WP5 – Alignment with the NGVA

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Objectives

- Identify LAVOSAR II concepts & contributions as future enhancements to the NGVA.
- Identify future short & long term goals from LAVOSAR II results.
- Harmonisation of LAVOSAR II results & Development of NGVA Roadmap.
- Relevant guidelines on gaps between NGVA and LAVOSAR II.

Input

- LAVOSAR I (12.R&T.OP.336) results
- NGVA (STANAG 4754)
- Def Stan 23-09 (GVA), Victory, Scorpion and FACE *
- LAVOSAR II WP’s 1,2,3,4 and 6 output

* open information from
Aim of this presentation

Collection of ideas for future standardisation:

What else could be agreed to be included in future NGVA?

Expectations?
NGVA Benefits/Aims

• Reduced platform integration time & costs
• Improved sub-system integration
• Inherent modularity and scalability
• Better obsolescence management, more 3\textsuperscript{rd} party options
• Integration with future training and simulation architectures
• Enabler for automated collection of system data
• Flexibility of design

• Reflecting GVA benefits internationally
NGVA (STANAG 4754) current developments:

To be submitted in 2015:
• Architectural Concept AEP
• Data Infrastructure AEP
• Data Model AEP
• Power Infrastructure AEP
• Safety AEP
• Verification & Validation AEP

Under Consideration:
• Crew Terminal Software Architecture AEP

Future:
• HUMS
• Physical Interfaces
UK GVA
- Approach
- Infrastructure
- HMI
- HUMS
- Data Model
- Security
- Common Services
- Safety-Critical Networks

NGVA
- Approach
- Data Infr.
- Crew Term. S/W Infr.
- HUMS
- Data Model
- Power Infr.
- Safety
- V&V
- Phys. Interf.

LAVOSAR I & II
- Operational Approach
- System Architecture
- Power / Data Infrastructure
- Software Architecture
- Safety
- V&V
- Logistics
- Maintenance, Upgrade & Support
- External Data exchange
- Architectural Views
... ? (more as study develops)
WP5 Potential Subject Areas

- **Logistics**
  - Data exchange procedures.
  - Data model for logistics.
  - HUMS logistics related status.

- **Architectural views**

- **Training** (potential AEP)

- **Upgrading** (potential AEP)

- **Modular safety cases guidelines** (LAVOSAR I)

- **Security and domain separation through virtualisation**

- **Best Practises standards**
  - LAVOSAR I standards for ORA

- **Common EU Level Requirements**

**Areas already influenced**

Data Infrastructure, V&V principles, Harmonised definitions of terms
Based on LAVOSAR results, NGVA could cover:

**Logistics common data**
- Maintenance, support & upgrading data (AEP for upgrading?)
- Definition of data exchanges at different tactical levels
- (Logistics AEP?)

**HUMS common data**
- Common Data schemas
  - Systems data
  - Measures
  - Operational Records
- HUMS & logistics related data

**External Data Exchange mechanisms**
- Communication mechanisms for data schemas for logistics & HUMS
- Security aspects (virtualisation & network)
- Other data (Mission, LSA, IS?)

**Training** (built-in, software emulated training modes – Training AEP?)
NGVA Benefits/Aims  LAVOSAR aligned

- Reduced platform integration time & costs  <- WP1/2 for mission systems
- Improved sub-system integration  <- WP1/2 for mission systems
- Inherent modularity and scalability  <- LAVOSAR 2
- Better obsolescence management, more 3\textsuperscript{rd} party options  <- LAVOSAR Logistics
- Integration with future training and simulation architectures  <- WP4 LAVOSAR
- Enabler for automated collection of system data  <- WP4 external GW concepts
- Flexibility of design  <- WP6 & Design practices (LAVOSAR I)
Further opportunities/concepts

- **Model Based Systems Engineering practises such as Harmony™ in SysML**
  - Research challenge: Could Assessment criteria, MoE’s and MoP’s be specified in a future standard to assess mission system development at its early design stages?
  - (For interoperability, performance lifecycle properties etc)

- **Modular Safety Case practices**
  - Also for the through-life capability aspects

- **Technology-independent specifications**
  - In favour of future capability/service oriented architecture
  - Including security practices/requirements

- **Modern technologies and protocols**
  - Network security
  - Benefits: advantages in efficiency and security, future proof (could enhance networking aspects in Data Infrastructure AEP)
End of File

Questions/Remarks