

Successful communication through maximum interoperability

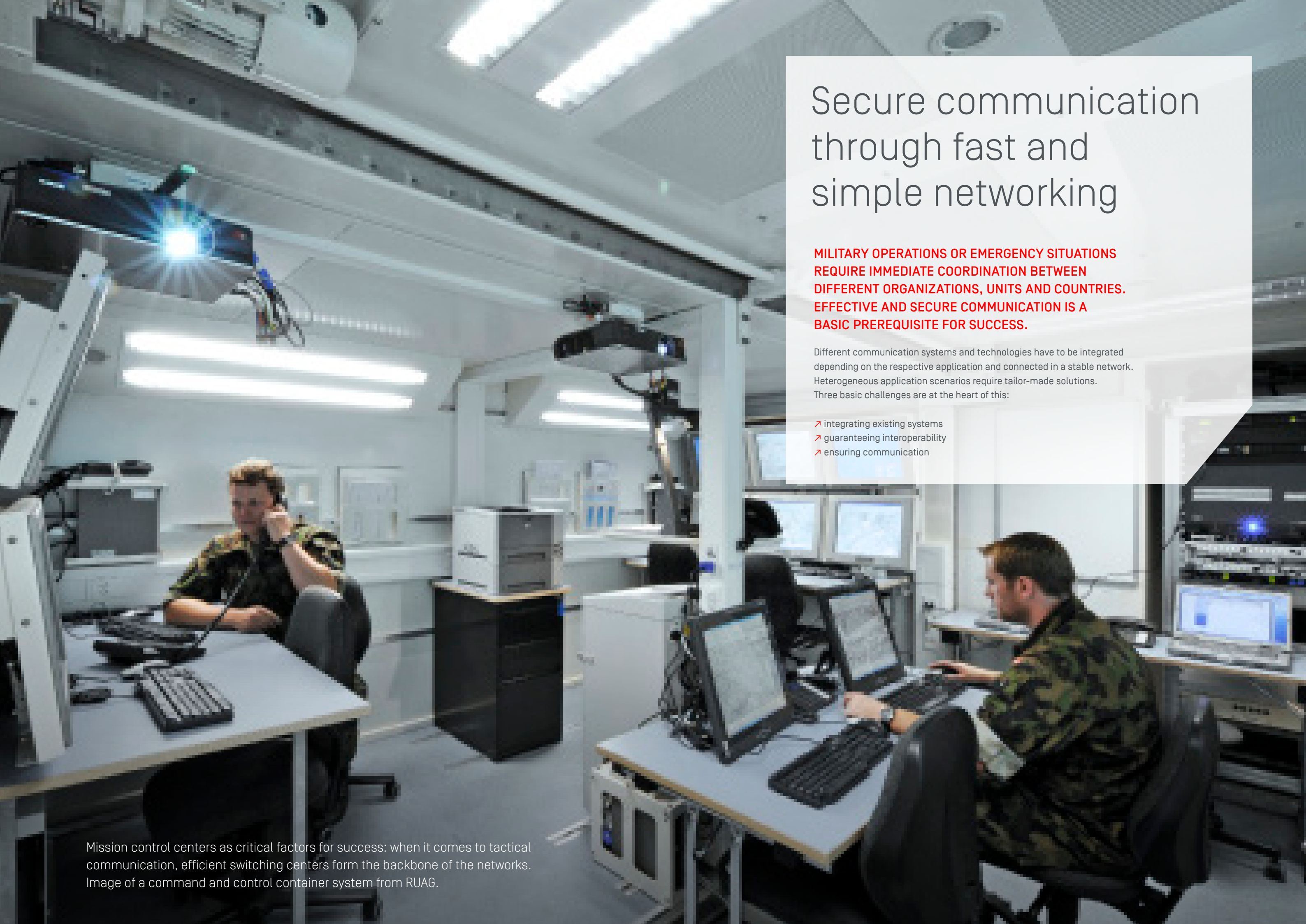


POLICE

RUAG 

RUAG TACTICAL COMMUNICATION SOLUTIONS

For sovereign security.

A control room with several operators at computer workstations. The room is filled with desks, monitors, and equipment. The lighting is bright, and the overall atmosphere is professional and focused.

Secure communication through fast and simple networking

MILITARY OPERATIONS OR EMERGENCY SITUATIONS REQUIRE IMMEDIATE COORDINATION BETWEEN DIFFERENT ORGANIZATIONS, UNITS AND COUNTRIES. EFFECTIVE AND SECURE COMMUNICATION IS A BASIC PREREQUISITE FOR SUCCESS.

Different communication systems and technologies have to be integrated depending on the respective application and connected in a stable network. Heterogeneous application scenarios require tailor-made solutions. Three basic challenges are at the heart of this:

- integrating existing systems
- guaranteeing interoperability
- ensuring communication

Mission control centers as critical factors for success: when it comes to tactical communication, efficient switching centers form the backbone of the networks. Image of a command and control container system from RUAG.

Tailor-made communication solutions with high cost-effectiveness

➤ Military operations are becoming increasingly complex. This is not least due to the different communication systems and technologies, as well as applications that are used for them. We have made it our goal to ensure maximum interoperability, even in challenging missions. Our tactical communication solutions can be adapted cost-effectively to heterogeneous scenarios (networks and applications) and integrated into existing communication infrastructures.

We can network different armed forces, organizations, systems and devices rapidly, securely and individually. All this is possible independently of technology, manufacturer and geographical requirements. Our concentrated expertise as a long-standing systems integrator with a high level of engineering and maintenance expertise is put into tailor-made communication solutions. It makes no difference whether it is a standalone solution or integrated system infrastructure.



INDIVIDUAL TACTICAL COMMUNICATION SOLUTIONS

- seamless networking
- maximum interoperability
- quick and secure communication



EFFICIENT SOLUTION ENGINEERING

- high level of integration and maintenance expertise
- independent technology partner
- cost-effective scaling solutions

INTEGRATED SYSTEM SOLUTIONS

- Communication node for multinational applications [radio connection point]
- Communication and data management solutions for command vehicles
- VETRONIC vehicle information management
- Networking of communication means and services for military WAN
- Transfer nodes to military core networks [system of systems]

SERVICES

As a non-proprietary full-service partner, we offer an impressive combination of services for our tactical communication solutions, from customized system integration to efficient system support throughout the entire life cycle.



RUAG Tactical Networking Solutions

Autonomous Military Core Network (fixed and deployable network levels)

WAN High bandwidth sophisticated protocol overhead	RUAG ARANEA SECURITY CORE			MIDDLEWARE		
	- Routing Domain - Security Domain Integrated Network Management (TSYM) Supported means of communication: - Radiated beam - Ethernet/IP (cable, optical fiber, LTE/5G, SatCom)			✓ Enables an autonomous military network with up to 2,000 node points ✓ Encrypted data transfer ranging from 1 up to 400 Gbit/s		
			SOFTWARE (OS LINUX DEBIAN)	HARDWARE	TOOLS (WINDOWS APPS)	
			NODEMANAGER - User Access Control - Key Management - Overlay Manager - Routing Manager - Segmentation - Client separation - TTEL VoIP telephony solution	NODE TYPES COTS (Server/Router/Crypto) TAN-400 family: TAN NG Various node types with different transfer rates	TSYM FOR NETWORK - Configuration - Mission planning - Monitoring - Operations Basis for Software-Defined Networking (SDN)	

Tactical Network (edge computing)

LAN MAN Low bandwidth small protocol overhead	RUAG ARANEA BPS PLATFORM			LOCAL SWITCH-ON POINT / INTEGRATION SOLUTIONS		
	- Ethernet switching / IP routing - Analog Radio Bridge - TTEL VoIP telephony solution: VoIP-based telephony system for tactical networks. With affiliation, dynamic telephone numbering plan, replication of the directory of participants, secure tactical messaging (TMSG) and tactical video conferencing platform (TCON).			✓ Local switch-on point for the networking of means of communication in a vehicle or control station ✓ Integration of legacy radio equipment via an analog radio bridge.		
			SOFTWARE (OS LINUX YOCTO)	HARDWARE	TOOLS (WINDOWS APPS)	
			BASIC PLATFORM SOFTWARE (BPS) - Radio Bridge - Routing / Switching - Firewall - VPN - TTEL VoIP telephony solution	TAN-200 family for 19" rack integration TVS family for vehicle integration 	RADIO OPERATOR CONSOLE (ROP) Control of radio bridge conferences VoIP Client For participation in a radio bridge conference via a separate computer.	

Optimum command capabilities through maximum interoperability

➤ With our customized tactical communication solutions, we ensure optimum command capability and lay the foundation for successful operations. We network a wide variety of communication systems and guarantee maximum interoperability for all application scenarios.

SUCCESSFUL COMMUNICATION AT ALL LEVELS: SELECTED PROJECTS

We help armed forces and security organizations successfully fulfill their missions all over the globe.

STAND ALONE SOLUTION

➤ **NATO EFP (ENHANCED FORWARD PRESENCE) IN LITHUANIA: RADIO BRIDGE**
Radio Bridge for ensuring communication and command capabilities within multinational task forces and heterogeneous radio systems.

INTEGRATED SYSTEM

➤ **GERMAN BUNDESWEHR: MULTINATIONAL INTEROPERABLE RADIO CONNECTION POINT**
Integration of voice and data from a wide range of communication systems from various partner countries.

➤ **GERMAN BUNDESWEHR: KMW PUMA VJTF 2023**
Integration of communication systems TVS as a media converter for connecting analog intercom systems and digital radio equipment.

➤ **BORDER SECURITY**
Ensuring communication between military and civil border security units.

WIDE AREA NETWORK (WAN)

➤ **SWISS ARMED FORCES: VOICE SYSTEM OF THE ARMED FORCES**
Tactical telephony solution for the Swiss Armed Forces based on our TTEL technology.

➤ **SWISS ARMED FORCES: INTEGRATED MILITARY TELECOMMUNICATIONS SYSTEM**
Tailor-made end-to-end solution for networked operations of the Swiss Armed Forces. A communication platform, RUAG TTEL, IP-based voice system and TAN.

