

EDA INDUSTRY WORKSHOP ON EUROPEAN REQUIREM FOR MISSION SYSTEMS OF LAND VEHICLES



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9 July 2015



WP0: Project Management

Stakeholder Engagement

Administrative Management

K A B

Technical Management (WPs Coherence)

Quality Assurance and Configuration Management Coordination and Consultation with Relevant Stakeholders

Workshop 1 Government Officials EU Standardization Workshop 2 Manufacturers, Integrators, Suppliers

Briefing 1

Briefing 2

Briefing 3

Briefing 4

WP1: Architectural Domain Analysis and Requirements

Analysis of Relevant Programs and Activities

Characterization of Required Architectural Domain

Definition of Any Needed Additional Architectural Layers

Evaluation of Benefits to be Gained

Estimation of Cost of Implementing

Open Reference Architecture Standards Update

Investigation and Update On Specific European Requirements

> Proposal for ORA Standards Update

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WP3 Worksflow and Procedure Update

Update of Operational Workflows

Update of Logistics Procedures

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WP4 Through Life Capability

Harmonized Data Exchange Procedures

> Development of Roadmap

WP5 Alignment with N GVA

Concepts for LAVOSAR Contrib. to Future Developm. of NGVA

> Identification of Potential Contributions

> > Development of Roadmap

WP6 Architecture Contributions to EDA Repository

Gathering EDA requirements for formal Architecture

> Modelling of required Architecture Views

Generating Model Documentation

Transferring Architectural Views to EDA



Military logistics operating environment

Categories of operations

- Major combat operations
- Stabilisation operations
- Non-combatant evacuation operations
- Operations at home garrison

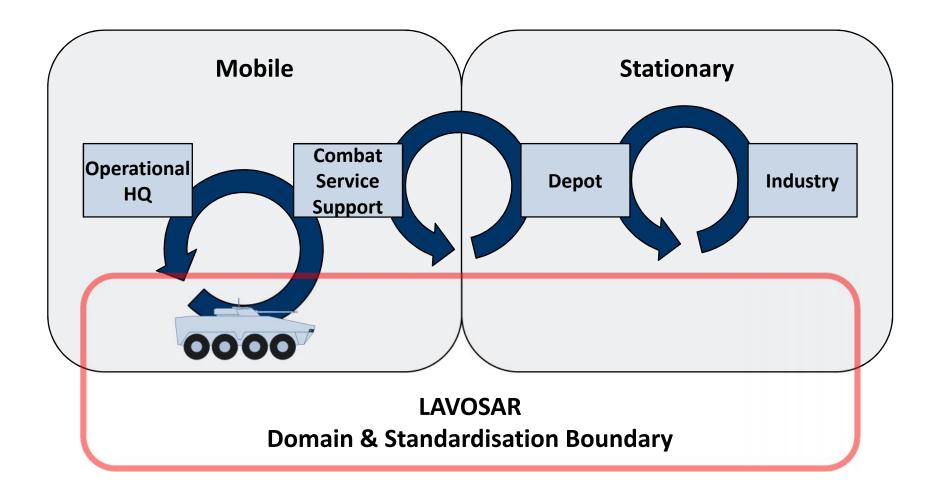
Maintenance levels and their locations

Location	WP3	Simplified organization	
Mobile (Operation) (Fielded)	Crew	Crew	
	Tactical Maint	Combat Service Support	
	Theatre Maint		
Stationary (Garrison) (Homeland)	Depot	Depot	
	Design authority	Industry	
	Subsystem supplier		

Long term storage?



Dataflows between echelons





Combat Service Support Logistics as part of operational workflows

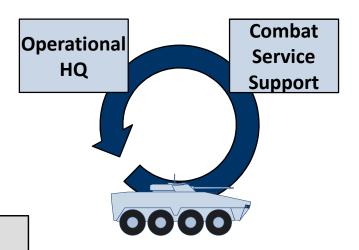
Combat Service Support is a subset of military logistics, as it primarily addresses those factors directly influencing combat operations.

- Give an answer to: is System still combat ready?
- Provide a asset status and location picture
- Supply consumables
- Provide proactive platform and system maintenance
- Do all this with utilising least possible network capability and bandwidth

Pre-mission training?

- a) Separate facilities and simulators
- b) Embedded into LAVOSAR

Monitor also combat readiness of the Crew?







Use case: External data exchange before operational use

Data category	Doto	Doto course	Data destination	Comment	1
		Data source	Data destination	Comment	1
Military Land Vehicle status and configuration data	Configuration				
	Vehicle	Valida DD	000 DD	Ala a vitilia a dila const	
igi	Weapon system	Vehicle DB	CSS DB	Also utilized by SRT	
onfi	Tools				
5	Additional equipment				4
auc	Usage data		CSS DB	Operating hours, on-off cycles, operating profile, V0 speeds. Also utilized by SRT.	
ns	Vehicle Platform	Vehicle DB			
stat data	Mission subsystems			promo, vo specas. 7400 atm26a by Otti	
e s	Consumables status				
)ic	Ammunition in vehicle	Vehicle DB	CSS DB	Also utilized by SRT	
Vehic	Petrol, Oil, Lubricants	Verlicie DB	CSS DB	Also utilized by SR I	
ا ہو	Batteries				
Lar	Technical status		CSS DB	Also utilized by SRT	
Σ	Vehicle Platform	Vehicle DB			
<u> </u>	Mission subsystems	1			
Σ	Software updates				cles, operating
	00047		Vehicle DB, Soldier equipment	Unit ORBAT for comms and BMS	ilized by SRT.
	ORBAT			configuration	
	Radio Frequency	1		3	1
ata	Crypto Key	FOB tactical DB			1
p	Map Material	1			1
C2 tactical data	·	1		E.g. location of own and known enemy	
act	Tactical Data			forces	nd BMS
.2 t					-
				E.g. own location, observations, orders, threats	
	COP updates				nown enemy
					ations, orders,
	Crew Role: Driver		n/a	Training Certificate / Permission	, , , , , , , , , , , , , , , , , , , ,
nn(:re\	Crew Role: Commander	1		Training Certificate / Permission	ission
0 0 ~	Crew Role: Gunner	FOB tactical DB		Training Certificate / Permission	ission ission
Pe an	Personal Equipment	1		Utilizes Mission planning DB)B





Use case: External data exchange during operational use

ıta category		Data source	Data destination	Comment	Priority	
uc	Configuration					
Military Land Vehicle status and configuration data	Vehicle	<u> </u>				
	Weapon system	<u> </u>		Also utilized by SRT	n/a	
nfig	Tools	_				
00	Additional equipment					
pu	Usage data			Operating hours, on-off cycles, operating		
ıs a	Vehicle Platform	Vehicle DB	CSS DB	profile, V0 speeds. Also utilized by SRT.	4	
att. Ea	Mission subsystems			profile, vo speeds. Also dillized by SICT.		
e stat data	Consumables status					
<u>icl</u>	Ammunition in vehicle	Vahiala DD	CSS DB	Aloo willood by CDT	2	
/eh	Petrol, Oil, Lubricants	Vehicle DB	CSS DB	Also utilized by SRT	3	
þ	Batteries				i	
Lan	Technical status				2	
≥	Vehicle Platform	Vehicle DB	CSS DB	Also utilized by SRT		
lita	Mission subsystems	7				
≅	Software updates				n/a	
	ORBAT			Unit ORBAT for comms and BMS configuration		
	Radio Frequency	7				
ata	Crypto Key	7			n/a	
<u>Б</u>	Map Material	7				
C2 tactical data	Tactical Data			E.g. location of own and known enemy forces		
22 1	COP updates	Vehicle DB	Soldier equipment			
O	COP updates	Soldier equipment	Vehicle DB	E.g. own location, observations, orders,	4	
	COP updates	Vehicle DB	FOB tactical DB	threats	ı	
	COP updates	FOB tactical DB	Vehicle DB			
	Crew Role: Driver			Training Certificate / Permission		
ersonner and crew data	Crew Role: Commander	1		Training Certificate / Permission	52/0	
oda da	Crew Role: Gunner	7		Training Certificate / Permission	n/a	
a e	Personal Equipment	7	Utilizes Mission planning DB			





Use case: External data exchange after operational use

	Data category	Data	Data source	Data destination	Comment	
uc	Configuration					
_6	atic	Vehicle			Also utilized by Army fleet management DB and Industry	е
	gnus	Weapon system	Vehicle DB	CSS DB		
-	nfig	Tools				vsing
	00	Additional equipment				ınication
	pu	Usage data			Operating hours, on-off cycles, operating	
	JS SL	Vehicle Platform	Vehicle DB	CSS DB	profile, V0 speeds. Also utilized by Army	
100	ta tu ta	Mission subsystems			fleet management DB and Industry.	
	e stat data	Consumables status]			
	icl	Ammunition in vehicle	Vehicle DB	CSS DB		
	Vek	Petrol, Oil, Lubricants	Verlicie DB	000 00		
	ρ	Batteries				1
	Laı	Technical status]		Also utilized by Army fleet management	
Cha	Military Land Vehicle status and configuration data	Vehicle Platform	Vehicle DB	CSS DB	DB and Industry	
0	ilita	Mission subsystems				et management
	Σ	Software updates				
		ORBAT			Unit ORBAT for comms and BMS	cycles, operating
0		ONDAT]		configuration	utilized by Army nd Industry.
	ø	Radio Frequency				1
0	data	Crypto Key				1
` ;	al c	Map Material	1			et management
0	tactical data	Tactical Data			E.g. location of own and known enemy	
	tac				forces	and BMS
	7	COP updates				
0		COP updates			E.g. own location, observations, orders,	
1 '		COP updates	4		threats	known enemy
I '		COP updates			T	votiona
1	nel ew	Crew Role: Driver	4		Training Certificate / Permission	vations, orders,
0 /	rsonr id cre data	Crew Role: Commander	4		Training Certificate / Permission	mission
1	Personnel and crew data	Crew Role: Gunner	4		Training Certificate / Permission	mission mission
	ш	Personal Equipment			Utilizes Mission planning DB	DB





Use case: External data exchange during depot-level maintenance

	Data category	Data	Data source	Data destination	Comment	
	guration	Configuration Vehicle Weapon system Tools	Vehicle DB	Army fleet management DB	Also utilized by Industry	
	us and confi	Additional equipment Usage data Vehicle Platform	Vehicle DB	Army fleet management DB	Operating hours, on-off cycles, operating profile, V0 speeds. Also utilized by	
Characte o Depot	Military Land Vehicle status and configuration data	Mission subsystems Consumables status Ammunition in vehicle Petrol, Oil, Lubricants Batteries			Industry.	_
•	itary Land	Technical status Vehicle Platform Mission subsystems	Vehicle DB	Army fleet management DB	Also utilized by Industry	
	Ξ	Software updates	Army fleet management DB	Vehicle DB	Beforehand tested updates from DA or OEMs	es, operating zed by
o Ample	C2 tactical data	ORBAT			Unit ORBAT for comms and BMS configuration	
Data eSecuri		Radio Frequency Crypto Key Map Material				
and st bound		Tactical Data			E.g. location of own and known enemy forces	from DA or
Data econfid	2	COP updates COP updates			E.g. own location, observations, orders,	
•		COP updates COP updates			threats	wn enemy
	nnel rew ta	Crew Role: Driver Crew Role: Commander			Training Certificate / Permission Training Certificate / Permission	ons, orders,
•	Personnel and crew data	Crew Role: Gunner Personal Equipment			Training Certificate / Permission Utilizes Mission planning DB	sion sion sion

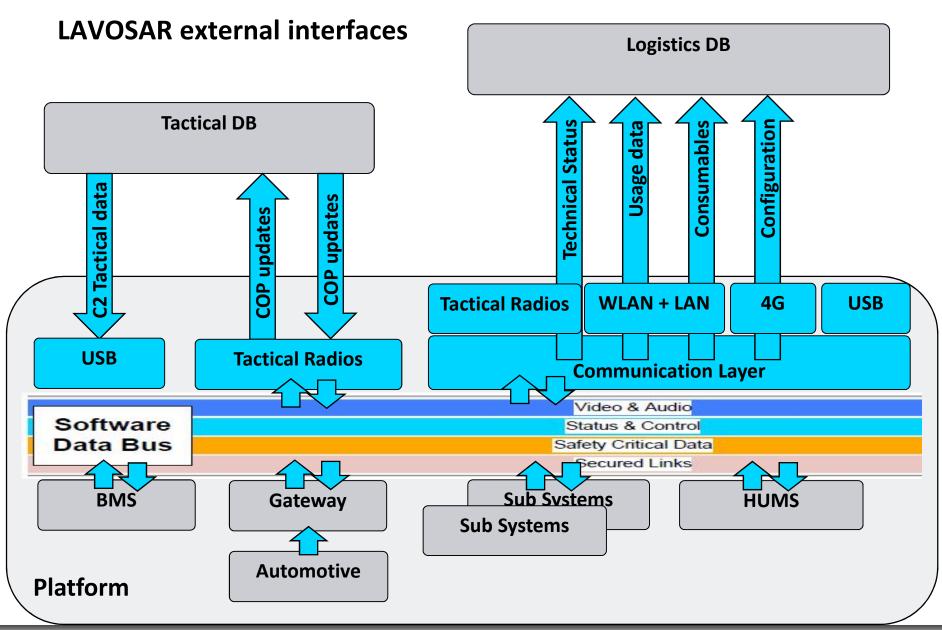




Use case: External data exchange during long-term storage

	Data category	Data	Data source	Data destination	Comment]
	uo	Configuration	Vehicle DB	Army fleet management DB	Also utilized by Industry	1
	하 플 후 르 그. L Wilitary Land Vehicle status and configuration data	Vehicle				
		Weapon system				
	ınfi	Tools				
	00 70	Additional equipment				4
	anc	Usage data	Valvala DD	Army fleet management	Operating hours, on-off cycles, operating	
	Sn:	Vehicle Platform	Vehicle DB	DB	profile, V0 speeds. Also utilized by	
	stat data	Mission subsystems			Industry.	4
	de	Consumables status	_	Army float management		
	hic	Ammunition in vehicle	Vehicle DB	Army fleet management DB	Also utilized by Industry.	
Character	ž	Petrol, Oil, Lubricants Batteries	1	DB		
Periodi	and	Technical status			 	1
May be	, L	Vehicle Platform	Vehicle DB	Army fleet management	Also utilized by Industry	
o Releva	i tar	Mission subsystems	Verliele DD	DB	raso dilized by ilidastry	s, operatined by
defects	;	Software updates				Lu by
sanity/		Software updates			Liet ODDAT for consist of DMC	4
respect		ORBAT			Unit ORBAT for comms and BMS	
o Time ci	1	Radio Frequency	+		configuration	+
o Ample	ata	Crypto Key	1			†
o Data ex	- 	Map Material	1			
inhibite	ica		1		E.g. location of own and known enemy	BMS
becaus	act	Tactical Data			forces	
admini	~ !	COP updates				1
	1	COP updates			E.g. own location, observations, orders,	n enemy
		COP updates			threats	
data co		COP updates				ns, orders
·	lar wa	Crew Role: Driver			Training Certificate / Permission	
	Personnel and crew data	Crew Role: Commander			Training Certificate / Permission	on on
	ers ind di	Crew Role: Gunner			Training Certificate / Permission	on
	<u> </u>	Personal Equipment			Utilizes Mission planning DB	-

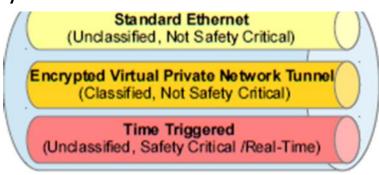


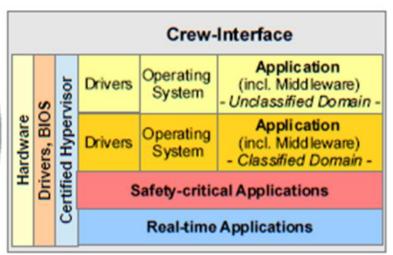




Information System Security at LAVOSAR Mission System

Security inside LAVOSAR Mission System can be handled by virtualization.



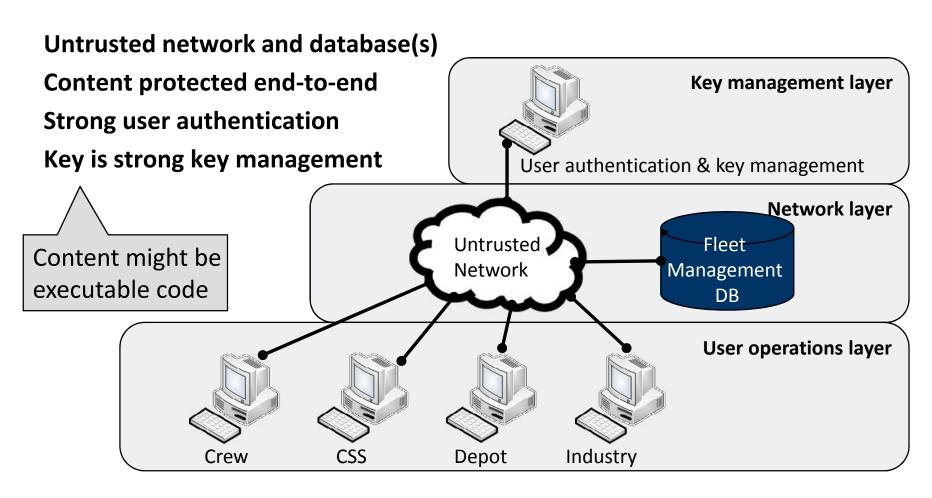


Data distribution challenges to be solved when operating under multiple administrative domains, such as coalition forces and industrial co-operation:

- From "need to know" into "need to share" and "need to hide".
- From separate networks to one common physical infrastructure.
- The Solution could be content-based information security, CBIS.
- Data itself has security attributes.
 - Content Data
 - Security Related Metadata



Content-Based Information Security, CBIS



Inspiration form FDF publication: Content-Based Information Security (CBIS)

