System Requirement Viewpoint

Domain: **Functional** *Aspect:* **Requirement**

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	Wireless Sensor Network	~~The FFDS system shall allow temperature, humidity, and CO environment data harvesting using a terrestrial-based wireless sensor network.~~		
6	SYS-REQ-002.2	Smoke and Fire Detection Software	The FFDS system shall allow querying and analysis of the provided WSN sensor data using a smoke and fire detection software. When a forest fire is detected the smoke and fire detection software shall be able to raise an alarm.		
7		Fire Monitoring			
8	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
9		Fire Prediction			
10	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
11		Fire Assessment			
12	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 Viewpoint specifies function(s), non-functional property(s), or constraint(s) of the system. System Requirement(s) are captured, the interrelationships between functional and non-functional requirement(s) on the same level of abstraction and the traceability to Stakeholder Requirement(s) are depicted.

Applicability

The System Requirement Viewpoint supports the "System Requirements Definition Process" activities of the INCOSE SYSTEMS ENGINEERING HANDBOOK 2015 [§4.3] and contributes to the system requirements verification and traceability matrix (RVTM).

Stakeholder

- Customer
- Project Manager

- Regulation Authority
- Safety Expert
- Security Expert
- System Architect

Concern

- What are the Exchange Requirements imposed on the system?
- What are the Functional Requirements imposed on the systeml?
- What are the Interface Requirements imposed on the system?
- What are the Non-Functional Requirements imposed on the system?
- What are the Requirements of environmental conditions imposed on the system?
- What are the interface requirements regarding bandwidth, data throughput and latency?
- What is the range of acceptable system performance, i.e. the critical, top-level Performance Requirements derived from the Operational Needs?

Presentation

A System Requirement Table (RVTM) featuring

- unique requirement ID, text and attributes
- traceability reference to upstream model elements and requirements
- traceability reference to depended requirement(s) on the same abstraction level

Profile Model Reference

- SAF_SFV06a_View
- SAF_StakeholderRequirement
- SAF_SystemFunctionalRequirement
- SAF_SystemFunctionalRequirementConstraint
- SAF_SystemNonFunctionalRequirement
- SAF_SystemRequirement
- SAF_SystemRequirementDerivation
- SAF_SystemRequirementDerivation

Input from other Viewpoints

Required Viewpoints

- Stakeholder Requirement Viewpoint

Recommended Viewpoints

- Operational Story Viewpoint
- Operational Context Exchange Viewpoint
- Operational Capability Viewpoint
- Operational Process Viewpoint
- Operational Interaction Viewpoint
- Operational Capability Traceability Viewpoint
- Operational Process Traceability Viewpoint