



Project Summary Information

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Contracting Agency: **European Defence Agency (EDA)**
Project Duration **1 Feb. 2013 - 30 Nov. 2013**
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Rheinmetall Defence Electronics (Germany)
Selex ES (United Kingdom)
Thales Communications and Security (France)
Thales Optronics Ltd. (United Kingdom)
Vetronics Research Centre (United Kingdom)

Background

The Land vehicle mission systems are a key element of Armed Forces for achieving their mission in a wide range scenarios and situations. Until now, they have been largely bespoke, designed and built for one mission, one vehicle platform, introducing a various set of solutions with proprietary interfaces to be integrated.

There is a permanent increasing need for networked information technology in military land vehicles which enables better Situational Awareness and faster, more efficient and precise effects during the missions. This requires a common European Land Vehicle approach such that devices inside the vehicle can exchange information between each other and can be integrated more easily whilst providing the ability to update and upgrade with the speed of the technological progress.

The motivation of this project is to provide benefit to the European Member States in “their effort to save procurement and life cycle costs, to improve the EU’s defence capabilities, and to sustain the Common Security and Defence Policy (CSDP) as it stands now and develops in the future”.

The project will make recommendations for the development of commonly agreed Open Architecture which is key to a cost efficient approach throughout the whole vehicle life cycle, based on:

- open, publicly available specifications,
- well-defined and widely used non-proprietary (standard) interfaces, services and formats,
- durable (stable or slowly evolving) component interfaces that facilitate component replacement and addition of new capabilities, and
- decoupled mechanical, hardware and software interfaces for independent upgrade of subsystems with minimal impact on the overall system.

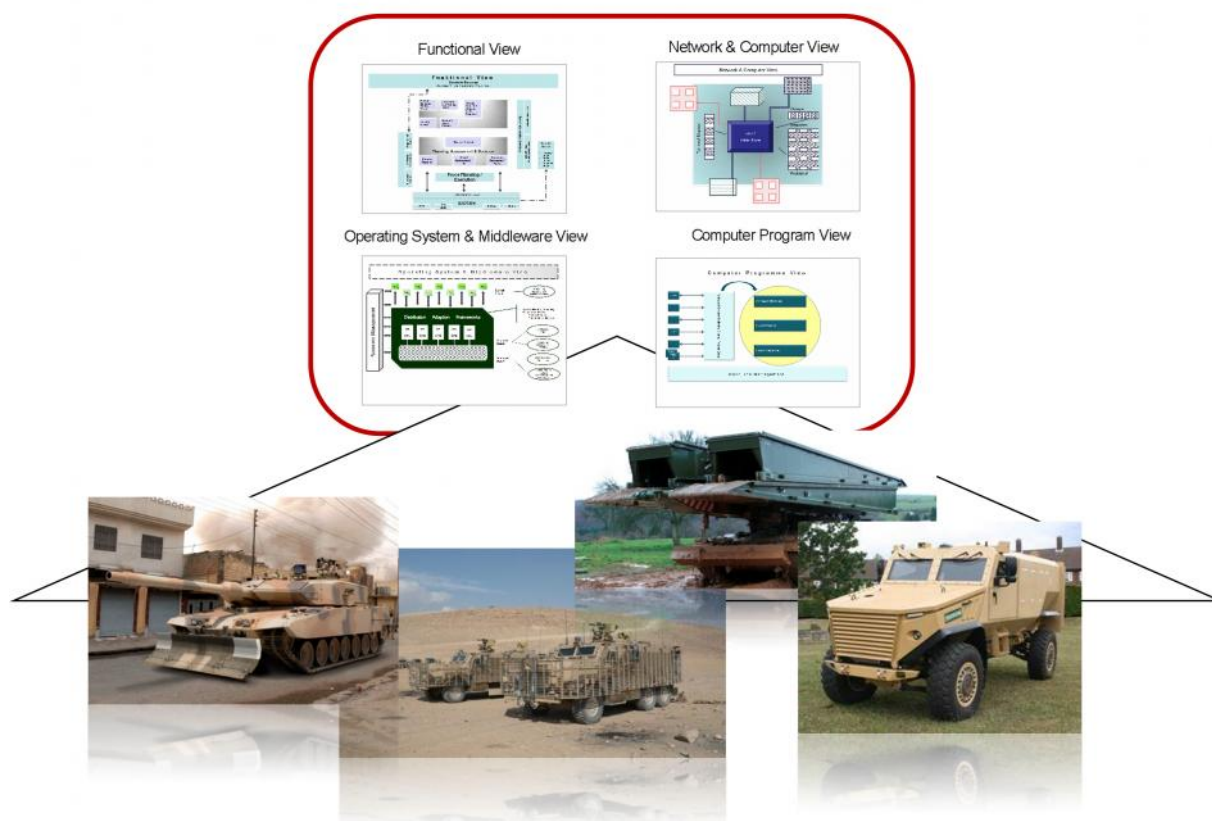


Figure 1 -Open Architecture Views on networked Land Vehicle Mission Systems

Aim

The objective is to define an electronic and information framework architecture for military land vehicles which shall be published and proposed as Land Vehicle Open Architecture for Mission Systems. The developed architecture shall serve as a reference solution for developing and implementing mission systems for vehicles as well as for integrating the missions systems into a completely networked vehicle capability which can exist in a variety of configurations, dependent on the vehicle or mission requirement.

It is understood that canvassing and bringing together the requirements of stakeholders within the European military environment is imperative to the successful execution and outcome of this project so that the recommendations for a standard and the associated business justification would be endorsed not only by the European players, but would prove attractive on a global scale.

A common European standard for Land Vehicle Systems and Equipment will provide a number of benefits, including improved operational effectiveness and reduced cost of ownership through:

- reducing vendor lock-in by the use of open, non-proprietary interfaces allowing greater competition,
- improved ability to re-role vehicles and insert new technology as it becomes available, through the use of a scalable and modular architecture,
- reducing operator training and facilitating the sharing of equipment during international common missions, and
- decreasing system engineering and integration, verification and validation costs and enabling greater systems innovation within the military vehicle mission systems industry.

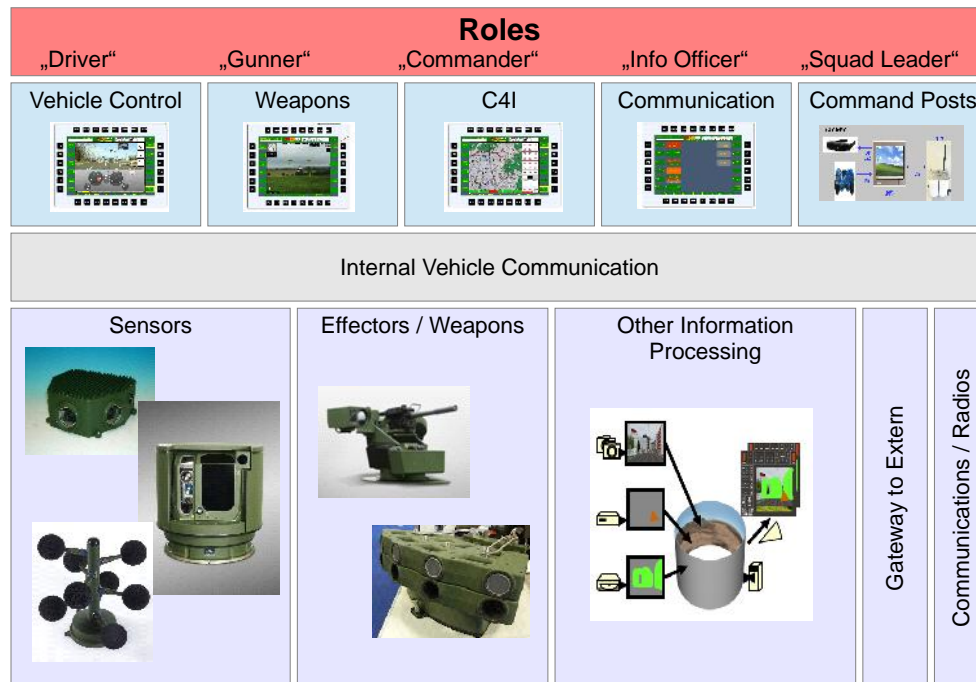


Figure 2 -A Networked Mission System

Approach

In *Work Package 1*, operational requirements and vehicle mission systems are defined and consideration is given to the requirements based on European Procurement Procedures. Current standards and practices are then evaluated against this, for relevance to the parameters of this project. Development of a Normative Framework will allow the drafting of an initial Business Case for an Open Architecture and a Road Map for establishing such a standard.

In *Work Package 2*, current and future potential technologies for vehicle mission systems will be identified which include computing technology, operating systems, middleware, applications, communication, network infrastructure and security. Safety and other technological aspects to be considered for the project will be refined. Meetings will be organised with some relevant technological stakeholders (military & civilian industrial stakeholders as well research universities) to collect technological information, which will be analysed and reviewed in coordination with the others Work Packages, to propose suitable technologies for future solutions development.

Work Package 3 addresses the development of the Functional and Technical Architecture that shall represent the desired Open Reference Architecture. Inputs of Work Packages 1 and 2 are analysed and evaluated in order to define domains, services, structures and interfaces, resulting in a completely networked overall system. Stable or slowly evolving parts are separated from areas of high innovation and competition, which ensures technological progress while, at the same time, providing a stable

framework for a modular, flexible, and extendable solutions. This reference architecture will support development of compatible configurations which will realise the benefit of reduced life cycle costs, improved innovation speed and delivering adaptability to new mission profiles.

Work Package 4 will formulate the developed common approach to a vehicle architecture by defining specifications, a list of relevant standards and design guidelines by encompassing the work identified within the other three Work Packages of this project, together with system acceptance criteria (verification, validation and assurance). Furthermore, the Business Case and Roadmap from Work Package 1 are finalized.

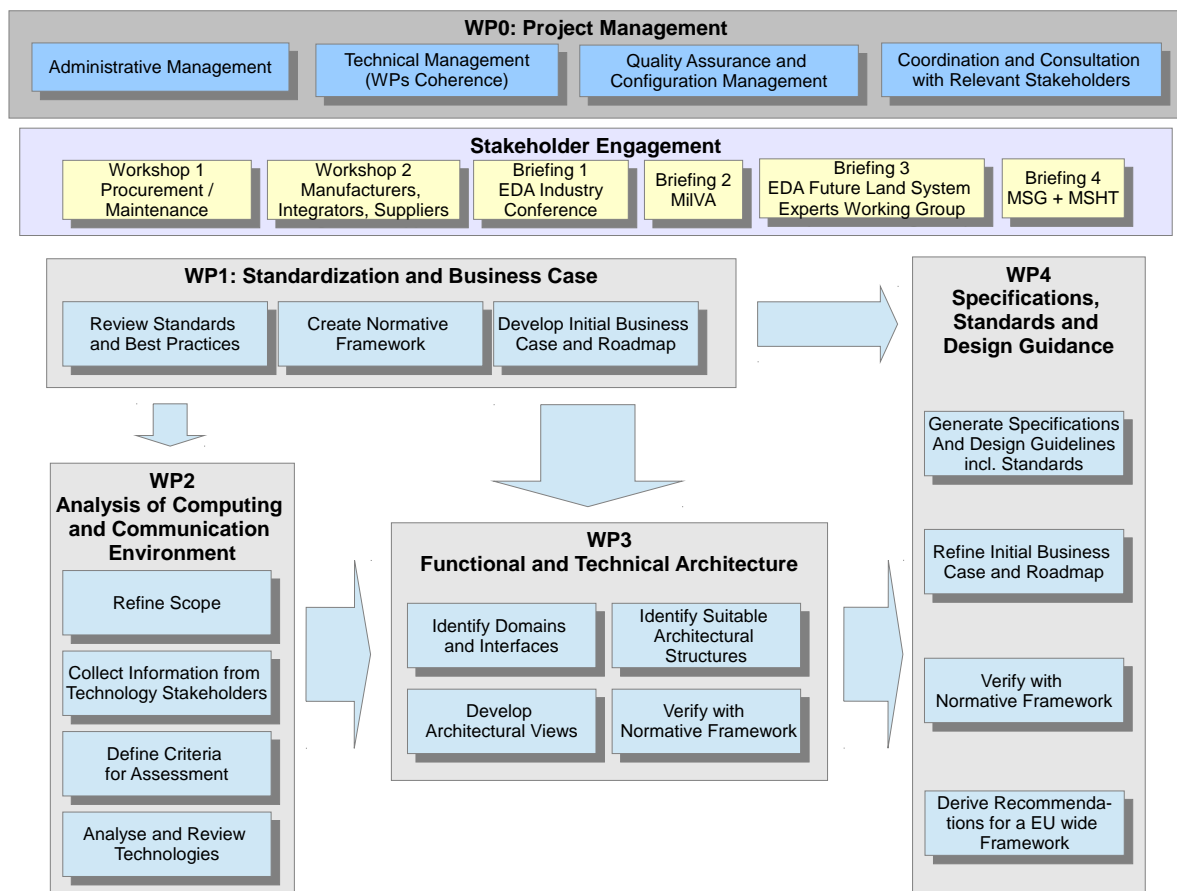


Figure 3 - Work Packages Break Down Structure

Emphasis is given to *Stakeholder engagement* in order to ensure the relevancy of the results worked out during the course of the project and to keep the stakeholders informed such they support the project's outcome. Two Workshops are organized:

- Workshop 1 with the government officials from the procurement and maintenance departments of the Ministries of Defence of all EDA participating Member States
- Workshop 2 with platform manufacturers, system integrators, and equipment suppliers.

Four Briefings will be given

- at EDA Industry Conference,
- to Military Vetronics Association (MILVA),
- to EDA Future Land System experts Working Group, and
- to EDA Materiel Standardization Group (MSG) and Materiel Standardization Harmonization Team (MSHT).