System Architecture Framework

Physical Context Definition Viewpoint

Domain: **Physical** *Aspect:* **Context**

Example

none

Purpose

The physical context definition Viewpoint identifies the different context the SOI is used in, along with the associated external entities sharing a physical interface with the SOI. For each context the applicable environmental conditions may be defined. The physical context helps in discovering the interface requirement(s) needed to integrate a SOI into its environment in a specific context. NOTE: For each candidate SOI architecture, the physical context Viewpoint is elaborated forming the baseline for the later assessment of the different system architecture solutions.

Applicability

The physical context definition Viewpoint supports the "Architecture Definition Process" activities of the INCOSE SYSTEMS ENGINEERING HANDBOOK 2015 [§ 4.4]. The Viewpoint is used to define context, boundaries, and external interactions of the SOI in the physical domain. NOTE: Only those external entities are identified that share a physical interface. Other entities connected via a network are subject of the logical system context.

Stakeholder

- System Architect
- Customer
- IV&V Engineer
- Acquirer

Concern

- What kind of test equipment is necessary to test the system elements?
- What is the System Boundary definition?
- How does the system or a system element interact with the test environment?
- What are necessary enabling systems?
- What are the external physical entities the system interacts with in the respective context?

Presentation

The following artifact(s) support the modeling activities: A) The physical context definition diagram defines the elements available in the context. At least one context definition diagram is generated per identified context. For each identified context a BDD featuring:

- one block representing the Physical SOI
- one block representing the Physical System Context
- several blocks representing Physical Context Elements such as Physical User, Physical External System, and Physical Environment present in the systems context
- composition relationship(s) attaching the Physical Context Elements and the Physical SOI to the Physical System Context block

Profile Model Reference

- Association [UML_Standard_Profile]
- Association [UML_Standard_Profile]
- Property [UML_Standard_Profile]
- Property [UML_Standard_Profile]
- SAF_PhysicalContext
- SAF_PhysicalEnvironment
- SAF_PhysicalExternalSystem
- SAF_PhysicalSOI
- SAF_PhysicalUser

Input from other Viewpoints

Required Viewpoints

none

Recommended Viewpoints

none