System Description (SysD) – Desktop Demonstrator

**Abstract**

This document provides the main template for the System Description of Arrowhead compliant Systems. It should be used to define the main services and interfaces of a system, without describing its internal implementation.

All Arrowhead systems 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.

Table of Contents

[Table of Contents 2](#_Toc375649363)

[1. System Description Overview 2](#_Toc375649364)

[2. Use-cases 2](#_Toc375649365)

[3. Diagrams 3](#_Toc375649366)

[4. Application services 3](#_Toc375649367)

[4.1. Produced Services 3](#_Toc375649368)

[4.2. Consumed Services 3](#_Toc375649369)

[5. Security 3](#_Toc375649370)

[6. References 3](#_Toc375649371)

[7. Revision history 3](#_Toc375649372)

[7.1. Amendments 3](#_Toc375649373)

[7.2. Quality Assurance 3](#_Toc375649374)

1. System Description Overview:

The Desktop demonstrator is a SOS with several temperature sensors and servo motor which will behave as service providers in the arrowhead framework and the consumer has the algorithm which relates the temperature sensors and servo motor. The consumer is able to change orchestration at run time so that it can switch between temperature sensors.

* The Consumer will first send the orchestration request for getting the temperature service.
* After the temperature value is received from one of the temperature service providers, it will compare the temperature with the threshold value and send a correct position to the servo motor.
* In case the provider stops sending the data, the consumer should be able to change orchestration and switch to another temperature sensor for reading temperature.

1. Behaviour Diagrams

Authorization

Service Registry

Orchestrator

Consumer

Temp Sensor1

Temp Sensorx

Servo Motor

Register temp service

Register temp service

Register servo service

Register system

Temp Service Request with match making flag false

Verify service

Verify access

Send the end points of temp sensor 1 and 2

Consuming service from temp sensor1

Switch to service from temp sensor x

Servo service Request

Verify service

Verify access

Send the end point of servo motor provider

Move the position of servo based on the sensor 1 input

Servo service Request

Verify service

Verify access

Send the end point of servo motor provider

Move the position of servo based on the sensor 2 input

Verify service

Temp Service Request

Verify access

Send the end points of other temp sensor

1. Application services

This system provides two services:

* Temperature
* Servo Motor Position

# Produced Services

Table 2 Pointers to IDD documents

|  |  |
| --- | --- |
| Service | IDD Document Reference |
| get-temp |  |
| get-servo |  |

# Consumed Services

Table 3 Pointers to IDD documents

|  |  |
| --- | --- |
| Service | IDD Document Reference |
| get-temp | n/a |
| get-servo | n/a |

1. Security

The system is using the HTTPS-SECURE-JSON security interface. Each systems both consumer and providers are using their corresponding client certificate for secure communication. Authorization core system is responsible for the access verification and token generation during the provider and consumer interaction.

1. References

<https://github.com/arrowhead-f/core-java-spring>

<https://github.com/arrowhead-f/sos-examples-spring>

1. Revision history

# Amendments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Date | Version | Subject of Amendments | Author |
| 1 | 2020-01-31 | 0.1 | First draft | Aparajita Tripathy |

# Quality Assurance

|  |  |  |  |
| --- | --- | --- | --- |
| No. | Date | Version | Approved by |
| 1 |  |  |  |
| 2 |  |  |  |