

MobKommSysBw – the Backbone Network of the Bundeswehr

MobKommSysBw provides the mobile, fully IP-based backbone network for information transfer in the fields of data, voice and video on different sites of operation for the international commitments of the Bundeswehr. It provides the main component that enables “networked command and control”.

By using MobKommSysBw, the means for the operation of the core segment of the communications system of the Bundeswehr in an assignment will be provided. It works as a provider network and realizes the necessary interfaces for linking access and user networks.

Highest Availability and Flexibility

Core requirements of this backbone network used for military purposes are maximum availability and flexibility. To ensure these requirements, networks and systems management became an essential part of the original tender.

If network hubs fail, it is absolutely essential to be able to connect them through a cascading redundancy concept, the management stations must be able to recognize newly connected subnets immediately and to integrate them into the network reliably and securely.

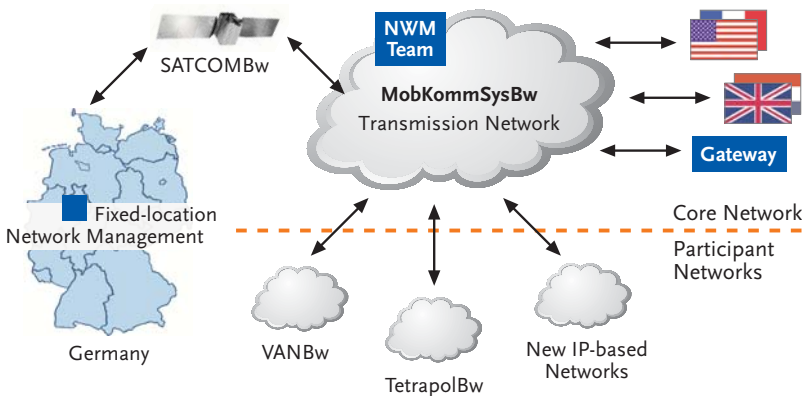
REALTECH, with its theGuard! products, was the only vendor able to meet these requirements.

Solution Concept

The Network Operating Center (NOC), which is located in Germany, offers 6 workstations and large screens. It acts as the control center of the complete backbone network. High availability is guaranteed by the redundancy concept of the theGuard! products (hot-standby).

The reference system is used for simulating specific scenarios of operation, for preparing operations and for provisioning purposes. The results are transported automatically to the systems of MobKommSysBw or VANBw via SatCom. 10 NWM teams are available for the management of the system teams in the different sites of operation of the Bundeswehr.

These are based on theGuard! NetworkManager Site Servers, which enable the hierarchical and cascable monitoring of the network. Each of these NWM teams consists of 3 workstations with a central screen. The individual teams are connected via hot-standby redundancies of the theGuard! products.



MobKommSysBw comprises the following system parts:

- 30 mobile system teams
- Network management system theGuard! Network-Manager, consisting of a fixed network management facility, a system reference facility and 10 mobile network management teams
- Training equipment

All mobile network parts are integrated into air-conditioned cabins. In the field, unmanned system teams are combined to an interconnected core network. In order to increase availability, the units are kept redundant and offer flexible connection possibilities for satellite-based and terrestrial transmission systems using E3 (34 MBit/s), n x E1 (n x 2 MBit/s) and FastEthernet (10/100 MBit/s) interfaces.





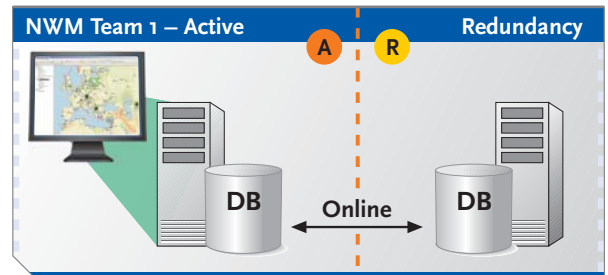
Operations Planning and Provisioning

The biggest challenges in the fields of operations planning and provisioning were to ensure a consistent network and device configuration, its automatic creation, provisioning, and standardization as well as the simplification of the planning of complete network configurations. In the NOC, readily prepared operations data is kept in the form of configurable macros, which can be provisioned automatically to the NWM teams.

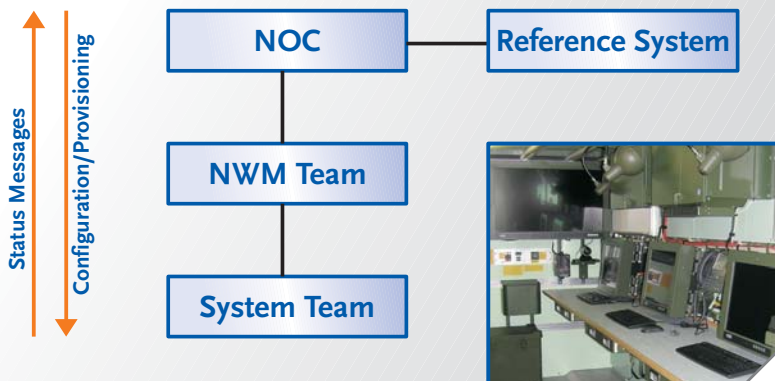
These macros are developed and tested on a reference system, which is used for the planning of operations and is connected directly to the NOC. The respective NWM teams provide the configurations to the mobile system teams.

Redundancy Concept

The redundancy concept is arranged hierarchically and provides for all possible disaster scenarios. By having redundancies inside each hierarchy and across hierarchy levels, operations can be kept running under all possible circumstances.



The replication of the database is time-controlled, the teams (active/redundant) monitor each other and alert as soon as one team fails to function. If the active system fails, the redundant system takes over all functions without disruptions. If the active system is up and running again, a re-synchronization of databases is carried out and the active system takes over all functions again.



The essential advantage of macros is their re-usability as well as their flexibility to adapt to new situations. This means that fast changes of configurations can be realized.

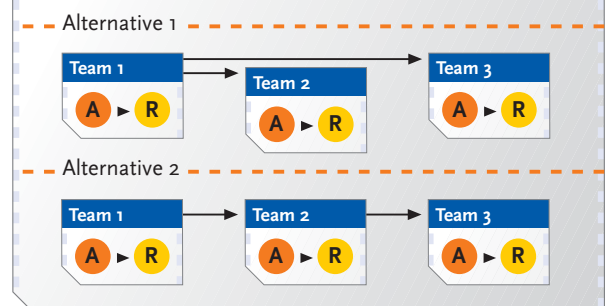
Macros...

contain syntax-specific commands of the respective product component and can be pre-defined for certain sub-tasks. They use values from the Parameter Sets.

Parameter Sets...

keep data which is used for the configuration of macros.

Redundancy between several NWM Teams



A special requirement of the Bundeswehr was that not only one team is organized redundantly, but that teams located at different sites can also provide redundancy for one other. The takeover procedure in case of a failure is carried out following priorities which can be freely defined. Up to 6 NWM teams are supported with this configuration.

REALTECH – a Proven Partner

For many years now, REALTECH has been providing products for system & network management for the mobile IP-backbone networks of the Bundeswehr, based on the theGuard! IT Service Management products.



:theGuard 



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