



Service Instance Locator

Requirements

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Draft for comment

National E-Health Transition Authority Ltd

Level 25

56 Pitt Street

Sydney, NSW, 2000

Australia.

<http://www.nehta.gov.au>**Disclaimer**

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Document information

Change history

Version	Date	Comments
1.0 draft	2008-09-01	Draft for review

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1 Introduction

1.1 Background

The the NEHTA national E-Health Infrastructure has identified the need for a Service Instance Locator [TAIS2006]. This directory allows service instances (i.e. deployed service implementations) to be located and used.

1.2 Purpose

This document describes the business requirements for the Service Instance Locator.

These requirements follow the structure and approach of the NEHTA Interoperability Framework [NIF2006].

1.3 Scope

This document deals with the requirements on the Service Instance Locator. It does not deal with the applications that use it or the business drivers for them.

This document is intended for:

- Business analysts; and
- Enterprise and solution architects.

1.4 Status

This document is a draft and has been released for comment and feedback purposes.

1.5 Definitions, acronyms, abbreviations

BSIR	Business Service Instance Record
HPI	Healthcare Provider Identifier
HPI-I	Healthcare Provider Identifier for Individuals
HPI-O	Healthcare Provider Identifier for Organisations
NEHI	National E-Health Infrastructure
NEHTA	National E-Health Transition Authority
TSIR	Technical Service Instance Record
URI	Uniform Resource Identifier
URL	Uniform Resource Locator
WSDL	Web Services Description Language

1.6 Overview

The Business Requirements are divided into sections based on the perspectives of the Interoperability Framework [NIF2006]. The Organisational Perspective is divided into sub-communities within the SIL community and expresses requirements in terms of the roles identified in those sub-communities. The Organisational perspective also includes a section on Policy.

Additional sections cover the Informational and the Technical perspectives.

2 Service Instance Locator

2.1 Purpose

There is a need to provide the capability to resolve an endpoint address from the identity of a provider, and type information about a service required.

The Service Instance Locator (SIL) is a technical infrastructure service that provides binding information that allows a client to invoke a service instance.

The SIL is an important component of the National E-Health Infrastructure, because it enables service requestors to dynamically bind to service providers at run time. The service requestor does not need to have information about specific service providers until it needs to invoke the service instance. This creates an environment where service instances can be added and removed dynamically, yet still be available to existing service requestors. New service instances can be deployed and the existing programs can find them. This late binding of service instances is important, because in the dynamic e-health environment there will be many service instances to manage.

2.2 Requirements

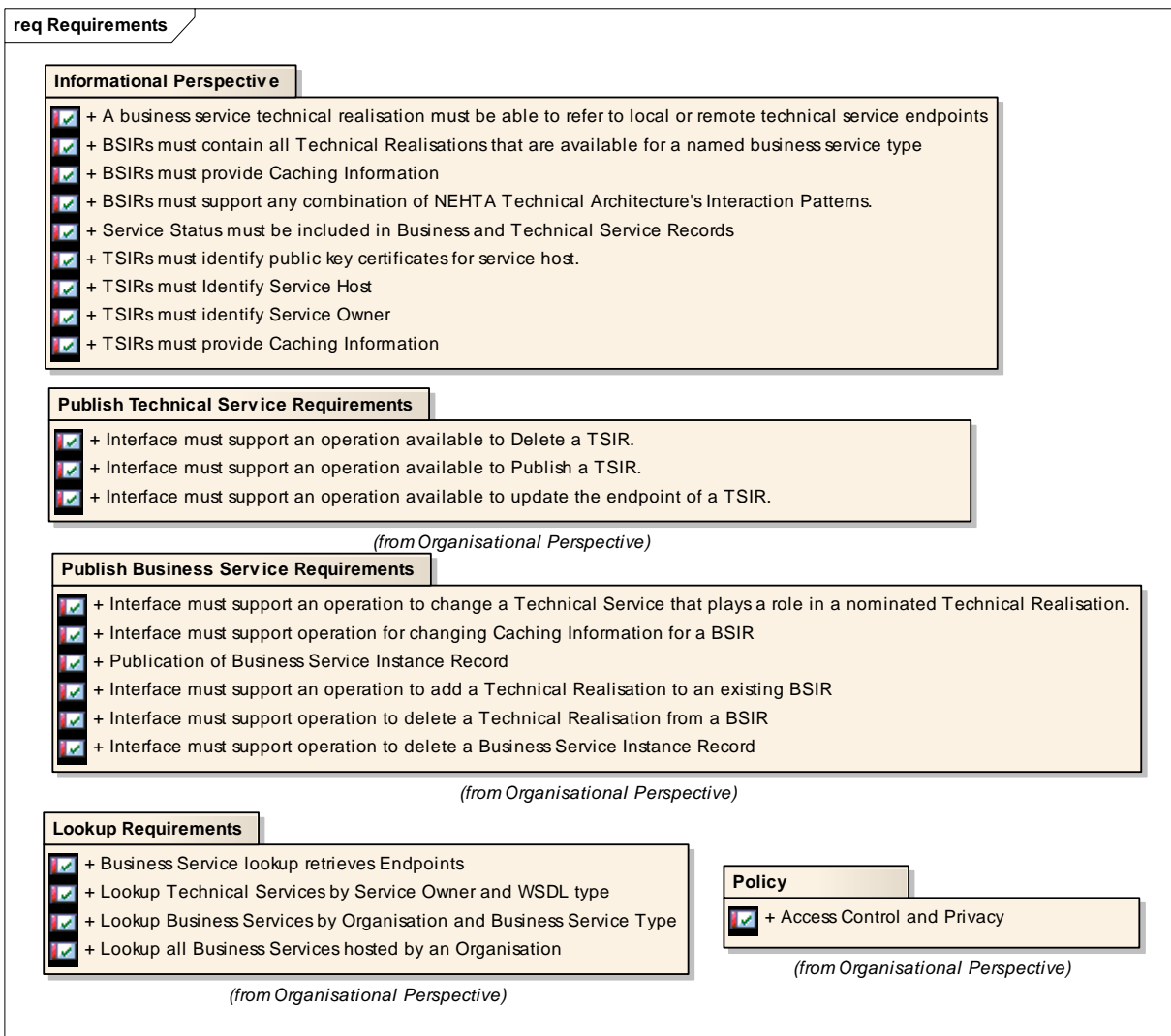


Figure: Requirements

2.2.1 Informational Perspective

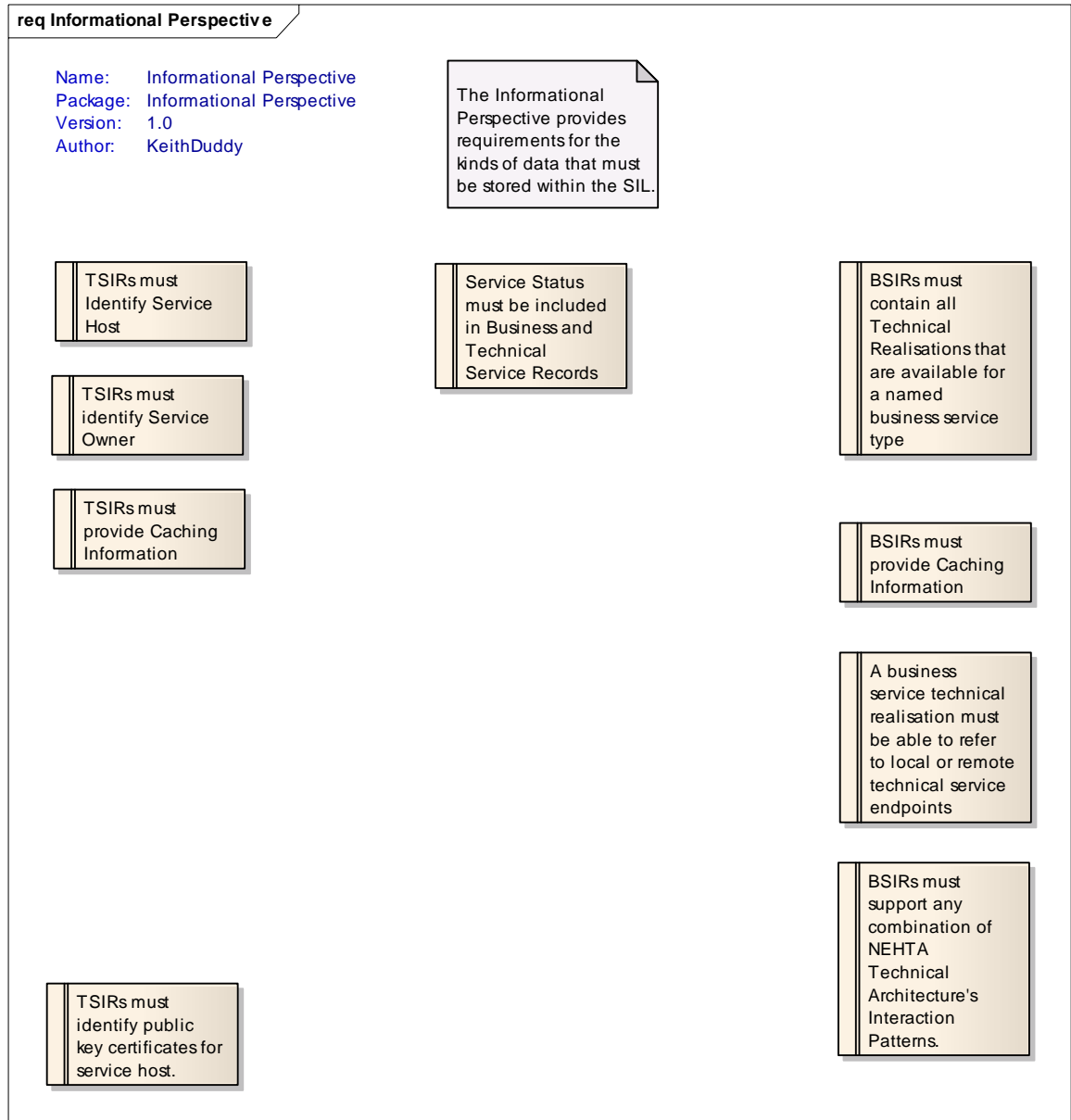


Figure: Informational Perspective

REQ100 A business service technical realisation must be able to refer to local or remote technical service endpoints

«Info» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0

The technical service instance records must reside in the SIL of the organisation that hosts the technical service.

[Scenario 2.3.1]

REQ101 BSIRs must contain all Technical Realisations that are available for a named business service type

«Info» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium

Phase: 1.0 *Version: 1.0*

This implies that there is at most one BSIR in each organisation's SIL for a particular Business Service Type, with a certain deployment status.

[Scenario 2.4.1]

REQ102 BSIRs must provide Caching Information

«Info» *Status: Proposed* *Priority: Medium* *Difficulty: Medium*
Phase: 1.0 *Version: 1.0*

BSIRS may be cached at the SID client after being returned. The Records must contain information to guide the caller on how long the record is expected to remain valid (time to live), so that it can be cached for an appropriate period before another query needs to be made.

[Scenario 2.5]

REQ103 BSIRs must support any combination of NEHTA Technical Architecture's Interaction Patterns.

«Info» *Status: Proposed* *Priority: Medium* *Difficulty: Medium*
Phase: 1.0 *Version: 1.0*

The Concepts and Patterns for Implementing Services has a variety of Interaction Patterns that may be used to realise a more abstract Business Service. A BSIR must allow any or all of these to be used as alternative technical realisations of the business service it represents.

[Source: Concepts and Patterns for Implementing Services, NEHTA, 2008]

[Scenario: 2.1]

REQ104 Service Status must be included in Business and Technical Service Records

«Info» *Status: Proposed* *Priority: Medium* *Difficulty: Medium*
Phase: 1.0 *Version: 1.0*

There may be parallel deployments of services of the same business or technical type with different operational statuses. The three identified are testing, training, and production.

[Source: AS 4700.1 -2005, Implementing of Health Level Seven Version 2.4, Part1: Patient administration, page 33]

REQ105 TSIRs must Identify Service Host

«Info» *Status: Proposed* *Priority: Medium* *Difficulty: Medium*
Phase: 1.0 *Version: 1.0*

A Technical Service Instance Record must contain enough information to identify the organisation that hosts the service. This may be a different organisation than the intended recipient of communications to the service to reflect outsourcing and other external hosting arrangements.

[Scenario: 2.1, 2.2.4, 2.3.1]

REQ106 TSIRs must identify Service Owner

«Info» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0

A Technical Service Instance Record must contain enough information to identify the organisation that "owns" the service, i.e. on whose behalf the service is hosted. This is the organisation that is the intended recipient of communications to the service, although the host of the service may be different, reflecting outsourcing and other external hosting arrangements.

[Scenario: 2.1]

REQ107 TSIRs must identify public key certificates for service host.

«Info» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0

A Technical Service Instance Record must contain enough information to identify the public key certificate of the service host. If the host only has a single certificate in the CA, then the identity of the host is sufficient. If the service host has several certificates in the CA, or its certificates are not in the NEHTA CA, then TSIRs must contain an endpoint at which the CA can be queried, and the SKI of the certificate needed to mutually authenticate with the service.

[Scenario: 2.3 (preamble)]

REQ108 TSIRs must provide Caching Information

«Info» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0

TSIRS may be cached at the SIL client after being returned. The Records must contain information to guide the caller on how long the record is expected to remain valid (time to live), so that it can be cached for an appropriate period before another query needs to be made.

[Scenario: 2.5]

2.2.2 Organisational Perspective

2.2.2.1 Publish Technical Service Requirements

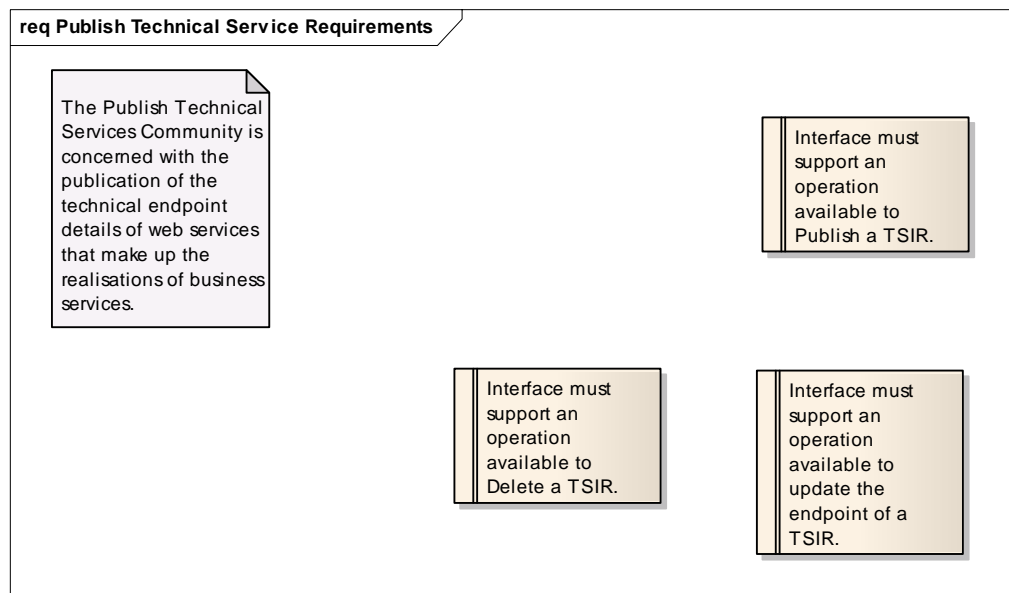


Figure: Publish Technical Service Requirements

REQ200 Interface must support an operation available to Delete a TSIR.

«Org» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0
 [Scenario: 2.3.3]

REQ201 Interface must support an operation available to Publish a TSIR.

«Org» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0
 [Scenario: 2.3.1]

REQ202 Interface must support an operation available to update the endpoint of a TSIR.

«Org» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0
 [Scenario: 2.3.2]

2.2.2.2 Publish Business Service Requirements

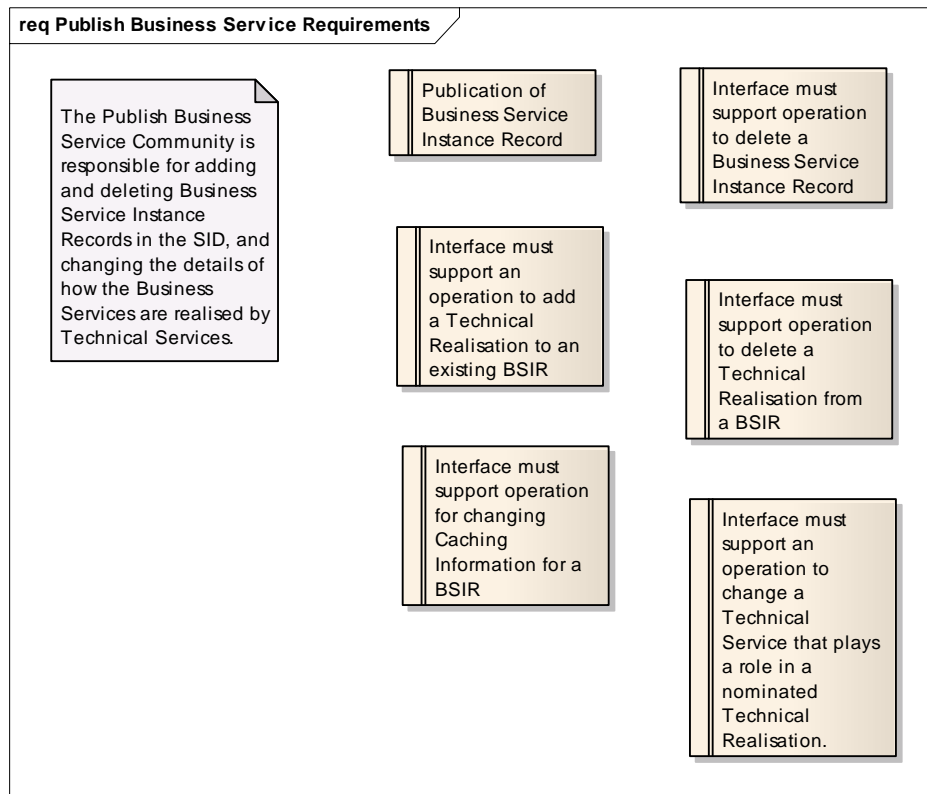


Figure: Publish Business Service Requirements

REQ220 Interface must support an operation to change a Technical Service that plays a role in a nominated Technical Realisation.

«Org» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0
 [Scenario: 2.2.4]

REQ222 Interface must support operation for changing Caching Information for a BSIR

«Org» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0
 The publisher of a Business Service Instance Record must be able to change the caching information (Time to Live) on a BSIR to reflect known hosting arrangements for the business service.
 [Scenario: 2.5]

REQ223 Publication of Business Service Instance Record

«Org» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0
 The SIL MUST allow a Business Service owner to publish a Business Service Instance Record.
 [Scenario: 2.2.1, 2.2.2, 2.2.3]

REQ224 Interface must support an operation to add a Technical Realisation to an existing BSIR

«Org» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium

Phase: 1.0 *Version: 1.0*

The SID must allow a Business Service Publisher to add a new Technical Realisation to an existing Business Service Instance Record.

[Scenario: 2.2.4]

REQ225 Interface must support operation to delete a Technical Realisation from a BSIR

«Org» *Status: Proposed* *Priority: Medium* *Difficulty: Medium*
Phase: 1.0 *Version: 1.0*

The SID MUST allow a BSIR Publisher to delete a nominated Technical Realisation from a BSIR.

[Scenario: 2.2.4]

REQ226 Interface must support operation to delete a Business Service Instance Record

«Org» *Status: Proposed* *Priority: Medium* *Difficulty: Medium*
Phase: 1.0 *Version: 1.0*

The SIL MUST provide a facility for the Publisher of a Business Service Instance Record to delete a Service Instance Record that they have published.

[Scenario: 2.2.5]

2.2.2.3 Lookup Requirements

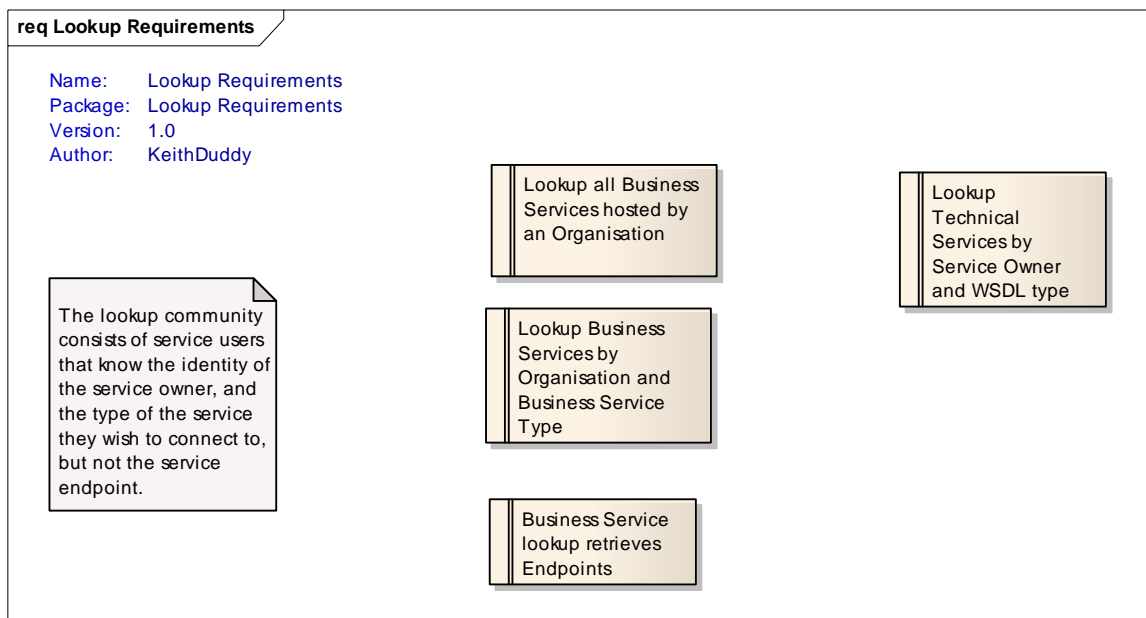


Figure: Lookup Requirements

REQ210 Business Service lookup retrieves Endpoints

«Org» *Status: Proposed* *Priority: Medium* *Difficulty: Medium*

Phase: 1.0 *Version: 1.0*

All operations to lookup BSIRs by an criteria must also use the references contained in the BSIRs to retrieve the endpoint information for the technical services that realise the business service. This must use local or cached remote records when available, or make invocations on other SILs when necessary. If a remote invocation fails, and no endpoint information is available, the lookup client must be informed.

[Scenario 2.4.1]

REQ211 Lookup Technical Services by Service Owner and WSDL type

«Org» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version: 1.0*

The SID must offer an operation that allows all the Technical Services of a particular WSDL Type, hosted for a particular organisation, to be retrieved.

[Scenario: 2.4.2]

REQ213 Lookup Business Services by Organisation and Business Service Type

«Org» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version: 1.0*

The SID MUST allow service clients to retrieve all details about a business service by providing the service operator's organisational identifier and the business service type.

[Scenario: 2.4.1]

REQ214 Lookup all Business Services hosted by an Organisation

«Org» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version: 1.0*

The SID MUST be able to return a set of all Business Service Instance Records offered by a particular organisation, including all of their details.

[Scenrio 2.4.3]

2.2.2.4 Policy

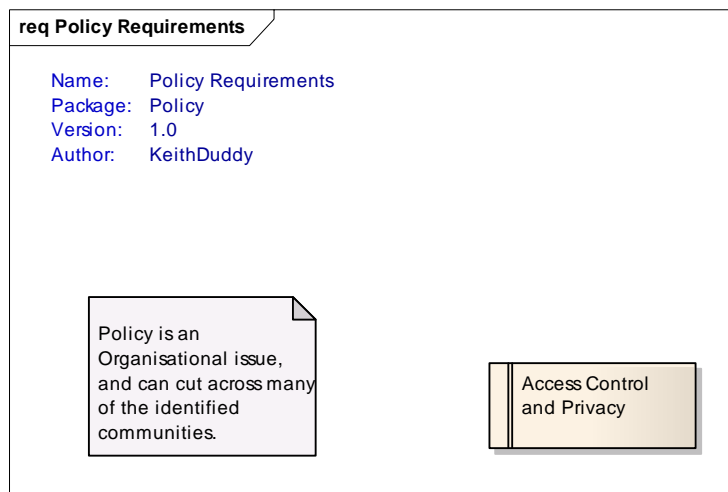


Figure: Policy Requirements

REQ230 Access Control and Privacy

«Policy» *Status:* Proposed *Priority:* Medium *Difficulty:* Medium
Phase: 1.0 *Version:* 1.0

Privacy and Security Assessments must be made to determine whether any encryption or access control restrictions are required by implementations of SIL.

[Source: NEHTA Policy]

Appendix A: References

- [NIF2006] NEHTA, *Interoperability Framework*, 1.0, 2006-04-01.
- [TAIS206] NEHTA, *Technical Architecture for Implementing Services: Concepts and Patterns*, 1.0, 2006-12-21.