



SAF User Documentation : System Process Viewpoint

Domain	Aspect	Maturity
Functional	Process & Behavior	 released

Example



Purpose

The System Process Viewpoint provides the functional representation of the system using a black-box approach

- the representation of the SOI and all Context Elements
- the System Functions the SOI shall be able to perform

- the Context Functions the Context Elements are expected to perform
- the exchange between SOI System Functions and Context Functions of Context Elements
- the functional flows crossing the boundary between SOI and Context Elements

Applicability

The System Process Viewpoint supports the "System Requirements Definition Process" activities of the INCOSE SYSTEMS ENGINEERING HANDBOOK 2015 [§4.3] and contributes to the System Function Identification and the System Functional Interface Identification.

Stakeholder

- [Acquirer](#)
- [Customer](#)
- [Hardware Developer](#)
- [IV&V Engineer](#)
- [Operator](#)
- [Project Manager](#)
- [Safety Expert](#)
- [Security Expert](#)
- [Software Developer](#)
- [Supplier](#)
- [System Architect](#)
- [User](#)

Concern

- How does a system function interact with its environment?
- How is the system interacting with the identified external entities?
- What are necessary inputs for operating the system expected to be provided by other external entities?
- What are the functional interfaces of the system?
- What are the scenarios a system function is utilized in?
- What is the functional scope of the system?
- What services are expected from external entities?
- Which functions are out of scope of the system?
- Which functions will the system provide?

Presentation

The System Process Activities and their sequence related to a System UseCase are represented in activity diagrams featuring swim lanes. The swim lanes are typed with Context Element usage and SOI usage from

the same System Context of the abovementioned Use case. In order to improve the clarity of diagrams it may be appropriate to use several activity diagrams for one system process.

A table listing all identified system functions, the system processes in which they appera and the functional exchange with the context elements.

Profile Model Reference

- [Allocate \[SysML Profile\]](#)
- [Allocate \[SysML Profile\]](#)
- [ControlFlow \[UML_Standard_Profile\]](#)
- [InputPin \[UML_Standard_Profile\]](#)
- [ObjectFlow \[UML_Standard_Profile\]](#)
- [OutputPin \[UML_Standard_Profile\]](#)
- [Parameter \[UML_Standard_Profile\]](#)
- [SAF_ContextAction](#)
- [SAF_ContextFunction](#)
- [SAF_FunctionAction](#)
- [SAF_LogicalRole](#)
- [SAF_LogicalRole](#)
- [SAF_SFV03a_View](#)
- [SAF_SystemFunction](#)
- [SAF_SystemProcess](#)

Input from other Viewpoints

Required Viewpoints

none

Recommended Viewpoints

- [Operational Context Definition Viewpoint](#)
- [Operational Domain Item Kind Viewpoint](#)
- [System Context Definition Viewpoint](#)
- [System Domain Item Kind Viewpoint](#)