Service Description (SD) Template

**Abstract**

This document defines the template for the Service Description of Arrowhead compliant Services.

A Service Description provides an abstract description of what is needed for systems /devices/units/software to provide and/or consume a specific service.

SD’s for Application Services are created (specified) by the Pilots WP’s and by the common Arrowhead framework. The SD shall make it possible for an engineer with technical programming knowledge to achieve an Arrowhead compliant realization of a provider and/or consumer of description of how the service is implemented/realized by using the Communication Profile and the chosen technologies.

A Service Description (SD) is the Service in a specific technology. All systems / devices /units/software implementing an Interface Design Description which complies with this SD will be able to exchange information with each other.

All Arrowhead Service Description should be specified using this template and stored on a common repository (available on the SVN server), in order to document and formalize the pilot demonstrators and the common Arrowhead framework.

## Service Description Overview

This document describes an Arrowhead service, including its interfaces, functions and information model. Some UML diagrams describing an abstract architecture of the service should be provided in this section.

The type of service that will be described should also be defined. The service type identifier clearly depicts the service that is going to be provided (e.g. Temperature).

An example of how this document can be elaborated can be found in SVN repository …/Meetings/Multi WP Workshops/2013-11-05 Porto/Documenting/Examples/SD/Arrowhead SD Temperature.

## Abstract Interfaces

Every interface should be described in a separate section. A more detailed description of the Overview section diagrams is suggested.

Every function included in the interface should also be presented and explained in a subsection for each interface. Sequence diagrams might be included to give a clearer view on functions’ usage.

The use of UML or SysML diagrams can be an adequate solution.

## Interface 1

Describe the interface here in general terms.

## Function

Describe the function of the interface here.

## Sequence Diagrams

Provide sequence diagrams that presents in which order operations must be done.

## Abstract Information Model

Gives a high-level presentation of the information model with types, attributes and relationships.

Include if possible one of the following diagrams:

* UML Class diagram
* SysML Parametric diagram

Explain each field, its attributes and any relations to other fields. A suggested approach is depicted in Table 1.

**Table 1 Data type description**

|  |  |
| --- | --- |
| **Field** | **Description** |
|  |  |

Not mandatory but also possible, in this section to provide any metadata defined by the service. Metadata is typically information that describes an instance of the service, like position, measuring unit etc.

**Table 2 Metadata description**

|  |  |  |
| --- | --- | --- |
| **Tag** | **Description** | **Mandatory** |
|  |  |  |

## Interface 2

Describe the interface here in general terms.

## Function

Describe the function of the interface here.

## Sequence Diagrams

Provide sequence diagrams that presents in which order operations must be done.

## Abstract Information Model

Gives a high-level presentation of the information model with types, attributes and relationships.

Include if possible one of the following diagrams:

* UML Class diagram
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**Table 2 Metadata description**

|  |  |  |
| --- | --- | --- |
| **Tag** | **Description** | **Mandatory** |
|  |  |  |

1. Non-functional Requirements

Describe requirements regarding QoS, response time, resources, reliability, etc. This section lists the non-functional requirements that can be implemented by the service. Note that some of these requirements can be optional.

This section reports, for example, the reliability targets that must be respected by the service in a particular use case. For example, a service can offer acknowledgment to service requests in a use case, and act on a best effort base in another use case.

The following table reports multiple non-functional requirements sets, each one pertaining to a use case that are directly implemented by the service.

**Table 3 Non-functional requirements description**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Name** | **Description** | **Type** | **Constraints** | **Use**-**case** |
|  |  |  |  |  |

The above table must report the non-functional requirements, by providing information such as:

* **Name:** The unique name (UID) of the non-functional requirement.
* **Description:** A description of the non-functional requirement.
* **Type:** The type of the non-functional requirement (e.g., hardware, software, performance).
* **Constraints:** Any constraints the requirement imposes to the use-case(s) (e.g., have a delay of less than 1 ms to deliver the service).
* **Use-case:** Provide the ID of the use case(s) it refers to.

## References

Any references must be placed here

## Revision history

## Amendments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Date | Version | Subject of Amendments | Author |
| 1 | 2020-05-27 | 4.1 | Major update | Jerker Delsing |
| 2 | 2020-08-17 | 4.2 | Major update | Jerker Delsing |
| 3 | 2020-0914 | 4.2.1 | Minor cleaning | jens Eliasson |
| 4 |  |  |  |  |

## Quality Assurance

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Date | Version | Approved by |
| 1 | 2020-09-15 | 4.2.1 | Jerker Delsing |
| 2 |  |  |  |