# System Requirement Traceability Viewpoint

| Domain | Aspect | Maturity |
|---|---|---|
| Functional | Mapping & Crossreference | under construction |

## Example

| # | Id | Name | Text | Refining System Function | Derived from Stakeholder Requirement |
|---|---|---|---|---|---|
| 1 | | Fire Detection | | | |
| 2 | SYS-REQ-001 | 24/7 Forest Fire Recognition | The FFDS system shall allow a forest fire recognition day & night. | | |
| 3 | SYS-REQ-002 | Forest Fire Detection | The FFDS system shall allow a forest fire detection acquiring data collected by terrestrial-based and aerial-based systems. | Request sensor data(context FFDS Context) | CPBLTY-11 Fire Detection |
| 4 | SYS-REQ-002.1 | Smoke and Fire Detection | The FFDS system shall allow querying and analysis of the provided sensor data using a smoke and fire detection algorithm. | | |
| 5 | SYS-REQ-002.2 | Smoke and Fire Alert | When a forest fire is detected the FFDS system shall be able to warn interacting agents, FFDS operator and Fire Department, about the danger. | | |
| 6 | | Fire Monitoring | | | |
| 7 | SYS-REQ-003 | Forest Fire Evolution Monitoring | In the event of a forest fire the FFDS system shall allow a specific area of interest observation interacting with aerial-based systems. | Analyze FF data (context FFDS Context) | CPBLTY-12 Fire Monitoring |
| 8 | | Fire Prediction | | | |
| 9 | SYS-REQ-004 | Forest Fire Spread Prediction | In the event of a forest fire the FFDS system shall allow a fire spread prediction using empirical and physical fire spread models. | Analyze FF data (context FFDS Context) | CPBLTY-17 Propagation Estimation Capability |
| 10 | | Fire Assessment | | | |
| 11 | SYS-REQ-005 | Forest Fire Damage Assessment | For evaluating the impacts of forest fire in landscape and biodiversity the FFDS system shall allow the determination of burned and fire affected areas using digital image processing of pre- and post-fire images. | | |

## Purpose

The System Requirement Traceability Viewpoint specifies for every System Requirement the traceability to functional domain level

- System Story
- System Context Definition
- System Context Exchange
- System Functional Scenario
- System Context Interaction

## Applicability

The System Requirement Traceability Viewpoint supports the "System Requirements Definition Process" activities of the INCOSE SYSTEMS ENGINEERING HANDBOOK 2015 [§4.3] and contributes to the System Requirements Traceability. The System Requirement Traceability Viewpoint contributes to System Requirements Verification and Traceability Matrix (RVTM).

## Stakeholder

- Project Manager

## Concern

- What is the rationale for this system requirement?
- Which Stakeholder Requirements are addressed by System Requirements?
- Which system interface is addressed by a system requirement?

## Presentation

A System Requirement Dependency Matrix featuring relationships from every SOI System Requirements to modeling elements such as

- System Story
- System Context Definition
- System Context Exchange
- System Functional Scenario
- System Context Interaction Referring to a Stakeholder Requirement the dependency relation is <<satisfy>>, otherwise <<trace>>.

## Profile Model Reference

- SAF_SFV08a_View
- SAF_SystemFunctionalRequirement
- SAF_SystemFunctionalRequirementConstraint
- SAF_SystemFunctionalRequirementRefinement
- SAF_SystemNonFunctionalRequirement
- SAF_SystemRequirement
- SAF_SystemRequirementDerivation
- SAF_SystemRequirementDerivation
- SAF_SystemRequirementRefinement
- SAF_SystemRequirementRefinement

## Input from other Viewpoints

### Required Viewpoints

- Stakeholder Requirement Viewpoint
- System Requirement Viewpoint

## Recommended Viewpoints

- System UseCase Viewpoint
- System Context Exchange Viewpoint
- System Capability Viewpoint
- System Process Viewpoint
- System State Viewpoint
- System Context Interaction Viewpoint