

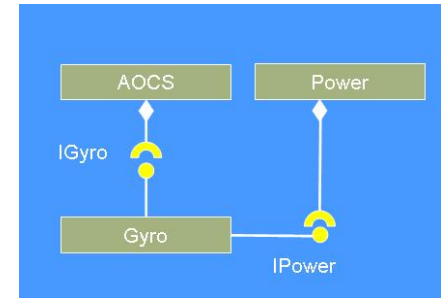
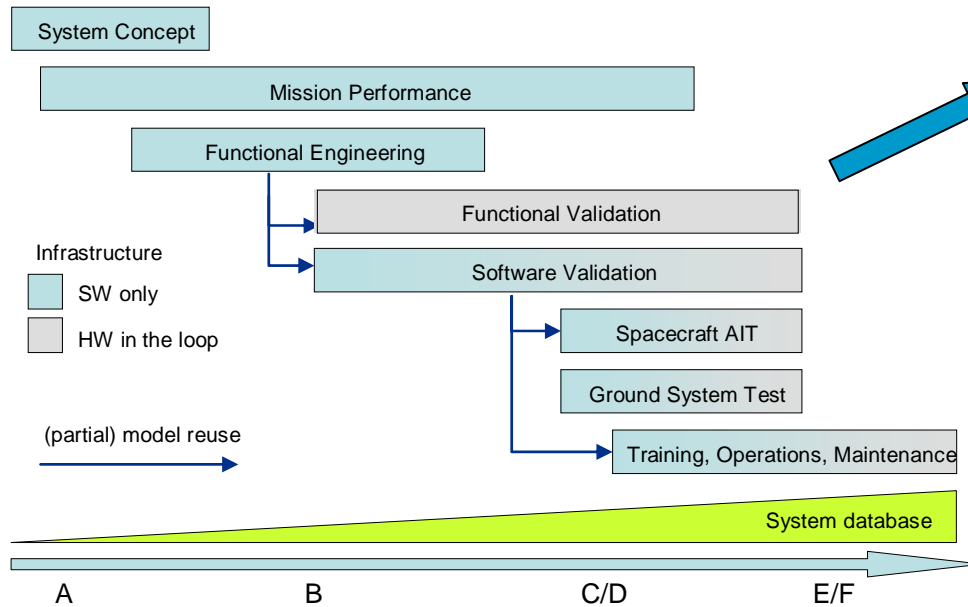
Spacecraft Simulation Reference Architecture – Panel Discussion SESP 2008

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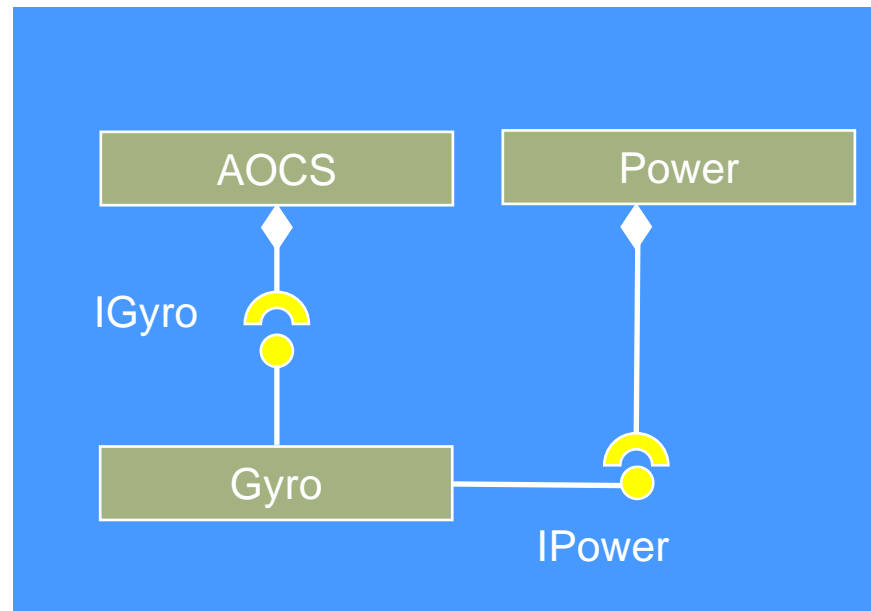
Objectives

- To develop an architecture that can serve as a reference for all simulator developments in a space project in order to enable the reuse of model implementations.



Scope

- Based on the syntax of ECSS E-40-07 try to standardise the main interfaces between the simulator models on a semantic level.

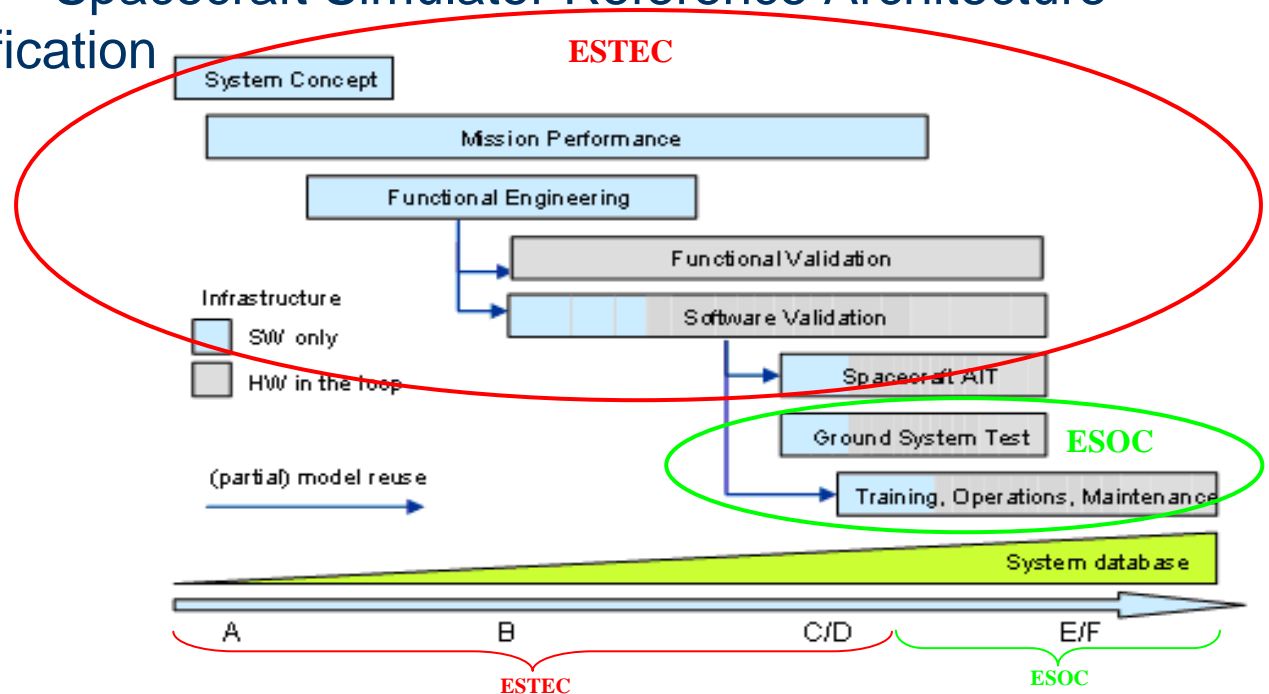


Reference Architecture Specification

- High-level reference architecture
- Interface Requirements
- Interface Definitions as UML model and SMP2 catalogues
- Model Requirements and Definitions as requirements document, UML model and SMP2 catalogues
- Simulator Configurations as design documents, UML models and SMP2 catalogues and assemblies
- Interface Test Specifications captured using the UML Testing Profile (UTP)

Activities

- Two activities on-going:
 - ESTEC – Space Simulation Reference Architecture
 - ESOC - Spacecraft Simulator Reference Architecture Specification



- Follow-up TRP activity planned for end 2009 to harmonise and further refine the architecture

Standardisation Efforts

- **System Modelling and Simulation (ECSS E-10-21)** – guidelines for applying simulation and modelling techniques in support of space system engineering process.
- **Simulation Modelling Platform (ECSS E-40-07)** – defines the requirements for space simulator developments as well as the interfaces on a syntactical level to promote simulator model reuse and exchange.
- **Space Simulator Reference Architecture** – based on the syntax of ECSS E-40-07 try to standardise the main interfaces between the simulator models on an semantic level.

Challenges

- Many stakeholders – need to involve the community, need to allow for many iterations!
- Level of specification, to what level of detail? Do not want to over-specify!!
- User-friendliness!!! How do I get started? How do I extend it? How does the RA specification integrate with our tools?

