SAF User Documentation : P8_PFUM Physical Functional Mapping Viewpoint

Domain	Aspect	Maturity
Physical	Traceability & Mapping	released

Example

Purpose

The Physical Functional Mapping Viewpoint supports the analysis of the assigment of system functions and system partial functions to physical system elements. The result shall be computed from the assigment of functions to logial system elements and the assignment of logical system elements to physical system elements

Applicability

The Physical Functional 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 Functional Mapping Viewpoint supports the "Allocation and Partitioning of Functional Entities to Physical Entities" activities.

Presentation

A FBS_to_PBS mapping matrix featuring

- Functional Breakdown Structure (FBS)
- Physical Breakdown Structure (PBS)

- mapping (it is a derived relationship) from system functions and system partial functions to physical SOI elements

Stakeholder

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

Concern

- What is the mapping of functions to the physical SOI physical architecture?
- Which system funcions need to be tested in IV&V activities?

Profile Model Reference

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

- Allocate [SysML Profile]
- Attribute "function" of SAF_PhysicalItem referencing SAF_SystemFunction
- SAF_P8_PFUM_Matrix
- SAF_PhysicalElement
- SAF_PhysicalHardwareElement
- SAF_PhysicalSoftwareElement
- SAF_SystemFunction
- SAF_SystemPartialFunction

Input from other Viewpoints

Required Viewpoints

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

Recommended Viewpoints

- System Functional Breakdown Structure Viewpoint