



**Federal Office of Bundeswehr
Equipment, Information Technology
and In-Service Support**



**Federal Armed Forces Technical
Center for Information Technology
and Electronics**

SVFuA The German SDR Program



Bundeswehr
Wir. Dienen. Deutschland.



Presentation Outline

- **Project Overview & WTD 81**
- **System Components**
- **Important Milestones**
- **Platform Integration**
- **Project Office**



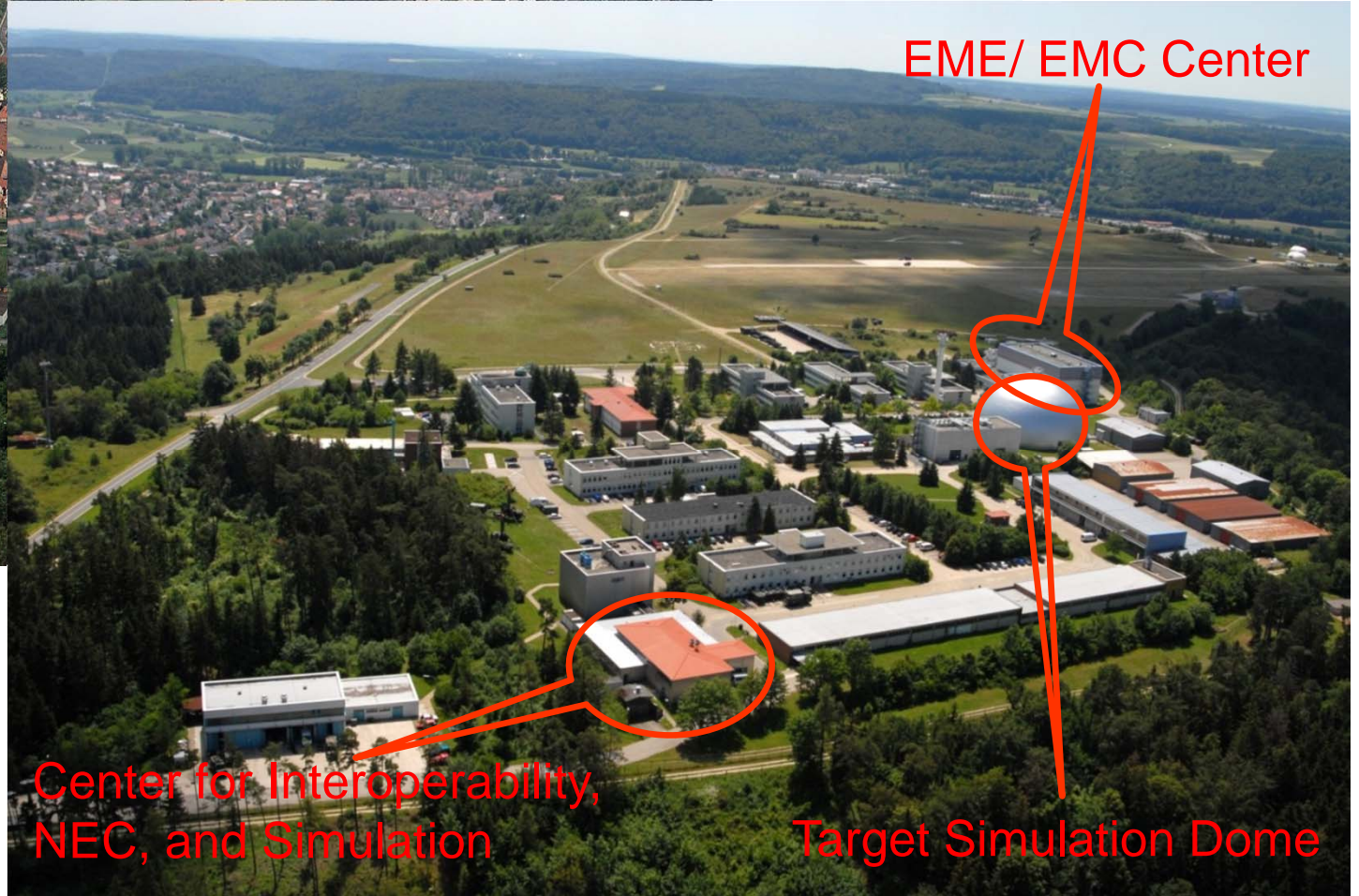
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- 1960 Foundation of the WTD 81 – original name „Erprobungsstelle 81“ – Proving Ground for Radio Equipment and Electronics
- 1961 Selection of Greiding Kalvarienberg as location
- 1964 Start of work in Greiding
- 1966 Moving to new buildings on the hill





- Integrated validation and verification/technical analyses
- R&T activities and management
- Engineering support to project teams in superordinated agencies, esp. BAaINBw
- Project management
- Mission: **Improve Military Information Technology**
 - to gain information → all kinds of sensor technologies
 - to transport information → all kinds of communications systems
 - to process information → C2I, WCS/ BMS



Our landmark – the radar "Würzburg Riese"

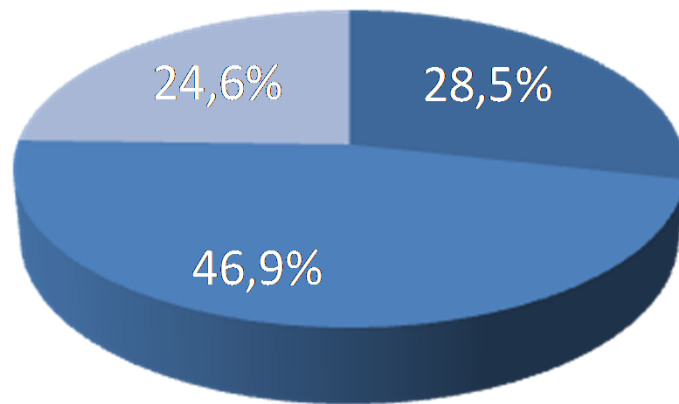
RADAR Device Fu.M.G 65

Frequency:	560 MHz
Power Output:	8 KW
Angle Accuracy:	0,25 °
Range:	50-70 km
Development:	1940/41



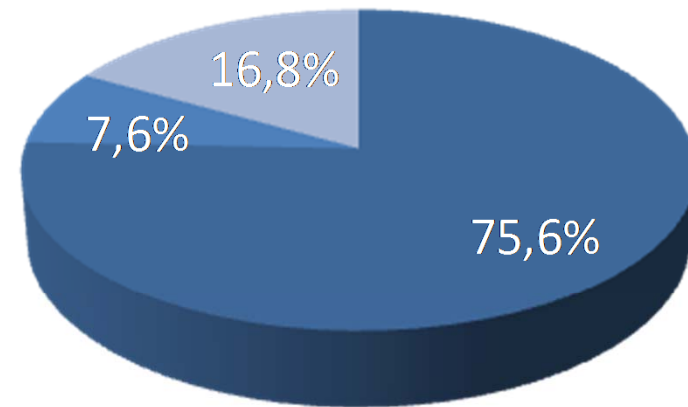
Qualification

Civil Servant

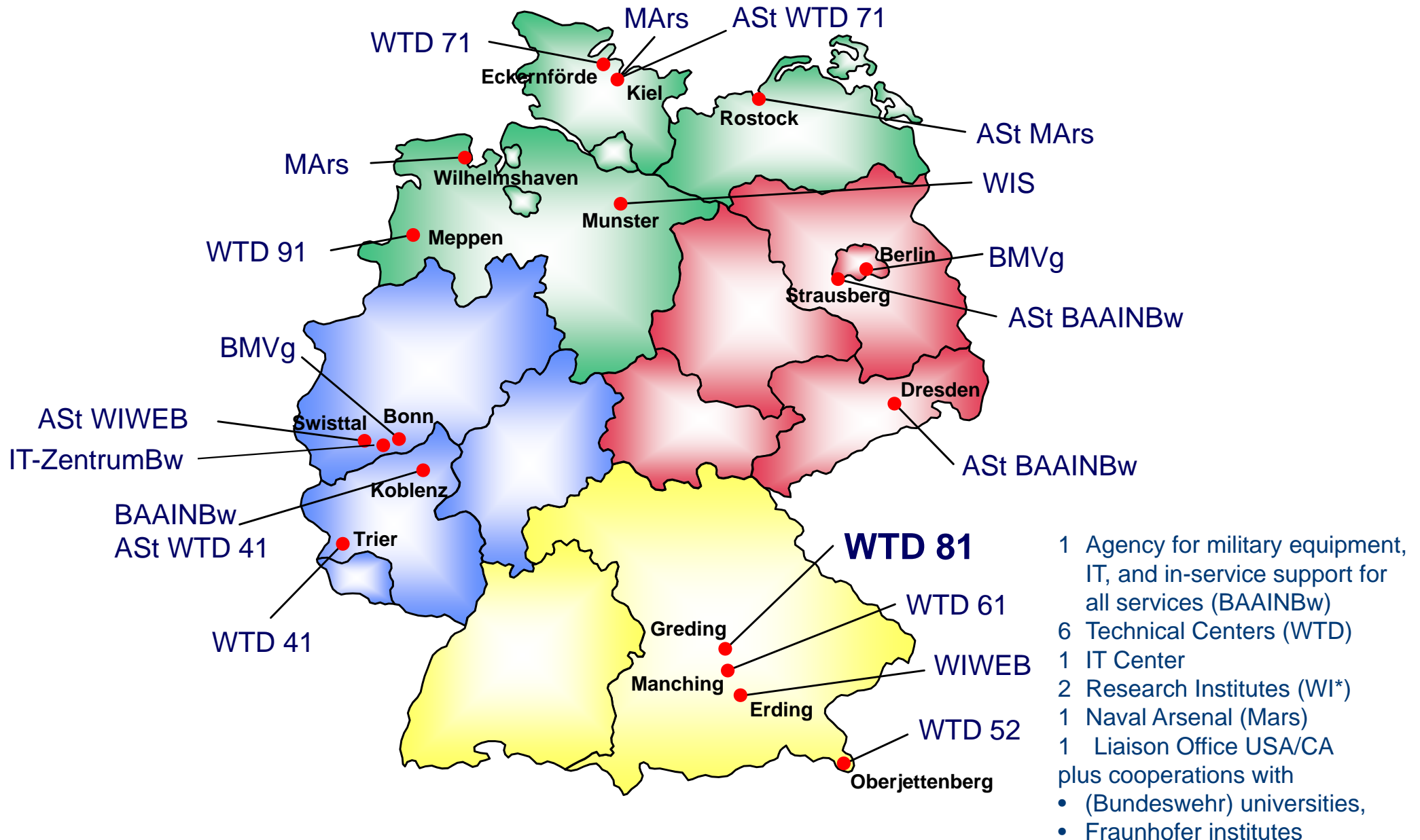


■ Masters, Ph.D. ■ Bachelor
■ Technician

Occupation



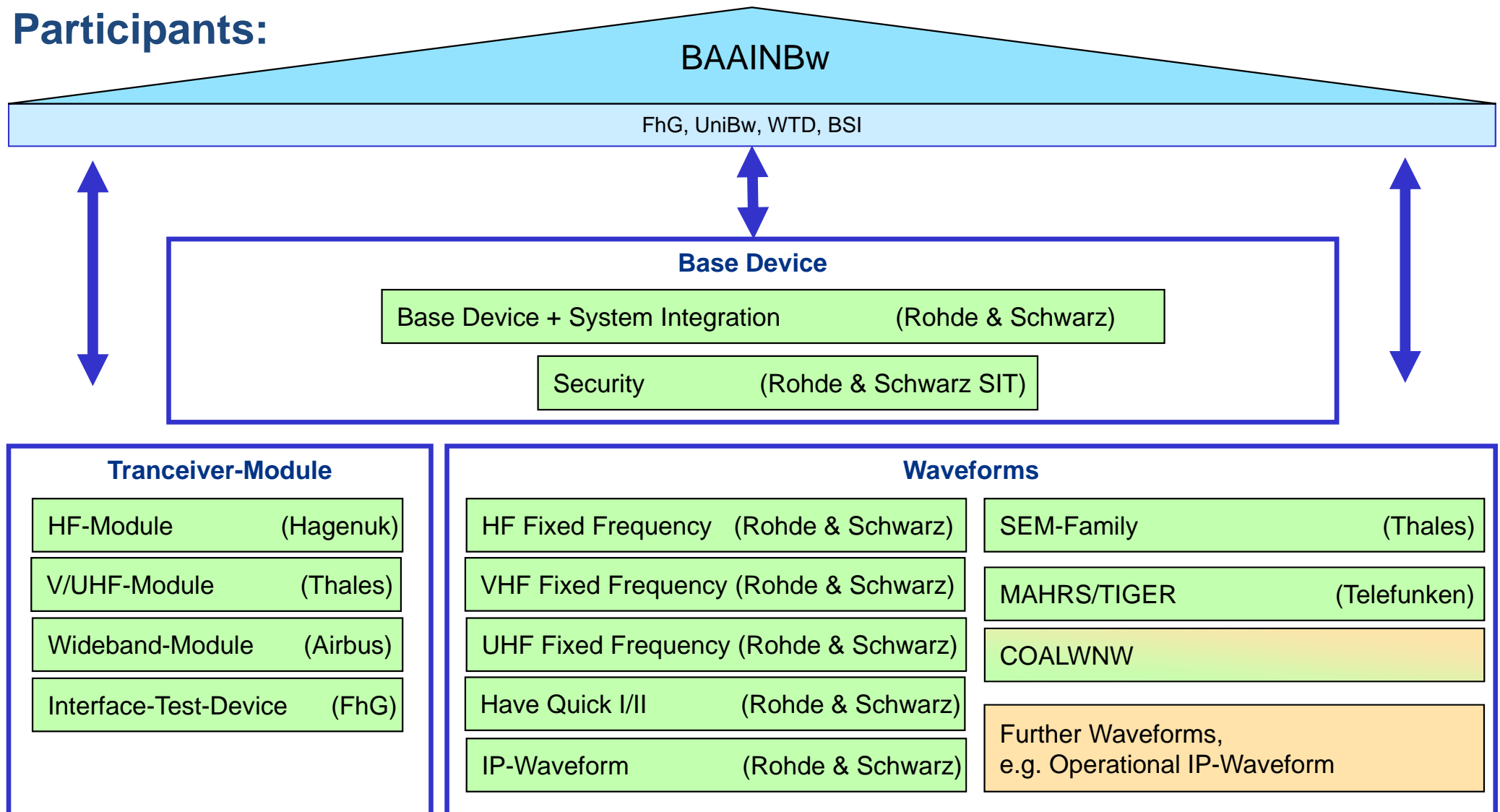
■ Operational Divisions
■ Administration
■ Technical Service





Project Structure

Participants:



Major System Facts

- Integrated Sw-based INFOSEC-Module
- Frequency Range for each Transceiver Module:
 - Transceiver Module HF: 1.5 MHz – 30 MHz
 - Transceiver Module V/UHF: 30 MHz – 600 MHz
 - Transceiver Module Wideband: 600 MHz – 3 GHz

- SCA 2.2.2





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System Components (1)

Base Device



Transceiver Module HF



20W



40W



Amplifier 400W

Antenna Tuning Unit



OBISS



Base Device Carrier - 2L

Transceiver Module V/UHF



Transceiver Module Wideband



System Components (2)

- Network Management System (NMS)
- Security Management System (SMS)
- Waveform Development Platform
- Waveforms
 - Fixed Frequency HF (STANAG 4203)
 - Fixed Frequency VHF (STANAG 4204)
 - Fixed Frequency UHF (STANAG 4205)
 - HaveQuick I / II (STANAG 4246)
 - MAHRS / TIGER
 - SEM 80 / 90 / 93
 - Operational IP-based networking waveform available





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Milestone in July 2013

- 2-Channel Configuration
- Connection to Service Device
- Connection to Network Management Station
- Waveform
 - FM3TR



Milestone in March 2014

- 3-Channel Configuration
- Connection to Operator Device
- Connection to Security Management Station
- Waveforms
 - Have Quick I/II
 - Fixed Frequency 4203, 4204, 4205





Demonstration in July 2014

Station Alpha



Voice and Data (Video) parallel



Station Charlie



Voice or Data



Station Bravo



Milestone in May 2015

- Waveform
 - MAHRS/TIGER

first WF ported by contractor different from platform manufacturer!

- User tests and training
- Platform Integration, part 1

stowage concept tests in BOXER, WOLF, WIESEL II



Milestones until June 2016

- **Waveform**
 - SEM 80/90/93
- **Environmental Tests**
- **Further user tests and training**
 - Compatibility tests with Legacy SEM radios and SVFuA w/ SEM WF
- **Platform Integration, part 2**

functional tests in BOXER, WOLF, WIESEL II



- **Federal Office for Information Security (BSI) certification is finished.**



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Exemplary Platform Integration

- Platforms:



Reconnaissance vehicle
here: C&C vehicle version



Light tactical armoured vehicle
Here C&C vehicle version



Battle tank



Multi Mission small tank



Light armored patrol Vehicle
here: C&C vehicle version



Transport Tank



All-terrain transport vehicle



Multi role protected transport vehicle
Here: Command Post version



Armoured personnel carrier
here: C&C vehicle version



Infantry fighting vehicle
here: C&C vehicle version

Exemplary Platform Integration

- Integration in vehicles
 - PUMA
 - BOXER
 - LEOPARD II
 - FENNEK
 - FUCHS
 - ENOK
 - DINGO
 - BV 206 S
 - WIESEL
 - (EAGLE IV)
- Phases
 - Electric/mechanic feasibility study
 - Prototype integration in lab environment
 - Prototype integration in vehicle





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Project Office

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Thanks for your attention!
Questions?