ABSTRACT

The deployment of Model-Based Systems Engineering (MBSE) in space projects is not straightforward. The interactions among stakeholders at various levels happen to be difficult because the tools involved are not fully interoperable. One of the key elements that would facilitate and ensure the exchange of engineering data information, is the definition of a common infrastructure that would allow implementing this interoperability.

In this regard, SASyF project aims to define the specification and architecture of a Model-Based Systems Engineering infrastructure for Space Systems Engineering, the so-called *System Factory*, covering all phases of a space system development, by applying the ARCADIA method.

The specification starts with the definition of 9 core use cases that compile the main activities performed in a Space System development process following an MBSE approach. Then the Capella model is produced covering the following levels: Operational Analysis, System Need Analysis, Logical Architecture and Physical Architecture. The Logical Architecture represents the main output. There is not a unique logical solution, however the resulting SASyF Logical Architecture represents one feasible alternative already agreed by the 3 LSIs (i.e. Thales Alenia Space, Airbus and OHB) and shall be a *reference point* for all companies to implement their Physical Architectures.

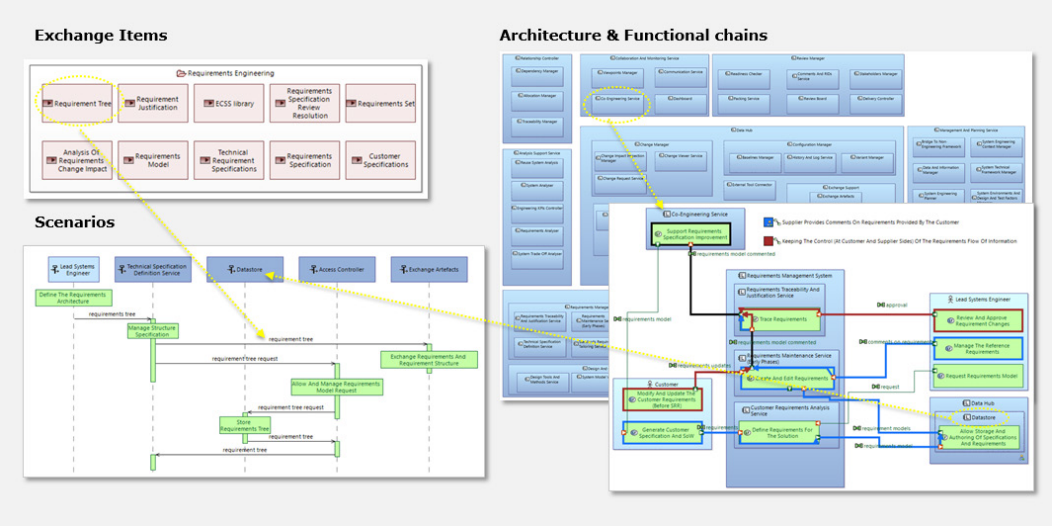

Figure 1: Definition of the System Factory Logical Architecture through different Capella diagrams

The results of this activity will evolve according to the digital engineering practices (Logical Architecture) and the model-based tools available (Physical Architecture). They can also be extended to include disciplines or define links with other ESA on-going activities. Current results contribute to enable the "Digital continuity" improving the communication workflows and facilitating the interoperability among stakeholders.

This ESA activity (Technical Officer: Andreas Jung / Marcel Verhoef) has been carried out by the SASyF consortium integrated by the following partners: GMV Aerospace and Defence S.A.U. acting as prime contractor, and Thales Alenia Space Italy, Airbus Defence and Space SAS, and OHB System AG as subcontractors.

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ESA Contract No. 4000129181/19/NL/AS