

SAVOIR-FAIRE working group report and On-Board Software Reference Architecture (OSRA) status – Oct 2018

Andreas Jung (ESA) – ADCSS 2018



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Hibernation period



• SAVOIR-FAIRE was in a longer hibernation period





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Re-activation of SAVOIR-FAIRE



- During hibernation, **consolidation work** has taken place:
 - Input: COrDeT-3 and SIFSUP (and past and on-going R&D activities like OSRA-NET and MORA-TSP)
 - Output: Generation of SAVOIR documents on OSRA and associated software (meta-model and editor)
 - Minor changes to COrDeT-3 results, mainly clean-up, clarifications, additions and alignment to latest R&D results
- Next meeting of SAVOIR-FAIRE: end of Oct 2018 to kick-off the review of the SAVOIR OSRA documents



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- TM-001: SAVOIR OSRA SCM Metamodel specification: The Space Component Model (SCM) metamodel specification.
- TM-003: SAVOIR OSRA Execution platform pseudo-component specification: A specification of the component layer pseudo-components representing the functionality of the Execution platform to the component layer.
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GS-005: SAVOIR OSRA - Execution platform functional specification: The specification of the execution platform at a functional level.

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Now ready for review

by SAVOIR-FAIRE



Software

Software is available on ESSR (<u>https://essr.esa.int/</u>):

- Space Component Model Metamodel (v1.0.1): The reference implementation of the component model for the OSRA is based on an ecore metamodel, called the Space Component Model (SCM).
- SCM Model Editor (v2.1.0):

A graphical editor has been developed to allow the creation of SCM models. The so called OSRA SCM Model Editor is based on Eclipse (currently version 4.6.3 = Neon.3), using the Sirius framework.



OSRA - ONBOARD SOFTWARE REFERENCE ARCHITECTURE



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R&D activities related to OSRA



On-going and soon starting R&D activities related to OSRA:

 Multicore Implementation of the On-Board Software Reference Architecture with IMA Capability (MORA-TSP (GSTP) – 500kEUR) Expected to finish Q1/2019.

> The overall objective of the activity is to **demonstrate** the feasibility and performance evaluation of an end-to-end process, tools and building blocks **from application level specification** using the **component based approach** of the OSRA down to representative implementation of the **combination of OSRA, TSP kernel, SMP operating system and multicore**.



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R&D activities related to OSRA

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On-going and soon starting R&D activities related to OSRA:

- Multicore Implementation of the On-Board Software Reference Architecture with IMA Capability (MORA-TSP (GSTP) – 500kEUR) Expected to finish Q2/2019.
- Model Exchange for Software Engineering (TRP 400kEUR) Expected to start Nov 2018.

The overall objective of the activity is to **define the global picture of the** *data and models* needed around the On-board Software Reference Architecture (OSRA), their relationship, their ownership, the process to produce and use them, and therefore the need for exchange within and outside the software domain, and to define the data exchange items and their associated data/model exchange formats. This shall be the input to the consolidation of the architecture of the *software factory*.

OSRA and beyond: Digital continuum



 Integration of OSRA SCM Model Editor into the "Digital continuum": Link Capella hardware architecture to OSRA hardware topology



Future work: Link of Capella functions to OSRA SW components.



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