



Project Case: Digital Land - Based Operations

Context:

A German Defense Organization launched a new program for a new integrated architecture solution in land-based tactical military operations called D-LBO.

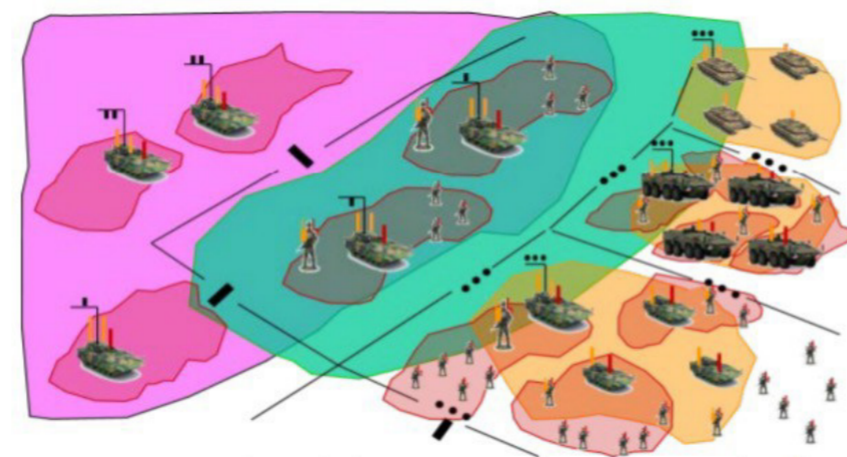
D-LBO aims at enabling distributed and simultaneous operations of land forces throughout the areas of strategic interest.

The operations include the war-fighter in the system development process from the beginning and takes a overall system of systems approach, avoiding isolated solutions, and building on existing COTS/MOTS solutions and standards

The System of systems architecture must be formalized according to international standards and modelled.

Approach:

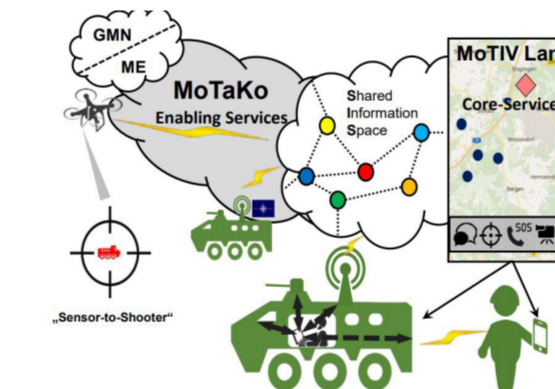
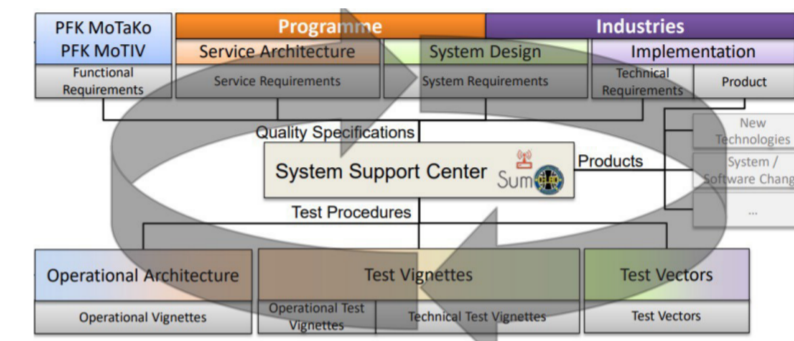
Apply the NATO Architecture Framework (NAF) to model the D-LBO system of systems Environment. The scope includes Procurement volume and required integration of 8 task forces, approx. 90.000 radios (vehicular, manpack , handheld) and approx. 25.500 vehicles (350 types)



	Advanced measures due to Obsolescence		TF & Capability oriented deployment							
	TF 1	TF 2	TF 3	TF 4	TF 5	TF 6	TF 7	TF 8		
SECRET Communication	80 C2 Vehicles (23 AIFV, PUMA, 27 MRAV, BOXER)									Equipping of 325 C2 vehicles (Enok, Dingel, Fuchs, Fennek, Leopard, BV206, Wiesse)
VHF/UHF Tactical Radio	AIFV PUMA, MRAV, BOXER									Equipping of fighting and functional vehicles in a set of forces oriented approach
	Future Soldier System									Equipping of further dismantled troops in a set of forces oriented approach
Cellular Networks (TETRA, LTE)	TETRA									Equipping with mobile or deployable cellular networks in a set of forces oriented approach
SOTM										Equipping in a set of forces oriented approach
HF Radio										Equipping in a set of forces oriented approach
Common Assets	Common control and display, IT-Services for mobile elements									Equipping in a set of forces oriented approach

Results:

- 01** | Development of a system of systems architecture that includes Solution Architecture Framework based on NAF & System/Service Design
- 02** | Deployment of an agile way of working in dealing with new requirements, releases and change Management
- 03** | Incremental development of the new architecture solution
- 04** | Modelling of Standardized installation, integration, and infrastructure



Concepts	Taxonomy		Structure		Connectivity		Processes		States		Sequences		Information		Constraints		Roadmap	
	Capability Taxonomy NAV-2, NAV-2	Enterprise Vision NAV-1	Capability Dependencies NAV-4	Standard Processes NAV-4	Effects NAV-4	Performance Parameters NAV-1	Planning Assumptions NAV-1	Capability Roadmap NAV-1										
Service Specifications	S1 Service Taxonomy NAV-2, NAV-1	S2 Service Structure NAV-2, NAV-4, NAV-12	S3 Service Interfaces NAV-2	S4 Service Functions NAV-3	S5 Service States NAV-4a	S6 Service Interactions NAV-4c	S7 Service I/F Parameters NAV-2	S8 Service Policy NAV-4a	S9 Service Roadmap NAV-1									
Logical Specifications	L1 Node Types NAV-2	L2 Logical Scenario NAV-2	L3 Node Interactions NAV-2, NAV-3	L4 Logical Activities NAV-5	L5 Logical States NAV-6a	L6 Logical Sequence NAV-6c	L7 Information Model NAV-7	L8 Logical Constraints NAV-6a	L9 Lines of Development NAV-2									
Physical Resource Specifications	P1 Resource Types NAV-2, NAV-3, NAV-2a, 3, 3.2	P2 Resource Structure NAV-4, NAV-1	P3 Resource Connectivity NAV-2, NAV-4	P4 Resource Functions NAV-4	P5 Resource States NAV-10a	P6 Resource Sequence NAV-10c	P7 Data Model NAV-11a, b	P8 Resource Constraints NAV-10a	P9 Configuration Management NAV-4									
Architecture Foundation	A1 Meta-Data Definitions NAV-2	A2 Architecture Products NAV-1	A3 Architecture Correspondence NAV-2, 10	A4 Methodology Used NAV-2, 10	A5 Architecture Status NAV-1	A6 Architecture Versions NAV-1	A7 Architecture Compliance NAV-3a	A8 Standards NAV-12	A9 Architecture Roadmap NAV-1									