The Radio System SVFuA
as enabler for secure communication

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Joint and Combined Radio System SVFuA
Key objectives of the development phase (2009 – 2016)

- A platform for both legacy and networking waveforms
- A waveform development environment supporting the porting of third party waveforms
- Support of migration via interoperability to the key legacy systems
- Coverage of the HF-, VHF-, UHF- and L-Bands from 3 MHz up to 3 GHz
- Multi-level security up to national and NATO SECRET
- Crypto "as a service" for COTS systems
- Multi-channel capability including relay and routing capability
- A management system and user interfaces
- Vehicle integration into selected platforms

Joint Combined Radio System (SVFuA)
Key objectives of the procurement phase (2017 – 2020)

- Framework contract
- Initial delivery of systems for 50 C2 vehicles
- Training systems and training
- A national tactical networking waveform (NTN)
- Full certification of the system
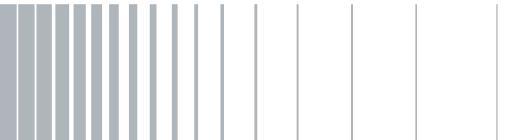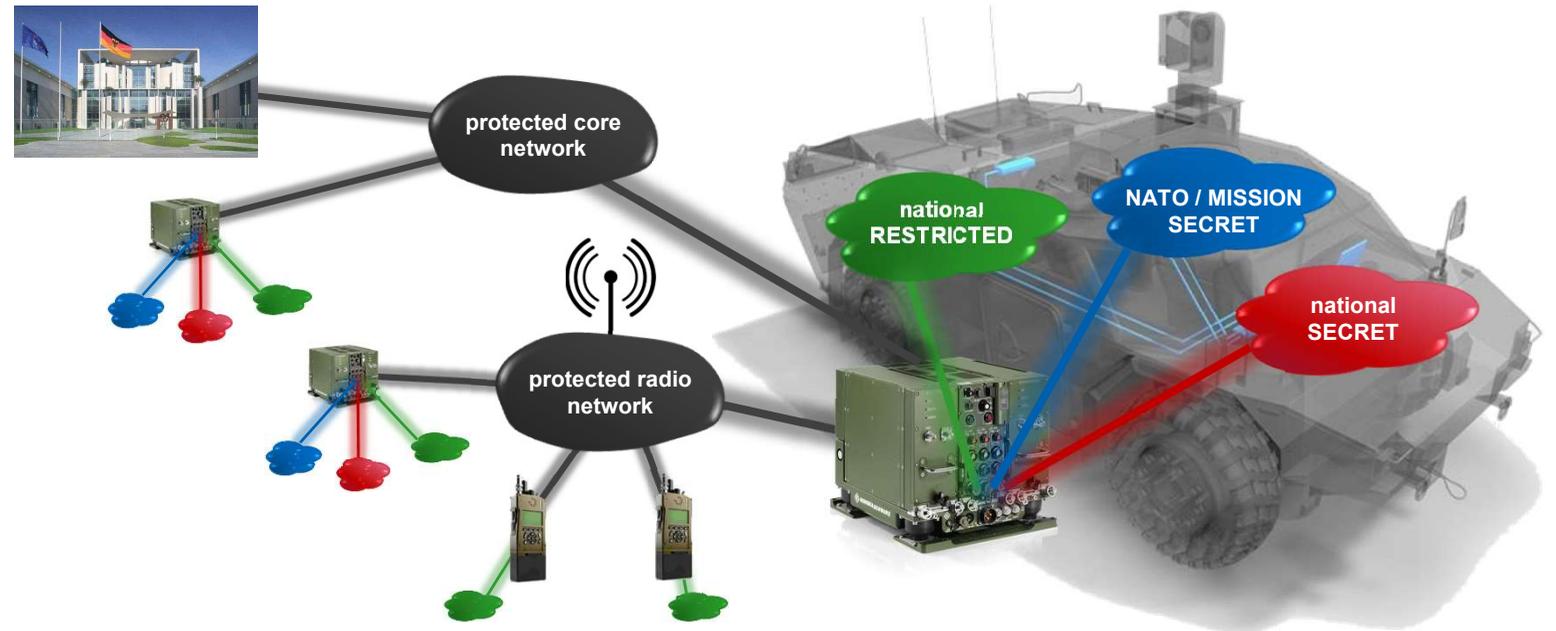
Joint and Combined Radio System SVFuA
Interoperability and networking waveforms

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021

SVFuA Enabling combined operations

- platform and system →
- legacy waveforms →
- national networking waveform →

COALWNW

- COALWNW networking waveform →

ESSOR

- ESSOR architecture →
- ESSOR networking waveform →
- accession negotiations →

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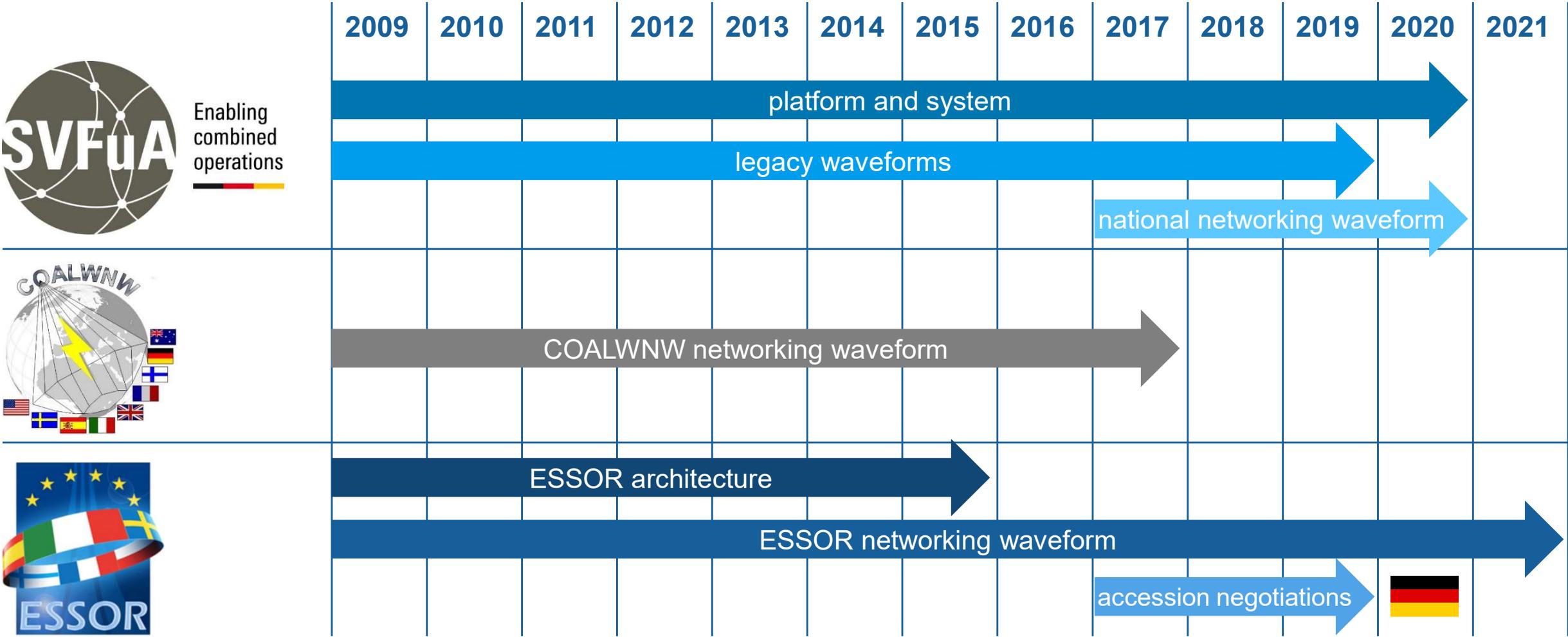
Three tier model of standardisation of military SDR
International, multinational, national

INTERNATIONAL ACTOR	MULTINATIONAL PROJECT or VIRTUAL OFFICE	INDIVIDUAL NATIONS

Open and public parts of SDR standard

SCA 2 2 2 release
ESSOR and SVFuA inputs to SCA

Releasable, but controlled parts of SDR standard

Coalition WFs
ESSOR add-ons

Nationally sensitive APIs

JTRS
SVFuA

WIRELESS INNOVATION FORUM

ETSI World Class Standards

COALWNW

ESSOR

JTRS JOINT TACTICAL RADIO SYSTEM

SVFuA

Enabling combined operations
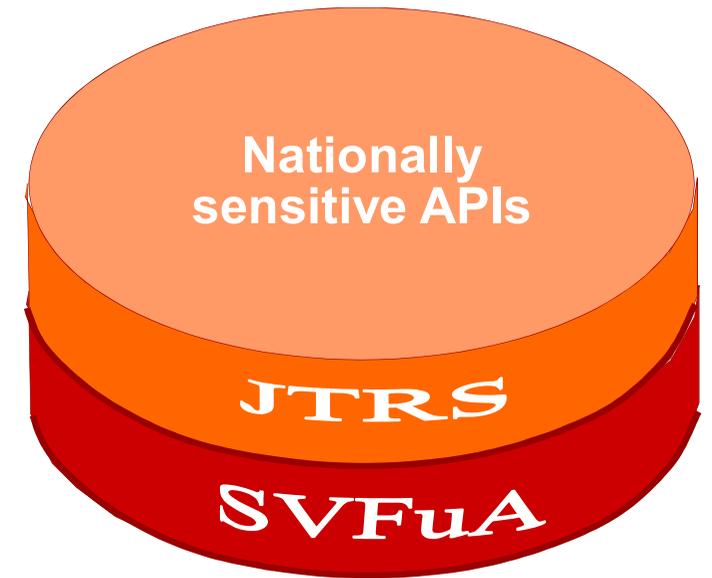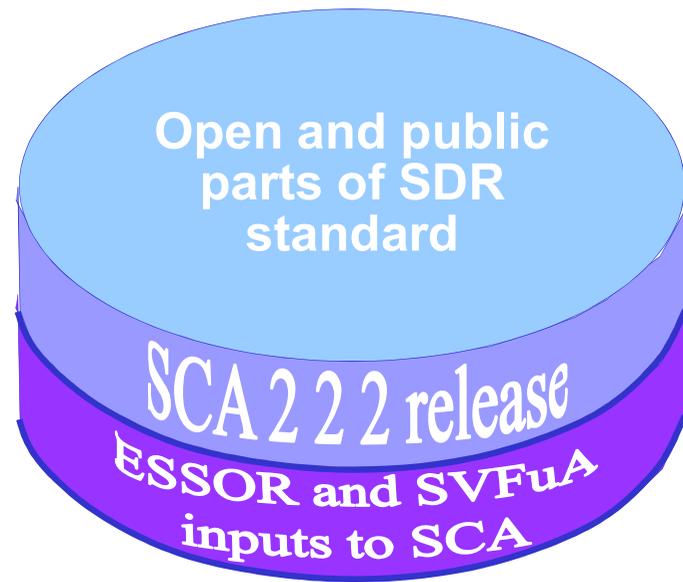
Based on a slide of Tero Solante, EDA, 2009

Standardisation in SVFuA

- Key aspects of SVFuA were specified together with subject experts:
  - The waveform development process
  - The platform architecture and interfaces (SVFuA APIs)
  - The optical baseband interface (OBISS)
  - The security architecture
  - The management processes and infrastructure
 - The user interfaces
  - The mechanical architecture

involved institutes and government agencies

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The waveform development process
An SCA-compliant solution to reusable waveform design

Requirements analysis

Waveform specification

Modell driven architecture & design

Waveform model

Implementation with the Waveform Development Environment

alternative targets

System integration

Waveform Development Platform

Transfer of deliverables

German waveform library

Transfer to the target platforms
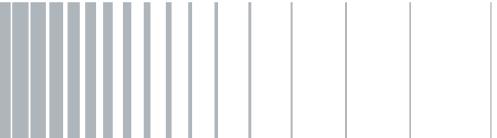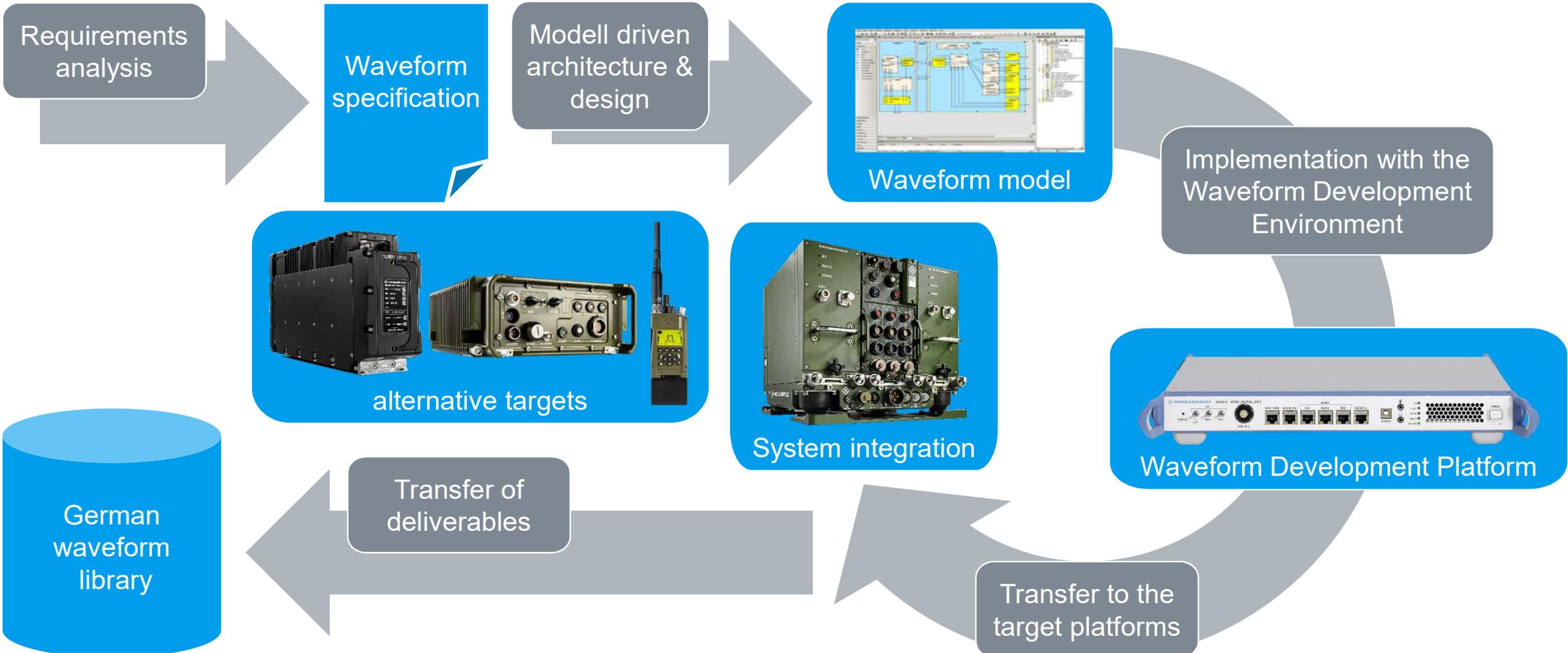
SVFuA system and components

key generation

NDA

keys

application device

crypto order

network management system (NMS)

Wellenform

software, policies

security management system (SMS)

BSI

R&S

OTAx

software, pre-sets, policies, authorisation

operational keys

fill device

token

CIK

user interface

two and three channel configurations

control panel

Service

service system
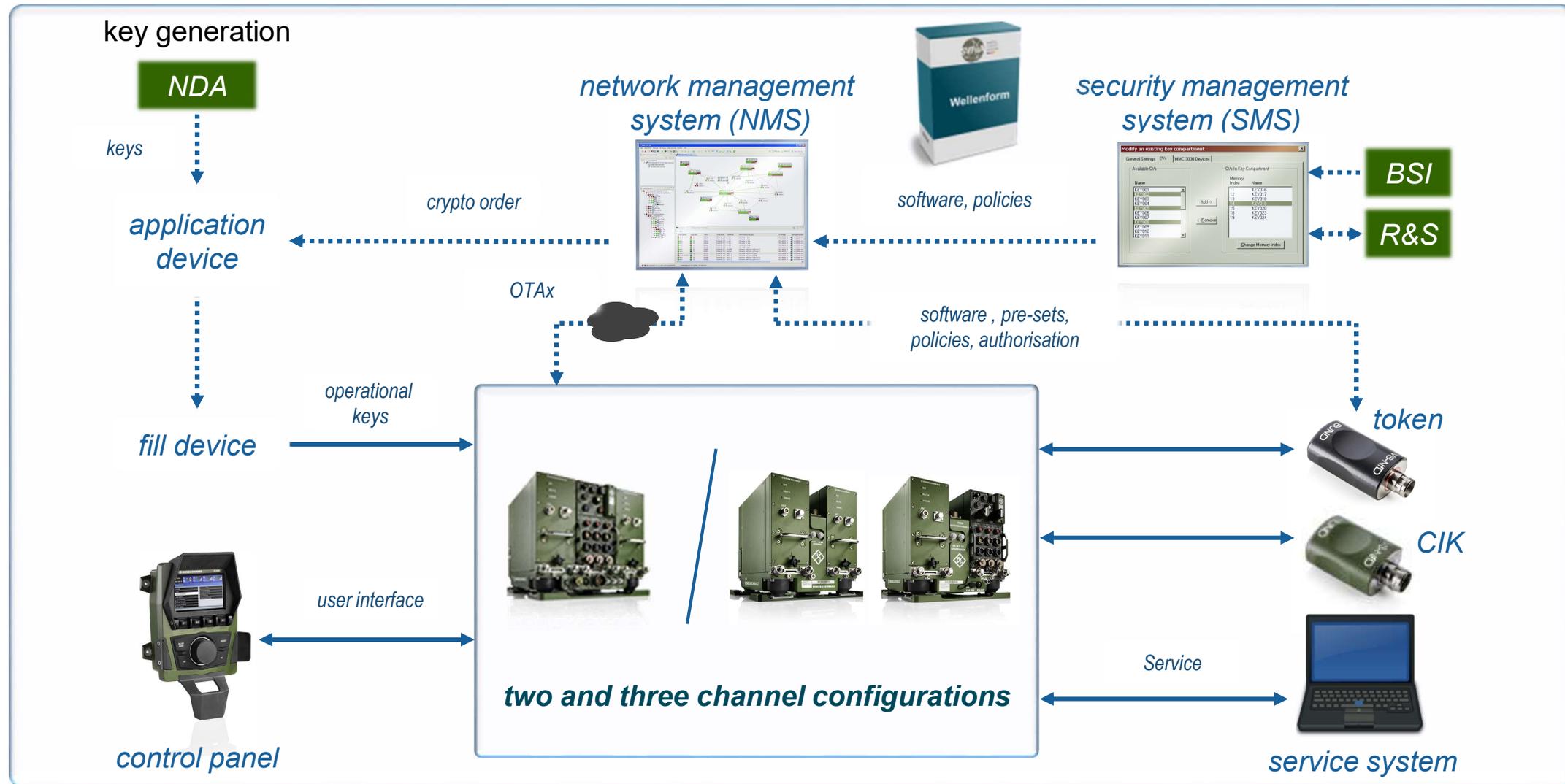
Support of migration
Connectivity to SEM70/80/90/93 and HQ legacy circuits

SEM93

SEM80/90

SEM70

HQ

two transceivers

central unit with
one transceivers

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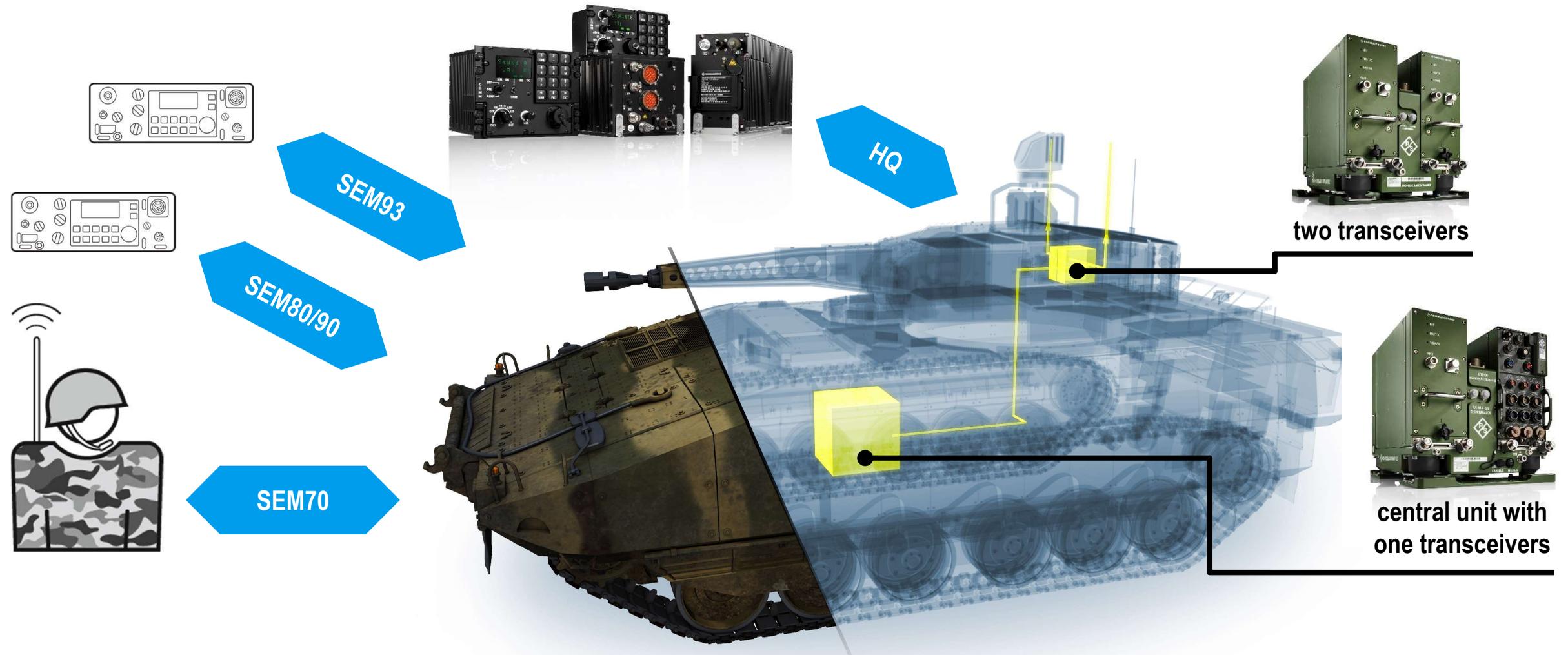
Support of Networked Operations
Networking via the National Tactical Networking waveform

two transceivers

central unit with
one transceivers
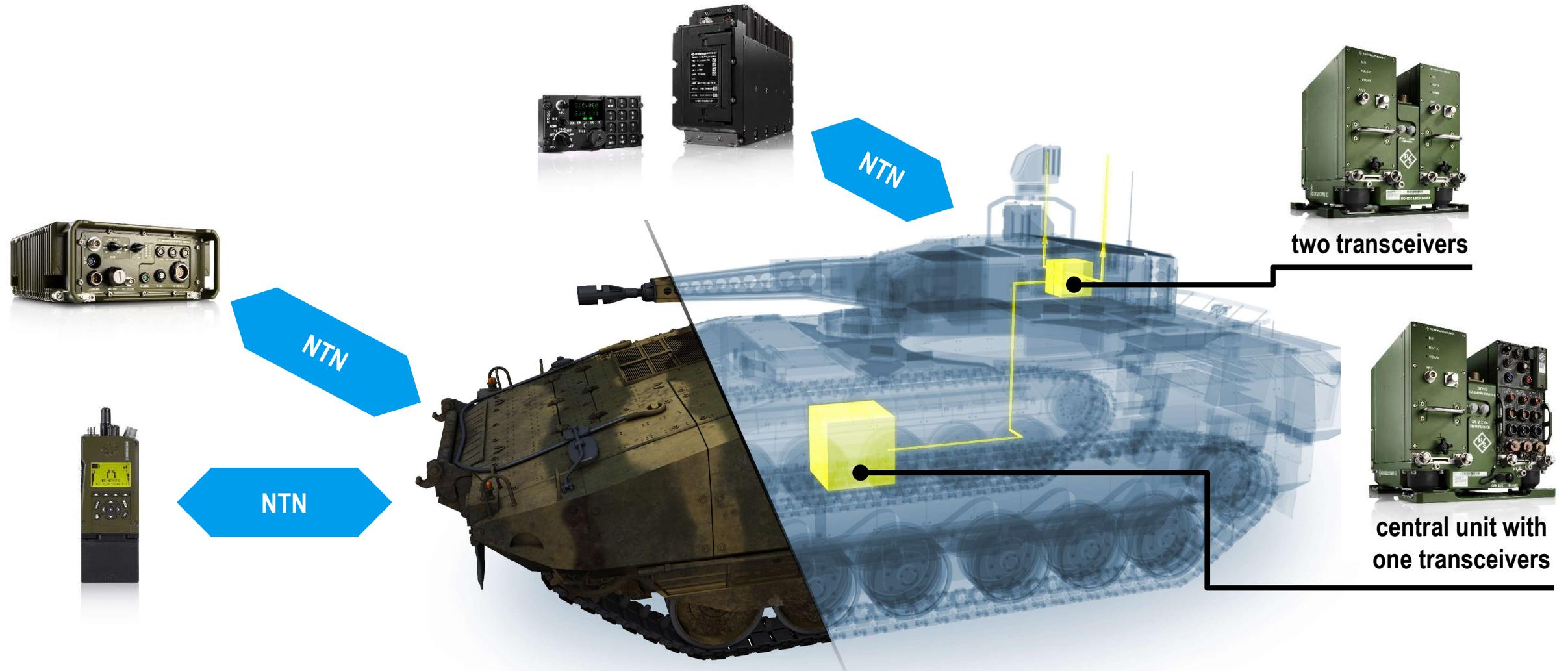
Summary
The Radio System SVFuA as enabler for secure communication

- SVFuA provides an integrated system for secure communication
  - delivery and initial trainings will be completed in 2020
- SVFuA enables replacement and migration for current tactical systems
- SVFuA supports porting of third party waveforms
- SVFuA includes a national tactical networking waveform
  that is interoperable with the SOVERON line of formfactors