

Real-time decision making and shared situational awareness for land forces



Solution criteria

To achieve real-time decision making and shared situational awareness, there are five enablers to address identified challenges:

1. Complex integration of FMN
2. Lack of bandwidth
3. Delay of information propagation
4. Insufficient integration of information systems
5. Numerous security domains

In addition, some organisations may have special requests that need to be accommodated.

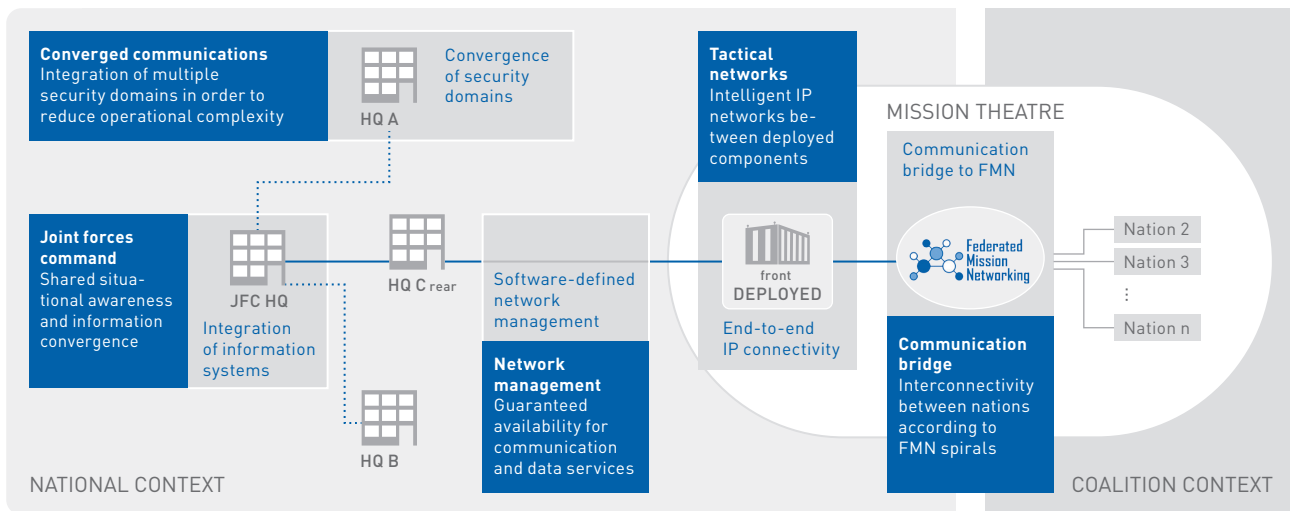
Highly dynamic environments, modernisation and convergence to IP networks, as well as increasingly complex communication networks, have led to an inhomogeneous landscape of communication and information systems – both within land forces, as well as in a joint coalition context.

The challenge at hand

Decision-makers in a joint environment struggle to make informed decisions and to communicate them to deployed components, especially in harsh conditions. From a technical perspective, this is mainly due to the lack of bandwidth and network performance management, a high number of security domains, and insufficient integration of information systems.

There are five key challenges that need to be addressed to achieve real-time decision making:

- > **Complex integration of FMN:** In a joint context, collaboration of coalition forces is required and anticipated through the Federated Mission Networking initiative (FMN). Due to the lack of interoperability between national communication tooling and multiple versions of FMN spirals, integration of communication and information sharing capabilities is complex and time-consuming.
- > **Lack of network bandwidth:** Available network resources are insufficient to accommodate all application and service needs. Guaranteed quality of service is needed for mission-critical communication and information capabilities.
- > **Delay of information propagation:** Decisions must reach the front line as quickly and securely as possible through end-to-end IP connectivity. Harsh environments, complex communication paths and gaps, and an ever-increasing number of data services and applications, create delays in information propagation.
- > **Insufficient integration of information systems:** Interaction between isolated information systems of forces is typically limited or non-existent. Integration of isolated systems is critical in order to achieve shared situational awareness.
- > **High number of security domains:** There are 5+ security domains in a joint operation. Such security domains are not integrated, which is why operators need to manage several communication devices at the same time.



Frequentis has been providing the defence market with mission-critical communication, information and surveillance systems for over seven decades. The fully redundant, highly available communications framework is used by joint and combined forces in today's command centre operations – be it in the air, at sea, or on land. The offering also includes end-to-end system integration and turnkey delivery capabilities, allowing customers to focus solely on their core mission. The cross-segment approach addresses the market need for interagency collaboration.

Bridging communication, information and data services

Frequentis enables real-time decision making by providing convergence of security domains, integration of information systems, guaranteed network quality, end-to-end IP connectivity, and a communication bridge to FMN.

Communication bridge to FMN

Collaboration with coalition partners is improved by integrating a communication bridge that enables connectivity between inhomogeneous national and coalition environments. This approach supports information exchange between disparate platforms (e.g. national solutions vs FMN spirals).

Software-defined network management

To guarantee connectivity and improve network bandwidth utilisation, network management allocates and prioritises available network resources for battle rhythms, on-going missions, incidents and made decisions, based on Software-Defined Networking (SDN).

End-to-end IP connectivity

Secure provisioning of data and communication services thanks to end-to-end IP connectivity from decision makers to the front line that integrates various communication links (e.g. microwave, VSAT, UHF, VHF, IP radios, etc) and endpoints (SIP, analogue, TDM).

Integration of information systems

The Shared Situational Awareness framework combines disparate data feeds into a single common operational picture (COP), enabling efficient operation across forces and better-informed decision making.

Convergence of security domains

To reduce operational complexity and the number of communication devices, multiple security domains are bundled into a single voice communication system.



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