OSMoSE - Governance

OSMoSE Governance

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MB4SE Project, its objective

Enable the deployment of the MBSE technology in Space Projects

- need to increase efficiency and cost-effectiveness

- taking into account the trend towards the extensive use of models, digitalizing the information

  - in various disciplines, and

  - in various industries

For MB4SE, refer to https://mb4se.esa.int - email: mb4se@esa.int

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OSMoSE – The problem to solve

Enabling semantic interoperability between the many actors involved in the Development and the Operations of a Space System

Lessons learned have shown that only specifying means to exchange data, without agreeing on the exact carried semantics, leads to confusions about what is exchanged and results in losses of knowledge

without an agreement on semantics, going model-base will only deteriorate the exchanges

First step is already in place with ECSS: around 150 standards have been produced to enhance the communication between all stakeholders however, exchange of information is still difficult

For enhancing communication and removing ambiguity, *as stated in ECSS-E-TM-10-23A Space System Data Repository*

Addressing the interoperability at semantic level is the only way forward !

For ECSS, refer to www.ecss.nl – see also https://ecss.nl/hbstms/ecss-e-tm-10-23a-space-system-data-repository

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OSMoSE – The Objective

Enabling semantic interoperability between the many actors involved in the Development and the Operations of a Space System

OSMoSE objective is to produce a Space System Ontology

- that satisfies all stakeholders in accordance with their responsibilities, roles and privileges
- that focuses on the knowledge that is exchanged between any stakeholder independently of whether the exchanges occur within an organization or between organizations

The Space System Ontology is a "global data model" defined at "schema level" that allows capturing the WHAT of each space system, i.e. the WHAT that is exchanged between any stakeholder involved in the development and operations of that space system

The Space System Ontology is expressed at "conceptual level" to avoid entanglement due to any design related methodology and technology

In line with ECSS, the Space System Ontology can be verbalized as requirements specifying the WHAT and not the HOW

MB4SE Advisory Group / OSMoSE
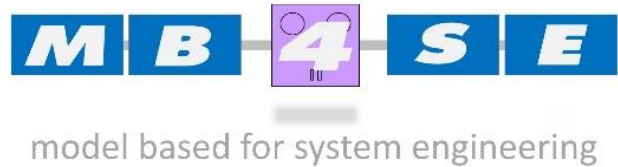
MB4SE Advisory Group responsibility

- all managerial issues e.g. risks, legal issues, roadmap related to the Space System Ontology
- the utilization of the Space System Ontology to enable semantic interoperability

OSMoSE Governance responsibility

- the Space System Ontology development taking all technical decisions e.g. modelling language selection, definition of the development lifecycle
- the elaboration of the related "global conceptual data model" to ensure its capability to achieve interoperability

OSMoSE objective : Space System Ontology in ECSS

OSMoSE Design Authority:

- Members of the OSMoSE Governance group who have the specific tasks
  - to maintain the overall quality of the Space System Ontology
  - to assess the adequacy of the proposed extensions to be integrated in the Space System Ontology

Space System Ontology publication:

- *Interaction with ECSS not officially started but* OSMoSE's intention are
  - Short term: to let to ECSS the responsibility to publish the ontology
    - As part of the ECSS Standards? a first publication has been made, refer to the ECSS-E-ST-70-41C PUS Foundation
    - As of a new type of ECSS documents
  - Long term: to bring the OSMoSE Design Authority role to ECSS

OSMoSE governance & Design Authority

OSMoSE Governance current & active participation:

- Space Agencies
  - ESTEC & ESOC
  - CNES
  - DLR
- Large Spacecraft Integrators
  - Airbus Space & Defence
  - OHB
  - TAS
- with support from:
  - GMV → currently active in conceptualizing MBSE for OSMoSE
  - Gorilla IT, Meta Invent → currently active in conceptualizing MBSE for OSMoSE
  - RHEA, De Konsult → currently active in specifying ECSS MasterDB
  - Ariane Group
  - CGI
  - *Others having declared interest not actively participating*

OSMoSE Design Authority required participation:

- Core made system engineers and conceptual modellers from
  - Space Agencies
  - Large Spacecraft Integrators
- Ad-hoc support from experts in the various disciplines of interest

Not everyone can be member of the OSMoSE Governance → We need to create the OSMoSE Community for:

- Sharing
- Gathering ideas
- …

https://mb4se.esa.int/OSMOSE_Main.html

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MBSE-2021 – Space System Ontology Workshop

OSMoSE Governance ➔ Questions & Answers

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