability, and network scalability.

SYSTEM	<ul style="list-style-type: none"> - Hardened Debian Linux (with file system protection, recovery functions) - Including system management (alerting, live monitoring) - Configuration via browser or touch-optimized GUI - Update management - Configuration profile management (provisioning and profiling) - Backup and restore functions - System snapshot function
MANAGEMENT	<ul style="list-style-type: none"> - Management for users, groups, units, assets, data hierarchies - Device management (devices, security policies and network policies)
MESHFLOW	<ul style="list-style-type: none"> - Automated neighbor discovery - Synchronized network path propagation - Seamless service - Cell or node transition support
SECURITY	<ul style="list-style-type: none"> - Firewall management for ports, addresses, IPv4, IPv6 and protocol management - Extended logging (alerts to live view, UAM) - Access control user and group management - 802.1X RADIUS AAA - Public key infrastructure (PKI) for MANET operations and runtime option without central system - IPsec for IPv4 and IPv6 in tunnel or transport mode (IKE1/IKE2) - Audit mechanisms
<div>NETWORK</div> <div>ROUTING</div> <div>EXTENSION</div> <div>WLAN</div> <div>NETWORK SERVICES</div>	<ul style="list-style-type: none"> - 4G EPC Core - Upgrade to 5G NC (New Core) - IPv4 and IPv6 dual stack runtime - 802.1Q VLAN-Support - Layer 2 Tunneling Mechanism - Network bridging - QoS marking of traffic - Ad hoc mesh with B.A.T.M.A.N. advanced and OLSRv2 - Routing (static, dynamic - OLSRv2, OSPFv2/v3, BGP) - Multipath situations fully supported - VRRP support - Multicast including Multicast routing and PIM - Internal 3G/4G modem management for backbone extension - WLAN client mode for backbone extension - User access point management - Ad hoc mesh capable - WPA2 (EAP, PSK), Multi SSID, SSID VLAN association, DFS Support - DHCP client and server IPv4 and IPv6 - DNS zone IPv4 and IPv6 - Network address translation (NAT) - NTP clock provisioning support as client or server
VIRTUALIZATION	<ul style="list-style-type: none"> - Extendable and adaptable VM storage - Import/Export functions - ISO/PXE installations - Snapshot functionality
DISTRIBUTED DATA-STORE	<ul style="list-style-type: none"> - NoSQL (key-value) storage - Ultra robust synchronization (active-active, active-passive) - Mission synchronization (one way, bidirectional or partial synch mechanism) - Unwanted data altering prevention via authentication, authorization, encryption

ABOUT GUARDSTACK

The GuardStack portfolio is a holistic software solution that orchestrates communication and data collection across system boundaries. The platform connects a wide variety of transmission media, ranging from established radio to state-of-the-art 5G technology. Thanks to predictive intelligence, the system acts and reacts completely independently to unforeseen impairments. All information from IT, OT and IoT data can be viewed from anywhere.

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