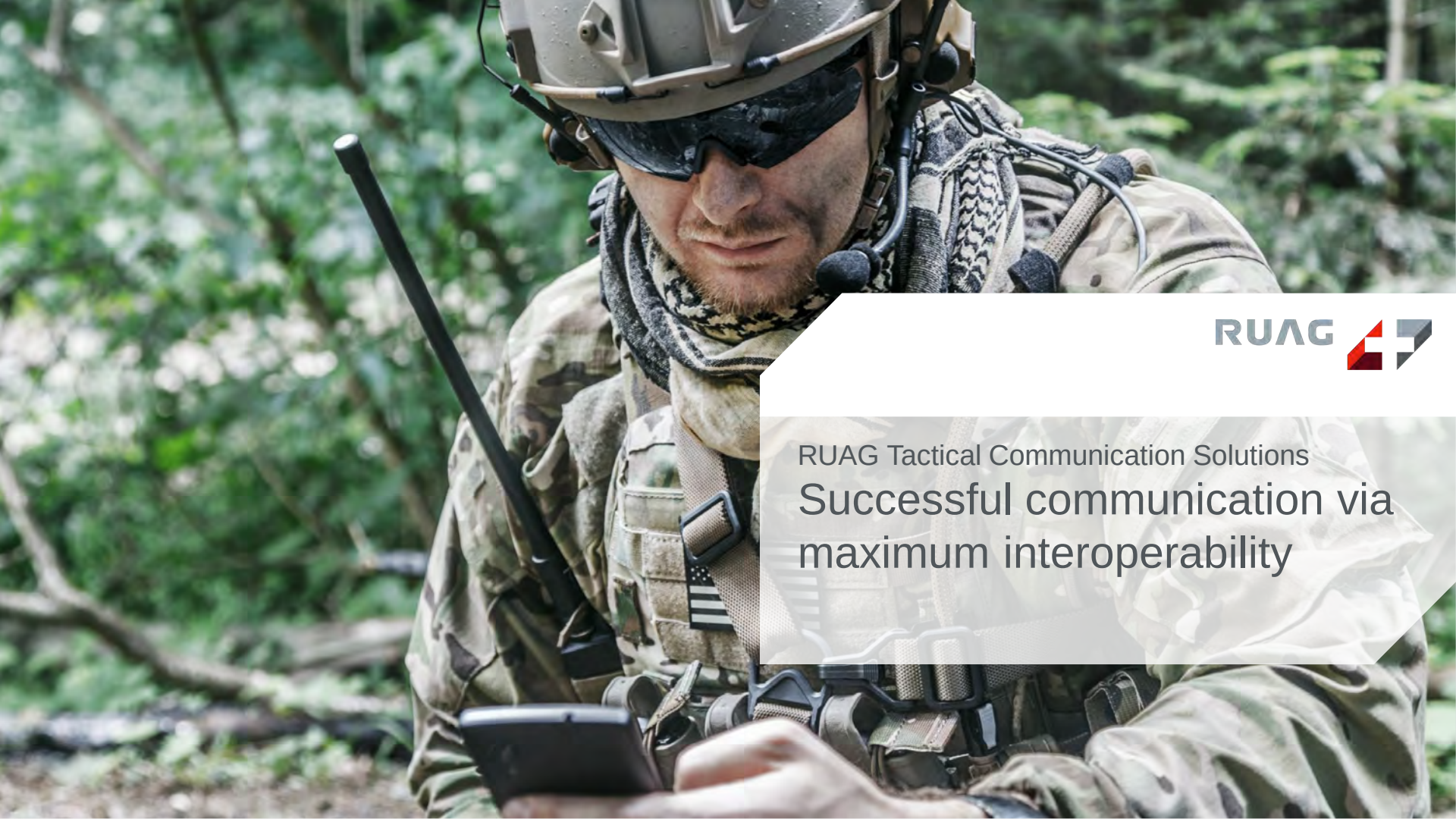
RUAG Multifunctional Interoperable Radio Connection Point (MIFAP)

Overview

RUAG MIFAP – Multifunctional Interoperable Radio Connection Point

1. RUAG – Tactical Communication Solutions
2. MIFAP System Overview
3. MIFAP Characteristics
4. MIFAP Technical Overview
5. Radio Bridge (optional)
6. Possible Scenario
7. Tactical Telephony TTEL (optional)
8. Selected Projects



RUAG Tactical Communication Solutions

Successful communication via maximum interoperability

Secure Communication

Through simple and fast networking

Military operations or emergency situations require immediate coordination between different organizations, units and countries.

In this context, different communication systems and technologies have to be integrated in a mission-specific manner and connected in a protected network.

Three basic challenges are at the heart of this:

- Integrate existing systems
- Ensure communication
- Guarantee interoperability

Tailor-made Communication Solutions

With high cost efficiency

We can network different armed forces, organizations, systems and devices rapidly, securely and individually, independently of technology, manufacturer and geographical requirements:

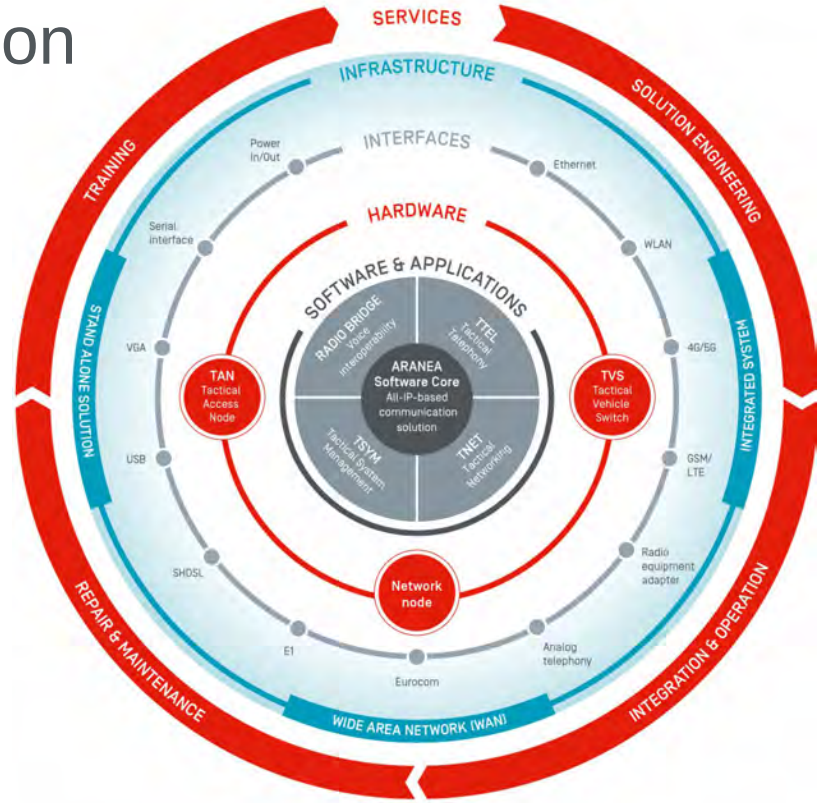
CUSTOMIZED TACTICAL COMMUNICATION SOLUTIONS

- seamless networking
- maximum interoperability
- quick and secure communication

EFFICIENT SOLUTION ENGINEERING

- high integration and maintenance competence
- independent technology partner
- cost-efficient scaling solutions

Modular System – Individual Solution



Integrated System Solutions and Services

INTEGRATED SYSTEM SOLUTIONS

- Communication nodes for multinational operations (radio connection point)
- Communication and data management solutions for command vehicles
- VETRONIC Vehicle Information Management
- Networking of communication means and services for military WAN
- Transition nodes to military core networks (System of Systems)

SERVICES

As a manufacturer-neutral full-service partner, we offer a convincing combination of services for our tactical communication solutions – from customized system integration to efficient system support throughout the entire life cycle.

ARANEA Software Core

For reliable voice and data communication

RADIO BRIDGE
For integration of voice radio systems. Allows connection of multiple voice radio networks to one remote control via the Radio Operator console.

TACTICAL SYSTEM MANAGEMENT (TSYM)
With various applications for configuration, control and monitoring of networked communication devices and network nodes. From the Radio Operator App for controlling a local Radio Bridge to the complete Network Management Suite for easy administration of complex networks.

TACTICAL TELEPHONY (TTEL)
VoIP-based telephony system for tactical networks. With affiliation, dynamic numbering plan, replication of the subscriber directory, Secure Tactical Messaging (TMSG) and tactical video conferencing platform (TCON).

TACTICAL NETWORKING (TNET)
Tactical network services implement optimized routing protocols for tactical networks with little and changing bandwidth availability. The services incorporate the latest technologies e.g., Tactical SDN.

Hardware

Tactical Access Node (TAN)

Integrated voice and data router for fixed and mobile use. The routers ensure interoperable connectivity between different networks.

Hardware

Tactical Vehicle Switch (TVS)

The switches are used for voice and data communication within and between networks.
Thanks to non-hierarchical networking, they enable efficiency at all levels.

RUAG MIFAP
Multifunctional Interoperable Radio Connection Point

RUAG MIFAP

Maximum interoperability – seamless communication

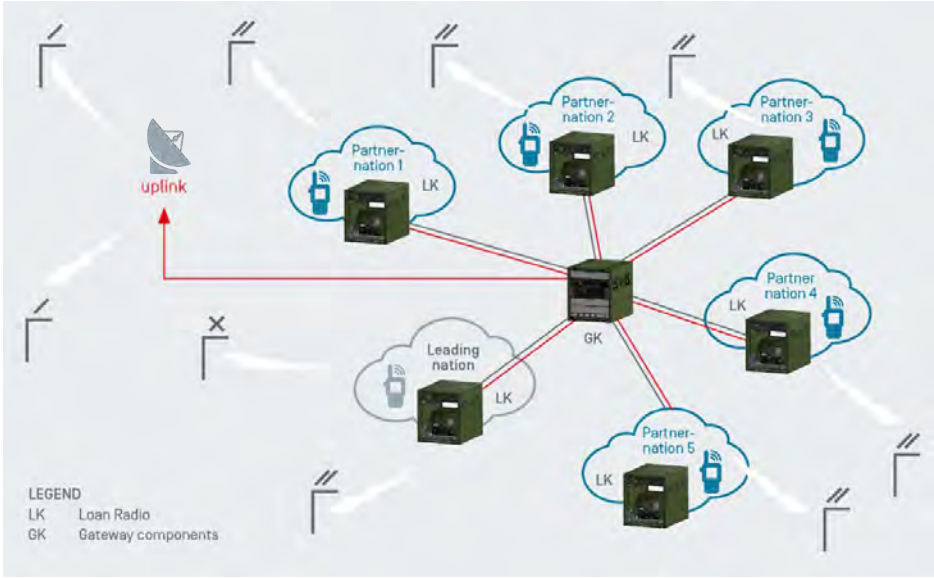
In order to ensure command capabilities during operations, RUAG MIFAP is operated as connecting nodes that interoperably connect transmission networks and devices of different manufacturers and procurement generations [bridge function] as a universal voice and IP router.

The supplied operating terminal allows up to six radio groups to be configured and operated. This enables seamless communication between proprietary military radio systems as well as civil radio systems and organizations.

System Overview

Ensuring command capabilities during operations

RUAG MIFAP is a high-performance communication hub for connecting a wide range of radio devices. Its core element is the RUAG TAN-T230A (Tactical Access Node). Audio and data signals from up to six transmission systems can be connected to it.



Characteristics

MIFAP in brief

- Radio Bridge for connecting (conferencing) up to 6 different radio voice circuits
- Integration of IP data interfaces (if available on the radio)
- Uplink via 10 Gbit/s SFP+ to a local network or WAN
- Operation/configuration via touch screen control terminal
- Universal mounting space for flexible installation of various types of radio equipment
- Pre-assembled radio-specific cable sets for power supply and connection to the gateway unit (data and voice)
- Broadband antenna system for easy use with all radio types
- Standardized transport boxes and power supply connections to the outside

System Components

MIFAP essentially consists of three main components plus accessories

TAN Gateway Unit
The TAN Gateway Unit is the central communication point of the overall system. It includes the gateway for routing voice and IP data, as well as the communication control system.

- TAN gateway incl. operating terminal
- Power supply

Loan Radio Unit
In addition to a power supply for radio devices, the Loan Radio Unit provides a carrier plate for holding and mounting radio devices.

- Installation space for any radio device
- Power supply

Antenna System

- Wide area antenna
- Mast

Accessories

- Cable harnesses
- Power failure protection
- Independent power supply

TAN Gateway Unit (GK)

System components

RUAG TAN-T230A (3 RU / rack unit / 1 RU = 44.45 mm)

10 × Ethernet 10/100/1000 base-T interfaces for IP data and VoIP radio, local networks, operating/configuration device
6 × radio analog terminal adapter interfaces for analog radio devices, incl. PTT, COR, audio input, audio output, completely separate ground for each signal
1 × SFP/SFP+ IP interface for local network or WAN

RUAG TPS T230 (2 RU)
1 × 230 V AC 4P Binder input
1 × 24 V DC NATO VG 96917 input
1 × 24 V DC/5A output
1 × 24 V DC/25A output

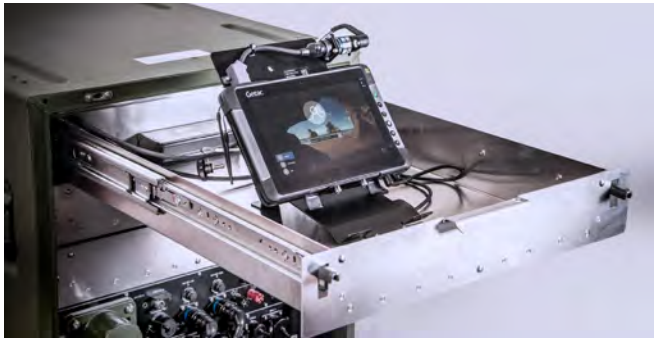
OPERATING DEVICE
– Tablet computer removable
– “Radio Operator Console” (operator software for RUAG TAN Radio Bridge)

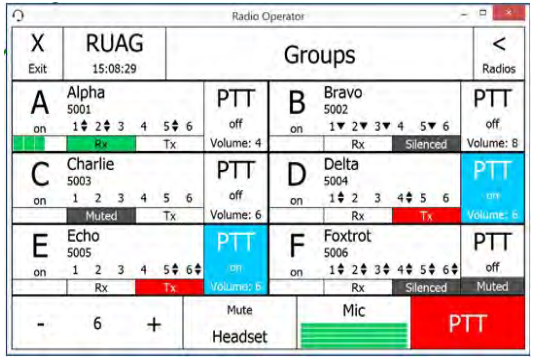
TRANSPORT CONTAINER
– 12 RU high
– 610mm deep
– 3 x 19“ drawer every 2 RU
– Weight: approx. 63 kg

Operating device

System component > TAN Gateway Unit

- Tablet Computer removable
- “Radio Operator Console” operator software for RUAG TAN Radio Bridge
- Depending on customer requirements
- xx
- xx





Power supply

System component > TAN Gateway Unit

- PowerPack wenn 19" Einschub + SFC Energy (Wasserstoff Brennstoffzellen Lösung)
- Arvey B2 von Axsol
- Depending on customer requirements
- xx
- xx

Loan Radio Unit (LK)

System components

RUAG TPS T230 (2 RU)
1 × 230 V AC 4P Binder input
1 × 24 V DC NATO VG 96917 input
1 × 24 V DC/5A output
1 × 24 V DC/25A output
1 × 24 V 25A radio device connection terminal

GROUND TERMINAL
2 × N to N EMP HF overvoltage protection
(provides overvoltage protection for radio devices)
1 × RU carrier plate / space for 9 RU radio device

The carrier plate is designed so that the base plate of the radio device used does not need to be modified for installation - adjustable in height.

TRANSPORT CONTAINER
- 12RU
- 610mm deep
- Weight: approx. 47 kg

Antenna system

System components

The antenna system consists of a tactical 2-port antenna with a modular mast system with a maximum height of 8.5 meters.

The 10 m cable is connected to a ground stake and connected to the radio device with the 20 m cable.

- Tactical dual-band antenna VHF302000TRI/DB-2
- AMX85S mast

Accessoires

System components

- Connection cable for data communication (IP)
- extension cord, for the analog RATA radio device connector cable
- extension cord, for the digital Ethernet radio device connector cable
- Ethernet cable, for the GC for integration into a local network
- 230 V power cord
- Ethernet cable, for remote operation of the operating device
- Transport cases for cable-sets, spare parts, tools

Complete system

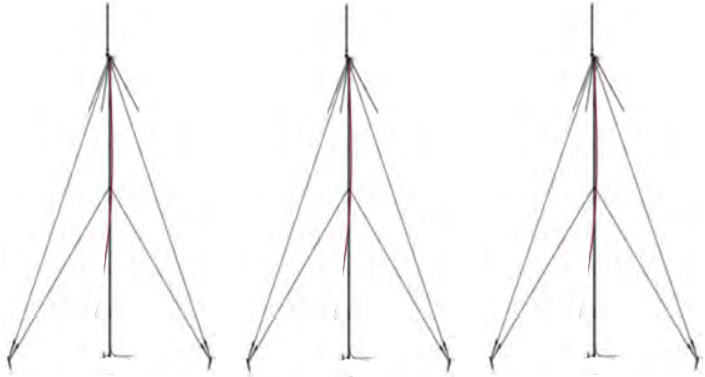
TAN Gateway Unit

Equipment case

User-Tablet

Loan Radio Unit

3 x Antenna system

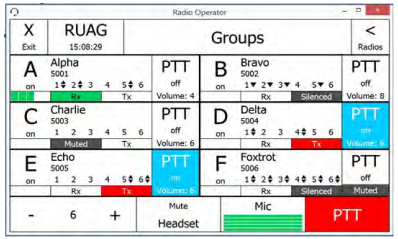


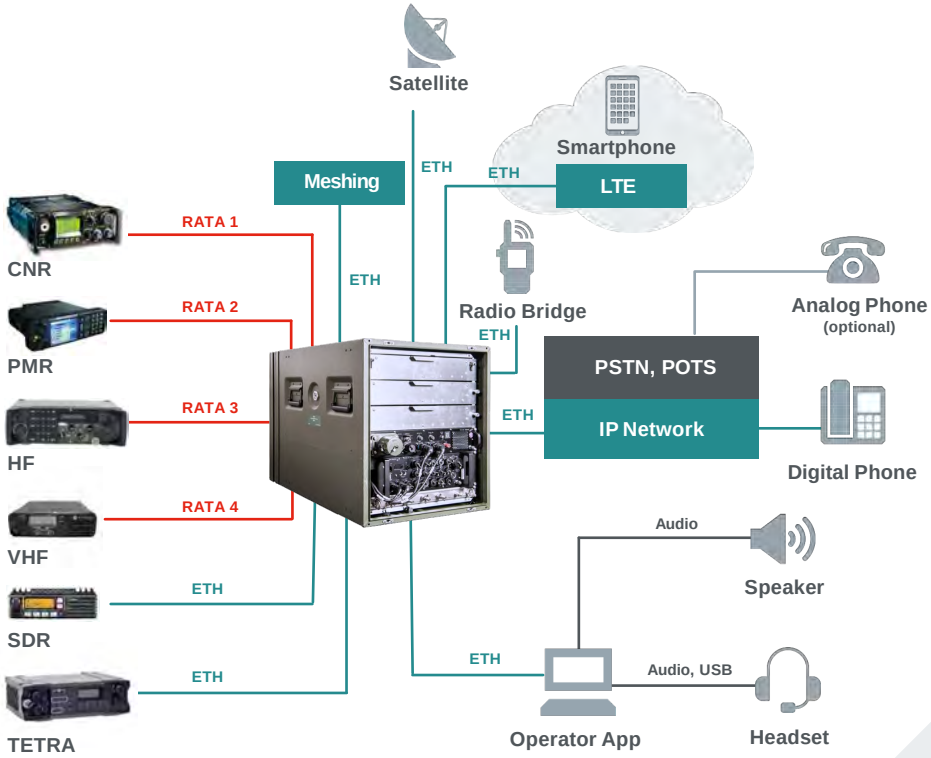
Cableset

Radio Bridge (optional)

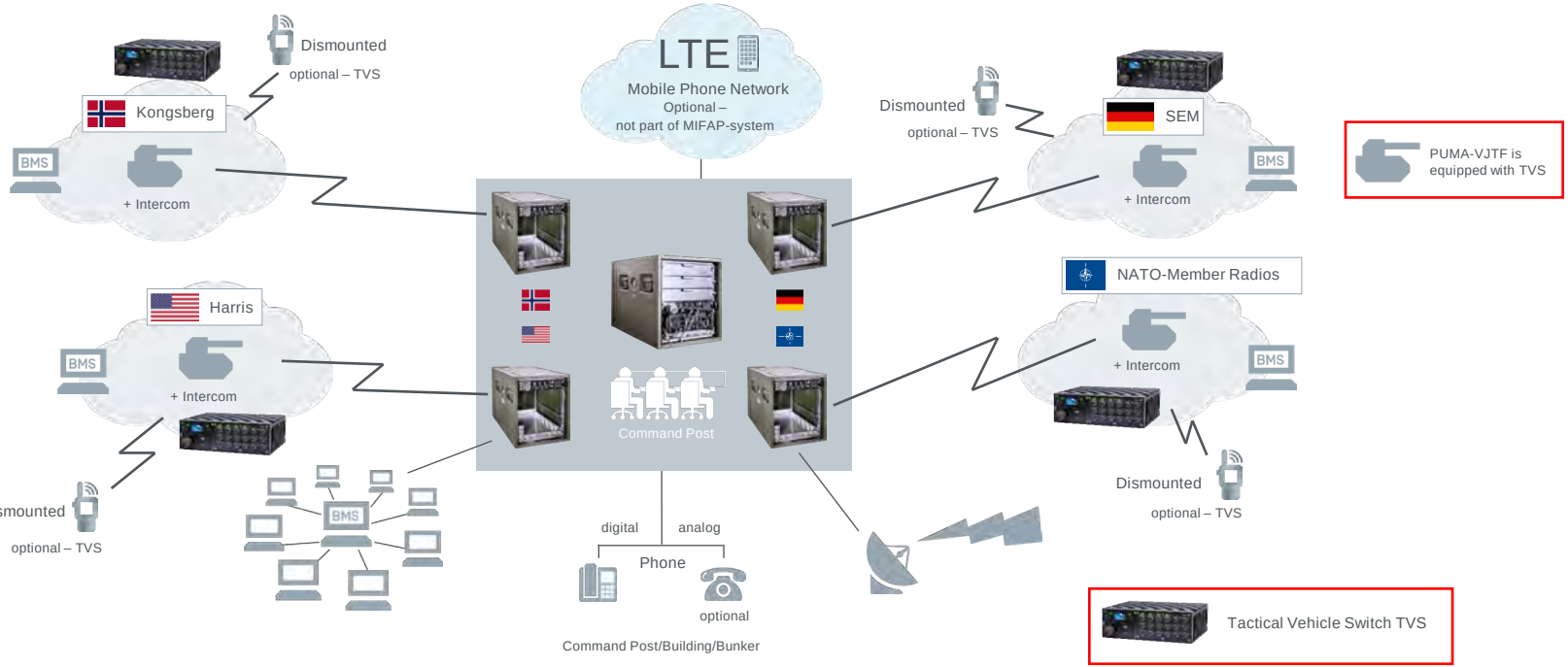
Voice interoperability

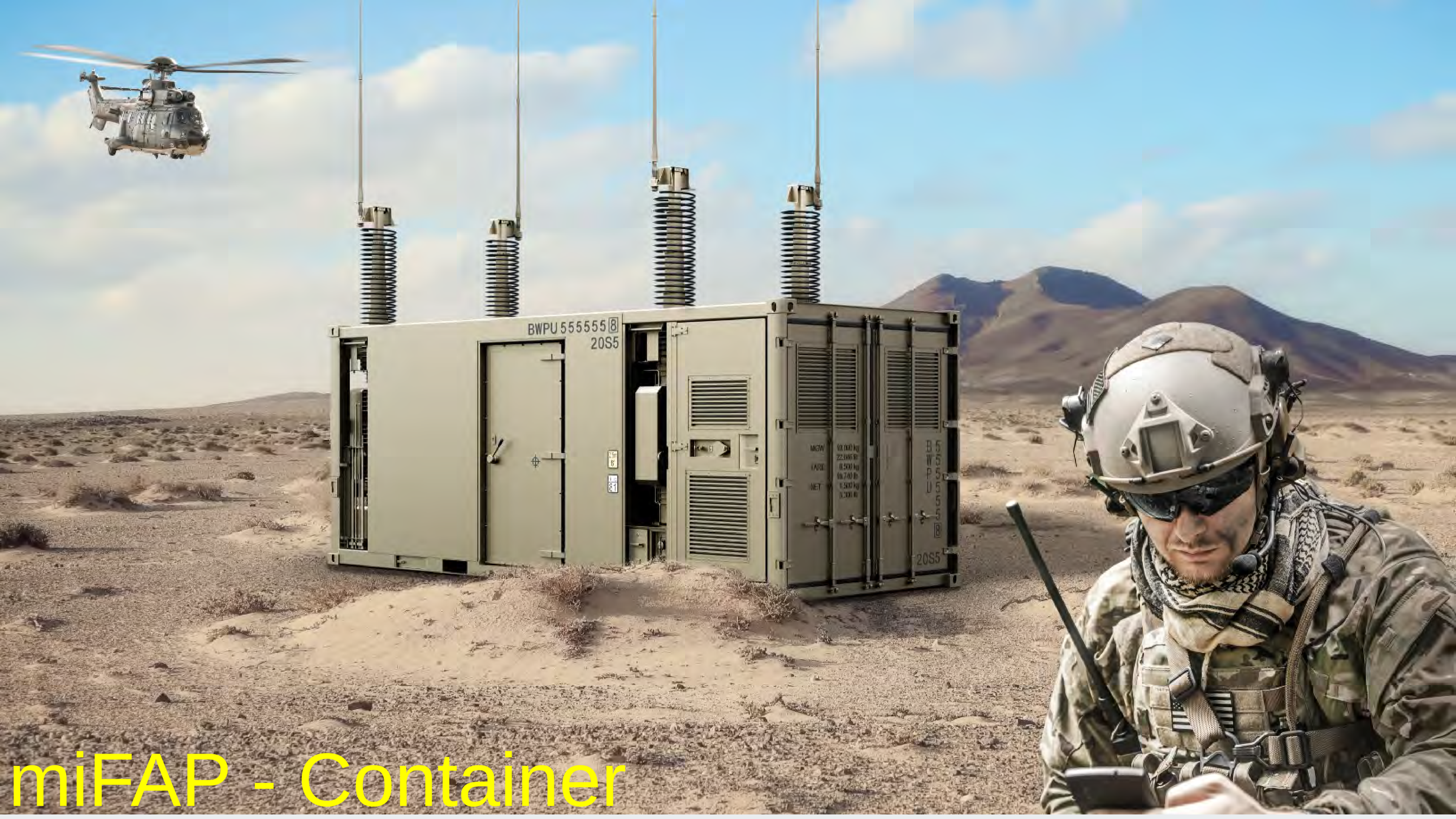
- Integration of any type of analog radio or telephone
- Connecting the analog with the digital IP world
- Interoperability and control via the Radio Operator App
- Accessible communication
- Connecting digtal Interfaces of SDRs





Possible MIFAP-Scenario





miFAP - Container

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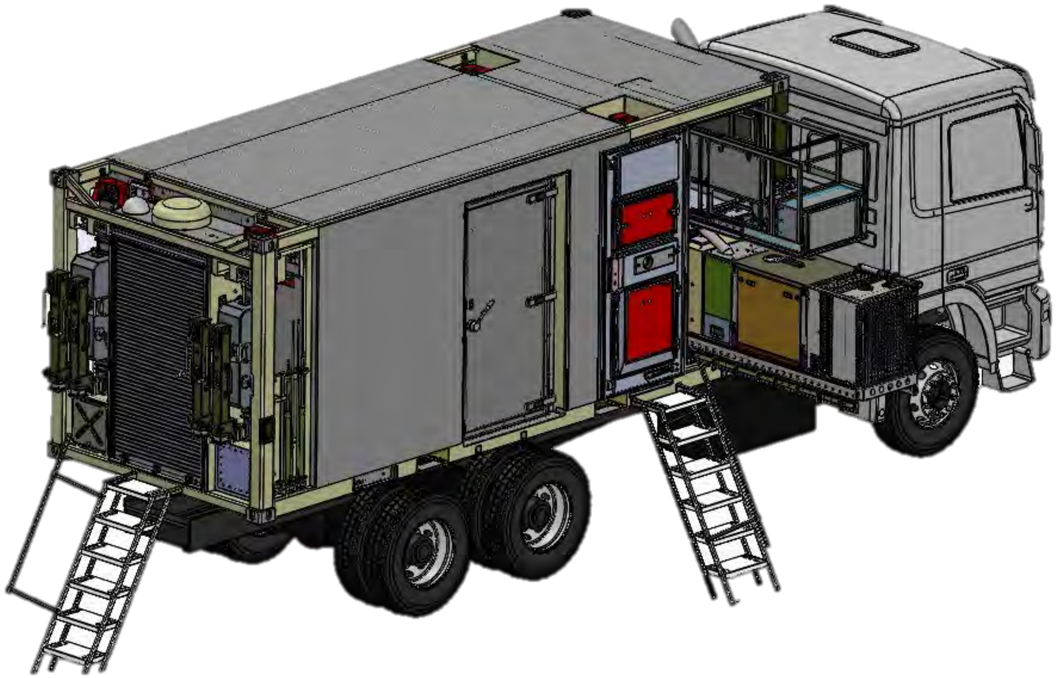
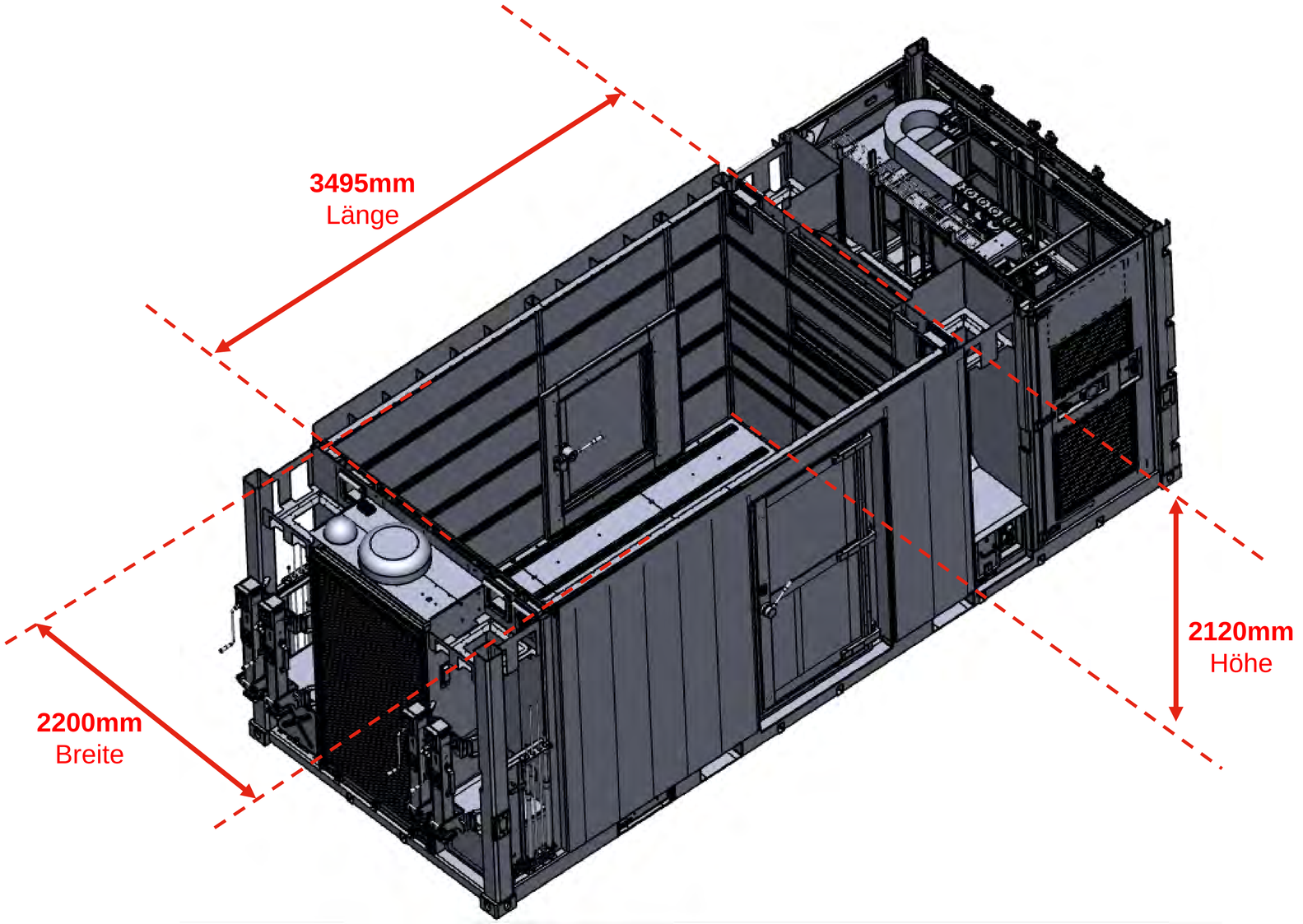


Power Generator:	25 kW
Air Con System:	10 kW – 4 kW // 14kW – 8 kW (cooling capacity – heating capacity)
Breathing Air Supply:	with NBC-filtration // without NBC filtration
Telescopic mast:	4x 8 m
Electrical Installation:	

miFAP - Container

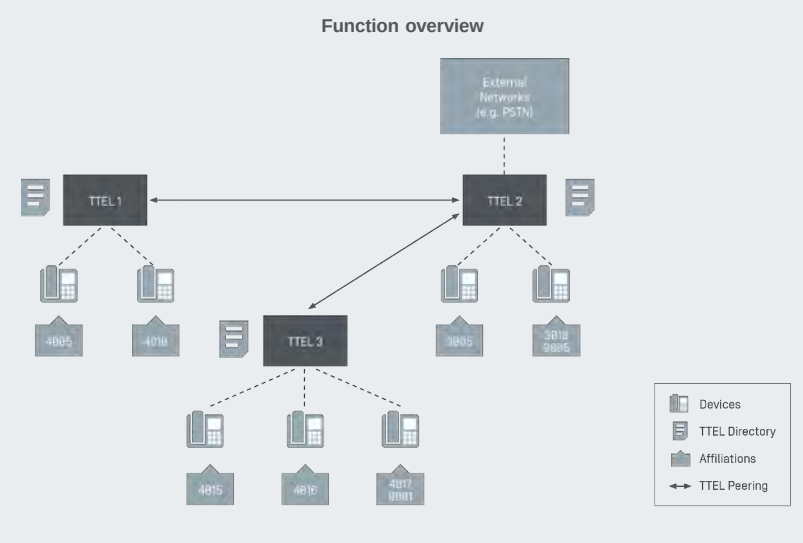


Tactical Telephony TTEL (optional)

Resilient telephony Solutions for All-IP tactical networks

Fulfilling defense organizations' need for telephony services RUAG Tactical Telephony (TTEL) offers an essential feature in tactical communications. Thanks to a modern, open architecture, TTEL offers a communication platform for information up to CONFIDENTIAL level.

TTEL is a modern solution for communication in a tactical network in the form of voice, video communication and messaging. It can be deployed in a network consisting of RUAG Tactical Communication Platform or integrated into existing infrastructures.



Tactical Telephony TTEL (optional)

Your benefits

- Decentralized architecture with replicated user directory, no single point of failure, no central instances
- Degradation and growth capability of individual instances and networks
- Voice and video communication up to level CONFIDENTIAL
- Seamless integration of multiple CNR networks
- Full user mobility thanks to affiliation/de-affiliation (logon/logoff): End-device independent users
- Militia-capable operation directly at the end device
- Support of dynamic network topologies through intelligent replication mechanisms

Tactical Telephony TTEL (optional)

Your benefits

- Support of proven telephony functions
- Easy commissioning, configuration thanks to automatic peering of TTEL instances
- High interoperability: analog and IP terminals as well as legacy, IP and radio networks
- Integration options in existing infrastructures

LTE Modul (optional)

System extentions

- Depending on customer requirements
- xx
- xx

Successful communication at all levels – selected projects

Stand alone solution

We support armed forces and security organizations in their missions worldwide:

NATO EFP (Enhanced Forward Presence) Lithuania
Radio Bridge to ensure communication and command capability within multinational task forces and heterogeneous radio systems.

Successful communication at all levels – selected projects

Integrated system

German Armed Forces – Multinational Interoperable Radio Hub
Integration of voice and data from a vide variety of communication systems from different partner countries.

German Armed Forces – KMW Puma VJTF 2023
Integration of communication systems. TVS as a media converter for connecting analogue intercom systems and digital radios.

Successful Communication at all levels – selected projects

Wide Area Network

Swiss Armed Forces – Army Voice System
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 the networked operations of the Swiss Armed Forces. One communication platform, RUAG TTEL, IP-based
voice system and TAN.

Thank you

Name…

Legende

Overview: Flags, Photos, Symbols