Service Description (SD) SystemDiscovery

15 november 2017

Document title	Document type
SD SystemDiscovery	v1.0
Date	Version
November 15, 2017	1.0
Author	Status
Silia Maksuti	Draft
Contact	Page
silia.maksuti@fh-burgenland.at	2(5)

1   Service Description Overview

The SystemDiscovery service is used to register and unregister systems within the local cloud, their produced services and their hosting devices, as well as to find systems among the registered systems in the SystemRegistry system.
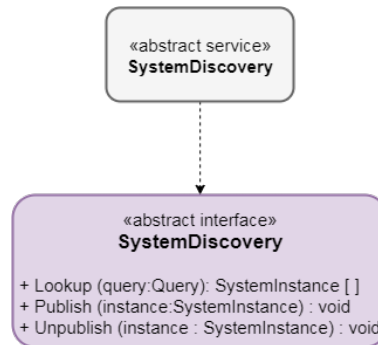

Figure 1: The SystemDiscovery service

2   Abstract Interfaces

2.1   SystemDiscovery Interface

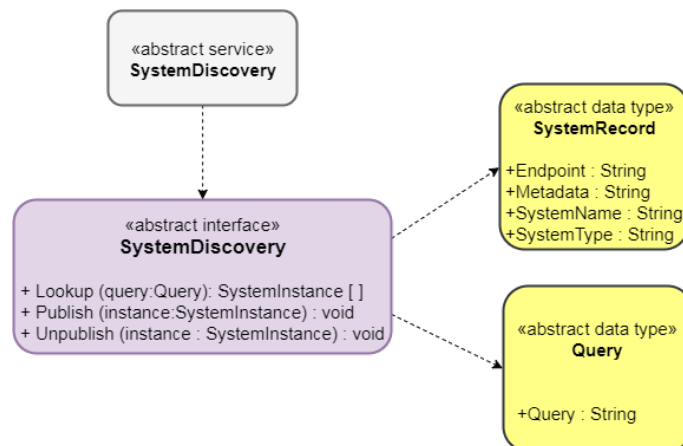The SystemDiscovery service interface is defined according to Figure 2.

Figure 2: The SystemDiscovery interface

Document title	Document type
SD SystemDiscovery	v1.0
Date	Version
November 15, 2017	1.0
Author	Status
Silia Maksuti	Draft
Contact	Page
silia.maksuti@fh-burgenland.at	3(5)

2.1.1 Functions

Publish The publish method is used to register a system. The systems will contain a symbolic name as well as a physical endpoint. The instance parameter represents the endpoint information that should be registered.

Unpublish The unpublish method is used to unregister a system that no longer should be used. The instance parameter contains information necessary to find the system to be removed.

Lookup The lookup method is used to find and translate a symbolic system name into a physical endpoint, IP address, and a port. The query parameter is used to request a subset of all the registered systems in the SystemRegistry system based on a specified criteria.

2.1.2 Sequence Diagrams

Sequence Diagram for Publish method Figure 3 shows the sequence diagram for the publish method of the SystemDiscovery service.
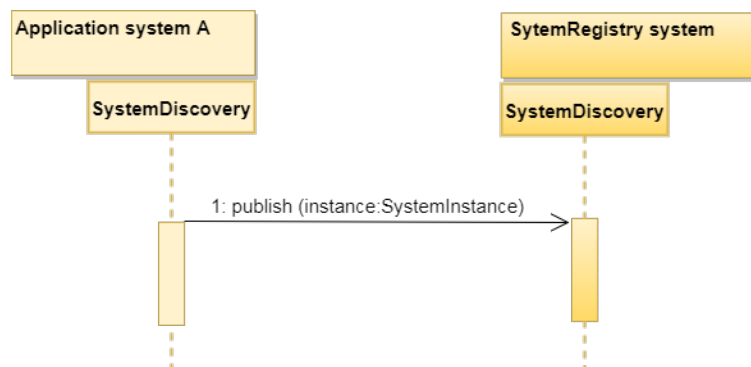

Figure 3: Sequence Diagram for the publish method of the SystemDiscovery service

Sequence Diagram for Unpublish method Figure 4 shows the sequence diagram for the unpublish method of the SystemDiscovery service.

Sequence Diagram for Lookup method Figure 5 shows the sequence diagram for the lookup method of the SystemDiscovery service.

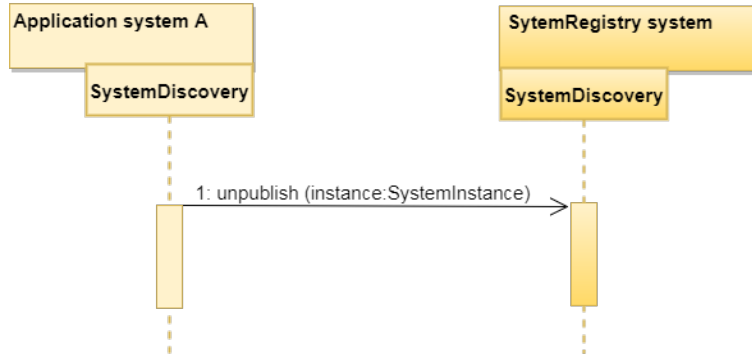| Document title	Document type
SD SystemDiscovery	v1.0
Date	Version
November 15, 2017	1.0
Author	Status
Silia Maksuti	Draft
Contact	Page
silia.maksuti@fh-burgenland.at	4(5)

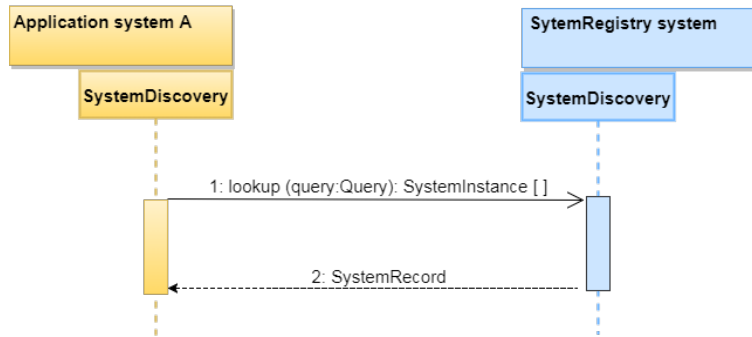Figure 4: Sequence Diagram for the unpublish method of the SystemDiscovery service

Figure 5: Sequence Diagram for the lookup method of the SystemDiscovery service

3 Abstract Information Model

The abstract information model shown in Figure 6 holds two data types: (i) SystemRecord and (ii) Query, as described in Table 1.
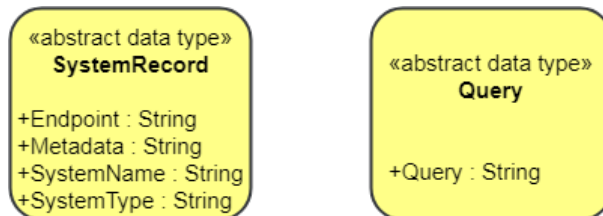

Figure 6: Abstract Information Model

Document title	Document type
SD SystemDiscovery	v1.0
Date	Version
November 15, 2017	1.0
Author	Status
Silia Maksuti	Draft
Contact	Page
silia.maksuti@fh-burgenland.at	5(5)

Table 1: Data type description

Field	Description
SystemRecord	The SystemRecord data type contains information of a system endpoint, such as name and physical address. System metadata can also be added here. Metadata is to be provided through DNS TXT record using key pairs such as, $encode = syntax$, e.g., $encode = xml$, $compress = algorithm$, e.g., $compress = exi$, $semantix = XX$, e.g., $semantic = senml$.
Query	The Query datatype represents a query that can be sent to the system provider in order to filter the stored systems to return a proper subset.

4 Non-functional Requirements

Not specified yet.

5 References

Any references must be placed here

6 Revision history

6.1 Amendments

No.	Date	Version	Subject of Amendments	Author
1	2017-09-10	1.0	Initial Version	Silia Maksuti
2	2017-11-15	1.1	Updated Version	Silia Maksuti
3				

6.2 Quality Assurance

No.	Date	Version	Approved by
1			
2			

Contributed by the Arrowhead project, www.arrowhead.eu