



SAVOIR-FAIRE working group report

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Review of SAVOIR OSRA documents



- **Recapitulation:**
 - SAVOIR-OSRA documents had been *produced* until end of 2018 with inputs from
 - COrDeT-3, SIFSUP and past and on-going R&D activities like OSRA-NET and MORA-TSP.
 - Minor changes to COrDeT-3 results, mainly clean-up, clarifications, additions and alignment to latest R&D results
- **Review of SAVOIR OSRA documents** took place until March 2019.



List of SAVOIR OSRA documents



- ***TN-002: SAVOIR Onboard Software Reference Architecture:***
An informative guide to the OSRA.
- ***GS-005: SAVOIR OSRA - Execution Platform Functional Specification:***
Generic specification of the execution platform at functional level.
- ***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.



GS-005 (Execution Platform Functional Specification) – Status



- SAVOIR-FAIRE review: 254 RIDs received, of which 48 major
 - A number of RIDs asking to rearrange the structure of document (presentation wise) → *time-intensive to implement*
- Work up to now gave priority to solving selected major RIDs; 22 major RIDs dispositions already implemented, including:
 - Re-alignment with ECSS OBCP and PUS,
 - request command sequencing,
 - use of the Execution Platform in a TSP environment,
 - restricted privileges for some services (i.e. security),
 - semantics and management of application context including restore from SGM.



GS-005 (Execution Platform Functional Specification) – Status (cont'd)



- Major topics currently being addressed (work ongoing)
 - Clarification of *semantics* of terms (e.g. error vs. fatal error, command vs. operation, dataset vs. parameter, etc...),
 - Clarification on *tailoring* and optional requirements,
 - Better inclusion of *files* and file management,
 - Coherent services for time access and time management in *TSP* and non-TSP environments,
 - Clarification on requirements for (orbit) *position-based scheduling*,
 - General re-alignment of some services with *PUS*, and ensuring that PUS is a valid instantiation of the services defined in this functional specification.



GS-005 (Execution Platform Functional Specification) – Release of i1r1



A **first version** (i1r1 - **for information** only, not yet approved by SAVOIR Advisory Group) has been released, considering that the topics that still need to be addressed will not have, from a conceptual point of view, a major impact on the document.

Available on ESSR in the OSRA project:

<https://essr.esa.int/project/osra-onboard-software-reference-architecture>

SAVOIR-GS-005 i1 r1 - SAVOIR OSRA - Execution Platform Functional Specification_2019-11-11.pdf



TN-002 (SAVOIR Onboard Software Reference Architecture) – Status



- SAVOIR-FAIRE for review: 127 RIDs received, of which 33 major
- Major topics being addressed:
 - Some RIDs require restructuring of document (presentation rather than contents) → time-intensive
 - Coherent model for interaction patterns, synchronous and asynchronous execution, and concurrency model
 - Observability of datasets
 - Configurability of Execution Platform
 - “OBCPs as components” (OBAPs vs. OBOPs)
 - Improved support for TSP, including non-functional properties and clarifications on Execution Platform design in TSP environments
 - Clarifications on “Context Management”
 - Future work: Use of components for the design of execution platform
 - Coherent propagation to TN-002 of modifications from GS-005



TM-001 (*SCM Metamodel specification*) – Status



- SAVOIR-FAIRE for review: 64 RIDs received, of which 10 major
- Major topics being addressed:
 - Validation checks at metamodel level
 - Import / Export of models
 - Compliance checks for metamodels
- In parallel, a reference version of the SCM metamodel (OSRA component model reference implementation) has been finalised.
 - It backported in SCM all major results of previous and on-going studies (COReT-3, OSRA-NET, selected features from GSTP MORA-TSP) → ensure to benefit from these features in a single coherent version of the metamodel
 - Metamodel description in TM-001 is being aligned



TM-003 (Execution platform pseudo-component specification) – Status



- SAVOIR-FAIRE for review: 51 RIDs received, of which 10 major
- Major outstanding topics:
 - Clarification of use and interface for pseudo-components
 - Dataset Group and Commanding group interface
 - Context management
 - Cold start / warm start and link with context management
 - OBCPs interface
 - Consistency with modifications to GS-005 and TN-002



Workplan

1. Finalization of GS-005 and submission to SAVOIR Advisory Group for approval.
2. Release of
 - the three other OSRA documents (TN-002, TM-001, TM-003) and approval by SAVOIR AG.
 - aligned software (metamodel and model editor) on ESSR, consistent with SAVOIR documentation.



Contact



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