Concept, History of Activities and Logic, Structure of Deliverables

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The goal of the SAVOIR-FAIRE (SAVOIR Fair Architecture and Interface Reference Elaboration) working group is to achieve the definition of an On-board Software Reference Architecture (OSRA). To this end, ESA has run several studies on software architectures in the past years, in particular those based on Component based development techniques (e.g., COrDeT-2, OSRAc), the ones on Time and Space Partitioning or Integrated Modular Avionics for Space (e.g., SISTORA, IMA-SP), as well as supporting activities like the OBCP Building block studies (OBCP-BB).

The COrDeT-3 study is intended to perform a harmonization and consolidation of the OSRA, using as inputs the results and recommendations of previous ESA Research and Development studies, and provide a consolidated and consistent On-Board Software (OBSW) reference architecture specification. To this end, the COrDeT-3 consortium, integrated by GMV, Thales, Airbus D&S, SCISYS, OHB and Bright Ascension, has been arranging periodical working group meetings. During these meetings different aspects of OSRA have been presented, discussed and agreed. As a result, a complete OSRA specification has been produced together with a consistent meta-model of the component model and a prototype tool implemented as a proof of concept to materialise the component model.

This OSRA specification is being presented to the two sub-working groups of SAVOIR, namely SAVOIR-FAIRE, addressing and following the OBSW reference architecture in general and SAVOIR-IMA, addressing specific points related to Time and Space Partitioning. The objective is to discuss and agree the proposed OSRA specification in order to become the baseline of the *SAVOIR Software reference architecture*.

Hereafter are listed the OSRA normative and informative documentation produced in the scope of the COrDeT-3 activity:

- ***D02 – On-board software reference architecture specification***. This normative document provides a full description of OSRA, detailing its three layers: 1) Component Layer, 2) Interaction Layer and 3) Execution Platform. Additionally, the expected development process and roles are described.
- ***D02 – On-board software reference architecture - Rationale***. This rationale represents an informative document that complements the OSRA specification. It compiles the background information, justifications and arguments of the OSRA design choices, as well as those new capabilities that might be required and envisage future work.
- ***D03 – Specification of the metamodel for the OSRA component model***. This deliverable corresponds to the normative specification of the Component Model. The document describes the general organization of the metamodel and focuses on each single meta-class for a detailed description of its semantics.

  The document D03 will be accompanied by the normative meta-model (M01) implemented as an ecore model.
- ***D04 – Software user manual and installation guide of the prototype tool***. This document provides the installation guide of the COrDeT-3 toolset prototype, and guides the user to design their models including a complete example project. It is not normative, but illustrates to the different stakeholders how the features of OSRA defined in the component model can be implemented.