



SAF User Documentation : Logical Functional Mapping Viewpoint

| Domain | Aspect | Maturity |
|---------|------------------------|--------------|
| Logical | Traceability & Mapping | released |

Example

| Legend | | FFDS Context | | | | | |
|--|--|--------------|-------------------------|--------------------------------|---------------------------|-------------------------------|-----------------|
| Allocate | | Operator | Satellite System [1..*] | Forest Sensor Ecosystem [1..*] | Meteorology System [1..*] | Fire Department System [1..*] | FFDS : FFDS [1] |
| FFDS A Day in the Life of FFDS(context FFDS Context) | | 3 | 1 | 1 | 1 | 1 | |
| Choose Area of Interest | | 1 | 1 | | | | |
| Provide Satellite Data | | 1 | | 1 | | | |
| Provide Sensor Data | | 1 | | | 1 | | |
| Provide Weather Data | | 1 | | | | 1 | |
| Observe Situation | | 1 | 1 | | | | |
| Receive Fire Warning | | 1 | 1 | | | | |
| Receive Fire Alert | | 1 | | | | | |
| Detect and Report Fire | | 1 | | | | 1 | 1 |
| Request image data | | 1 | | | | | 1 |
| Request sensor data | | 1 | | | | | 1 |
| Request weather data | | 1 | | | | | 1 |
| Retrieve image data | | 1 | | | | | 1 |
| Retrieve sensor data | | 1 | | | | | 1 |
| Retrieve weather data | | 1 | | | | | 1 |
| Acquire metadata | | 1 | | | | | 1 |
| Analyze FF data | | 1 | | | | | 1 |
| Visualize FF data | | 1 | | | | | 1 |
| Manage Operator warning | | 1 | | | | | 1 |
| Display Operator warning | | 1 | | | | | 1 |
| Alert fire | | 1 | | | | | 1 |
| Report fire | | 1 | | | | | 1 |

Purpose

The Logical Functional Mapping Viewpoint captures the assignment of the System Functions and the System Partial Functions to the Logical SOI and the Logical SOI Elements.

Applicability

The Logical Function Mapping Viewpoint supports the "System Architecture Definition process" activities of the INCOSE SYSTEMS ENGINEERING HANDBOOK 2015 [§ 4.4] and contributes to the System Architecture description.

Stakeholder

- [Hardware Developer](#)
- [Software Developer](#)
- [System Architect](#)

Concern

- Which (system and system partial) functions are assigned to a logical item and logical item components?
Note: if allocation of usage is used, then allocation of definition is a derived relationship XOR.

Presentation

A dependency matrix featuring

- the call behavior action representing usage of System Functions or System Partial Functions,
- the part properties representing usage of Logical SOI Elements,
- the allocation relationship between above mentioned elements.

Profile Model Reference

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

- Allocate [SysML Profile]
- [SAF_FunctionAction](#)
- [SAF_LogicalElement](#)
- [SAF_LogicalInternalRole](#)
- [SAF_LogicalSOI](#)
- [SAF_SLV08a_View](#)
- [SAF_SystemFunction](#)
- [SAF_SystemPartialFunction](#)

Input from other Viewpoints

Required Viewpoints

- [Logical Structure Viewpoint](#)
- [System Process Viewpoint](#)
- [System Functional Refinement Viewpoint](#)

Recommended Viewpoints

- [System Domain Item Kind Viewpoint](#)