SAF User Documentation : Physical Logical Mapping Viewpoint

Domain	Aspect	Maturity
Physical	Traceability & Mapping	✅ released

Example

Purpose

The Physical Logical Mapping Viewpoint supports the definition of the assignment of conceptual logical system elements to physical SOI elements.

Following the identification of physical SOI elements capable of performing the system functions of logical elements, the Physical Logical Mapping Viewpoint provides feedback to the System Architecture Definition process to consolidate or confirm the allocation, partitioning, and alignment of logical elements to physical elements that comprise the SOI.

Applicability

The Physical Logical Mapping Viewpoint supports the "Design Definition Process" activities of the INCOSE SYSTEMS ENGINEERING HANDBOOK 2023 [§2.3.5.5] and contributes to the artifact "Traceability Mapping".

Furthermore, the Physical Logical Mapping Viewpoint supports the "Allocation and Partitioning of Logical Entities to Physical Entities" activities of the INCOSE SYSTEMS ENGINEERING HANDBOOK 2015 [§4.4.2.7].

Presentation

A LBS_to_PBS mapping matrix featuring

- Logical Breakdown Structure (LBS)
- Physical Breakdown Structure (FBS)
- Allocation from conceptual logical system elements to physical SOI elements

Stakeholder

- Hardware Developer
- IV&V Engineer
- Mechanic Developer
- Software Developer
- System Architect

Concern

- Which conceptual logical elements are allocated to the physical SOI physical architecture?

Profile Model Reference

The following Stereotypes / Model Elements are used in the Viewpoint:

- Allocate [SysML Profile]
- Attribute "logical_element" of SAF_PhysicalItem referencing SAF_LogicalElement
- SAF_LogicalInternalRole contained in SAF_LogicalElement
- SAF_PhysicalInternalRole contained in SAF_PhysicalItem
- SAF_LogicalElement
- SAF_PhysicalInternalRole
- SAF_SPV08a_View

Input from other Viewpoints

Required Viewpoints

- Logical Structure Viewpoint
- Physical Structure Viewpoint
- Logical Functional Mapping Viewpoint

Recommended Viewpoints

- System Functional Breakdown Structure Viewpoint