Title: System Description Test Producer
Version: 0.1
Status: for approval
Date: 20201210
Author: Gustav Hansson
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Arrowhead C# Client library SoS

Abstract
This document defines the template for the System-of-Systems Description of Arrowhead compliant System-of-Systems.
It will contain an abstract high level view, describing the System-of-Systems main functionalities and architecture.
This document will mainly be used to describe one System-of-Systems in an abstract way, i.e. without instantiating into any specific technologies. In Arrowhead such document will be used to describe a pilot.
All Arrowhead System-of-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.

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1. System of Systems Overview

This document describes a small example system-of-systems to give an example on how to use the C# Client library. It consists of a Producer and a Consumer, both using the library to communicate with the Arrowhead Core Systems.

2. Systems

Table 1 Pointers to the SysD documents

System name	Path
Test_Consumer	"./SySD Test Consumer.docx"
Test_Producer	"./SySD Test Producer.docx"

3. Use-cases

Table 2 Use-case description table

Example use of C# Client library
ID: 1
Brief description: Setup and run of the system-of-systems
Primary actors: Test Consumer
Secondary actors: Test Producer
Preconditions: Up and running mandatory core systems. Correctly configured certificates
Main flow: SETUP Test Producer:

1. Register Service to the ServiceRegistry
2. Start HTTP server and REST api

SETUP Test Consumer:

1. Register Service to the ServiceRegistry

SETUP Authorization and Orchestration entries (Admin access to mgmt. endpoints, can be done via Management Tools)

2. Get necessary information about the provider that should be consumed
3. Create intracloud ruleset in the Authorization Core System
4. Create store entry in the Orchestrator Core System

RUN Test Consumer

5. Start Static Orchestration by calling the Orchestrator
6. Call Producer API and get example data
7. Repeat step 6

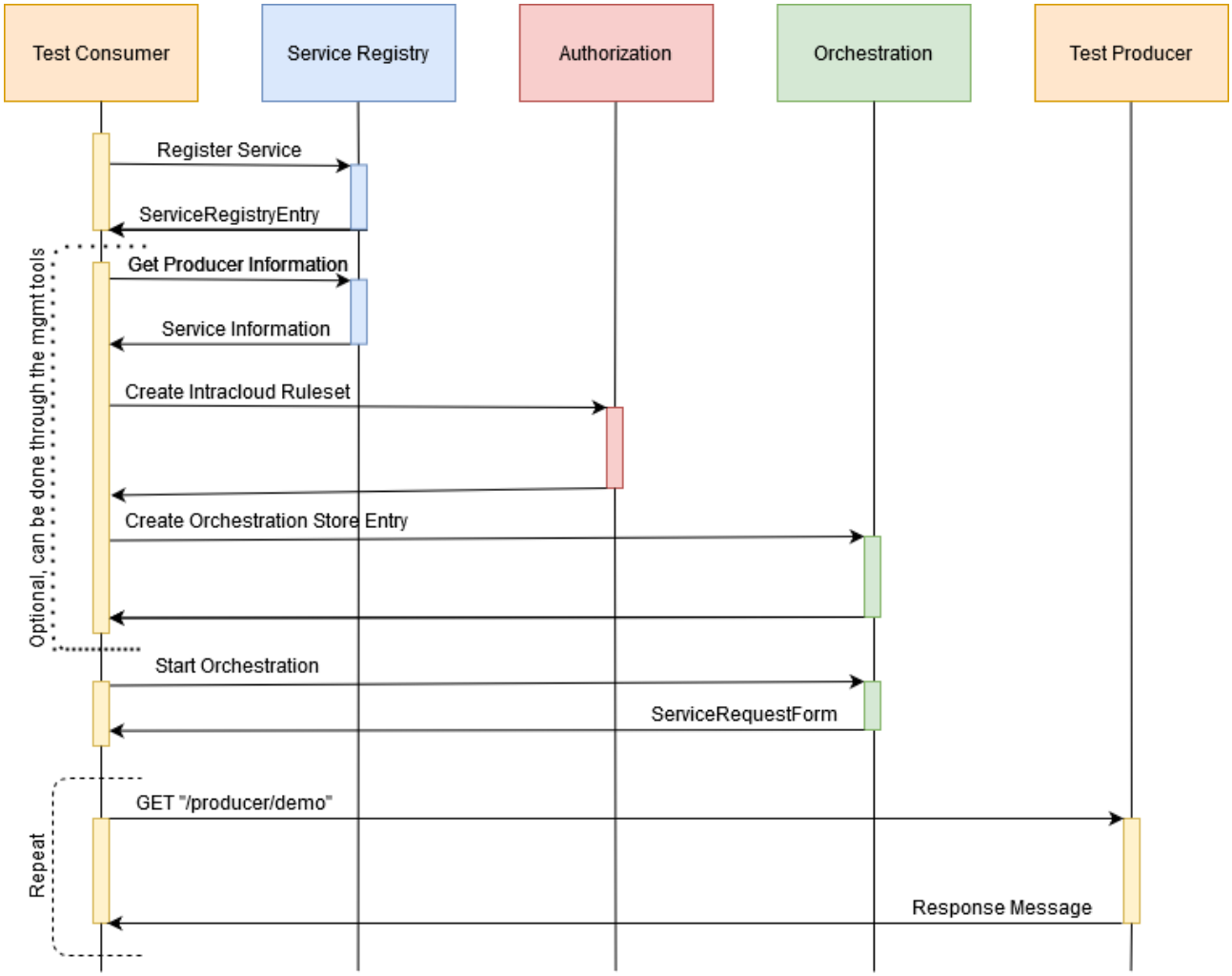
Postconditions:

None.

Alternative flows:

None

4. Behavior diagrams



5. Non-functional requirements

None.

6. Security

The mandatory core systems run in secure mode and thus the clients need a client certificate for the communication to these systems. The Consumer also uses the Admin module of the library which is used for access to the management endpoints of the Authorization and Orchestration Core Systems. This access is fully optional but requires a sysop.p12 certificate in addition to the client certificate.

7. References

None

8. Revision history

8.1 Amendments

No.	Date	Version	Subject of Amendments	Author
1	2020-12-10	0.1	Initial Draft	Gustav Hansson