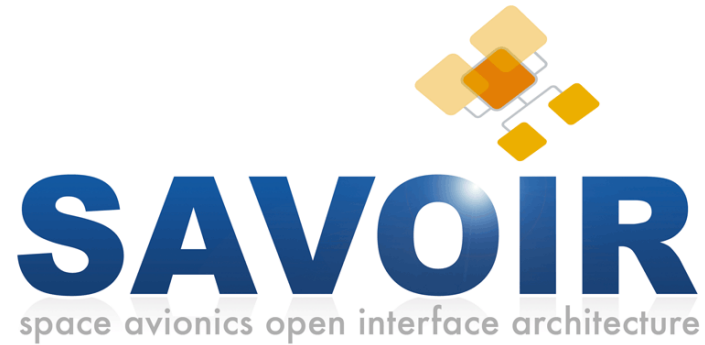




Generic OIRD: purpose, scope, status



Purpose - Why a generic OIRD?



The problem

- The OIRD's (one per mission) are perceived as significantly different from one mission to another – difference not necessarily justified or not as big as perceived.
- A similar problem is perceived by operators for what concerns on-board SW implementations
- The operability requirements drives the mission management / data management services as well on-board as the MCS.
- The variability of requirements and implementations hamper product orientation

Objective

- Under the SAVOIR harmonization, and in line with the Avionics Reference Spec's, establish a Generic OIRD which shall form the baseline spec for future missions and allow the definition of compatible OBSW libraries

Expected Benefit

- Allow Industry & Mission Control to be product oriented
- A standardised approach to operability allows Industry (& Operation) to prepare reference libraries to be reused between missions.



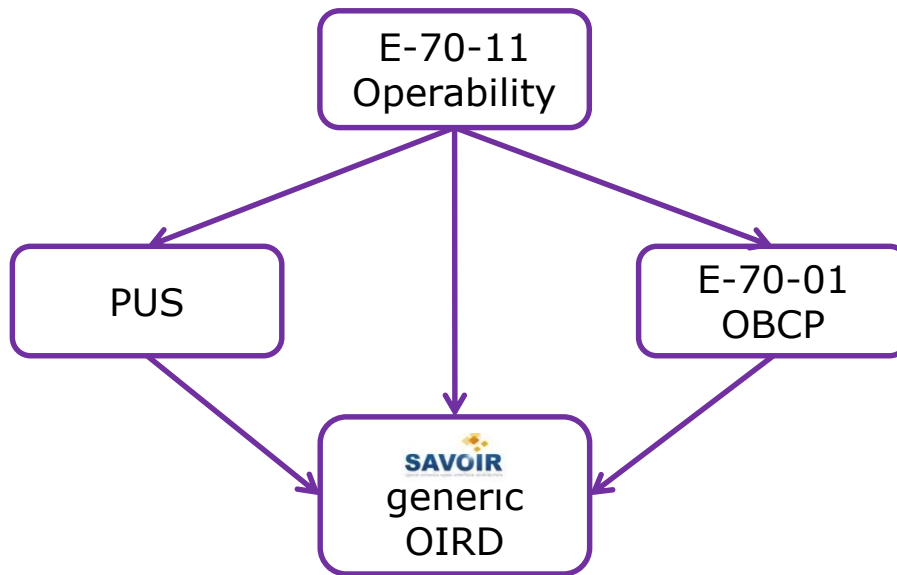
Scope: Content of a generic OIRD



- The document defines all requirements common to all (or most of) missions
- The generic and/or the mission specific OIRD might perform a tailoring/applicability of these requirements
 - E.g. we might decide that a specific PUS service/sub-service is not generically needed by ESA mission, so it should not end up in the Generic OIRD, eventually in the mission specific one if needed
- The document may further detail/expand requirements if needed, e.g.:
 - back-up modes (Safe/Survival Mode) requirements
 - downlink priority management
- The differences at OIRD level between mission types (EO, Astronomy, interplanetary, etc.) should be negligible.
 - If any, they can be managed as “options” as done in Savoir specs (e.g. OBC)
- Distinction between mission classes (small. medium, big) are avoided.
- the level of the requirements shall be balanced to avoid inclusion of design requirements while getting properly operable equipment (see Juice, S3A experience)



Context: Relation to existing standards

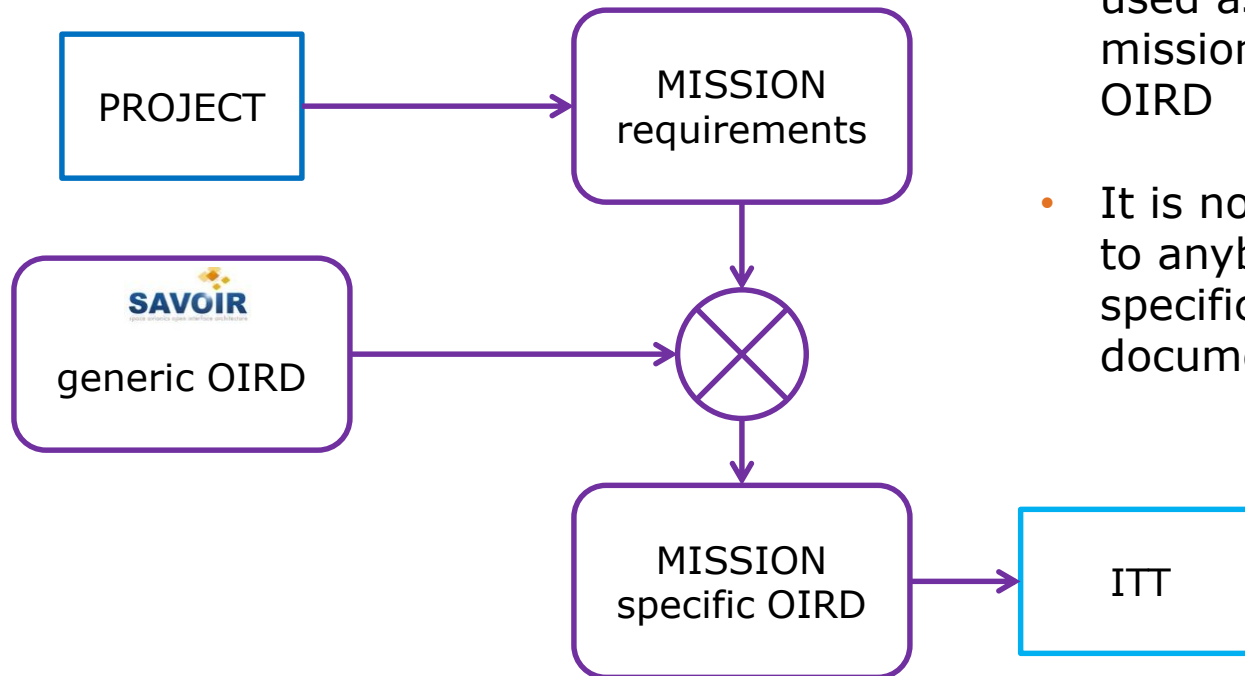


- The document refers to existing standards, i.e. it does NOT duplicate requirements

- The operability standard is a higher level document defining the generic rules, guidelines, and needs for requirements in the operability domain (e.g. it shall not specify FDIR design, it shall rather set the rules to be used when designing FDIR)
- the PUS and the OBCP standards (and any other that might come) shall define the detailed requirements for their specific domain



Use: Where does it fit wrt mission specific requirements?



- The document is intended to be used as a starting point for missions to build their own OIRD
- It is not an applicable document to anybody, only the mission specific OIRDs will be applicable documents to industry



Starting point: Existing material



- ECSS Standards:
 - E-70-11 Operability: under-going update; ESA change proposals are available; formal document won't be available for a while
 - E-70-41 PUS-C available
 - E-70-01 OBCP available
- Draft generic OIRD (Word file) with traceability/applicability matrixes wrt ECSS 70-11 and 70-41 standards
- SAVOIR Document "General recommendations for Spacecraft Monitoring & Control (P-ASRA-NOT-1073128-TAS-2)"





- ✓ Agree on the “scope and purpose” of the generic OIRD
- ✓ Agree on the content of the generic OIRD
- ✓ Create a mini-WG (1 rep each OPS-OA/-OE/-OP)
- Re-start from scratch directly in DOORs
- CK if there is a template / data model that can be used
- define applicability “as is” of reqs from ECSS standards
- Identify and develop areas where specification as standards level is not enough (*On-going*)
- Identify and develop areas missing from standards (if any) (*On-going*)
- PUS-C tailoring (*On-going*)
- Expected draft for Generic OIRD early 2017 (Jan/Feb)- Note: *This is likely too late to be applicable for PLATO.*

