

SAVOIR

Avionics Reference Architecture

Operability & the Generic OIRD

Avionics, Data Control & Software Systems Workshop

20/10/2015 ESTEC

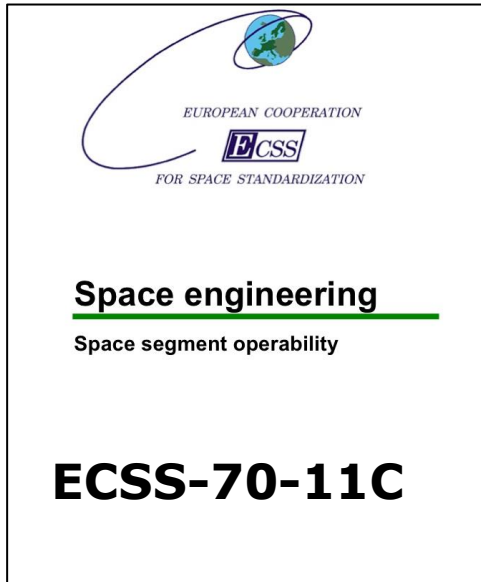


1. The Spacecraft Operations Interface Document was created in the 90's to standardise how ESA specified its operability requirements.
2. This document was eventually included in the ITT to Industry.
3. ECSS Standards for Operability were established early 2000, and were based on the SOIRD.
4. Packet Standards were also adopted.
5. There is a strong push by both Operations and Industry to have a standard set of requirements for Operability

Requirements are tailored from the ECSS Operability Requirements for various mission families:

- **Earth Observations,**
- **Science missions,**
- **Interplanetary missions.**

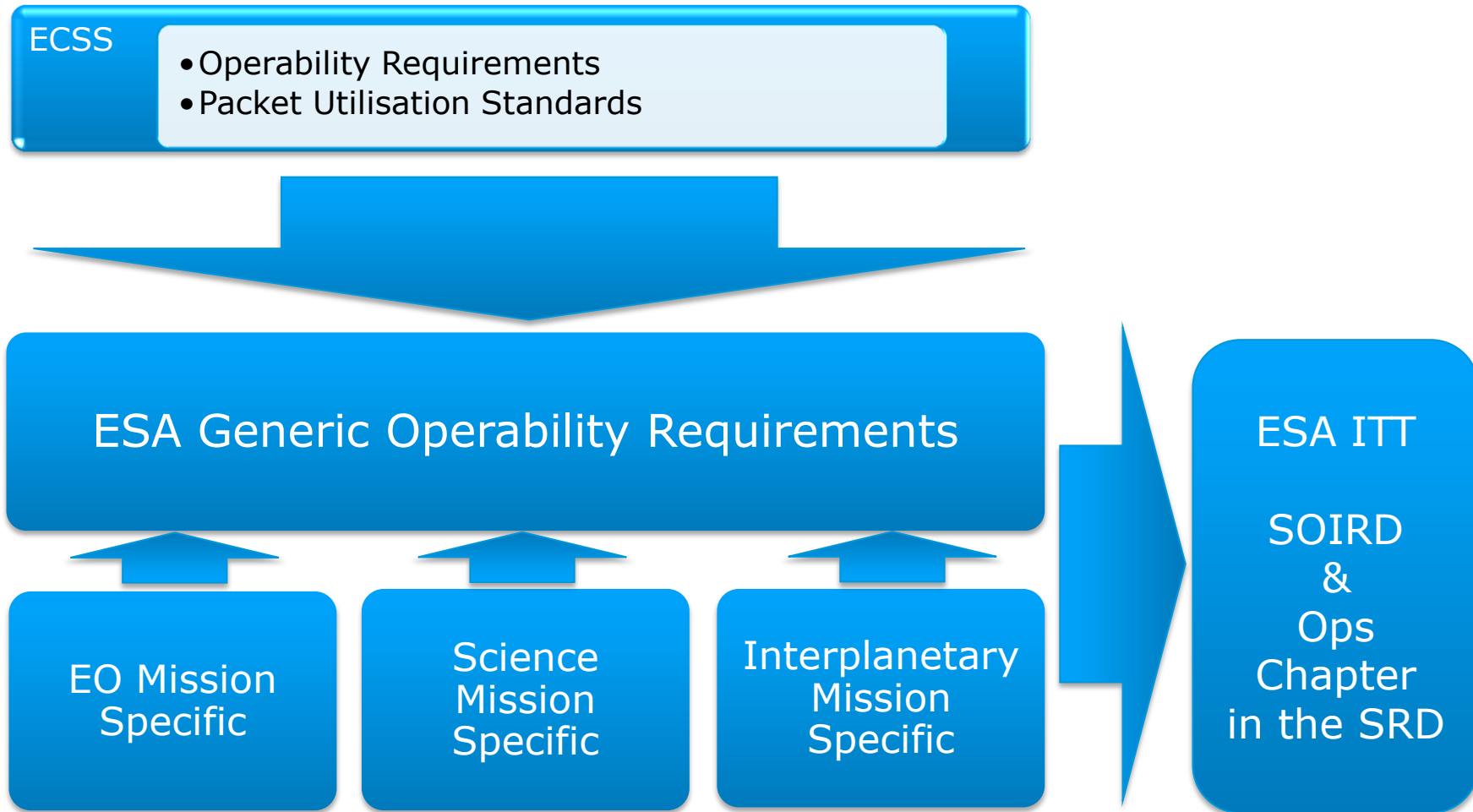
- **Different Agencies Missions**



Operability is then formally specified in the ESA ITT issued to Industry:

- Spacecraft Operations Interface Requirements Document, SOIRD
- Operability Requirements Chapter of the System Requirements Document

ECSS & ESA Operability in the ITT



Implementing Operability



Harmonising Operability Requirements:

- A review of SRDs and SOIRDs has been made, to consolidate the requirements, format and wording into generic cross-mission requirements with mission family specific adaptations. It also includes current practices and missing functionality.

Addressing the Standards:

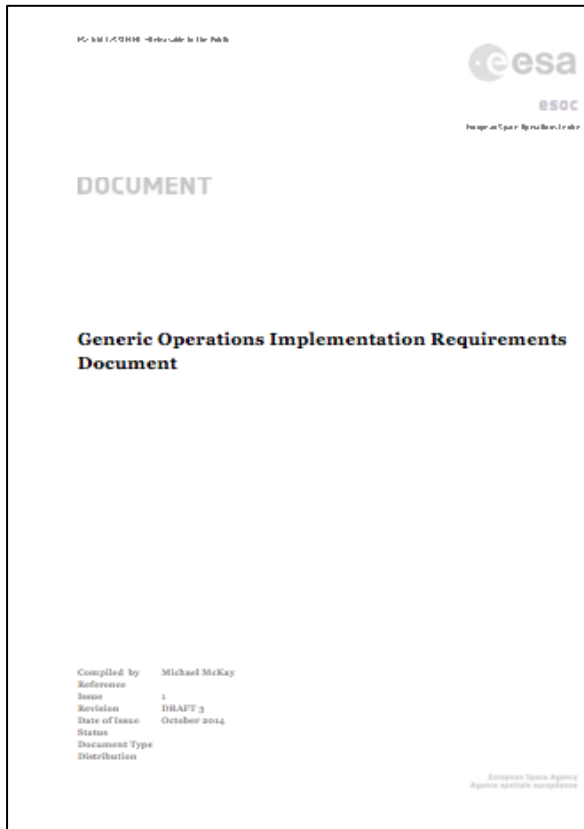
- Inclusion of the latest Packet Utilisation Standard additions & changes
- Coherence with the ECSS Operability Standard 70-11C
- Input to the ECSS Operability Standards Working Group to propose updates to the Standard.

Major changes in the PUS included



- The latest version of the Packet Utilisation Standard has addressed many Services that are needed for today's missions and those of the future.
- All but 3 previous PUS Services have been extended and 4 new Service have been added. These are:
 - Parameter Management
 - Request Sequencing
 - Position-Based Scheduling
 - File Management
- All these changes have been incorporated into the Generic OIRD.

Generic OIRD



ECSS-E-70-11 Updates



MAS AIS Operability Requirements



Coordination with Projects

Generic OIRD

- The Generic OIRD has been completed and is going under review by ESA and the SAVOIR Advisory Group
- A consolidated document should be completed by the end of 2015
- Within ESA, the Generic OIRD will be used during the Phase A of new missions, ensuring a more common specification of operability requirements
- Coherence between the ECSS PUS, Operability & the Generic OIRD are ensured

Future Evolution

- Mission Operations Services will be considered in the future.

Thank you for your attention



Any Questions?