

Digital Capability Publisher Implementation Guide

Version 1.0

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Digital
Business
Council

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Acknowledgements















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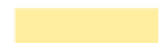



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1 Audience

 BUSINESS ANALYSTS		 APPLICATION DEVELOPERS	
Business Analysts: <ul style="list-style-type: none"> • Those who analyse and document business or processes or systems, assessing the business model or its integration with technology; or • Those involved in the identification of business requirements for solutions to support accounts receivable, accounts payable and the electronic transmission of the associated documents between businesses. 		Application Developers: <ul style="list-style-type: none"> • Those involved in the design, operation and implementation of software and services for the exchange of electronic documents or messages; or • Those involved in the design, integration and operation of business applications dealing with invoicing. 	
Audience Reading Guide		 BUSINESS ANALYSTS	 APPLICATION DEVELOPERS
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Conformance	2		
Distribution Package	3		
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Primary Audience 

Secondary Audience 

2 Overview

This document describes the services offered by a Digital Capability Publisher. Digital Capability Publishers implement the OASIS Service Metadata Publisher standard (OASIS, 2014). The OASIS SMP standard defines the discovery services required for the dynamic discovery of a recipient's endpoint.

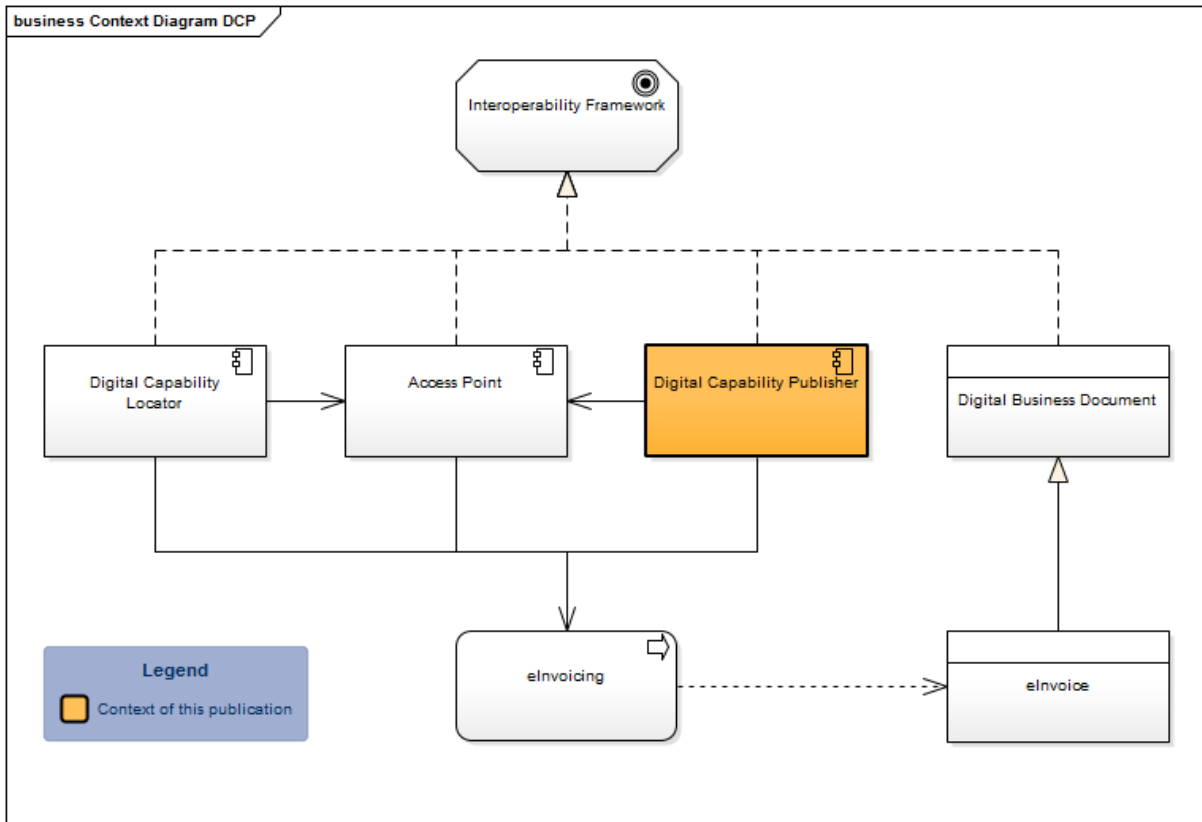


Figure 1: Context of Digital Capability Publishers within the Interoperability Framework

The context diagram Figure 1 shows the components included in the Interoperability Framework and where the Digital Capability Publisher (Digital Capability Publisher) sits. The Digital Capability Publisher is used/accessed by Access Points in the eInvoicing process.

The Digital Capability Publisher operates in a four-corner model (see Figure2: Four Corner Model). In a four-corner model, the businesses, or participants, that exchange electronic documents use access points to send and receive these documents. Each participant registers their receiving Access Point in a Digital Capability Publisher. The sending Access Point is then able to determine the receiver's digital address by lookup up a participant's identifier in the Digital Capability Publisher. This happens in conjunction with a Digital Capability Locator, which stores the Digital Capability Publisher address in association with the participant identifier.

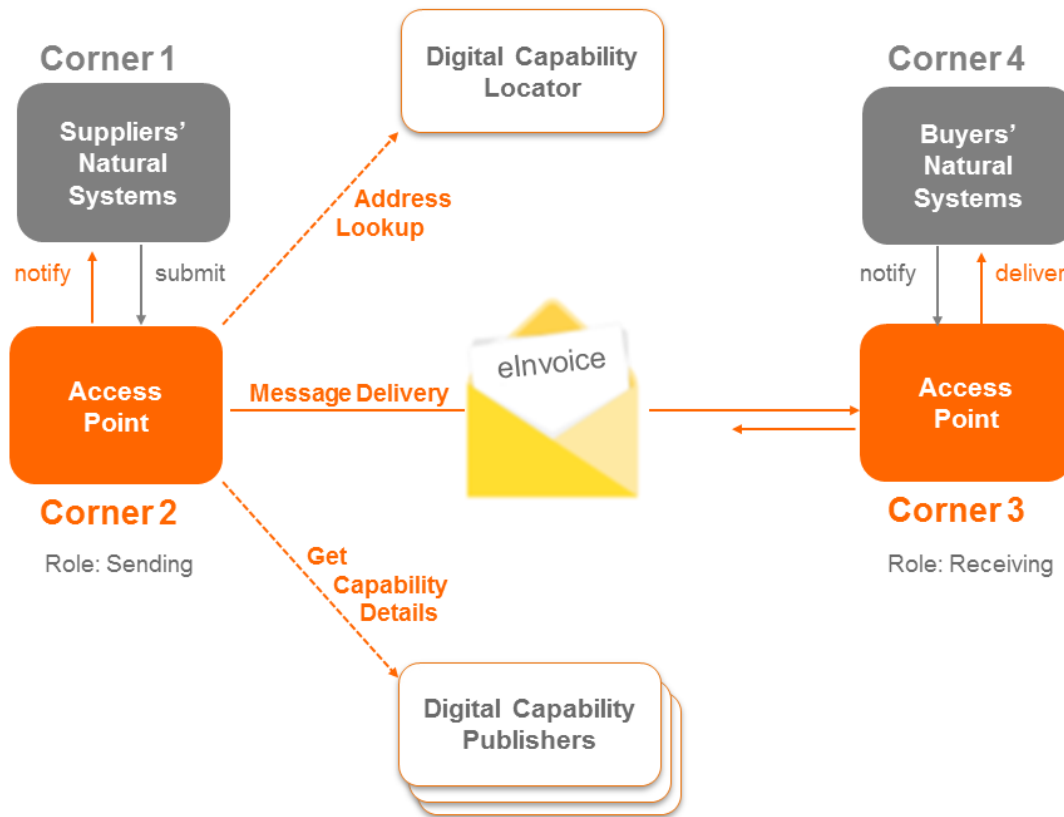


Figure2: Four Corner Model

The OASIS SMP standard (OASIS, 2014) omits the services required to create, update and delete entries in the Digital Capability Publisher. Implementers are expected to provide an interface to perform these maintenance activities. A web based user interface is one way of providing this interface.

This document does not go into detail on the user interface as the person interacting with this interface will be able to adapt to different implementations. This document does describe a HTTP API interface, popularly known as a RESTful interface (described in section 0). External parties can use this interface to programmatically maintain business capability information.

3 Conformance

Conformance to the Digital Capability Publisher Implementation Guide means conformance with the sections marked as 'Normative' in this Implementation Guide.

The keywords 'MUST', 'MUST NOT', 'REQUIRED', 'SHALL', 'SHALL NOT', 'SHOULD', 'SHOULD NOT', 'RECOMMENDED', 'MAY', and 'OPTIONAL' in this specification are to be interpreted as described in RFC2119 (Bradner, 1997).

4 Distribution Package

The Digital Capability Publisher Implementation Guide and associated artefacts are published at: <http://resources.digitalbusinesscouncil.com.au/dbc/services/discovery/dcp/implementationguide/current>

This directory contains the following sub-directories:

- testsets – containing example XML fragment instances (used in this document);
- val – test assertions and outcomes for validation testing.

5 Terms and Definitions (Normative)

The terms listed in Table 1 are used as defined throughout this specification.

Table 1: Terms and Definitions

Term	Definition
Business Identifier	See Participant Identifier.
Data Format	A machine-readable language, syntax or dialect used to present the Information Elements contained in an electronic Document (for example, an eInvoice).
Digital Capability Locator	A service for looking up the location of the Digital Capability Publisher for a Participant.
Digital Capability Publisher	A service for Buyers and Suppliers to store details of their capabilities, and includes what scenarios they can process, the data formats they support and the delivery address for their eInvoices.
Digital Capability Publisher Provider	Digital Capability Publisher Provider means the service provider of the Digital Capability

Term	Definition
	Publisher services to a Client.
Distribution Package	A packaged file that contains the technical artefacts to support conformant implementation of the DBC AS4 Profile.
eInvoice	An Invoice that has been created transmitted and received in a structured electronic format that allows for its Information Elements to be automatically processed by business applications. The eInvoice structure is also applicable to a Recipient Created Tax Invoice (RCTI), Credit Note or Adjustment Note.
eInvoicing	The set of processes required to exchange eInvoices.
Identification Scheme	The collection of Identifiers applicable for a given type of Information Element governed under a common set of rules.
Identifier	A character string used to establish the identity of, and distinguish uniquely, one instance of an object within an Identification Scheme from all other objects within the same scheme. An Identifier may be a word, number, letter, symbol, or any combination of those.
Information Element	A semantic concept that can be defined independent of any particular data format.
Normative	Sections of a document conveying criteria to be fulfilled if compliance with the document is to be claimed and from which no deviation is permitted.
Participant	Council Accredited Access Point Providers,

Term	Definition
	Digital Capability Publisher and Digital Capability Locator services and the businesses, organisations and other entities who have adopted the Framework.
Participant Identifier	An identifier for a participant.
Profile	A conformant subset of a standard specification.
Schema	A World Wide Web Consortium (W3C) recommendation that specifies how to formally describe the XML Elements in an XML Document.
Service	An application able to process specific document types for specific business transactions.
Service Interface	A software interface to support a Service.

6 Use Cases

This document describes the services provided by Digital Capability Publishers.

The use cases listed in this section are separated in two categories:

- Use cases dealing with the actual operation of sending and receiving business documents; and
- Use cases dealing with configuration and registration of information to enable the operational use cases.

6.1 Sending a Business Document (including Dynamic Discovery)

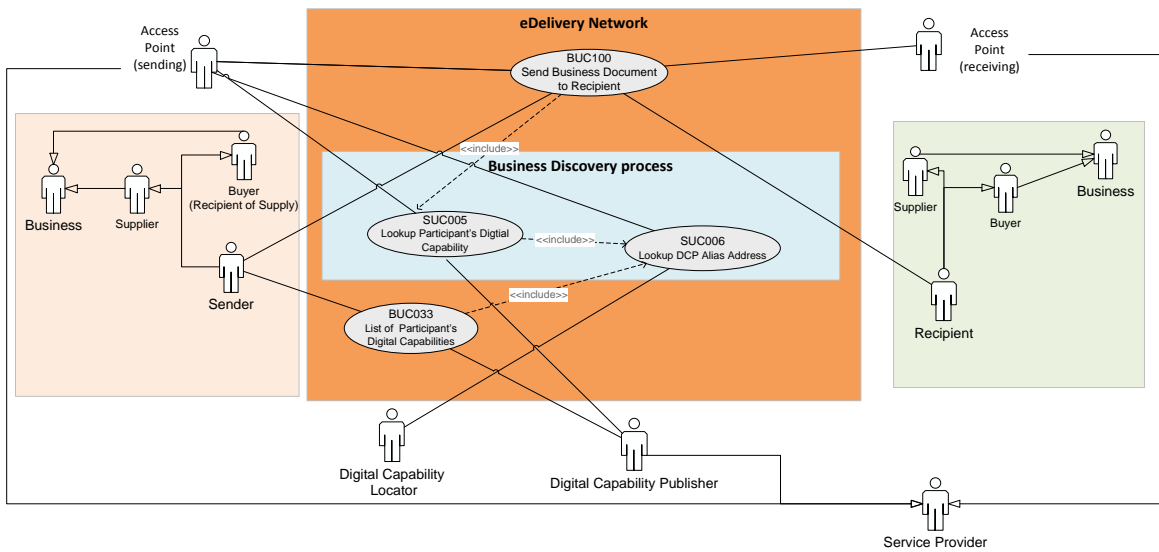


Figure 3: Sending a Business Document (with Business Discovery) Use Case Diagram

6.2 Maintenance of Dynamic Discovery Information

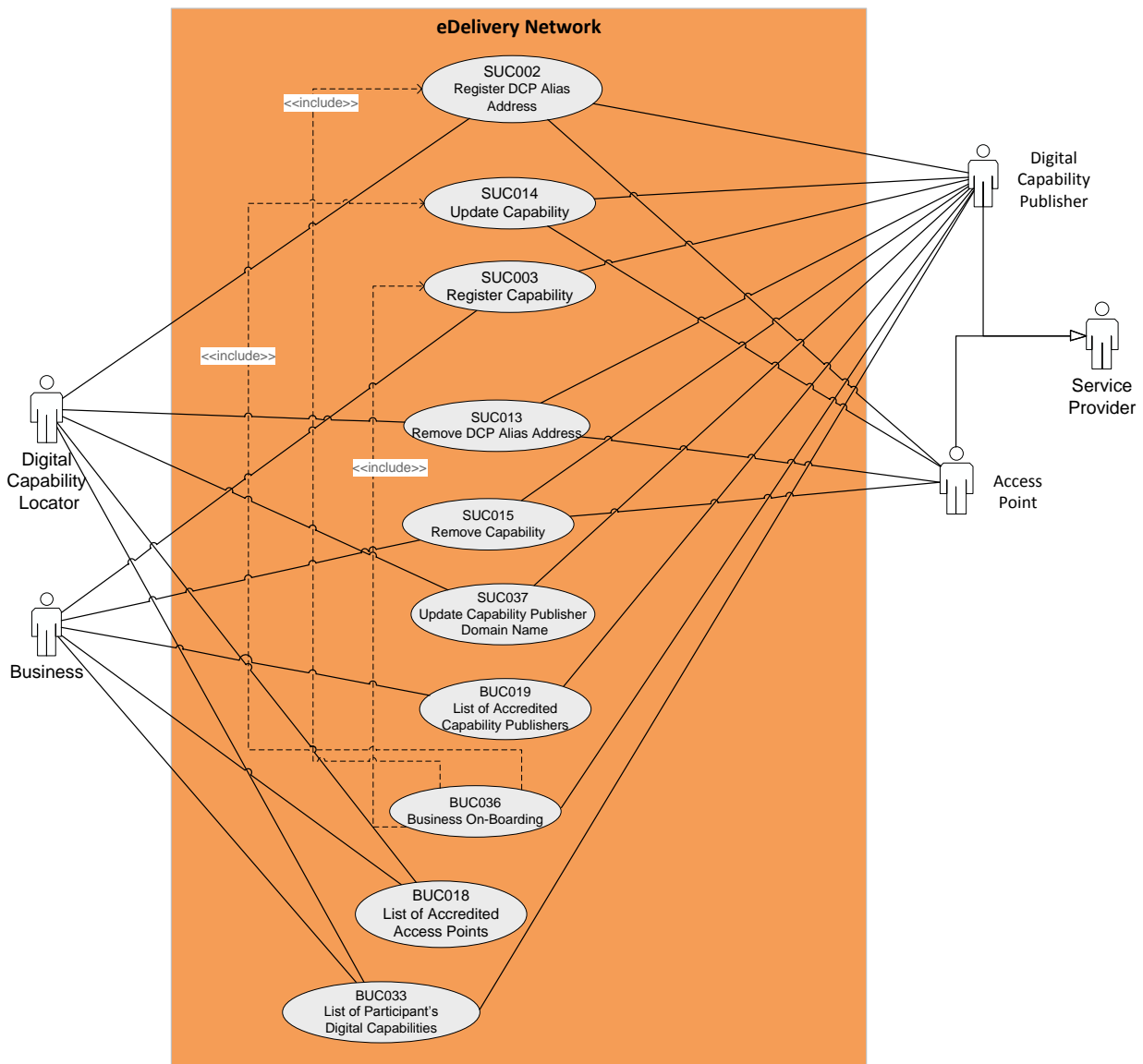


Figure 4: Maintenance Use Case Diagram

6.3 Use Case Descriptions

Use Case ID	Actors	Description	High Level Process	Present In
SUC002	Digital Capability Publisher Access Point Digital Capability Locator	Register Digital Capability Publisher Alias Address	Maintenance	Implementation guides for: Access Point, Digital Capability Publisher and Digital Capability Locator
SUC003	Access Point Digital Capability Publisher	Register Capability	Maintenance	Implementation guides for: Digital Capability Publisher and Access Point
SUC005	Access Point Digital Capability Publisher Digital Capability Locator	Lookup Participant's Digital Capabilities (this includes SUC006)	Sending a business document	Implementation guides for: Digital Capability Locator, Digital Capability Publisher and Access Point
SUC006	Access Point Digital Capability Locator	Lookup Digital Capability Publisher Alias Address	Sending a business document	Implementation guides for: Access Point and Digital Capability Locator

Use Case ID	Actors	Description	High Level Process	Present In
SUC013	Access Point Digital Capability Publisher Digital Capability Locator	Remove Digital Capability Publisher Alias Address	Maintenance	Implementation guides for: Access Point, Digital Capability Publisher and Digital Capability Locator
SUC014	Access Point Digital Capability Publisher	Update Capability	Maintenance	Implementation guides for: Digital Capability Publisher and Access Point
SUC015	Access Point Digital Capability Publisher	Remove Capability	Maintenance	Implementation guides for: Digital Capability Publisher and Access Point
BUC033	Access Point Digital Capability Publisher Digital Capability Locator	List of Participant's Digital Capabilities (Note: looking up all a participant's capabilities is optional, and could be used by the sender to determine a trading partner's ability to receive business documents) (this includes SUC006)	Maintenance/ Sending a business document	Implementation guides for: Digital Capability Locator, Digital Capability Publisher and Access Point

Use Case ID	Actors	Description	High Level Process	Present In
BUC036	Access Point Digital Capability Publisher Digital Capability Locator	Business On-boarding (note: this includes a business new to eInvoicing or a business changing provider) (includes SUC002, SUC003 and SUC014)	eDelivery On-boarding / Maintenance	Implementation guides for: Access Point, Digital Capability Publisher and Digital Capability Locator
BUC100	Access Point Digital Capability Publisher Digital Capability Locator	Send Business Document to Recipient (includes SUC005 – Lookup Participant’s Digital Capability)	Sending a business document	Implementation guides for: Access Point, Digital Capability Publisher and Digital Capability Locator

7 Service Metadata Publishing (SMP) Version 1.0 Profile (Normative)

This section explains how the OASIS BDX-smp specification (OASIS, 2014) is profiled for use within the Interoperability Framework.

The BDX-smp specification defines a data model and a REST binding to retrieve service metadata:

- A Capability Publisher hosts metadata for each participant identifier at a predefined URL; and
- The sender uses this URL in a HTTP GET operation which returns the metadata relating to that recipient's capabilities.

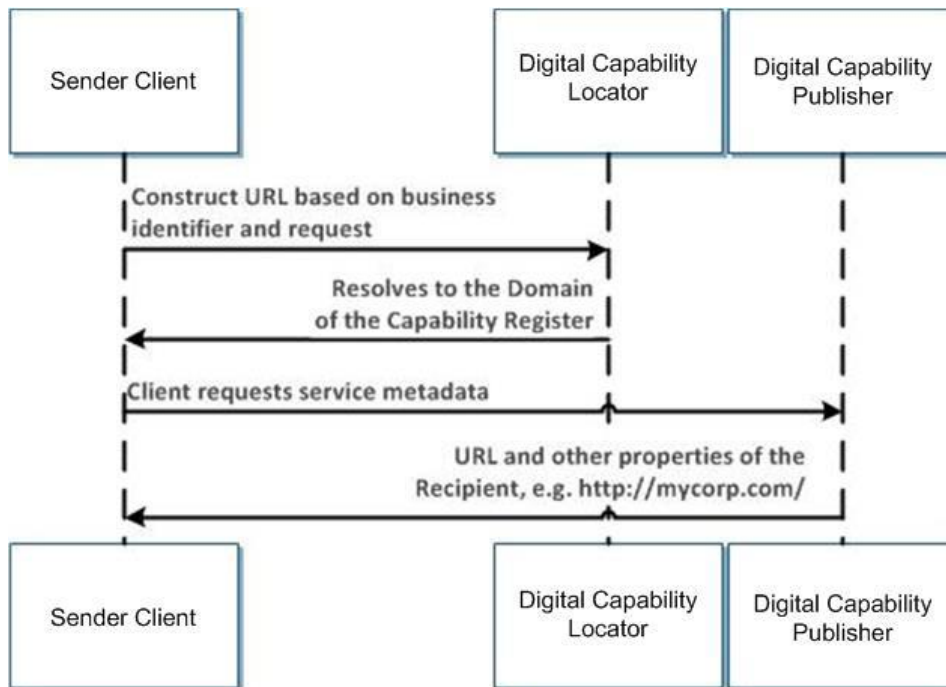


Figure 5: Capability Lookup

The sender retrieves the information necessary for setting up an interoperability process. The Capability Publisher stores the capability metadata, which enables routing of documents received from a sender to the correct recipient. Capability metadata is a combination of information on the end entity recipient (its identifier, supported business documents and processes in which it accepts those documents) and the access point (metadata which includes technical configuration information on the receiving endpoint, such as the transport protocol and its address).

Each participant identifier **MUST** be registered in only one Digital Capability Publisher (an organization may have more than one participant identifier).

BDX-Location provides the underlying standard for the Digital Capability Locator described in the Digital Business Council Digital Capability Locator Implementation Guide (Digital Business Council, 2016a) . The digital address for a Capability Publisher is mapped to a participant identifier in the Digital Capability Locator.

7.1 Data Model

7.1.1 Signed Service Metadata

The signed service metadata data structure contains the actual business capability. This structure is adopted from the standard as-is except for the redirect element which **MUST NOT** be used.



Figure 6: Signed Service Metadata

The location of a signed service metadata document depends on the following identifiers:

1. Participant identifier: identifies the business offering the capability; and
2. Document identifier: identifies the document that is being transmitted;

These two identifiers are required to return a capability record which may include a list of processes. To determine the correct process, the client needs to know the Process identifier. Each process defines a list of endpoints which are identified by a transport profile.

These identifiers are related to information in the messaging protocol as specified in the Digital Business Council Access Point Implementation Guide (Digital Business Council, 2016b) and are profiled for use in the Interoperability Framework (See also sections 7.2, 7.3 and 7.4).

7.1.2 Service Group

The service group data structure contains a list of capabilities for a business. A Capability Publisher MUST support the service group resource location.

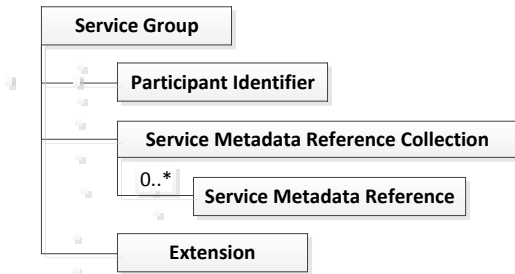


Figure 7: Service Group

Each Service Metadata Reference is a hyperlink to a Signed Service Metadata resource.

7.2 Signature Specification

The signature MUST follow the standard described in (OASIS, 2014) section 3.6.2.

7.3 Participant Identifier

The participant identifier is based on the ebCore Party-ID standard (OASIS, 2010) and is profiled by the Digital Business Council (Digital Business Council, 2016c). Actual values will be defined in the implementation section of this document.

7.4 Document Identifier

Document Identifiers are described in the BDX-smp standard (OASIS, 2014, p. 16). Actual values will be defined in this implementation guide.

7.5 Process Identifier

Process Identifiers are described in the BDX-smp standard (OASIS, 2014, p. 18). Actual values will be defined in this implementation guide.

7.6 Discovery Interface

The Capability Publisher REST interface provides access to two resources:

1. Signed Service Metadata: the representation is an XML document with a service metadata and signature; and
2. Service Group: the representation is an XML document with a list of locations for signed service metadata resources.

Representation of these two resources is per the BDX-smp standard.

The management interface concerned with updates and changes to the Capability Publisher are described further in this implementation guide.

7.6.1 Location of Signed Service Metadata

The resource address of the Signed Service Metadata follows the BDX-smp standard:

```
<dcp domain>/{scheme identifier}::{id}/services/{document identifier type}::{root namespace}::{document element local name}##{Subtype identifier}
```

Actual values depend on the scheme identifier and document identifier types. These values will be published further in this implementation guide.

7.6.2 Location of Service Group

The resource address of the Service Group is:

```
<dcp domain>/{scheme identifier}::{id}
```

Actual values depend on the scheme identifier. This value is described further in this implementation guide.

8 Identifiers

An endpoint address can be uniquely identified by a combination of:

- The business by its participant identifier;
- The type of document that is to be transmitted;
- The process in which the transmission is participating; and
- The transport protocol used to exchange a message.

8.1 Participant Identifier

A participant identifier has two components:

- The scheme of the identifier; and
- The unique ID within the scheme.

Following the (OASIS, 2010) specification the general structure of a participant identifier is:

urn:oasis:tc:ebcore:partyid-type:catalog-identifier:scheme-in-catalog::scheme-specific-identifier

The supported identifier schemes are described in (Digital Business Council, 2016c) and are designed to support national as well as international exchange of business information.

In an Australian context the use of the Australian Business Number is a valid identifier and the identifier would have the following components:

scheme	urn:oasis:names:tc:ebcore:partyid-type:iso6523:0151
scheme-specific identifier	ABN Number

Example

urn:oasis:names:tc:ebcore:partyid-type:iso6523:0151::23601120601

8.2 Document Identifier

A document identifier has two components:

- The scheme of the identifier; and
- The unique ID within the scheme.

The scheme defines the namespace in which the document is specified.

scheme	dbc-docid
scheme-specific identifier	<unique document identifier>

The format as specified in the standard is:

{identifier scheme}::{rootNamespace}::{documentElementLocalName}[###{Subtype identifier}]

URL Example:

dbc-docid::urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:doctype:core-invoice:xsd::core-invoice-1###urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:process:invoicing02:ver1.0

XML Example:

```
<ns2:DocumentIdentifier scheme="dbc-docid">
urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:doctype:core-invoice:xsd::core-invoice-1###urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:process:invoicing02:ver1.0
</ns2:DocumentIdentifier>
```

8.3 Process Identifier

A process identifier has two components:

- The scheme of the identifier; and
- The unique ID within the scheme.

scheme	dbc-procid
scheme-specific identifier	<unique process identifier>

XML Example:

```
<ProcessIdentifier scheme="dbc-procid">
urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:ver1.0
</ProcessIdentifier>
```

8.4 Transport Profile

A transport profile has one component

Transport identifier	busdox-transport-ebms3-as4
----------------------	----------------------------

9 Services Provided by the Capability Publisher

A Digital Capability Publisher exposes two types of interfaces:

1. A discovery interface. This interface is a publicly available API to retrieve information stored in the Digital Capability Publisher. It gives access to a receiver's capability information.
2. A management interface. This interface limits access to authorized clients and allows changes to information stored in the Digital Capability Publisher.

A Digital Capability Publisher Provider may also decide to implement a graphical user interface to interact with business capability data. This type of interface is not defined in this implementation guide.

9.1 Discovery API

The discovery API is used during the operation of the framework. It is responsible for allowing entities in the network to discover endpoints.

Access to discovery resources is via HTTP GET requests.

9.1.1 Security

These API's can be made available without security over HTTP. The resource representation of a business capability record is signed with the Digital Capability Publisher private key (see 7.2 p.19).

9.1.2 Service group

9.1.2.1 Purpose of the API

The service group resource is the entry point for access points to discover a list of capabilities for a business.

9.1.2.2 Behaviour of API

This API does not have side effects and will return a Service Group element as per the OASIS standard (OASIS, 2014).

9.1.2.3 Sequence Diagram

Retrieving a list of capabilities can be done by corner 1, when a business user wants to determine the capability of a trading partner. Or by corner 2, where an access point finds a suitable service to send a document to.

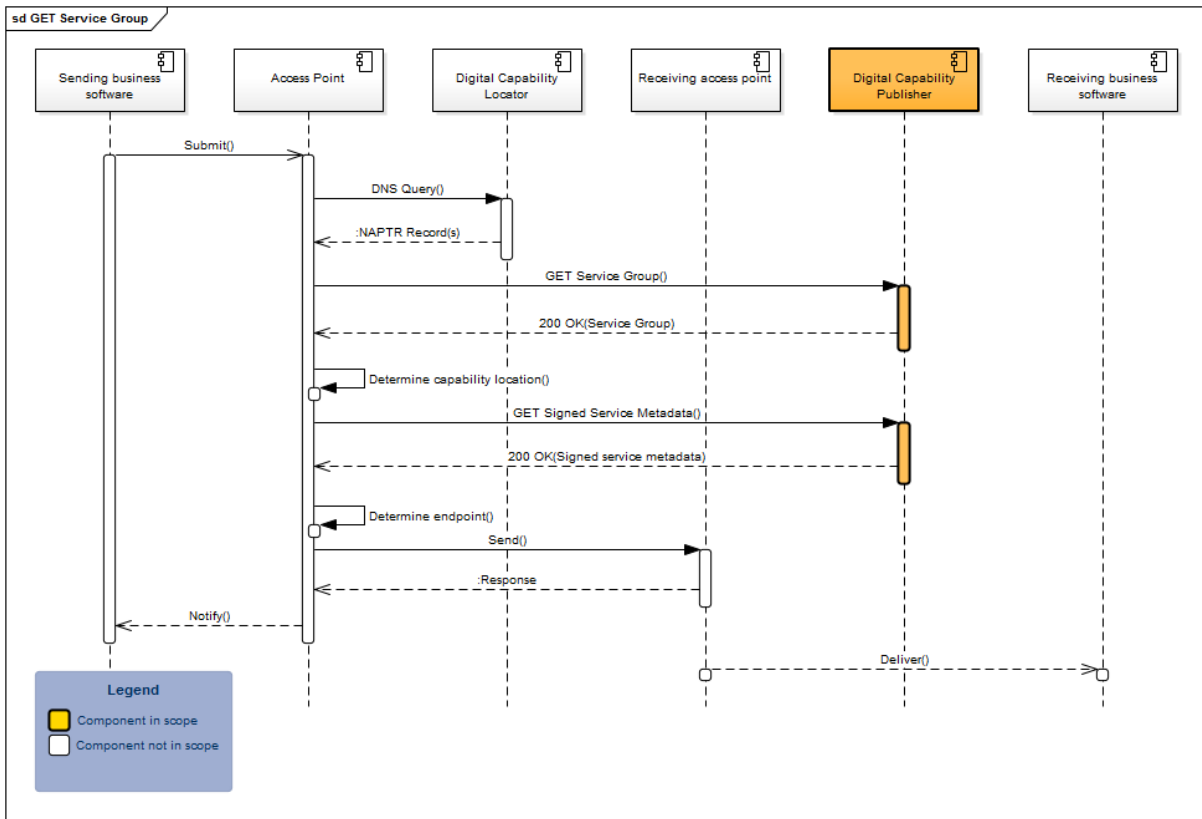


Figure 8: Get Service Group by Access Point

9.1.2.4 Resource Location

Request URL	http://<dcg domain>/{scheme identifier}::{id}	
HTTP Method	SSL/TLS	Authentication Mechanism
GET	No	N/A

The ServiceGroup resource has the following location:


```
http://<dcop domain>/{scheme identifier}::{id}
```

Colons in the URL need to be encoded as per (Berners-Lee, Fielding, & Masinter, 2005).

scheme identifier	urn:oasis:names:tc:ebcore:partyid-type:iso6523:<scheme e.g. 0151>
id	e.g. <abn number>

Example URL

```
http://dcp.acme.com.au/urn%3Aoasis%3Anames%3Atc%3Aebcore%3Apartyid-type%3Aiso6523%3A0151%3A%3A23601120601
```

9.1.2.5 Request Headers

Header	Optional	Type	Description
Accept	Optional	String	text/xml

9.1.2.6 Status Codes & Error Conditions

HTTP Status Code	Message	Category	Additional Info
200	Ok	Success	Returns a ServiceGroup element
404	Not Found	Error	The origin server did not find a current representation for the target resource or is not willing to disclose that one exists.
5xx	Server Error	Error	Any appropriate HTTP server error

9.1.2.7 Example Responses

HTTP RESPONSE CODE: 200 (Ok)

9.1.2.8 Response Headers

Header	Optional	Type	Description
Content-Type	Mandatory	String	text/xml

9.1.2.9 Response Body – text/xml

An example of a service group resource representation:

```

<?xml version="1.0" encoding="UTF-8"?>
<smp:ServiceGroup xmlns:smp="http://docs.oasis-open.org/bdxr/ns/SMP/2014/07">
  <smp:ParticipantIdentifier scheme="urn:oasis:names:tc:ebcore:partyid-
type:iso6523:0151">23601120601</smp:ParticipantIdentifier>
  <smp:ServiceMetadataReferenceCollection>
    <!--Zero or more repetitions: ->
    <smp:ServiceMetadataReference
href="http://dcp.acme.com.au/urn%3Aoasis%3Anames%3Atc%3Aebcore%3Apartyid-
type%3Aiso6523%3A%3A0151%3A23601120601/services/bdx-docid-
qns%3A%3Aurn%3Aoasis%3Anames%3Aspecification%3Aubl%3Aschema%3Axsd%3Ainvoice-
2%3A%3Ainvoice%23%23UBL-2.0"/>
  </smp:ServiceMetadataReferenceCollection>
</smp:ServiceGroup>
  
```

9.1.2.10 Response Field Reference

See section 7.1.2 Service Group.

9.1.3 Signed Service Metadata

9.1.3.1 Purpose of API

Allow retrieval of a business capability for a particular document type. This can be done via an intermediary step which involves retrieving a list of document locations for a document identifier. Alternatively, the client can retrieve a signed service metadata document by accessing the resource with the participant identifier and document identifier.

9.1.3.2 Behaviour of API

This API does not have side effects and will return a Signed Service Metadata element as per the OASIS standard (OASIS, 2014).

9.1.3.3 Sequence Diagram

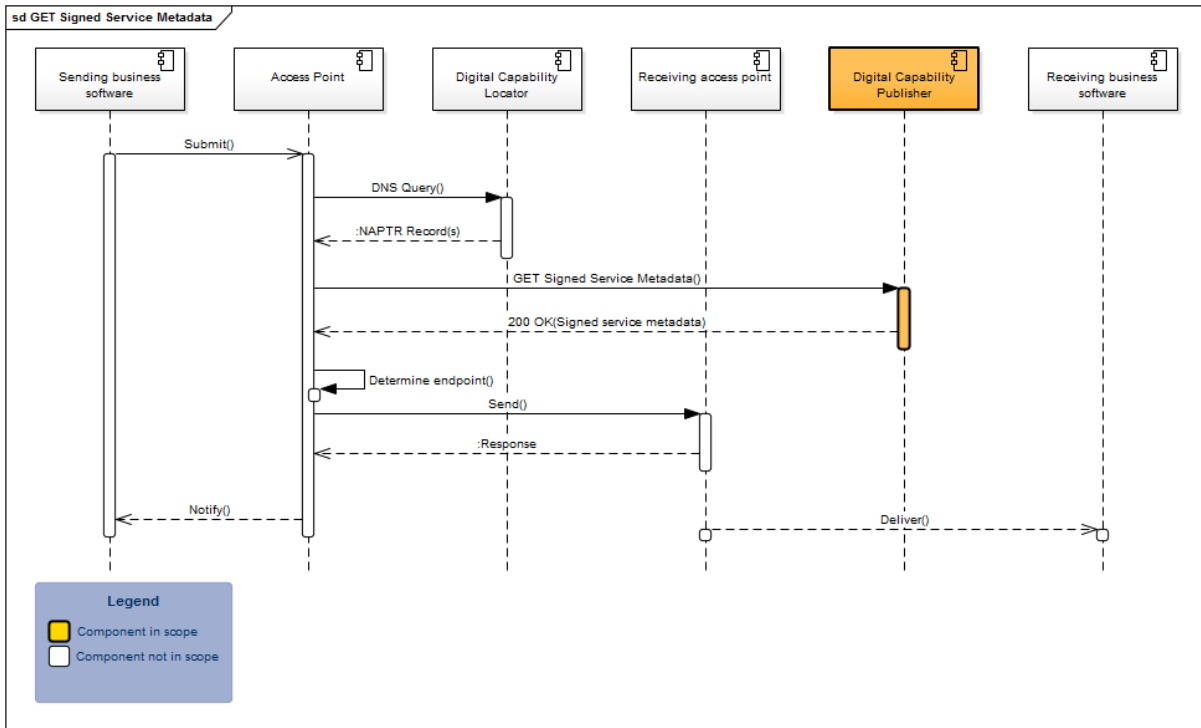


Figure 9: Get Signed Service Metadata

9.1.3.4 Resource Location

Request URL	http://<dcg domain>/{scheme identifier}::{id}/services/{document identifier type}::{root namespace}::{document element local name}###{Subtype identifier}	
HTTP Method	SSL/TLS	Authentication Mechanism
GET	No	N/A

A signed service metadata resource has the following location:

<dcg domain>/{scheme identifier}::{id}/services/{document identifier type}::{root namespace}::{document element local name}###{Subtype identifier}

Colons in the URL need to be encoded as per (Berners-Lee, Fielding, & Masinter, 2005).

scheme identifier	urn:oasis:names:tc:ebcore:partyid-type:iso6523:<scheme>
Id	E.g. <ABN Number> Other identifier types defined by iso6523 are supported.
Document identifier type	dbc-docid
Root namespace	urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:doctype:core-invoice:xsd
Document element local name	core-invoice-1
Subtype identifier	urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:process:invoicing01:ver1.0

Example

```
http://dcp.acme.com.au/urn%3Aoasis%3Anames%3Atc%3Aebcore%3Apartyid-type%3Aiso6523%3A0151%3A%3A23601120601/services/dbc-docid%3A%3Aurn%3Awww.digitalbusinesscouncil.com.au%3Adbc%3Ainvoicing%3Adoctype%3Acore-invoice%3Axsd%3A%3Acore-invoice-1%23%23urn%3Awww.digitalbusinesscouncil.com.au%3Adbc%3Ainvoicing%3Aprocess%3Ainvoicing01%3Aver1.0
```

9.1.3.5 Request Headers

Header	Optional	Type	Description
Accept	Optional	String	text/xml which is the default

9.1.3.6 Status Codes & Error Conditions

HTTP Status Code	Message	Category	Additional Info
------------------	---------	----------	-----------------

HTTP Status Code	Message	Category	Additional Info
200	Ok	Success	
404	Not Found	Error	The origin server did not find a current representation for the target resource or is not willing to disclose that one exists.
406	Not Acceptable	Error	The resource identified by the request is only capable of generating response entities which have content characteristics not acceptable according to the accept headers sent in the request.
5xx	Server Error	Error	Any appropriate HTTP server error

9.1.3.7 Example Responses

HTTP RESPONSE CODE: 200 (Ok)

9.1.3.8 Response Headers

Header	Optional	Type	Description
Content-Type	Mandatory	String	text/xml

9.1.3.9 Response Body – text/xml

An example response. The actual signature block has been omitted.

```

<?xml version="1.0" encoding="utf-8" ?>
<ns:SignedServiceMetadata xmlns:ns="http://docs.oasis-open.org/bdxc/ns/SMP/2014/07"
xmlns:xd="http://www.w3.org/2000/09/xmldsig#">
  <ns:ServiceMetadata>
    <ns:ServiceInformation>
      <ns:ParticipantIdentifier scheme="urn:oasis:names:tc:ebcore:partyid-
type:iso6523:0151">23601120601</ns:ParticipantIdentifier>
      <ns:DocumentIdentifier scheme="dbc-docid">dbc-
docid::urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:doctype:core-invoice:xsd::core-invoice-
1##urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:process:invoicing01:ver1.
</ns:DocumentIdentifier>
      <ns:ProcessList>
        <!--1 or more repetitions:-->
        <ns:Process>
          <ns:ProcessIdentifier scheme="dbc-procid">
            urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:ver1.0
          </ns:ProcessIdentifier>
          <ns:ServiceEndpointList>
            <!--1 or more repetitions:-->
            <ns:Endpoint transportProfile="dbc-as4">
              <ns:EndpointURI>
                http://www.acme.com.au/as4Service
              </ns:EndpointURI>
              <ns:RequireBusinessLevelSignature>
                false
              </ns:RequireBusinessLevelSignature>
            </ns:Endpoint>
          </ns:ServiceEndpointList>
        </ns:Process>
      </ns:ProcessList>
    </ns:ServiceInformation>
  </ns:ServiceMetadata>
  <xd:Signature Id="string">...
</xd:Signature>
</ns:SignedServiceMetadata>

```

9.1.3.10 Response Field Reference

See section 7.1.1 Signed Service Metadata.

9.2 Management API

A management API may be implemented by a Digital Capability Publisher Provider. Management of information in a Digital Capability Publisher may also be offered through a web based user interface. This section describes an example of a management API using the HTTP protocol.

9.2.1 Security

The management APIs must only be made available over HTTPS using TLS1.2 as a minimum. Fallback to earlier versions of TLS or SSL must not be used. TLS versions with known vulnerabilities must not be used.

The management APIs are protected and requires clients to authenticate using a client certificate. The client as well as server certificates for both access points and Digital Capability Publishers are published in the Digital Capability Locator and should be used to verify peer certificates.

9.2.2 Create and Update Service Group

9.2.2.1 Purpose of the API

Create or update an entry for a participant in the Digital Capability Publisher. This method can be used to add extensions to a participant entry in the Digital Capability Publisher. When updating the Service Group, the request must include a Service Group element. This will not update existing Service Metadata and Service Metadata Reference elements should not be provided.

9.2.2.2 Behaviour of API

This method is idempotent and the resource will only be created once. If the resource exists and the body is empty, nothing changes and the method returns 200 Ok. If a ServiceGroup element is provided it will replace the existing one.

If the resource does not exist, a resource is created for the provided location.

9.2.2.3 Sequence Diagrams

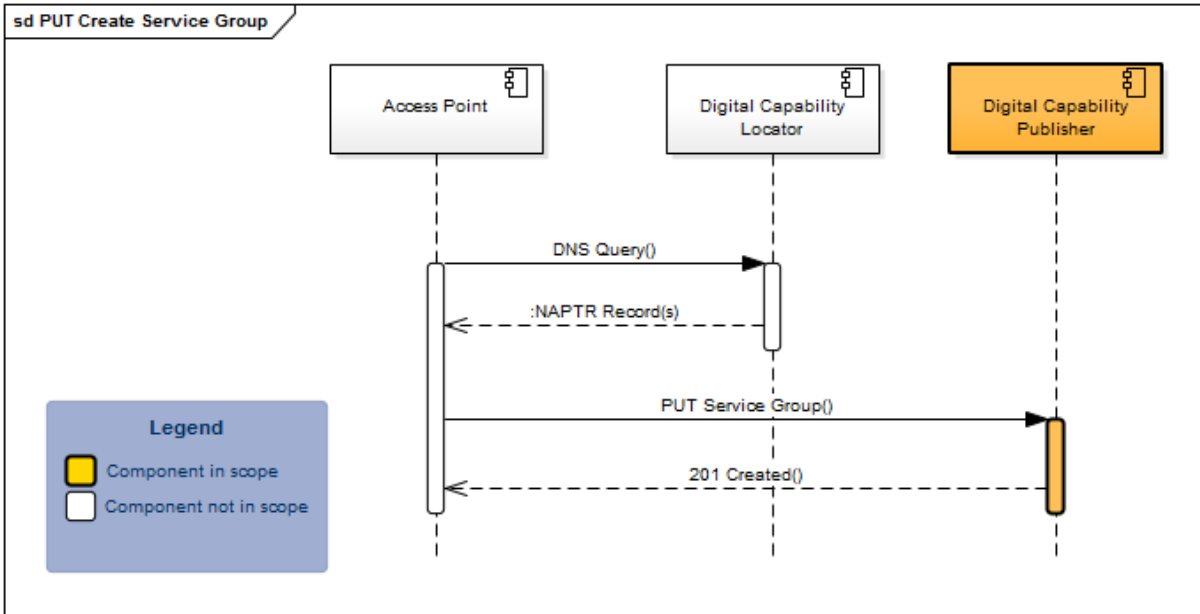


Figure 10: Create Service Group

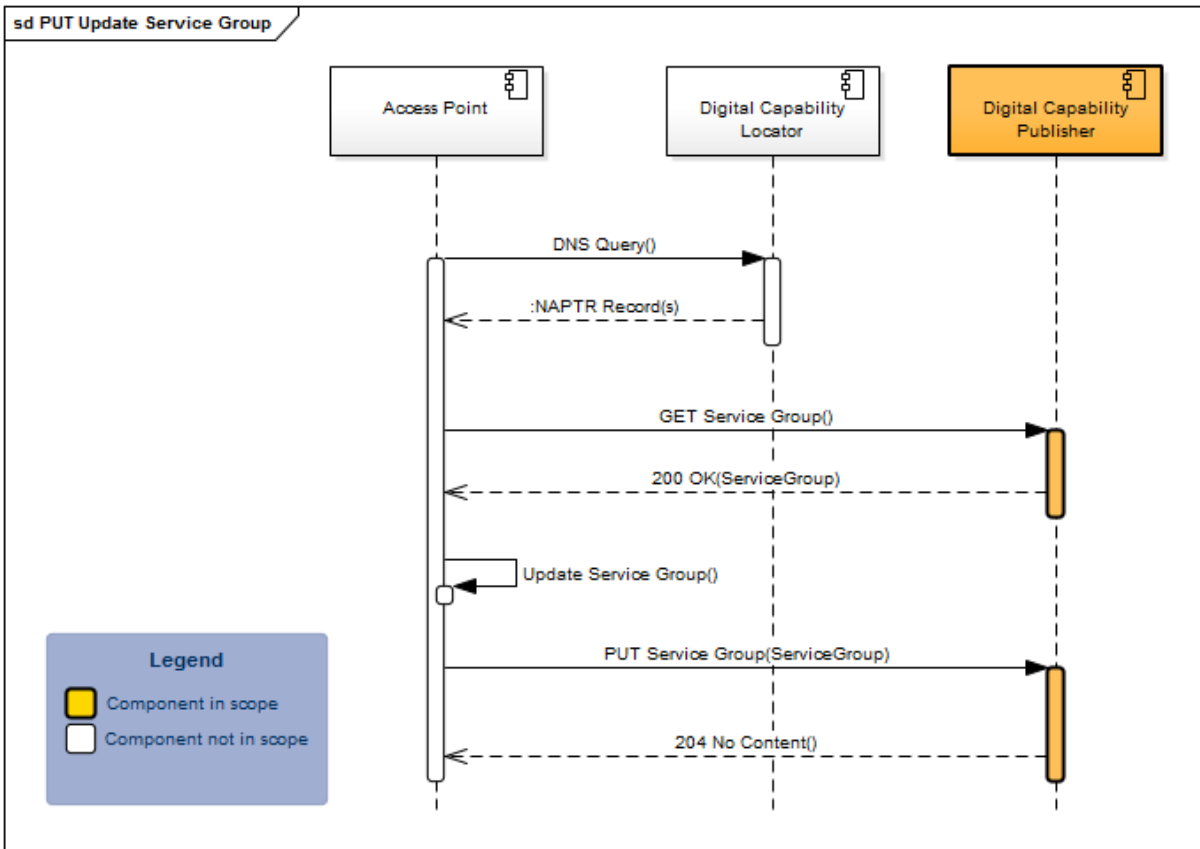


Figure 11: Update Service Group

9.2.2.4 Resource Location

Request URL	http://<dcg domain>/{scheme identifier}::{id}	
HTTP Method	SSL/TLS	Authentication Mechanism
PUT	Yes	Client Certificate

The ServiceGroup resource has the following location:

http://<dcg domain>/{scheme identifier}::{id}

Colons in the URL need to be encoded as per (Berners-Lee, Fielding, & Masinter, 2005).

scheme identifier	urn:oasis:tc:ebcore:partyid-type:catalog-identifier:scheme-in-catalog
-------------------	---

id	<identifier> E.g. <ABN Number>
----	--

Example URL

```
http://dcp.acme.com.au/urn%3Aoasis%3Anames%3Atc%3Aebcore%3Apartyid-type%3Aiso6523%3A0151%3A%3A23601120601
```

9.2.2.5 Request Headers

Header	Optional	Type	Description
Content-Type	Mandatory	String	text/xml

9.2.2.6 Request Body

The request body may optionally contain a ServiceGroup element. The ServiceMetadataReferenceCollection element is not required and should be ignored. This element is implied by the document resources assigned to a participant.

This method does allow updates to extension elements.

```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns2:ServiceGroup xmlns:ns2="http://busdox.org/serviceMetadata/publishing/1.0/">
  <ParticipantIdentifier scheme=" urn:oasis:names:tc:ebcore:partyid-
type:iso6523:0151">12345678901</ParticipantIdentifier>
  <ns2:Extension>
    <property name="email">info@acme.com</property>
  </ns2:Extension>
</ns2:ServiceGroup>
```

9.2.2.7 Request Field References

See section 7.1.2 Service Group. The request should not provide a ServiceMetadataReferenceCollection element.

9.2.2.8 Status Codes & Error Conditions

HTTP Status Code	Message	Category	Additional Info
201	Created	Success	The request has been fulfilled and has resulted in one or more new resources being created.
204	No Content	Success	The resource already existed and nothing happened if the body was empty. If the body was not empty and the participant identifier matched the URL, the resource is updated.
400	Bad Request	Error	The server cannot or will not process the request due to something that is perceived to be a client error.
403	Forbidden	Error	The server understood the request, but is refusing to fulfill it. Return this if there is a problem with the client certificate.
5xx	Server Error	Error	Any appropriate HTTP server error

9.2.2.9 Response Headers

201 CREATED

Header	Optional	Type	Description
Location	Mandatory	String	The location of the created resource. Should match the resource location used to create it.
Date	Mandatory	String	The date and time that the message was originated.

204 No Content

Header	Optional	Type	Description
Date	Mandatory	String	The date and time that the message was originated.

9.2.3 Delete Service Group

9.2.3.1 Purpose of the API

Delete an entry for a participant in the Digital Capability Publisher. This method will delete the Service Group and all related Service Metadata entries for the participant.

9.2.3.2 Behaviour of API

This method can only be called once. Subsequent calls will result in a 404 Not Found response.

9.2.3.3 Resource location

Request URL	http://<dcg domain>/{scheme identifier}::{id}	
HTTP Method	SSL/TLS	Authentication Mechanism
DELETE	Yes	Client Certificate

The ServiceGroup resource has the following location:

```
http://<dcg domain>/{scheme identifier}::{id}
```

Colons in the URL need to be encoded as per (Berners-Lee, Fielding, & Masinter, 2005).

scheme identifier	urn:oasis:tc:ebcore:partyid-type:catalog-identifier:scheme-in-catalog
id	<identifier> E.g. <ABN Number>

Example URL

```
http://dcp.acme.com.au/urn%3Aoasis%3Anames%3Atc%3Aebcore%3Apartyid-  
type%3Aiso6523%3A0151%3A%3A23601120601
```

9.2.3.4 Request Headers

Header	Optional	Type	Description
NA	-	-	-

9.2.3.5 Status Codes & Error Conditions

HTTP Status Code	Message	Category	Additional Info
204	No Content	Success	The resource has been removed.
400	Bad Request	Error	The server cannot or will not process the request due to something that is perceived to be a client error.
403	Forbidden	Error	The server understood the request, but is refusing to fulfill it. Return this if there is a problem with the client certificate.
404	Not Found	Error	The origin server did not find a current representation for the target resource or is not willing to disclose that one exists.
5xx	Server Error	Error	Any appropriate HTTP server error

9.2.3.6 Response Headers

204 No Content

Header	Optional	Type	Description
--------	----------	------	-------------

Header	Optional	Type	Description
Date	Mandatory	String	The date and time that the message was originated.

9.2.4 Create and Update Service Metadata

9.2.4.1 Purpose of the API

Create or update one or more Service Metadata records for a participant identifier. This API can be used to create as well as update entries. When updating entries existing entries will be overwritten. A client should therefore submit a complete and correct list of service metadata records.

9.2.4.2 Behaviour of API

This method is idempotent and the resource will only be created once. If a Service Information element is provided it will replace the existing one.

If the resource does not exist, a resource is created for the provided location. This includes the resource for Service Group.

9.2.4.3 Sequence Diagrams

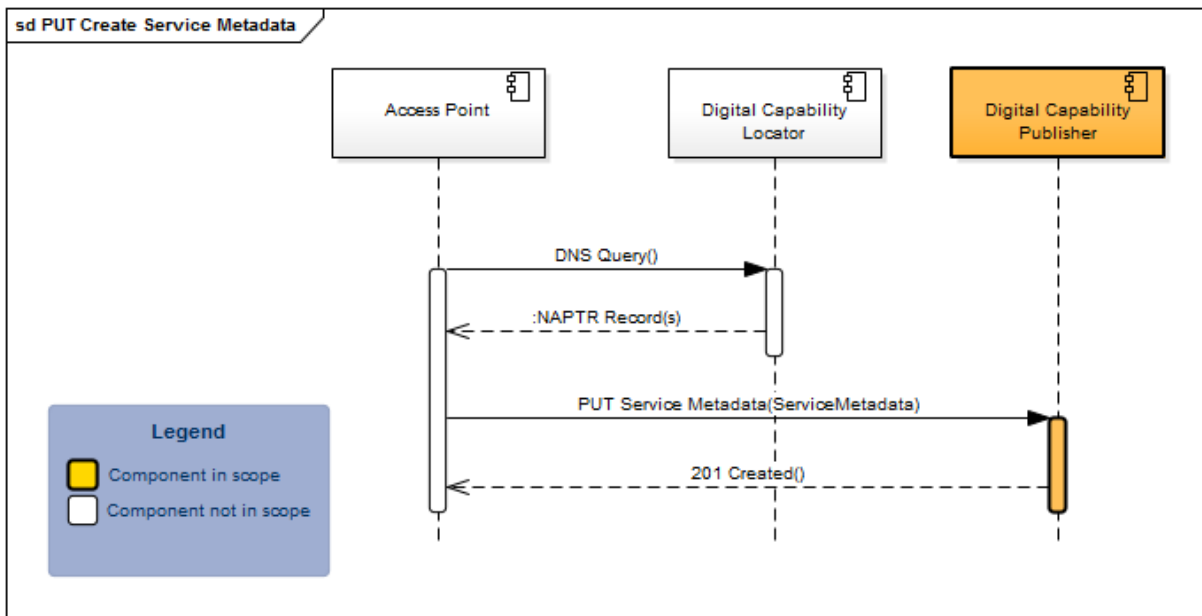


Figure 12: Create Service Metadata

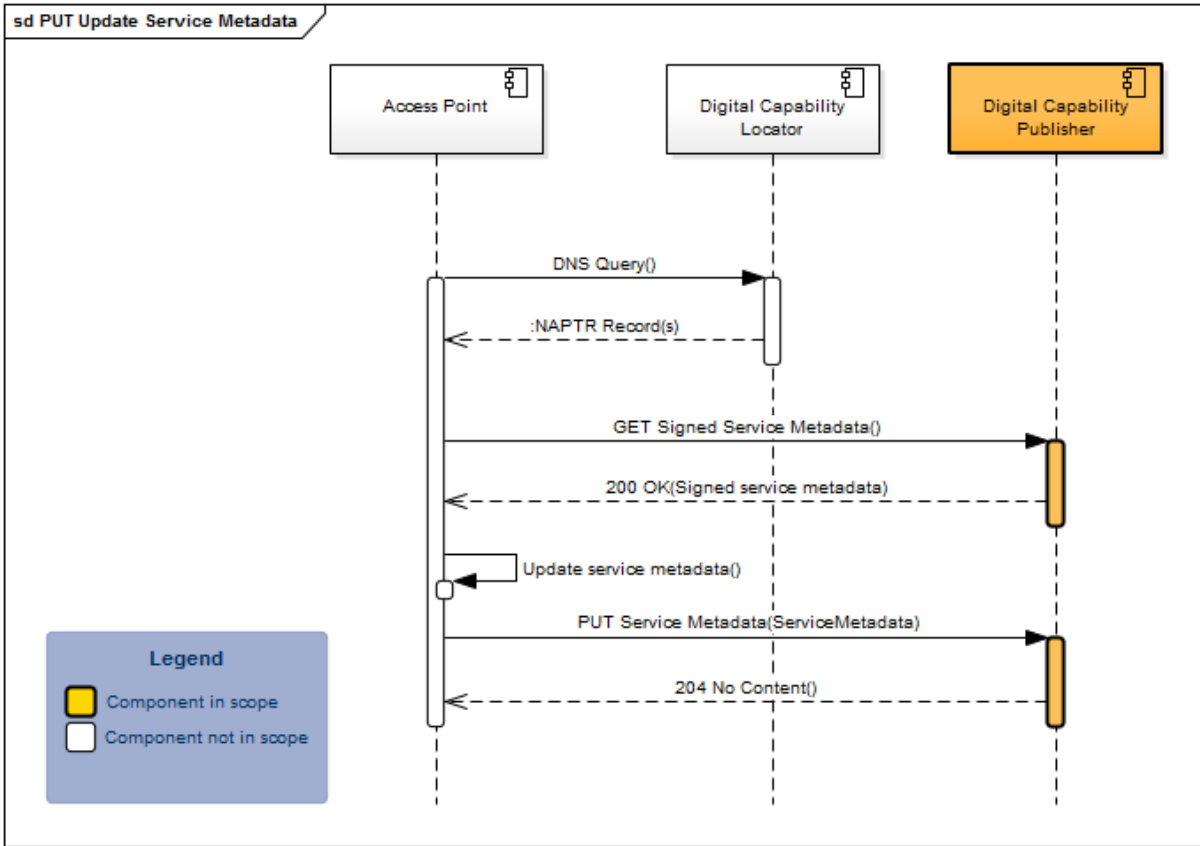


Figure 13: Update Service Metadata

9.2.4.4 Resource Location

Request URL	http://<dcg domain>/{scheme identifier}::{id}/services/{document identifier type}::{root namespace}::{document element local name}###{Subtype identifier}	
HTTP Method	SSL/TLS	Authentication Mechanism
PUT	Yes	Client Certificate

See 9.1.3 Signed Service Metadata for the structure of the resource location and examples.

9.2.4.5 Request Headers

Header	Optional	Type	Description
Content-Type	Mandatory	String	text/xml

9.2.4.6 Request Body

The request body must contain a Service Metadata element. Any existing processes and endpoints will be overwritten.

An example body is given below. The Process details are not shown.

```

<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ServiceMetadata>
  <ServiceInformation>
    <ns2:ParticipantIdentifier scheme="urn:oasis:names:tc:ebcore:partyid-
type:iso6523:0151">23601120601</ns2:ParticipantIdentifier>
    <ns2:DocumentIdentifier scheme="dbc-docid">
urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:doctype:core-invoice:xsd::core-invoice-
1##urn:www.digitalbusinesscouncil.com.au:dbc:invoicing:process:invoicing01:ver1.0
    </ns2:DocumentIdentifier>
    <ProcessList>
      <Process>...</Process>
      <Process>...</Process>
    </ProcessList>
  </ServiceInformation>
</ServiceMetadata>
  
```

9.2.4.7 Request Field References

See section 7.1.1 Signed Service Metadata.

9.2.4.8 Status Codes & Error Conditions

HTTP Status Code	Message	Category	Additional Info
201	Created	Success	The request has been fulfilled and has resulted in one or more new resources being created.
204	No Content	Success	If the body was not empty and the

			participant identifier and document identifier matched the URL, the resource is updated.
400	Bad Request	Error	The server cannot or will not process the request due to something that is perceived to be a client error.
403	Forbidden	Error	The server understood the request, but is refusing to fulfill it. Return this if there is a problem with the client certificate.
5xx	Server Error	Error	Any appropriate HTTP server error

9.2.4.9 Response Headers

201 CREATED

Header	Optional	Type	Description
Location	Mandatory	String	The location of the created resource. Should match the resource location used to create it.
Date	Mandatory	String	The date and time that the message was originated.

204 No Content

Header	Optional	Type	Description
Date	Mandatory	String	The date and time that the message was originated.

9.2.5 Delete Service Metadata

9.2.5.1 Purpose of the API

Delete a Service Metadata entry for a participant in the Digital Capability Publisher. This method will delete the Service Metadata and all related processes and endpoint entries for the document and participant.

9.2.5.2 Behaviour of API

This method can only be called once. Subsequent calls will result in a 404 Not Found response.

9.2.5.3 Resource Location

Request URL	http://<dcg domain>/{scheme identifier}::{id}/services/{document identifier type}::{root namespace}::{document element local name}[##{Subtype identifier}]	
HTTP Method	SSL/TLS	Authentication Mechanism
DELETE	Yes	Client Certificate

See 9.1.3 Signed Service Metadata for the structure of the resource location and examples.

9.2.5.4 Request Headers

Header	Optional	Type	Description
NA	-	-	-

9.2.5.5 Status Codes & Error Conditions

HTTP Status Code	Message	Category	Additional Info
204	No Content	Success	The resource has been removed.
400	Bad Request	Error	The server cannot or will not

			process the request due to something that is perceived to be a client error.
403	Forbidden	Error	The server understood the request, but is refusing to fulfill it. Return this if there is a problem with the client certificate.
404	Not Found	Error	The origin server did not find a current representation of the target resource or is not willing to disclose that one exists.
5xx	Server Error	Error	Any appropriate HTTP server error

9.2.5.6 Response Headers

204 No Content

Header	Optional	Type	Description
Date	Mandatory	String	The date and time that the message was originated.

APPENDIX A: Use Cases

BUC100 Send Business Document to Recipient

Purpose

This high level use case describes the end to end process of sending a business document to a recipient.

Assumptions

N/A

Preconditions

1. The Sender, Recipient, Capability Publisher and the Access Points are participants in eDelivery.

Post conditions

1. The recipient receives the Sender's business document successfully.

Basic Flow

1. The Sender populates the business document with the required information (identifier and scheme, document type and process);
2. The Sender sends the business document to their Access Point;
3. The sending Access Point performs the business discovery process to obtain the capability of the recipient (which includes obtaining the service endpoint of the receiving Access Point);
 - a. <<include>> SUC005 – Lookup Participant's Digital Capability.
4. The sending Access Point sends the business document to the recipient's nominated Access Point for the business document type;
5. The receiving Access Point receives the business document successfully;
6. The receiving Access Point sends the business document to the recipient;
7. The recipient receives the business document from their nominated Access Point successfully;
8. End flow.

BUC033 List Participant's Capabilities

Purpose

This use case describes the steps required for a party, possibly a sender, to discover the entire capabilities (ie every process) supported by a participant.

This use case is optional as it would only be useful if there were more than one process supported by a participant. It is not necessary for a Sender to discover all capabilities of a Recipient to send a business document from corners 1 to 4.

Assumptions

1. Any party, even those not participating in eDelivery, can view a Participant's Capabilities.
2. No authentication or authorisation checks are required.

Pre-conditions

1. The requester needs to know the identifier of the participant they are looking up.

Post-conditions

1. The recipient's digital capabilities have been determined by a participant.

Basic Flow

1. The requester establishes the location of the recipient's digital capabilities;
 - a. <<include>> SUC006 - Lookup Participant's DCP Alias Address;
2. The requester constructs the request to retrieve a recipient's capability list;
3. The requester sends the request to the recipient's Digital Capability Publisher;
4. The Digital Capability Publisher creates the response including the capabilities for each process the participant has in their capability record;
5. The requester receives the response;
6. End flow.

BUC036 Business On-boarding

Purpose

This use case describes the process to on-board a business to a single Digital Capability Publisher and/or one or more Access Point services for eDelivery. This does not include Access Point and Digital Capability Publisher service providers themselves, who are covered by the process described in BUC010 – Service Provider On-Boarding.

There are a number of scenarios covered by this use case:

1. A business is entering the eDelivery framework for the first time (new participant).
2. A business changes their service provider(s) to a single or multiple service provider (noting a business can only have one and only one Digital Capability Publisher service provider):
 - a. The business moves both services from one service provider to one or more service providers.
 - b. The business moves only their Access Point service for a particular process to a new service provider.

- c. The business moves only the Digital Capability Publisher service to a new service provider.
- d. The business has Access Point and Digital Capability Publisher services with separate providers and consolidates the services in one provider.
- e. The business has different Service Providers for Digital Capability Publisher and Access Point services, and moves each service to two new Service Providers.

Assumptions

1. A Service Provider can operate an Access Point and/or a Digital Capability Register but it is not mandatory to provide both.
2. Where a Service Provider can provide both services, whether a business chooses to use both services of that one service provider is completely at their discretion.

Constraints

1. The Service Provider, when providing both services, must create and maintain the business' Digital Capability Locator entry and Digital Capability Publisher capability record.
2. When the business enters into agreements with a Digital Capability Publisher service provider and one or more Access Point service providers, the Digital Capability Publisher Service provider is responsible for coordinating, creating and maintaining the Digital Capability Locator entry and Digital Capability Publisher record on behalf of the business for the duration of this arrangement as it will need all Access Point details to create the business' Capability record in their nominated Digital Capability Publisher.
3. When the business has its own Access Point, the Service Provider for Digital Capability Publisher services is responsible for creating and maintaining the Digital Capability Locator entry, creating the capability record and responding to requests by the business to update the Access Point details the business uses as required.
4. In Access Point service provider change events, The Service Provider holding the business' capability record must comply with Access Point Service Provider request to update the capability record with the new Access Point details.
5. As defined in the Council provider agreements, the losing Service Provider must cooperate with the gaining (New) Service Provider during portability/change of service events.
6. Only one capability record can exist in the eDelivery framework for a participant; this record contains all the capabilities of the business.

Pre-conditions

1. The business has obtained an Australian Business Number (ABN) from the Australian Business Register (ABR) or a GLN, DUNS or other Council approved identifier.
2. The business is required to receive business documents supported by the Council and framework.
3. The New Service Provider is accredited by the Council.

Post-conditions

1. The business has agreements with one or more Service Providers for receiving Council supported business processes and documents through one or more Access Point providers and only one Digital Capability Publisher provider, having either become a new participant or changed service providers.
2. The business has only one capability record in any accredited Digital Capability Publisher.
3. The business is discoverable in the Digital Capability Locator and, if the new Digital Capability Publisher is listed in the Digital Capability Locator entry.

Basic Flow – New Participant in eInvoicing; Business chooses to use a single Service Provider for both Access Point and Digital Capability Publisher services.

1. The business determines their requirements;
2. The business investigates the services offered and pricing of various service providers;
3. The business determines the Service Provider(s) that meets their requirements;
4. The business enters an agreement with the New Service Provider;
5. The New Service Provider determines if the business' capability is already registered in a capability register (this also determines if the client has an Access Point service in the framework also);
6. The business does not have an existing capability record registered and requires it to be created in the New Service Provider's Digital Capability Publisher;
7. The New Service Provider determines the client does not have an Access Point service and will use the New Service Provider's AP;
8. The New Service Provider adds its own supported Access Point address, transport profiles, document types and processes to the business' capability record in its own Digital Capability Publisher;
 - a. <<include>> SUC003 – Register Capability.
9. The New Service Provider requests the capability address (Digital Capability Locator entry) be added to the Digital Capability Locator;
 - a. <<include>> SUC002 – Register Capability Address.
10. The New Service Provider informs the business the on-boarding activities have been completed;
11. End flow.

Alternate Flows

1. **New Participant; Business is signing up to Digital Capability Publisher service only (participant may have an Access Point of its own or is signing a separate agreement with a different Access Point Service Provider).**
 - a. At step 6, the New Service Provider determines the Business is entering into an agreement with a different Access Point service provider or is using its own Access Point;
 - b. The New Service Provider obtains the Access Point endpoint address and transport profile it supports for each document and process, from either the Business (if using its own AP) or the Business' Access Point Service Provider(s);

- c. The New Service Provider creates a capability record including Access Point endpoint address, transport profile, document and process types;
 - i. <<include>> SUC003 – Register Capability.
- d. Resume at step 9.

2. Existing Participant; Business has an existing Digital Capability Publisher service and is changing only this service to the New Service Provider

At step 6, the New Service Provider discovers the business has an existing Digital Capability Publisher service that needs to be changed to the New Service Provider's Digital Capability Publisher service.

- a. The New Service Provider informs the Losing Digital Capability Publisher Provider they are now providing the business' Digital Capability Publisher service.
- b. The Losing Digital Capability Publisher Provider deprecates the business' capability record in their Digital Capability Publisher.
- c. The New Service Provider contacts the business' existing Access Point Provider(s) to confirm the Access Point endpoint address and supported transport profile for each document type and process (the New Service Provider would have obtained this information when looking up the business' capability record in step 5 of the basic flow).
- d. The New Service Provider creates a capability record including Access Point endpoint address, transport profile, document types and process types.
 - i. <<include>> SUC003 – Register Capability
- e. Resume at step 9.

3. Existing Participant; the business is moving both services to the New Service Provider.

At step 6, the New Service Provider discovers the business has an existing Digital Capability Publisher service that needs to be changed to the New Service Provider's Digital Capability Publisher service.

- a. The New Service Provider informs the Losing Digital Capability Publisher Provider they are now providing the business' Digital Capability Publisher service.
- b. The Losing Digital Capability Publisher Provider deprecates the business' capability record in their Digital Capability Publisher.
- c. The New Service Provider informs the previous Access Point Provider they are the business' nominated Access Point Provider.
- d. The New Service Provider creates a capability record including the Access Point endpoint address(es), transport profile(s), document and process types.
 - i. <<include>> SUC003 – Register Capability
- e. Resume at step 9.

Exception flows

1. New Participant; Business is signing up to Access Point service with the New Service Provider, it will use another Service Provider for Digital Capability Publisher services.

At step 6, the New Service Provider determines the business will use a different service provider for a Digital Capability Publisher service.

- a. The Digital Capability Publisher service provide requests the New Service Provider's Access Point details;
 - b. The New Service Provider provides their Access Point endpoint address and transport profile, to enable the Digital Capability Publisher Service Provider to successfully create the business' capability record;
 - c. The Digital Capability Publisher Service Provider creates the capability record;
 - i. <<include>> SUC003 – Register Capability.
 - d. The Digital Capability Publisher Provider requests addition of the business' Digital Capability Locator entry in the Digital Capability Locator;
 - i. <<include>> SUC002 – Register Capability Address.
 - e. The Digital Capability Publisher Provider informs the business that all access points have been added to the capability record for each document/process and the Digital Capability Locator entry has been created;
 - f. End flow.
2. Existing Participant: The Business is changing only to a new Access Point Service Provider for a particular document type and process

At step 9, the service provider discovers the participant has an existing Access Point provider and will be providing this service for the business instead, however the business is retaining its current Digital Capability Publisher Service provider.

- a. The New Service Provider informs the previous Access Point service provider they are the business' new Access Point provider for the particular document type and process;
- b. The New Service Provider looks up the holder of the business' capability record;
- c. The New Service Provider provides their Access Point endpoint address and accepted transport protocol for the process and document type to the Digital Capability Publisher Provider to successfully create the business' capability record;
- d. The Digital Capability Publisher Provider updates the capability record;
 - i. <<includes>> SUC014 – Update Capability.
- e. The Digital Capability Publisher Provider informs the business their change in Access Point service has been updated and they are able to receive documents through the new Access Point;
- f. End flow.

SUC002 Register Digital Capability Publisher Alias Address

Purpose

This use case describes the interaction required for the Identifier to be mapped to the Digital Capability Publisher Alias Address of a participant's Digital Capability Publisher and this mapping added to the Digital Capability Locator, enabling the Participant to be discovered.

Assumptions

N/A

Pre-conditions

1. The participant's capability record has been added to an accredited Digital Capability Publisher.
2. The participant does not have a Digital Capability Publisher Alias Address already registered.
3. The Digital Capability Publisher has been accredited by the council and added to the Digital Capability Locator.
4. The Digital Capability Publisher has obtained the identifier and the identifier scheme of the participant.

Post-conditions

1. The Digital Capability Publisher Alias Address of the participant's Digital Capability Publisher has been added to the Digital Capability Locator, with the Participant's identifier mapped to the Digital Capability Publisher endpoint address.
2. The participant's Digital Capability Publisher address is discoverable on the Digital Capability Locator.

Basic Flow

1. The requester constructs the Digital Capability Publisher Alias Address record addition request;
2. The requester sends the Digital Capability Publisher Alias Address record addition request to the Digital Capability Locator;
3. The Digital Capability Locator receives the Digital Capability Publisher Alias Address record addition request;
4. The Digital Capability Locator checks the requester is authorised to request a record addition;
5. The Digital Capability Locator verifies the Digital Capability Publisher Alias Address record addition request is in the correct format;
6. The Digital Capability Locator determines no record exists for this participant;
7. The Digital Capability Locator locates the accredited Digital Capability Publisher specified in the request for inclusion in the participant's record;
8. The Digital Capability Locator checks the Digital Capability Publisher in the request is accredited;
9. The Digital Capability Locator publishes the participant's Digital Capability Publisher Alias Address record;

10. The Digital Capability Locator responds, informing the requester that the Digital Capability Publisher Alias Address has been published successfully;
11. End flow.

Exception Flows

1. At step 4, the Digital Capability Locator determines the requester is not authorised and sends an error response indicating this;
2. At step 5, the Digital Capability Locator is unable to add the Digital Capability Publisher Alias Address record successfully because the request format is invalid;
 - a. The Digital Capability Locator sends an error message response to the requester;
 - b. End flow.
3. At step 6, the Digital Capability Locator is unable to add the Digital Capability Publisher Alias Address record successfully to the Digital Capability Locator because the participant already has a record;
 - a. The Digital Capability Locator sends an error message response to the requester;
 - b. End flow.
4. At step 7, the Digital Capability Locator is unable to add the Digital Capability Publisher Alias Address record successfully because the Digital Capability Publisher identifier provided cannot be found;
 - a. The Digital Capability Locator sends an error message response to the requester;
 - b. End flow.
5. At step 8, the Digital Capability Locator is unable to add the Digital Capability Publisher Alias Address record successfully because the Digital Capability Publisher is not accredited;
 - a. The Digital Capability Locator sends an error message response to the requester;
 - b. End flow.

SUC006 Lookup Digital Capability Publisher Alias Address

Purpose

This use case describes the steps required for a party to discover the Digital Capability Publisher Alias Address of a participant.

Assumptions

1. The Digital Capability Locator does not supply the URL to the capability record in the Digital Capability Publisher, but only the URL of the Digital Capability Publisher, it is up to the requester to construct the location of the capability record URL in the subsequent request.
2. The business document may have been generated by the sender and sent to the access point as part of sending a business document. The Access Point may be trying to discover the

location of the capability record in order to send the business document to the recipient's access point.

3. Any participant can look up the Digital Capability Publisher Alias Address of another participant.

Pre-conditions

1. The requester and Digital Capability Publisher are participants in eDelivery.
2. The requester is aware of the identifier and the identifier scheme of the participant in order to lookup the Digital Capability Publisher Alias Address.

Post-conditions

1. The location of the recipient's Digital Capability Publisher endpoint address has been determined by the requester.

Basic Flow

1. The requester forms a query to locate the capability record of the recipient;
2. The requester sends the query to their Domain Name System (DNS) server;
3. The Digital Capability Locator receives the query;
4. The Digital Capability Locator locates the Digital Capability Publisher Alias Address for the recipient;
5. The Digital Capability Locator sends the query response to the requester;
6. The requester successfully receives the query response;
7. End flow.

Alternate Flows

1. At step 3, the Digital Capability Locator is unavailable at the time of the query;
 - a. The requester retries a specified amount of attempts;
 - b. The Digital Capability Locator is available during one of the attempts;
 - c. Resume at step 3.
2. At step 2, the Digital Capability Publisher Alias Address of a recipient's capability has been previously looked up by the requester, stored locally and is still valid (the Time-To-Life has not expired). The capability location is then determined by the requester based on this cached record and the Digital Capability Locator does not need to be queried.

Exception Flows

1. At step 4 the Digital Capability Locator cannot locate the recipient's Digital Capability Publisher Alias Address record and responds with an error message indicating this outcome;
2. At step 2 the Digital Capability Locator domain is incorrect;
 - a. The DNS server responds with an error;
 - b. End flow.

3. At step 6 the Digital Capability Publisher Alias Address is not present in the Digital Capability Publisher Alias Address record;
 - a. The Digital Capability Locator responds to the query;
 - b. The requester receives the response but cannot discover the location of the Participant's Digital Capability Publisher;
 - c. End flow.

SUC013 Remove Digital Capability Publisher Alias Address

Purpose

This use case describes the steps to remove a Digital Capability Publisher Alias Address record from the Digital Capability Locator.

Assumptions

1. The participant no longer trades or decides not to participate in eDelivery.
2. The Digital Capability Publisher or the participant can request removal the participant's Digital Capability Publisher Alias Address, so long as they can be authenticated and their permissions allow this.
3. The requester could be removing the record before adding a new one.

Pre-conditions

1. The participant has an existing Digital Capability Publisher Alias Address record.

Post-conditions

1. The participant's Digital Capability Publisher Alias Address record is no longer discoverable on the Digital Capability Locator.

Basic Flow

1. The Digital Capability Publisher or participant itself sends a request to the Digital Capability Locator to remove the participant's Digital Capability Publisher Alias Address record;
2. The Digital Capability Locator receives the request;
3. The Digital Capability Locator checks the requester is authorised to request the record to be removed;
4. The Digital Capability Locator checks the request format is correct;
5. The Digital Capability Locator locates the participant's record;
6. The Digital Capability Locator removes the participant's Digital Capability Publisher Alias Address record;
7. The Digital Capability Locator sends a response to the requester confirming the location has been removed;

8. End flow.

Exception Flows

1. At step 3, the Digital Capability Locator determines the requester is not authorised to perform a removal of the Digital Address;
2. At step 4, the Digital Capability Locator is unable to remove the Digital Capability Publisher Alias Address record successfully because the request format is not valid;
 - a. The Digital Capability Locator sends an error message response to the requester;
 - b. End flow.
3. At step 5, the Digital Capability Locator cannot find a Digital Capability Publisher Alias Address Record for the participant;
 - a. The Digital Capability Locator sends an error message response to the requester;
 - b. End flow.

SUC018 List of Accredited Access Points

Purpose

This may be performed when a requester wants to discover all accredited Access Points accredited or determine the accreditation status of a particular Access Point.

Assumptions

1. This list will be readily available and not require authentication and authorisation checks for requesters.

Pre-conditions

1. The Access Points on the list have been accredited by the accreditation body.

Post-conditions

1. The requester has obtained the list of accredited access points.

Basic Flow

1. The requester sends a request to the Digital Capability Locator for a list of accredited access points;
2. The Digital Capability Locator receives the request;
3. The Digital Capability Locator compiles the list of accredited Access Points;
4. The Digital Capability Locator sends the response with the list to the requester;
5. End flow.

SUC005 Lookup Participant's Digital Capability

Purpose

This use case describes the steps required for a party to discover a specific capability for a particular document and process. The party would discover in the capability the service endpoint and transport Profile for a recipient's Access Point for the specified document and process.

For example, an Access Point could be trying to determine if the Recipient actually accepts eInvoicing process documents such as Tax Invoices, where to send them and in what format.

Assumptions

1. Capability records should not be cached or stored outside of a Digital Capability Publisher, but the capability looked up in the Digital Capability Publisher each time needs to be discovered.
2. Any party can determine the business processes and capability of a participant in eDelivery without being authenticated or authorised.

Pre-conditions

1. The requester has obtained the Participant's identifier and its scheme, the document type, and the business process.

Post-conditions

1. The recipient's digital capability for the document type and business process has been confirmed by a requester.
2. The requester has determined the recipient's Access Point endpoint address and transport Profile needed to send the business document.

Basic Flow

1. The requester establishes the location of the recipient's Digital Capability Publisher;
 - a. <<include>> SUC006 - Lookup Participant's DCP Alias Address.
2. The requester constructs the request to retrieve recipient's capability record including participant identifier, document type and process type;
3. The requester sends the request to the Digital Capability Publisher endpoint;
4. The Digital Capability Publisher receives the request and verifies the format is correct;
5. The Digital Capability Publisher finds the appropriate capability record;
6. The Digital Capability Publisher creates the response including the capability record of the Participant, containing the Access Point service endpoint and transport Profile for the specified process;
7. The Digital Capability Publisher sends the response to the requester;
8. The requester receives the response successfully;
9. End flow.

Exception Flows

1. At step 5, the Digital Capability Publisher cannot find a Capability Record for the participant;
 - a. The Capability Record sends an error message response to the requester;
 - b. End flow.
2. At step 2, the Digital Capability Publisher is unable to find the Capability record successfully because the request format is not valid;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
3. At step 2, the Digital Capability Publisher is unable to find the Capability record successfully because the identifier provided does not conform to an Identifier scheme supported by the Council;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
4. At step 2, the Digital Capability Publisher is unable to find the Capability successfully because the document type or process provided in the request does not conform to any in the capability record for that participant;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.

SUC003 Register Capability

Purpose

This use case describes the steps required for an Access Point provider or a participant to add the digital capability record for the participant on a Digital Capability Publisher.

Assumptions

1. The party adding the capability record is authenticated and authorised to perform the addition of a capability record on behalf of the Participant.

Pre-conditions

1. The Access Point endpoint address and transport Profile for each of the Participant's supported business processes is known to the party adding the capability record.
2. A participant cannot have an existing capability in any Digital Capability Publisher.

Post-conditions

1. The participant's capability record has been added to a Digital Capability Publisher, including the Access Point endpoint address for each business process and the transport Profile used for each process.

2. There is only one Digital Capability Publisher record for a participant in any Digital Capability Publisher.

Basic Flow

1. The Access Point provider or Participant sends the capability record addition request to the Digital Capability Publisher;
2. The Digital Capability Publisher checks the requester is authorised to perform the addition of a capability record;
3. The Digital Capability Publisher checks the request format is correct;
4. The Digital Capability Publisher checks the participant does not have an existing record in this Digital Capability Publisher;
5. The Digital Capability Publisher creates the capability record;
6. The Digital Capability Publisher adds the capability record successfully;
7. The Digital Capability Publisher informs the requester of the successful addition of the record;
8. The Digital Capability Publisher adds the DCP Alias Address of the participant to the Digital Capability Locator;
 - a. <<include>> SUC002 - Register DCP Alias Address.
9. End flow.

Exception Flows

1. At step 2, the Digital Capability Publisher is unable to add the Capability Record because the requester is not authorised to add a record;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
2. At step 5, the Digital Capability Publisher is unable to add the Capability Record successfully because the transport Profile in the request does not conform to the supported Council transport Profiles;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
3. At step 5, the Digital Capability Publisher is unable to add the Capability record successfully because the request format is not valid;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
4. At step 5, the Digital Capability Publisher is unable to add the Capability record successfully because the identifier provided does not conform to an Identifier scheme supported by the Council;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.

5. At step 5, the Digital Capability Publisher is unable to add the Capability Record successfully because the document identifier in the request does not conform to a supported document identifier scheme;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
6. At step 5, the Digital Capability Publisher is unable to add the Capability Record successfully because the process identifier in the request does not conform to a supported process identifier scheme;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.

SUC014 Update Capability

Purpose

This use case describes the steps to update a participant's capability. This could be, for example, to change Access Point endpoint locations for a business process in the capability record, update a transport Profile for a process, or add a capability for a new business process.

Assumptions

1. The Access Point or Participant can update the Digital Capability Publisher.
2. The requester needs to be authenticated and only authorised parties can update capability records.

Pre-conditions

1. The participant has an existing capability record in the Digital Capability Publisher.

Post-conditions

1. The participant's capability record has had the appropriate detail updated.

Basic Flow

1. The requester sends a request to the Digital Capability Publisher to update the capability record with the appropriate detail;
2. The Digital Capability Publisher checks if the requester is authorised to an update to the participant's record;
3. The Digital Capability Publisher determines the request format to be valid;
4. The Digital Capability Publisher locates the record to be updated;
5. The capability record is updated by the Digital Capability Publisher with the requested detail;
6. The Digital Capability Publisher responds with confirmation the capability record has been updated;

7. End basic flow.

Exception Flows

1. At step 2, the Digital Capability Publisher is unable to add the Capability Record because the requester is not authorised to add a record;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
2. At step 4, the Digital Capability Publisher cannot find a record belonging to the participant;
 - a. The Digital Capability Publisher responds with an error message;
 - b. End flow.
3. At step 3, the Digital Capability Publisher is unable to update the Capability Record successfully because the transport Profile in the request does not conform to the supported Council transport Profiles;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
4. At step 3, the Digital Capability Publisher is unable to update the Capability record successfully because the request format is not valid;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
5. At step 3, the Digital Capability Publisher is unable to update the Capability record successfully because the participant identifier provided does not conform to an Identifier scheme supported by the Council;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
6. At step 3, the Digital Capability Publisher is unable to update the Capability record successfully because the Access Point endpoint address provided does not conform to the correct format;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
7. At step 3, the Digital Capability Publisher is unable to update the Capability Record successfully because the document identifier in the request does not conform to a supported document identifier scheme;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
8. At step 3, the Digital Capability Publisher is unable to update the Capability Record successfully because the process identifier in the request does not conform to a supported process identifier scheme;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.

SUC015 Remove Capability

Purpose

This use case describes the steps to remove a participant's capability. This could be to either remove a single business process from the participant's record or to remove the entire capability for all business processes for a participant.

Assumptions

1. A requester could be the Access Point or the Participant themselves.
2. The requester needs to be authenticated and only authorised parties can remove capability.

Pre-conditions

1. The participant has an existing capability record in the Digital Capability Publisher.

Post-conditions

1. The participant's capability record has had the appropriate detail(s) removed.

Basic Flow

1. The requester sends a request to the Digital Capability Publisher to remove the required capability;
2. The Digital Capability Publisher checks that the requester is authorised to remove the capability;
3. The Digital Capability Publisher determines the remove request format to be correct;
4. The Digital Capability Publisher locates the capability needing to be removed;
5. The Capability requested by the requester is removed by the Digital Capability Publisher;
6. The Digital Capability Publisher responds to the requester with confirmation the capability has been removed;
7. End flow.

Exception Flows

1. At step 2, the Digital Capability Publisher is unable to remove the capability because the requester is not authorised to add a record;
 - a. The Digital Capability Publisher sends an error message response to the requester;
 - b. End flow.
2. At step 4 the Digital Capability Publisher cannot find a record belong to the participant;
 - a. The Digital Capability Publisher responds with an error message;
 - b. End flow.
3. At step 3 the Digital Capability Publisher finds the request format to be invalid;
 - a. The Digital Capability Publisher responds with an error message;
 - b. End flow.

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