Physical Context Definition Viewpoint

Domain	Aspect	Maturity
Physical	Context & Exchange	⚠️ under construction

Example
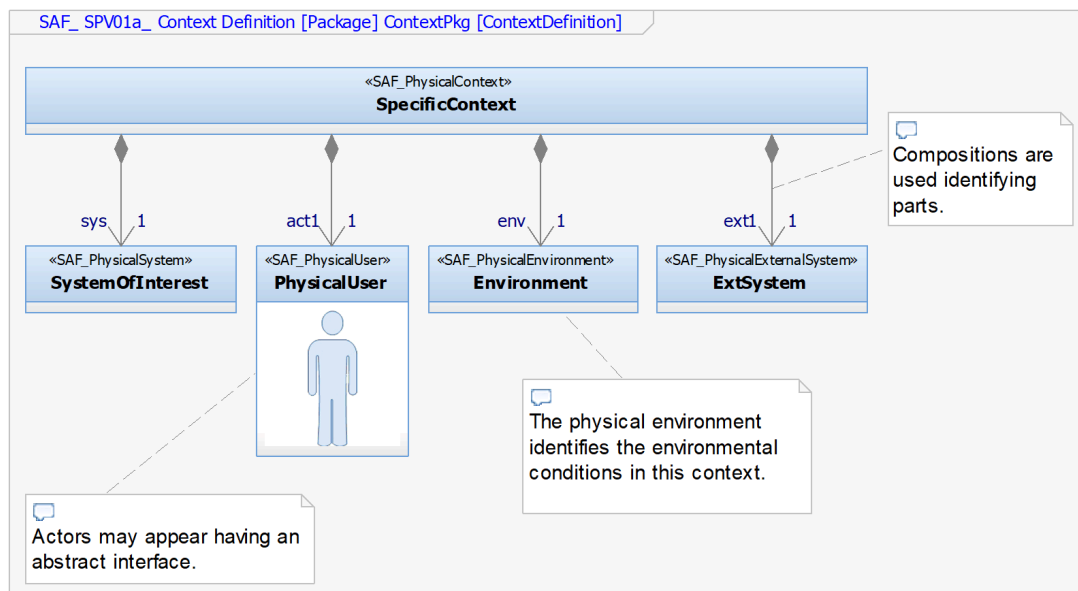
Purpose

The Physical Context Definition Viewpoint identifies the different context the system is used in, along with the associated external entities sharing a physical interface with the system. For each context the applicable environmental conditions may be defined. The physical context helps in discovering the Interface Requirements needed to integrate a system into its environment in a specific context. NOTE: For each candidate system 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

- Acquirer
- Customer
- Hardware Developer
- IV&V Engineer
- Safety Expert
- Software Developer
- Supplier
- System Architect

Concern

- 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?
- What is the system boundary definition?
- What kind of test equipment is necessary to test the system elements?

Presentation

The following artifacts support the modeling activities: The physical context definition diagram (BDD) defines the elements available in a specific context. At least one physical context definition diagram is used per identified context, featuring

- one block representing the Physical System i.e. the system of interest
- one block representing the specific 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 relationships attaching the Physical Context Elements and the Physical System 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_PhysicalSystem
- SAF_PhysicalUser
- SAF_SPV01a_View

Input from other Viewpoints

Required Viewpoints

none

Recommended Viewpoints

none