



# 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

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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

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

## Concern

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- 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

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An activity diagram featuring the ordered execution of System Process Actions. The activity diagram swim lanes are typed with Context Element usage and SOI usage from the same System Context. Note: In order to

improve the clarity of presentation it may be appropriate to use several activity diagrams for one System Process.

A tabular format listing all identified System Functions, the System Processes in which they appear, and the Context Exchange with the Context Functions.

## Profile Model Reference

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

- 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\\_LogicalContextRole](#)
- [SAF\\_LogicalContextRole](#)
- [SAF\\_SFV03a\\_View](#)
- [SAF\\_SystemFunction](#)
- [SAF\\_SystemProcess](#)

## Input from other Viewpoints

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### Required Viewpoints

*none*

### Recommended Viewpoints

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