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PCEHR Document Exchange Service Using the IHE XDS.b Platform

Technical Service Specification v1.5.1

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Approved for external use

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Key information

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Product version	Date	Release comments
1.0	20 December 2011	Draft for limited release.
1.1	18 January 2012	Incorporated stakeholder feedback.
1.2	26 April 2012	**New Additions:** Conformance Points starting with DEXS-T 90+ 3.1.2 SOAP signatures 4.2.3 Transmission timestamp 4.2.4 Transmission Signature Table 3 - XDSDocumentEntry Document Type and Class Code value set 4.3 Supported Responses **Updates:** DEXS-T 3, DEXS-T 5, DEXS-T 18, DEXS-T 53, DEXS-T 55, DEXS-T 56, DEXS-T 61, DEXS-T 83 Figure 1 - Document map Figure 2 - PCEHR functions addressed 3.3.5 setDocumentAccessLevel (Deprecated) 4.3 Common Response Status Table 2 – Document Metadata to XDS.b Document Entry mapping Table 13 - PCEHRHeader (username case changed, HPI-I alternative needs to be approved) Appendix A XSD and WSDL
1.3	22 October 2012	Changes due to HPI-O relaxation for conformant repositories
1.4	12 April 2013	Approved for external release – see details in PCEHR B2B Gateway Service Release Note v1.5
1.5	13 November 2014	Updates based on PCEHR Release 4.2 and Release 5
1.5.1	27 December 2014	Minor editorial corrections.

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1 Introduction

1.1 Purpose

This document provides an implementable technical interface specification for the Document Exchange services using IHE's Cross-Enterprise Document Sharing-b (XDS-b) specification and accompanying bespoke web services.

This document should be read in conjunction with the *PCEHR Document Exchange Service Logical Service Specification* [DOCX-LSS].

Note that all references in this document to the "logical service specification" are referring to the *PCEHR Document Exchange Service Logical Service Specification.*

1.2 Intended audience

This document is intended primarily for:

- Implementers of the national PCEHR system (normative)
- Developers and implementers of PCEHR conformant repositories (normative)
- NEHTA architects and eSolution managers (normative)
- Jurisdictional eHealth programs (informative)
- The Australian Health Informatics Standards development community (informative)
- Developers and implementers of software products which seek to interact with the PCEHR system (normative)

This is a technical document which makes use of the UML2.3 standard.

It is assumed that the audience is familiar with:

- UML and service-oriented architecture concepts and patterns
- The PCEHR Concept of Operations [PCEHR-CON-OPS], September 2011 release
- RM-ODP (Reference Model of Open Distributed Processing) reference model [RM-ODP]
- ATS 5820-2010 *E-health Web Services Profile* [ATS 5820-2010]
- ATS 5821-2010 *E-health XML Secured Payload Profiles* [ATS 5821—2010].

1.3 Context

This document describes an XDS.b and web services–based realisation of the operations specified within the PCEHR Document Exchange Service Logical Service Specification [DOCX-LSS].

This document addresses two key solution areas:

- the exchange of documents via the PCEHR system's "B2B" (business to business) interfaces
- interactions between the PCEHR system and conformant repositories.

1.3.1 PCEHR B2B interactions

The PCEHR system provides a suite of interfaces which may be used by connecting systems (clinical information systems and PCEHR portals) to perform operations on a PCEHR.

The interfaces relevant to PCEHR B2B interactions are provided in section 3.3.

1.3.2 PCEHR conformant repositories

A PCEHR Conformant Repository is a system which stores and provides access to clinical documents in a manner conformant with PCEHR specifications.

The interfaces relevant to PCEHR B2B interactions are provided in section 3.4.

Figure 1 shows how the set of operations addressed in this specification fit into the broader set of PCEHR functionality.

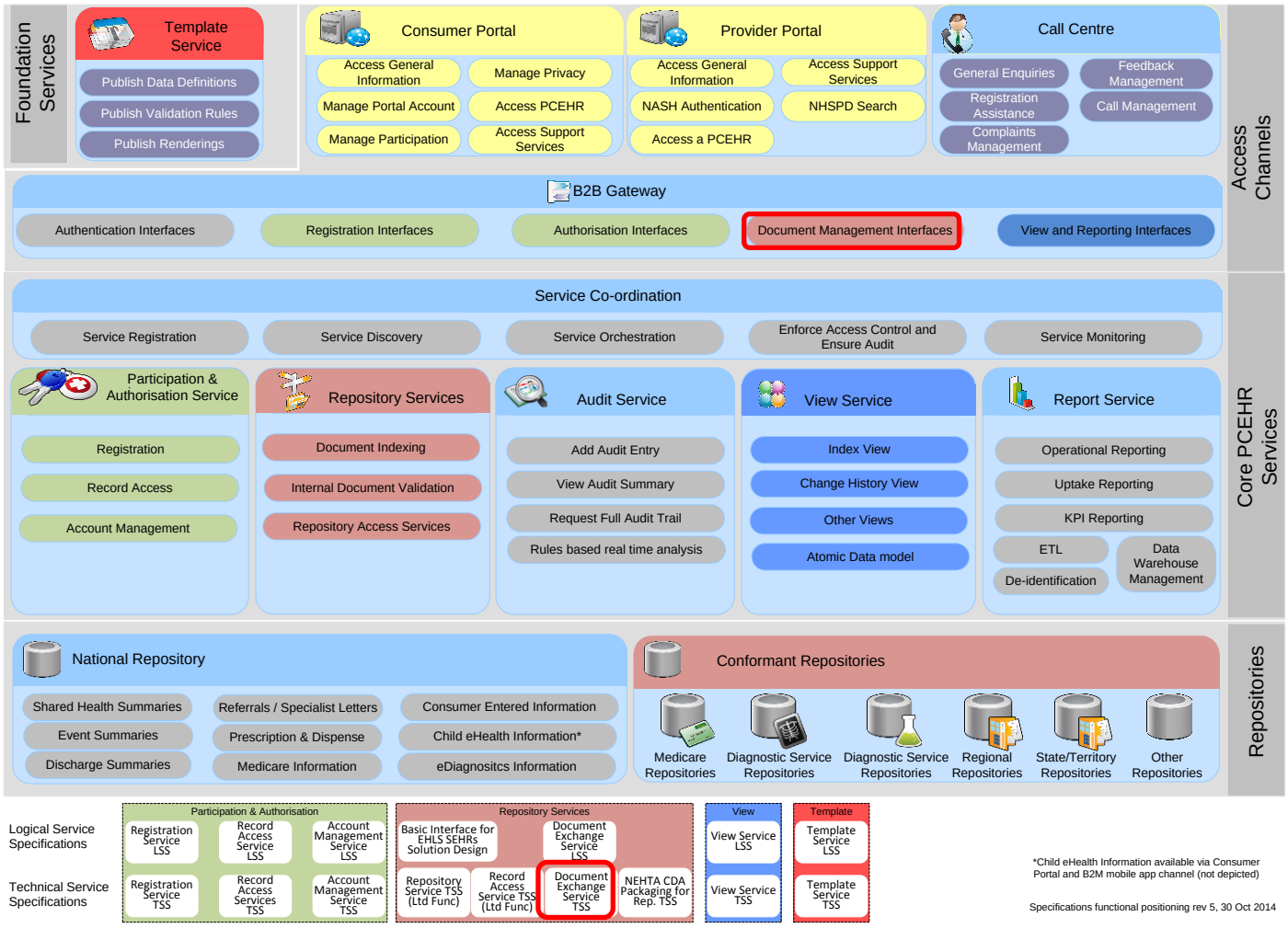

Figure 1 PCEHR functions addressed

As illustrated in Figure 2 below, the Document Exchange Service is expected to be used by clinical systems (which, for the purposes of this illustration, include contracted service providers and conformant provider portals), conformant consumer portals and conformant repositories.

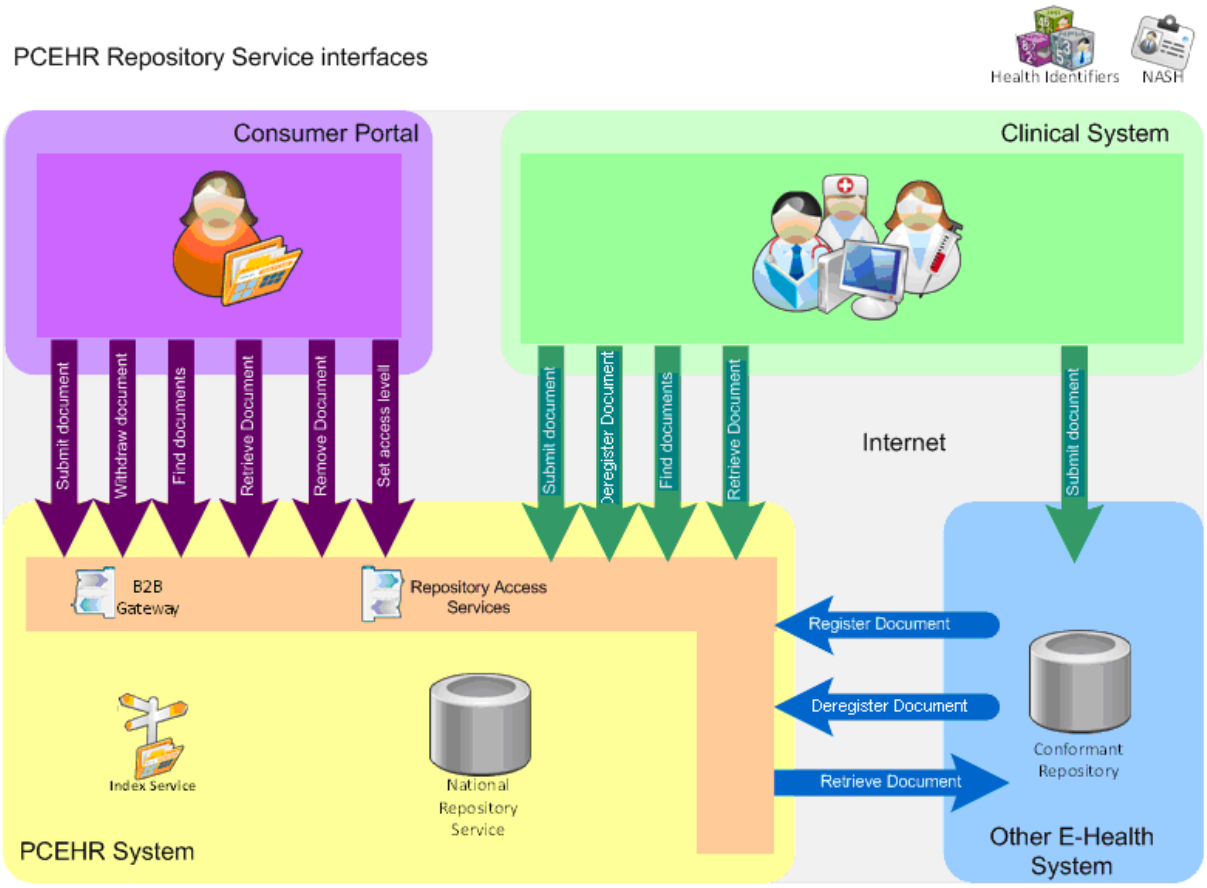

Figure 2 Document Exchange Service systems and interactions

1.4 Scope of document

This document provides a realisation of the set of functions outlined in the logical service specification [DOCX-LSS] using IHE's XDS.b platform.

1.4.1 In scope

An XDS.b based realisation of all functions specified in the logical service specification [DOCX-LSS].

1.4.2 Out of scope

- Other PCEHR services which may be used by clinical information systems, portals or conformant repositories.
- The re-statement of the system roles, interactions and conformance points specified in the logical service specification [DOCX-LSS].
- Support for platforms other than those specified in IHE's XDS.b profile. Examples of excluded platforms include those based on the ATS-5822 Secure Message Delivery protocol and HSSP's Retrieve, Locate and Update Service Specification.

1.5 Conformance points

This specification contains conformance points that identify normative requirements that are to be met by identified members of the Document Exchange Service interface user system roles (as described in the logical service specification) in order to comply with this specification when interacting with the Document Exchange Service interface.

Conformance points include requirements on a party (Service Invoker) invoking the service and the party (Document Source) providing the service.

Any capability required to meet a conformance point **SHALL** be considered part of the requirements to be met under this specification.

Conformance points are identified within this document by the means of the following notation:

DEXS-T 0	This is an example only. Conformance points **SHALL** be numbered and contain an identifier of 'DEXS-T' which identifies them as being applicable to the PCEHR Document Exchange Service technical service specification.

The keywords **SHALL**, **SHALL NOT**, **SHOULD** and **SHOULD NOT** in this document are to be interpreted as described in IETF's RFC 2119 [RFC2119].

Note that the conformance point numbering is non-consecutive in some sections; however, numbers remain uniquely assigned to each conformance points.

1.6 Document map

Figure 3 shows how this document and other PCEHR artefacts are grouped according to the eHealth Interoperability Framework layers of abstraction and viewpoints.

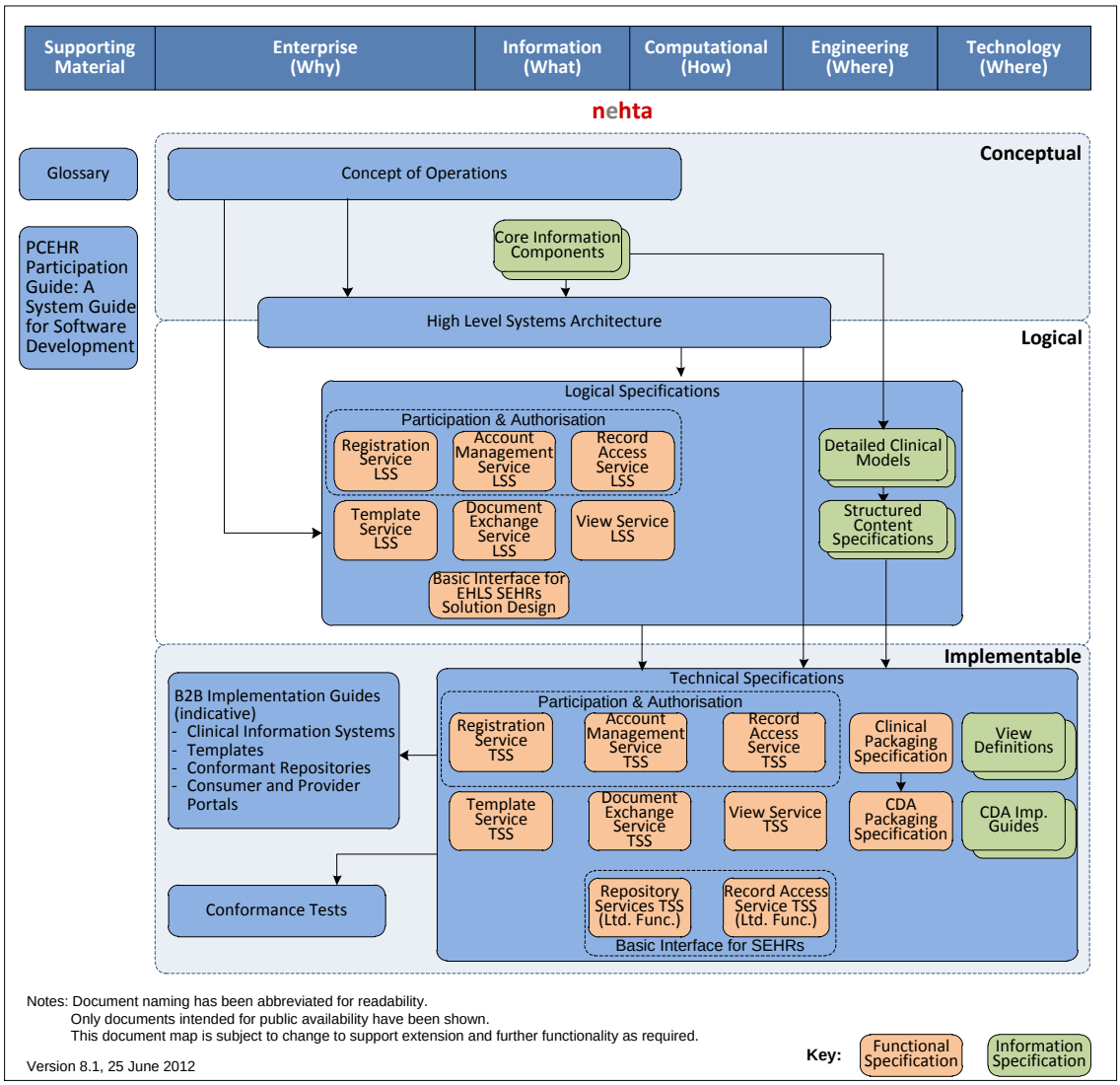

Figure 3 Document map

2 Standards and technology platform

A standards and technology platform is a collection of standards and technologies that may be used collectively to realise an implementation of one or more service interfaces specified within a logical service specification.

A single service interface within a logical specification must be realised fully by a single standards and technology platform. However, each service interface specified within a logical specification may be realised wholly on different standards and technology platforms.

The standards and technology platform for this technical service specification is made up from a set of specifications and standards.

- IHE's *Cross-Enterprise Document Sharing* (XDS.b) is a specification for sharing clinical documents within a trusted community called an Affinity Domain. This Affinity Domain contains a single document registry and one or more document repositories. References to the set of IHE specifications are provided on page 58.

  The core XDS.b specification does not provide a mechanism for removing documents or updating document metadata. IHE's XDS.b Metadata Update Trial Implementation supplement [IHE_TS] proposes a mechanism for achieving this functionality. However, there are a number of areas where gaps have been identified between this specification and the PCEHR system requirements, specifically:

  - The *ITI-62 Remove Document Set* transactions specified within the XDS.b Metadata Update supplement specifies a solution that deletes the ebXML registry entries. The PCEHR requirements only support a "logical removal" where the entry is retained but marked as removed.
  - The *ITI-57 Update Document Set* transaction requires the Document Administrator Actor (in this instance a clinical information system, conformant repository or portal) to supply the full XDSDocumentEntry object (which describes the full set of document metadata). The XDS registry may then perform updates on any index entries where the supplied XDSDocumentEntry differs from the registry (with the supplied data taking precedence over the stored data). The PCEHR system only allows the XDSDocumentEntry.confidentialityCode and XDsDocumentEntry.availabilityStatus fields to be updated (and only in specific use cases by specific actors). Providing a function which allows a wider set of data to be updated and then constraining this via policy offers an inelegant user interface and may pose a security risk if errors occur within policy enforcement.
  - The *XDS Metadata Update* specification is a trial implementation supplement and may be changed (or withdrawn). Therefore, it does not represent a stable basis for development.
  - Given the above concerns, the setDocumentAccessLevel, removeDocument and deregisterDocument operations are realised as bespoke web services. The XDS.b Metadata Update Trial Implementation supplement is not considered further within this document.

- ATS 5820 Web Service Profile

  ATS 5820 E-health Web Service Profile, issued by Standards Australia in conjunction with NEHTA, provides a common platform for web service communication across Australian eHealth systems.

Figure 4 illustrates the specification and standards included in this technical service specification.

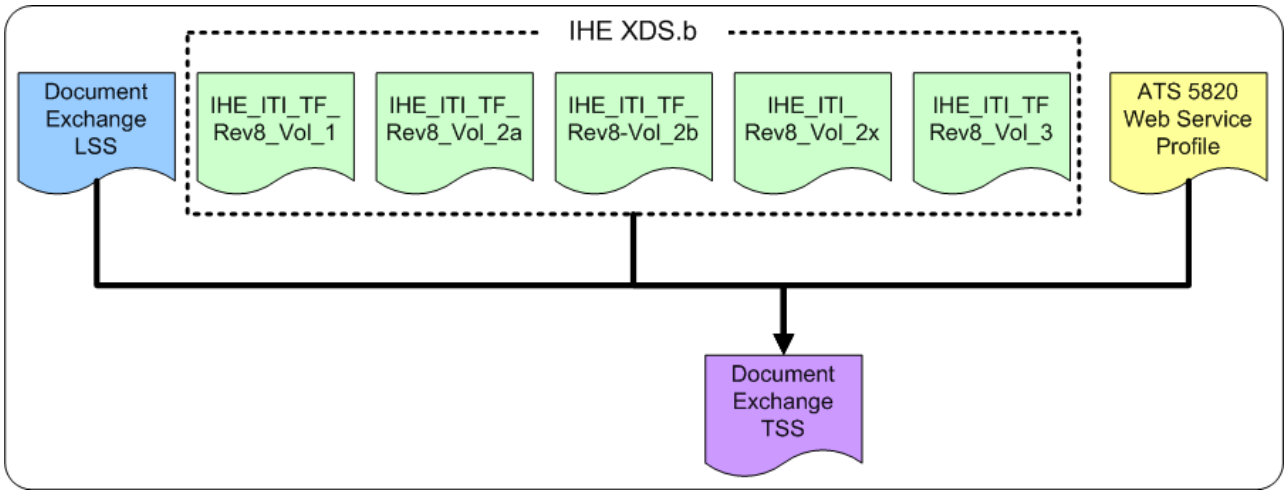

Figure 4 Document Exchange Standards Platform

In addition to the above items, this specification depends on the following foundation infrastructure services:

- Healthcare Identifiers Service (HI Service) for identification of healthcare provider organisations (via HPI-Os), healthcare provider individuals (via HPI-Is) and the subject of care (an individual identified by an IHI).
- The National Authentication Service for Health (NASH) compliant X.509 certificates.

Conformance points

The following conformance points define the application of the *E-health Web Services Profile* [ATS 5820-2010] to service interactions:

DEXS-T 1	All implementations **SHALL** conform to the Web Services Base Profile from the Standards Australia E-health Web Services Profiles [ATS 5820-2010] for all web service invocations with the following conformance point taking precedence:
DEXS-T 2	All implementations **SHALL** implement the TLS Security Profile from the Standards Australia E-health Web Services Profiles [ATS 5820-2010] for all web service invocations.

Informative note

The naming of operations, data types and services specified within the set of IHE specifications will be re-used by the specification and will not be changed to align with the naming conventions specified in [ATS 5820-2010].

With the exception of naming conventions and explicit support for MTOM-XOP, the IHE XDS.b Specification is closely aligned with the specification provided within the ATS Web Services Profiles document [ATS 5820-2010]. There are no changes required to the IHE XDS.b Specification as a result of alignment with ATS 5820-2010.

3 Computational viewpoint

The computational viewpoint addresses how the service interfaces and service operations defined in the logical service specification map onto the operation and transport specifications provided by the standards and technology platform.

3.1 Information security

3.1.1 Security

Conformance points

DEXS-T 3	All implementations **SHALL** implement the TLS Security Profile provided within the *ATS 5820 Standards Australia E-health Web Services Profiles* specification [ATS 5820-2010].

3.1.2 SOAP signatures

Conformance points

DEXS-T 90	The service invoker and service provider **SHALL** include a Transmission Signature (section 4.3.4) containing a signed attestation of elements contained within the SOAP message on all SOAP request and response messages, except where the response contains a SOAP fault.
DEXS-T 91	The service invoker and service provider **SHALL** create the signature using a certificate that asserts the same identity as that asserted in the TLS connection.
DEXS-T 92	The service provider **SHOULD** respond to an invalid Transmission Signature by rejecting the entire message and responding with an error.

3.2 Service interface realisation

This section shows the service interfaces defined in the logical service specification and specifies how these are realised on the chosen standards and technology platform.

Figure 5 shows how the logical operations are realised in this technical service specification. The IHE transactions are shown with a prefix of the unique ITI code assigned by IHE to each transaction. The prefix "WS:" is used to indicate bespoke web services.

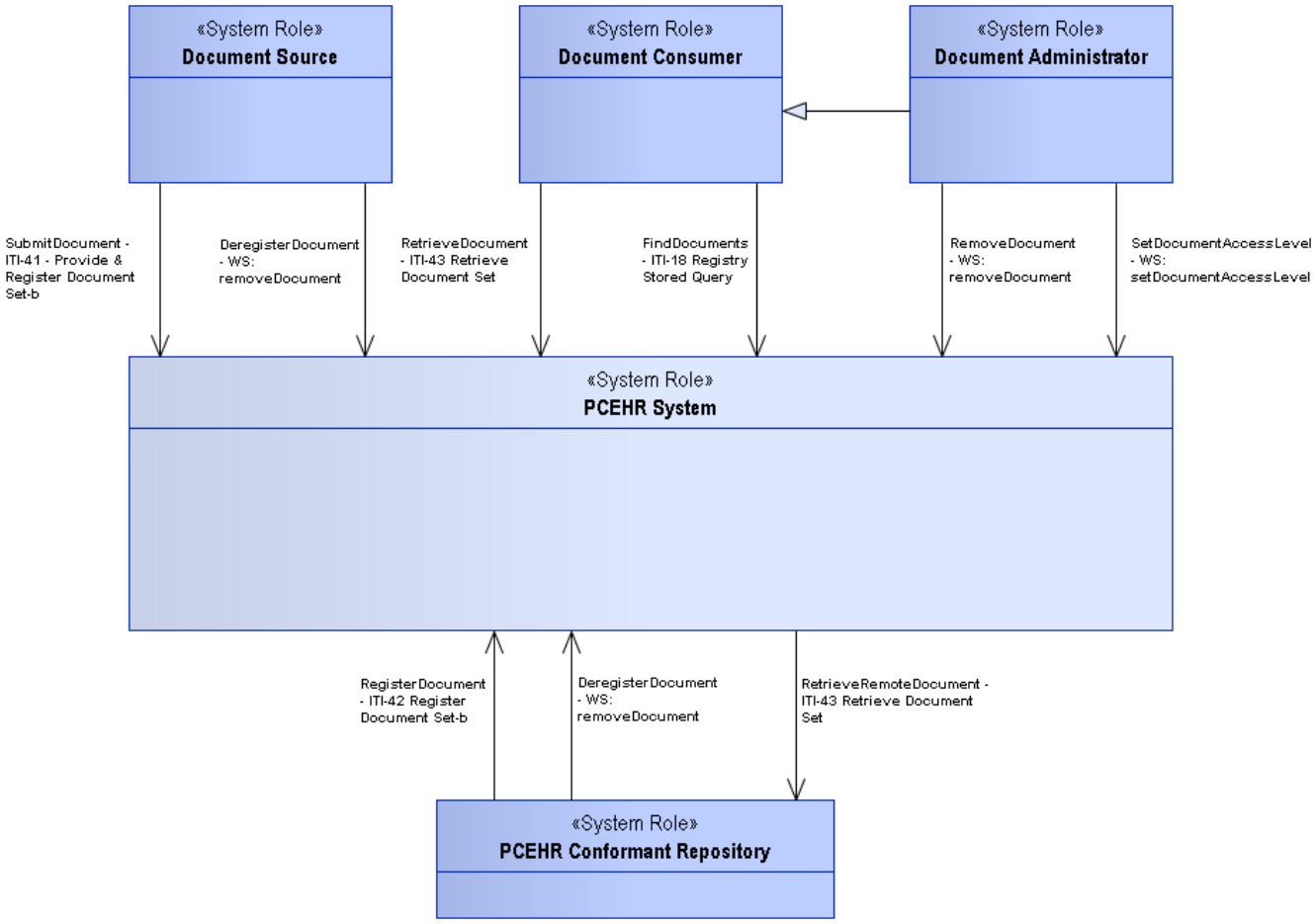

Figure 5 Mapping of LSS operations to XDS.b transactions

Table 1 Mapping between logical and technical operations

Logical Service Specification	Technical Service Specification
DocumentSubmission.submitDocument	ITI-41 Provide & Register Document Set – b
DocumentRetrieval.retrieveDocument	ITI-43 Retrieve Document Set
DocumentRetrieval.findDocuments	ITI-18 Registry Stored Query
ConformantRepositoryRetrieval.retrieveRemoteDocument	ITI-43 Retrieve Document Set
DocumentRegistration.registerDocument	ITI-42 Register Document Set - b
DocumentRegistration.deregisterDocument	Bespoke Web Service – removeDocument
DocumentManagement.setDocumentAccessLevel	Bespoke Web Service – setDocumentAccessLevel
DocumentManagement.removeDocument	Bespoke Web Service - removeDocument

Conformance points

DEXS-T 4	Implementations **SHALL NOT** rely on support for IHE interactions unless they are specified within the 'Technical Service Specification' column in Table 1.

3.3 Interactions between CISs, PCEHR portals and the national PCEHR system

3.3.1 ITI-41 Provide & Register Document Set – b

Name in logical service specification: submitDocument

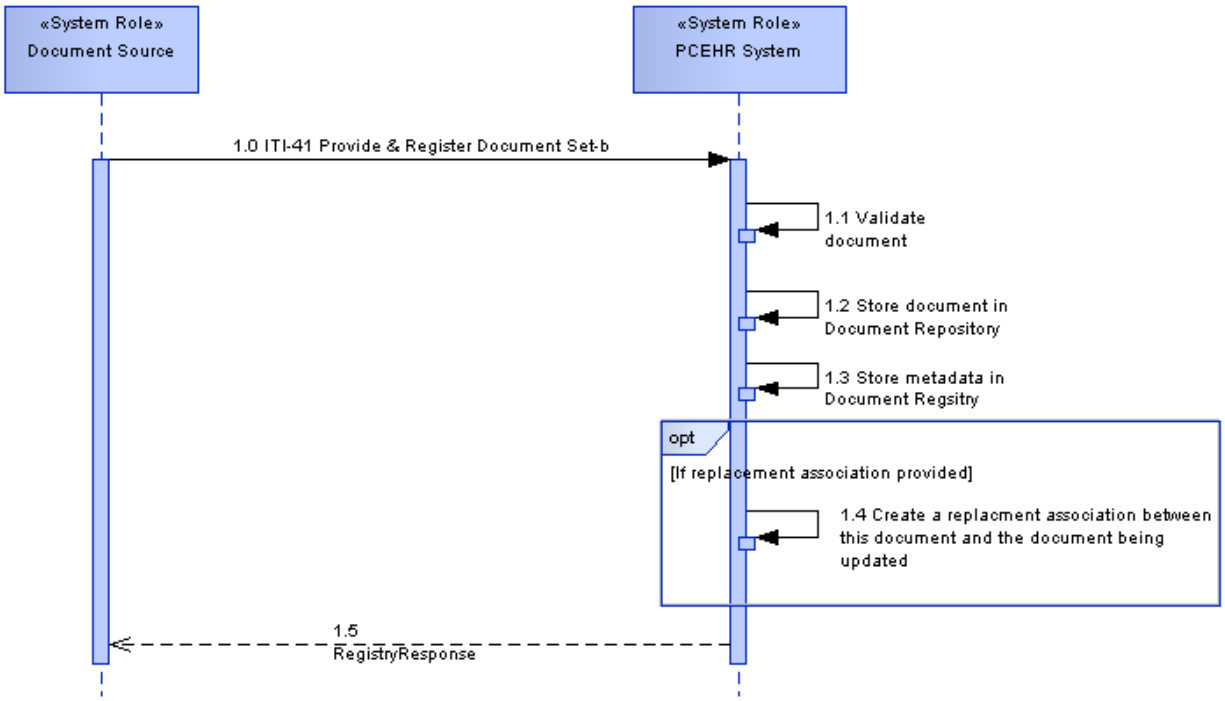

Figure 6 Provide & Register Document Set-b

The Provide & Register Document Set–b transaction represents an XDS.b realisation of the submitDocument operation defined in the logical service specification.

This operation allows a Document Source to submit a document and associated metadata to the national PCEHR system.

The national PCEHR system will implement the XDS.b Document Repository and XDS.b Document Registry Actors. The XDS.b Document Source actor will be implemented by clinical information systems (CISs) and consumer portals (for the submission of items such as Consumer Entered Information) seeking to upload documents to the PCEHR system.

The Provide & Register Document Set-b operations also provide support for document versioning through the use of association constructs. In this model, a document may be submitted with metadata that states that the current document replaces an existing document. If the existing document does not exist within the PCEHR system, then an error will be returned.

3.3.1.1 Pre-conditions

Within the scope of this section, the Document Repository and Document Registry Roles shall exclusively be fulfilled by the national PCEHR system.

3.3.1.2 Interaction

Conformance points

DEXS-T 6	The normative description of the Provide & Register Document Set – b operation as provided in section 3.41 of volume 2B of the IHE IT Infrastructure Technical Framework Specification [ITITF-2B] **SHALL** apply, including any further document or section references therein, with the following conformance points taking precedence:
DEXS-T 7	The operation request **SHALL** include the full "Common Header" as specified in section 4.3.1.
DEXS-T 8	The Provide & Register Document Set transaction **SHALL** contain exactly one XDS Document element.
DEXS-T 9	The Provide & Register Document Set transaction **SHALL** contain one or more unique XDSDocumentEntry elements.
DEXS-T 10	The Provide & Register Document Set transaction **SHALL NOT** contain XDS Folder elements.
DEXS-T 11	The Provide & Register Document Set transaction **SHALL** only support the Document Replace Option and **SHALL NOT** support the Document Addendum, Document Transformation and Folder Management options (section 3.4.1.61 within [ITITF-2B] provides the definition of these terms).

Informative note

The specification provides support for submitting a document to a Document Repository and does not provide support for the use of the ITI-41 transaction between entities fulfilling the Document Source and Document Recipient actors (as shown in section 3.41.4 of ITITF-1).

All CDA documents will be contained within CDA packages. An XDS message will contain one CDA Package.

3.3.1.3 Post-conditions

Conformance points

DEXS-T 12	Upon successful execution, the PCEHR System **SHALL** persist the document and return a status of 'urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success'.

3.3.1.4 Inputs, outputs and faults

In order to support the inclusion of the Common Header and alignment with ATS-5820 Web Services Profile [ATS 5820-2010], the service will use the WSDL provided in Appendix A rather than those specified within the IHE specifications.

Operation data fields	Data structures
Input	ihe:ProvideAndRegisterDocumentSetRequest
Output	rs:RegistryResponse

Conformance points

DEXS-T 13	The conformance points specified in sections 4.2.1, 4.2.2 and 4.2.3 **SHALL** apply to this operation.

3.3.1.5 Service faults

The specification for Service Faults associated with XDS.b transactions is provided within section 4.2.6.

3.3.2 ITI-43 Retrieve Document Set

Name in logical service specification: retrieveDocument

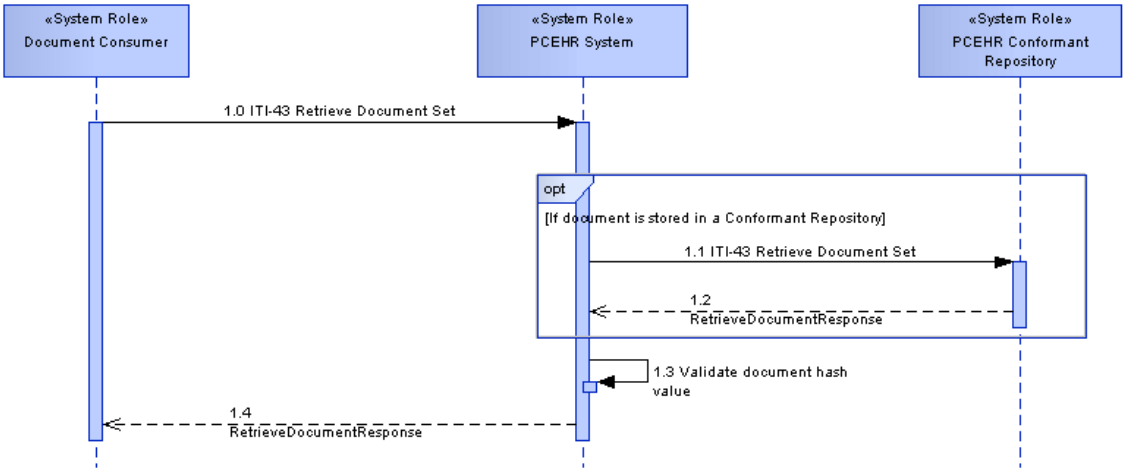

Figure 7 ITI-43 Retrieve Document Set

The Retrieve Document Set transaction represents an XDS.b realisation of the retrieveDocument operation defined in the logical service specification.

This operation allows a Document Consumer to retrieve a document from the national PCEHR system.

The national PCEHR system will implement the XDS.b Document Repository and XDS.b Document Registry Actors. The XDS.b Document Consumer actor will be implemented by clinical information systems PCEHR portals seeking to retrieve a document from the PCEHR system.

3.3.2.1 Pre-conditions

Within the scope of this section, the Document Registry role shall be fulfilled exclusively by the national PCEHR system.

3.3.2.2 Interaction

Conformance points

DEXS-T 14	All conformance points specified in the *PCEHR Document Exchange Service LSS Specification* for the retrieveDocument operation **SHALL** apply to this operation.
DEXS-T 15	The normative description of the Retrieve Document Set operation as provided in section 3.43 of volume 2B of the *IHE IT Infrastructure Technical Framework Specification* [ITITF-2B] **SHALL** apply, including any further document or section references therein, with the following conformance points taking precedence:

DEXS-T 16	The operation request **SHALL** include the full "Common Header" as specified in section 4.3.1.
DEXS-T 17	Retrieve Document Set transactions **SHALL** contain exactly one XDS document element.

3.3.2.3 Post-conditions

Conformance points

DEXS-T 18	Upon successful execution, the PCEHR System SHALL return the requested document along with a status of 'urn:oasis:names:tc:ebxmlregrep:ResponseStatusType:Success'.

3.3.2.4 Inputs, outputs and faults

In order to support the inclusion of the Common Header and alignment with ATS-5820 Web Services Profile [ATS 5820-2010], the service will use the WSDL provided in Appendix A rather than those specified within the IHE specifications.

Operation data fields	Data structures
Input	ihe:RetrieveDocumentSetRequest
Output	ihe:RetrieveDocumentSetResponse

Conformance points

DEXS-T 19	The ihe:RetrieveDocumentSetRequest **SHALL** contain exactly one ihe:DocumentRequest element.
DEXS-T 20	The ihe:RetrieveDocumentRequest **SHALL NOT** contain an ihe:HomeCommunityId element.
DEXS-T 21	The ihe:RetrieveDocumentSetResponse **SHALL** contain a maximum of one ihe:DocumentResponse element.
DEXS-T 22	The conformance points specified in section 4.2.4 **SHALL** apply to this operation.

3.3.2.5 Service faults

The specification for Service Faults associated with XDS.b transactions is provided within section 4.2.6.

3.3.3 ITI-18 Registry Stored Query

Name in logical service specification: findDocuments.

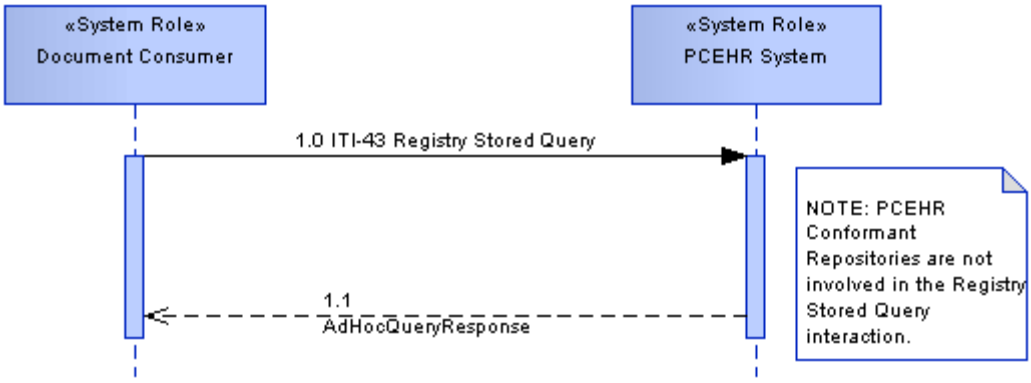

Figure 8 ITI-43 Registry Stored Query

The Registry Stored Query transaction represents an XDS.b realisation of the findDocuments operation defined in the logical service specification.

This operation allows a Document Consumer to find one or more documents within the national PCEHR system which match a set of provided search criteria.

The national PCEHR system will implement the XDS.b Document Registry Actor. The XDS.b Document Consumer actor will be implemented by clinical information systems, PCEHR portals and mobile clients seeking to find documents within the national PCEHR system.

3.3.3.1 Pre-conditions

Within the scope of this section, the Document Registry role shall be fulfilled exclusively by the national PCEHR system.

3.3.3.2 Interaction

Conformance points

DEXS-T 23	All conformance points specified in the PCEHR Document Exchange Service LSS Specification for the findDocuments operation **SHALL** apply to this operation.
DEXS-T 24	The normative description of the Registry Stored Query operation as provided in section 3.18 of volume 2A of the IHE IT Infrastructure Technical Framework Specification [ITITF-2A] **SHALL** apply, including any further document or section references therein, with the following conformance point taking precedence:
DEXS-T 25	The operation request **SHALL** include the full "Common Header" as specified in section 4.3.1.

3.3.3.3 Post-conditions

Conformance points

DEXS-T 26	Upon successful execution, the PCEHR System **SHALL** return the list of documents matching the supplied criteria along with a status of 'urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success'.

3.3.3.4 Inputs, outputs and faults

In order to support the inclusion of the Common Header and alignment with ATS-5820 Web Services Profile [ATS 5820-2010], the service will use the WSDL provided in Appendix A rather than those specified within the IHE specifications.

Operation data fields	Data structures
Input	query:AdHocQueryRequest
Output	query:AdHocQueryResponse

Conformance points

DEXS-T 27	The conformance points specified in section 4.2.5 **SHALL** apply to this operation.

3.3.3.5 Service faults

The specification for Service Faults associated with XDS.b transactions is provided in section 4.2.6.

3.3.4 removeDocument

Name in logical service specification: removeDocument and deregisterDocument.

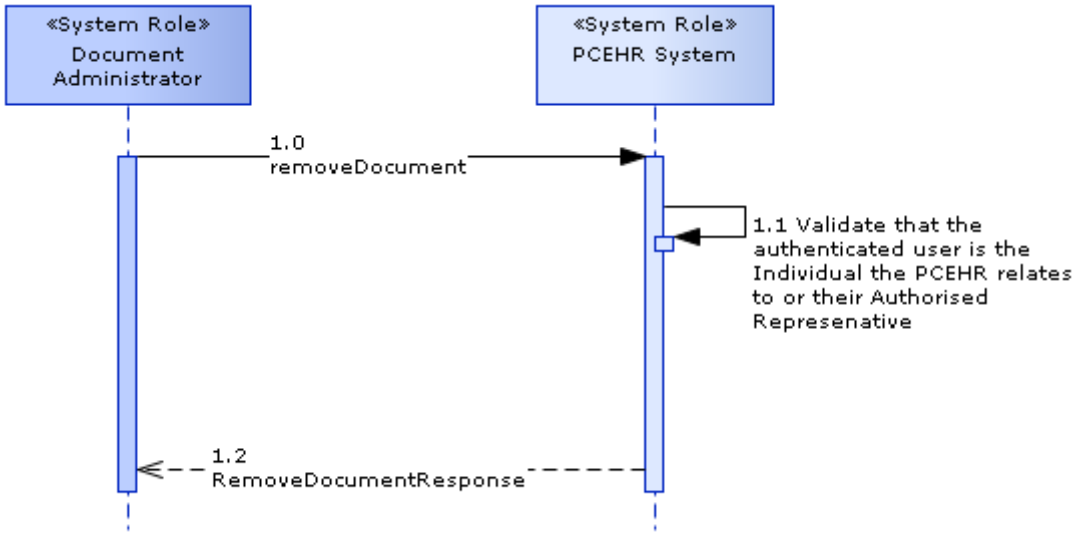

Figure 9 removeDocument

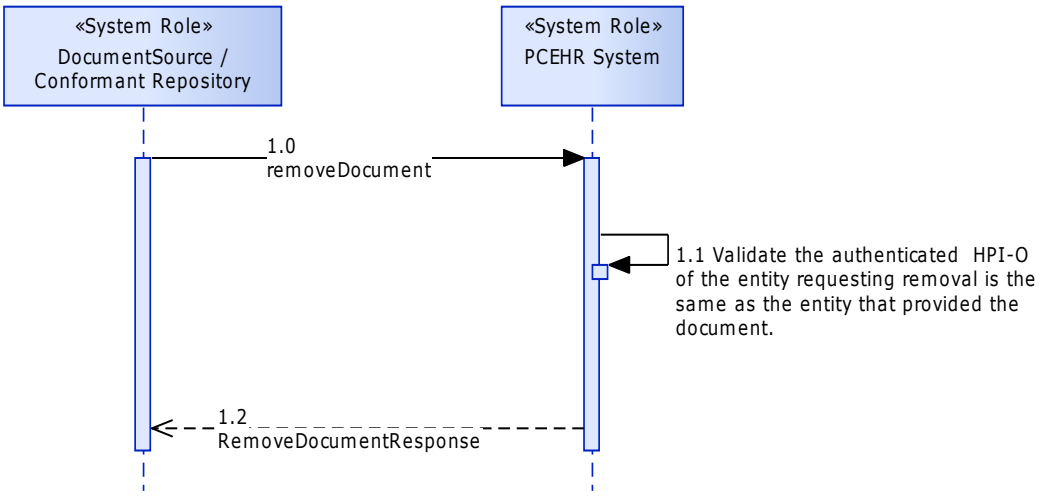

Figure 10 removeDocument (deregisterDocument)

The logical service specification specifies operations for removing and deregistering documents. These functions are shown as discrete operations in order to highlight the differences in behaviours within the logical model, however the set of parameters and data types used by both services are identical.

At the technical layer, these operations will be realised using the single service interface: removeDocument.

The logical separation provided in the logical service specification still applies and systems are required to conform to a specific logical service specification system role and logical operation when invoking the technical removeDocument operation.

As specified in the logical service specification, the removal of documents is performed at a purely logical level and is realised by manipulating metadata associated with the document.

3.3.4.1 Pre-conditions

Conformance points

DEXS-T 28	The system seeking to update the status **SHALL** have the XDSDocumentEntry.uniqueId of the document that is to be removed.

3.3.4.2 Interactions

Conformance points

DEXS-T 29	Any realisation of the removeDocument operation specified in this technical service specification **SHALL** meet all conformance points specified for the removeDocument operation in the logical service specification [DOCX-LSS].
DEXS-T 30	Where the removeDocument operation provided in this technical service specification is used to realise the deregisterDocument operation, as specified in the logical service specification [DOCX-LSS], those conformance points associated with the deregisterDocument operation in the logical service specification [DOCX-LSS] **SHALL** apply.
DEXS-T 31	The operation request **SHALL** include the full "Common Header" as specified in section 4.3.1.
DEXS-T 32	The reasonForRemoval field **SHALL** be set to either 'IncorrectIdentity', 'ElectToRemove' or 'Withdrawn'.

Informative note

The response reason of 'ElectToRemove' **MAY** only be used by those systems acting on behalf of a consumer. The response reason of 'Withdrawn' **MAY** only be used by those systems acting on behalf of a provider. The response reason of 'IncorrectIdentity' **MAY** be used by those systems acting on behalf of a consumer or a provider.

3.3.4.3 Post-conditions

Conformance points

DEXS-T 33	Upon successful execution, the PCEHR System **SHALL** logically remove the document and return a positive status response.

3.3.4.4 Inputs, outputs and faults

The fields specified for this operation within the request and response entities within the logical service specification are realised directly within the XML Schema Definition referenced within the WSDL.

A representation of the request and response data types is located in section 4.2.7.

The XML Schema Definition and WSDL files for this operation are referenced in Appendix A.

3.4 Interactions between national PCEHR system and PCEHR conformant repositories

3.4.1 ITI-42 Register Document Set – b

Name in the logical service specification: registerDocument

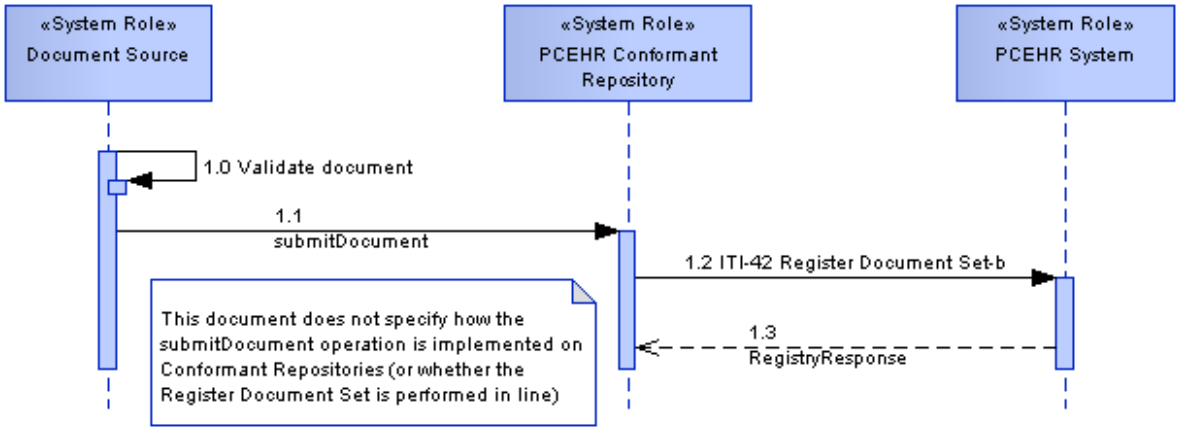

Figure 11 ITI-42 Register Document Set-b

The Register Document Set – b transaction represents an XDS.b realisation of the registerDocument operation defined within the logical service specification.

This operation allows a Document Repository to register a document with the national PCEHR system.

The national PCEHR system will implement the XDS.b Document Registry Actor. The XDS.b Document Repository actor will be implemented by PCEHR conformant repositories.

3.4.1.1 Pre-conditions

Conformance points

DEXS-T 38	Within the scope of this section, the Document Repository service **SHALL** be fulfilled by PCEHR conformant repositories and the Document Registry Role **SHALL** be fulfilled by the national PCEHR system.
DEXS-T 39	The PCEHR Conformant Repository **SHALL** validate the CDA Document against the template the document conforms to.
DEXS-T 40	The identifier of the template this document asserts to conform to **SHALL** be included within the XDSDocumentEntry.formatCode element of the Register Document Request transaction.
DEXS-T 41	Documents which fail validation **SHALL NOT** be registered in the PCEHR system.

3.4.1.2 Interaction

Conformance points

DEXS-T 42	All conformance points specified in the logical service specification for the registerDocument operation **SHALL** apply to this operation.
DEXS-T 43	The normative description of the Register Document Set –b operation as provided in section 3.42 of volume 2B of the IHE IT Infrastructure Technical Framework Specification [ITITF-2B] **SHALL** apply, including any further document or section references therein, with the following conformance points taking precedence:
DEXS-T 44	The operation request **SHALL** include the full "Common Header" as specified in section 4.3.1.
DEXS-T 45	The Register Document Set transaction **SHALL** contain document metadata for exactly one document.
DEXS-T 46	The Register Document Set transaction **SHALL NOT** contain Folder elements.
DEXS-T 47	The Register Document set transaction **SHALL** only support the Document Replace Option and **SHALL NOT** support the Document Addendum, Document Transformation and Folder Management options (section 3.4.1.61 within [ITITF-2B] provides the definition of these terms).

3.4.1.3 Post-conditions

Conformance points

DEXS-T 48	Upon successful execution, the PCEHR System **SHALL** register the supplied document metadata and return a status of 'urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success'.

3.4.1.4 Inputs, outputs and faults

In order to support the inclusion of the Common Header and alignment with ATS-5820 Web Services Profile [ATS 5820-2010], the service will use the WSDL provided in Appendix A rather than those specified within the IHE specifications.

Operation data fields	Data structures
Input	lcm:SubmitObjectsRequest
Output	rs:RegistryResponse

Conformance points

DEXS-T 49	The conformance points specified in sections 4.2.1, 4.2.2 and 4.2.3 **SHALL** apply to this operation.

3.4.1.5 Service faults

The specification for Service Faults associated with XDS.b transactions is provided in section 4.2.6.

3.4.2 ITI-43 Retrieve Document Set

Name in the logical service specification: retrieveRemoteDocument

This operation shall be realised in accordance with section 3.3.2.

3.4.3 removeDocument

Name in the logical service specification: deregisterDocument

This operation shall be realised in accordance with section 3.3.4.

4 Information viewpoint

The information viewpoint is concerned with the representation of information in the system and is relevant for business (i.e. clinical and administrative) stakeholders, interface developers and information modellers.

Note: The error code tables may be subject to extension as the development of the PCEHR system progresses.

4.1 Character set support

The PCEHR system only supports the Latin character set and does not support other international characters or digits.

DEXS-T 124	The Service Invoker **SHALL NOT** use any non-Latin characters and digits when invoking calls to the PCEHR System.

4.2 Document Exchange Service LSS to IHE XDS.b mapping

The following sub-sections show how the key elements of the information model specified within the logical service specification [DOCX-LSS] are realised using IHE XDS.b data elements.

Where mandatory elements exist within the XDS.b specification and are not present within the logical model, the model is extended to include these additional fields. Optional XDS.b fields which are not present within the logical model are explicitly removed.

Where elements exist within the logical model which do not exist within the XDS.b specification (or the SOAP or Common Headers), the XDS.b specification is extended (there are no such items within this version of the specification).

The IHE XDS specification provides details of the data types and formats for each of the fields described within this section.

4.2.1 Document metadata and XDS.b document entry types

The Document Metadata entity presented within the logical model is realised entirely by the XDSDocumentEntry object. Table 2 shows the mapping between these two entities.

Table 2 Document Metadata to XDS.b Document Entry mapping

Row #	LSS field	Description	XDS.b field name	Conformance points	
1	Authoring Organisation	The name and identifier of the organisation that authored the document.	XDSDocumentEntry. authorInstitution		Note: The XPath statements below assume the Author is a Person.
				DEXS-T 126	The XDSDocumentEntry. authorInstitution name field **SHALL** match the Organisation Name used in the HI Service.
2				**DEXS-T 100**	The XDSDocumentEntry.authorInstitution field **SHALL** be set to either: a the HPI-O of the Organisations issued by the HI Service; or b PAI-O issued by the PCEHR System Operator.
3	Authoring Individual	The name and identifier of the individual that authored the document.	XDSDocumentEntry. authorPerson	**DEXS-T 128**	The XDSDocumentEntry.authorPerson name field **SHALL** contain the value of the following CDA element (*Author name)*: "/cda:ClinicalDocument/cda:author/cda:assignedAuthor/cda:assignedPerson/cda:name"
4				**DEXS-T 129**	The XDSDocumentEntry.authorPerson identifier field **SHALL** contain the value of the following CDA element (*Author identifier)*: "/cda:ClinicalDocument/cda:author/cda:assignedAuthor/cda:assignedPerson/ext:asEntityIdentifier/ext:id"

Row #	LSS field	Description	XDS.b field name	Conformance points	
5				**DEXS-T 101**	The XDSDocumentEntry.authorPerson field **SHALL** be set to: a the HPI-I of the Individual issued by the HI Service; or b a device identifier approved by the PCEHR System Operator, such as a PAI-D; or c an identifier which uniquely and legally identifies the person and is approved by the PCEHR System Operator, such as the IHI of the Individual.
6	Document Type Code	A code relating to the type of document being submitted.	XDSDocumentEntry.classCode	**DEXS-T 130**	The XDSDocumentEntry.classCode field **SHALL** contain the appropriate ClassCode value from Table 3 XDSDocumentEntry Document Type and Class Code value set.
7	Document Type Display Name	A display friendly name for the document type.	XDSDocumentEntry.classCodeDisplayName	**DEXS-T 131**	The XDSDocumentEntry.classCodeDisplayName field **SHALL** contain the appropriate DocumentName from Table 3 XDSDocumentEntry Document Type and Class Code value set.
8	PCEHR Template Identifier	The identifier of the template this document conforms to.	XDSDocumentEntry.formatCode	**DEXS-T 58**	The XDSDocumentEntry.formatCode field **SHALL** contain the Template package ID of the Template package to which the CDA Document asserts conformance.
9	Document ID	A unique object identifier relating to the document. This must be unique within the PCEHR system and must be equivalent to the identifier of the root CDA Document within the CDA Package.	XDSDocumentEntry.uniqueId	**DEXS-T 53**	The Document Source **SHALL** ensure that the XDSDocumentEntry.uniqueId generation algorithm is guaranteed to be globally unique within the PCEHR system. The XDSDocumentEntry.uniqueId **SHALL** be an OID of format as defined in ITU-T Recommendation X.667 [ITU-X.667].

Row #	LSS field	Description	XDS.b field name	Conformance points	
10				**DEXS-T 56**	The XDSDocumentEntry.uniqueId **SHALL** be set to the OID form of the Document Identifier field within the supplied CDA document. This equivalency shall be created according to the following rules: a Where the CDA Document Identifier is represented as an OID without an extensions attribute, the XDSDocumentEntry.uniqueID field **SHALL** be set to this value. b Where the CDA Document Identifier is represented as an OID and includes an extension, the XDS DocumentEntry.uniqueID field **SHALL** be set to a value constructed as [OID]^[extension]. c Where the CDA Document Identifier is represented as an UUID, the XDSDocumentEntry.uniqueID field **SHALL** be set to an OID representation of this UUID. The OID representation **SHALL** be constructed as specified in section 7 of ITU-T Recommendation X.667 [ITU-X.667]
11	Title	An optional title for the given document.	XDSDocumentEntry.title	None	
12	Document Creation Time	The time the document was created.	XDSDocumentEntry.creationTime	**DEXS-T 132**	The XDSDocumentEntry.creationTime field **SHALL** contain the value of the following CDA element *(Effective Time):* "/cda:ClinicalDocument/cda:effectiveTime"
13				**DEXS-T 122**	The XDSDocumentEntry.creationTime, XDSDocumentEntry.serviceStartTime, XDSDocumentEntry.serviceStopTime dates **SHOULD** use YYYYMMDDhhmmss precision.
14				**DEXS-T 123**	The XDSDocumentEntry.creationTime, XDSDocumentEntry.serviceStartTime, XDSDocumentEntry.serviceStopTime dates **SHALL** only allow the following precisions: YYYYMMDD, YYYYMMDDhhmm, and YYYYMMDDhhmmss.

Row #	LSS field	Description	XDS.b field name	Conformance points	
15				**DEXS-T 144**	The XDSDocumentEntry.creationTime Datetime, XDSDocumentEntry.serviceStartTime and XDSDocumentEntry.serviceStopTime values **SHALL** be in Universal Coordinated Time (UTC) format as per IHE XDS specification requirements.
16	Service Start Time	The datetime the service being performed which caused the document to be created started.	XDSDocumentEntry. serviceStartTime	**DEXS-T 133**	Unless otherwise stated, the XDSDocumentEntry. serviceStartTime field **SHALL** contain the value of the following CDA element (*EncompassingEncounterEffectiveTime*) using low value if available: "/cda:ClinicalDocument/cda:componentOf/cda:encompassingEncounter/cda:effectiveTime" Otherwise the CDA element (*Effective Time*) **SHALL** be used, "/cda:ClinicalDocument/cda:effectiveTime/@value"
17				**DEXS-T 134**	If the document is of type **Specialist Letter,** then XDSDocumentEntry. serviceStartTime field **SHALL** contain the value of the following CDA element *(Effective Time)*: "/cda:ClinicalDocument/cda:effectiveTime/@value"
18				**DEXS-T 145**	If the document is of type **Discharge Summary,** then XDSDocumentEntry. serviceStartTime field **SHALL** contain the Admittance Date. "/cda:ClinicalDocument/cda:componentOf/cda:encompassingEncounter/cda:effectiveTime/low/@value"
19				**DEXS-T 135**	If the document is of type **eHealth Prescription Record,** then XDSDocumentEntry. serviceStartTime field **SHALL** contain the value of the following CDA element *(Author time)*: /cda:ClinicalDocument/cda:author/cda:time/@value

Row #	LSS field	Description	XDS.b field name	Conformance points	
20				**DEXS-T 136**	If the document is of type **eHealth Dispense Record,** then XDSDocumentEntry. serviceStartTime field **SHALL** contain the value of the following CDA element *(Supply time)*: "/cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component/cda:section[cda:code/@code='102.16210']/cda:entry/cda:substanceAdministration/cda:entryRelationship/cda:supply/cda:effectiveTime/@value"
21				**DEXS-T 137**	If the document is of type **Pathology Report,** then the XDSDocumentEntry. serviceStartTime and XDSDocumentEntry. serviceStopTime fields **SHALL** contain the value of the following CDA element (*Specimen Collection Date*) using the latest date: "/cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component/cda:section[cda:code/@code='101.20018']/cda:component/cda:section[cda:code/@code='102.16144']/cda:entry/cda:observation/cda:entryRelationship/cda:observation[cda:code/@code='102.16156']/cda:effectiveTime/@value"
22				**DEXS-T 150**	If the document is of type **Diagnostic Imaging Report,** then the XDSDocumentEntry. serviceStartTime and XDSDocumentEntry. serviceStopTime fields **SHALL** contain the value of the following CDA element (*Imaging Date)* using the latest date recorded in the Diagnostic Imaging Report: "/cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component/cda:section[cda:code/@code='101.16945']/cda:component/cda:section[cda:code/@code='102.16145']/cda:entry/cda:observation/cda:entryRelationship/cda:act/cda:entryRelationship/cda:observation/cda:effectiveTime/@value"
23					Also refer to conformance points **DEXS-T 122** and **DEXS-T 123** and **DEXS-T 144** in this table (rows 13 to 15).

Row #	LSS field	Description	XDS.b field name	Conformance points	
24	Service Stop Time	The datetime the service being performed which caused the document to be created stopped. The Service Stop Time may be set to the same value as the Service Start Time in order to indicate the datetime of an event.	XDSDocumentEntry. serviceStopTime	**DEXS-T 138**	Unless otherwise stated, the XDSDocumentEntry. serviceStopTime field **SHALL** contain the value of the following CDA element *(EncompassingEncounterEffectiveTime)* using high value if available: "/cda:ClinicalDocument/cda:componentOf/cda:encompassingEncounter/cda:effectiveTime" Otherwise the CDA element (*Effective Time*) **SHALL** be used, "/cda:ClinicalDocument/cda:effectiveTime/@value"
25				**DEXS-T 139**	If the document is of type **Specialist Letter,** then XDSDocumentEntry. serviceStopTime field **SHALL** contain the value of the following CDA element *(Effective Time)*: "/cda:ClinicalDocument/cda:effectiveTime/@value"
26				**DEXS-T 146**	If the document is of type **Discharge Summary,** then XDSDocumentEntry. serviceStopTime field **SHALL** contain the value of the discharge date of the individual. "/cda:ClinicalDocument/cda:componentOf/cda:encompassingEncounter/cda:effectiveTime/high/@value"
27				**DEXS-T 140**	If the document is of type **eHealth Prescription Record**, then XDSDocumentEntry. serviceStopTime field **SHALL** contain the value of the following CDA element *(Author time)*: "/cda:ClinicalDocument/cda:author/cda:time/@value"
28				**DEXS-T 141**	If the document is of type **eHealth Dispense Record,** then XDSDocumentEntry. serviceStopTime field **SHALL** contain the value of the following CDA element *(Supply time)*" "/cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component/cda:section[cda:code/@code='102.16210']/cda:entry/cda:substanceAdministration/cda:entryRelationship/cda:supply/cda:effectiveTime/@value"

Row #	LSS field	Description	XDS.b field name	Conformance points	
29	*Continued from previous page*			**DEXS-T 142**	If the document is of type **Pathology Report**, then the XDSDocumentEntry. serviceStopTime field **SHALL** contain the value of the following CDA element (*Specimen Collection Date*) using the latest date recorded*:* "/cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component/cda:section[cda:code/@code='101.20018']/cda:component/cda:section[cda:code/@code='102.16144']/cda:entry/cda:observation/cda:entryRelationship/cda:observation[cda:code/@code='102.16156']/cda:effectiveTime/@value"
30				**DEXS-T 147**	If the document is of type **Diagnostic Imaging Report**, then the XDSDocumentEntry. serviceStopTime field **SHALL** contain the value of the following CDA element (*Imaging Date)* using the latest date recorded: "/cda:ClinicalDocument/cda:component/cda:structuredBody/cda:component/cda:section[cda:code/@code='101.16945']/cda:component/cda:section[cda:code/@code='102.16145']/cda:entry/cda:observation/cda:entryRelationship/cda:act/cda:entryRelationship/cda:observation/cda:effectiveTime/@value"
31					Also refer to conformance points **DEXS-T 122** and **DEXS-T 123** and **DEXS-T 144** in this table. (rows 13 to 15).
32	Document Hash	A SHA-1 hash representation of the CDA package. This field is mandatory for ITI-42 document registrations.	XDSDocumentEntry.hash	**DEXS-T 5**	All conformance points specified in the PCEHR Document Exchange Service LSS Specification for the submitDocument operation SHALL apply to this operation, with the following conformance point taking precedence: a The XDSDocumentEntry.hash field **SHALL** be generated using the SHA-1 hashing algorithm.
33				**DEXS-T 97**	The XDSDocumentEntry.hash field **SHALL** be set for ITI-42 operations.
34				**DEXS-T 102**	The XDSDocumentEntry.hash field **SHALL** be generated using the SHA-1 hashing algorithm for ITI-42 operations.

Row #	LSS field	Description	XDS.b field name	Conformance points	
35				**DEXS-T 148**	The Document Hash for Medicare CDA packages (Australian Childhood Immunisation Register, Australian Organ Donor Register, Medicare/DVA Benefits Report, Pharmaceutical Benefits Report) **SHALL** have the Document Hash value of an empty file of size 0. This is because these documents are generated at the time of request.
36				**DEXS-T 149**	Connecting systems **SHALL NOT** validate the Document Hash of Medicare CDA packages (Australian Childhood Immunisation Register, Australian Organ Donor Register, Medicare/DVA Benefits Report, Pharmaceutical Benefits Report) before opening the CDA packages.
37	Keyword	One or more keywords which are related to the document submission. Both these fields must be excluded from submission.	XDSDocumentEntry. eventCodeList	**DEXS-T 95**	The following XDSDocumentEntry fields **SHALL NOT** be included within the submission: eventCodeList, eventCodeListDisplayName, parentDocumentRelationship, parentDocumentId.
38			XDSDocumentEntry. eventCodeListDisplayName		See **DEXS-T 95** directly above.
39	Healthcare Facility Type Code	A code identifying the type of healthcare facility where the event relating to this document submission request initiated.	XDSDocumentEntry. healthcareFacilityTypeCode		This field is not taken from the CDA document. It is provided by the source client system. See Appendix B Code sets in the *PCEHR Document Exchange Logical Service Specification* [DOCX-LSS].
40	Healthcare Facility Type Name	A display friendly name for the above code.	XDSDocumentEntry. healthcareFacilityTypeCodeDisplayName		This field is not taken from the CDA document. It is provided by the source client system. See Appendix B Code sets in the *PCEHR Document Exchange Logical Service Specification* [DOCX-LSS].

Row #	LSS field	Description	XDS.b field name	Conformance points	
41	Clinical Speciality Code	A code identifying the clinical specialty where the event relating to this document submission request initiated.	XDSDocumentEntry. practiceSettingCode		This field is not taken from the CDA document. It is provided by the source client system. See Appendix B Code sets in the *PCEHR Document Exchange Logical Service Specification* [DOCX-LSS].
42	Clinical Specialty Display Name	A display friendly name for the above specialty.	XDSDocumentEntry. practiceSettingCodeDisplayName		This field is not taken from the CDA document. It is provided by the source client system. See Appendix B Code sets in the *PCEHR Document Exchange Logical Service Specification* [DOCX-LSS].
43	N/A	This field is not present in the LSS definition of the Document Metadata as it is in the Common Header. The value from the Common Header should be replicated into this field.	XDSDocumentEntry. sourcePatientId	**DEXS-T 143**	Unless otherwise stated, the XDSDocumentEntry.sourcePatientId field **SHALL** contain the data from the following CDA element *(16-digit IHI number):* "/cda:ClinicalDocument/cda:recordTarget/cda:patientRole/cda:patient/ext:asEntityIdentifier[@classCode='IDENT']/ext:id[@assigningAuthorityName='IHI']/@root" Formatted as per the XDS Specification [IHE_TS].
44				**DEXS-T 51**	The XDSDocumentEntry.sourcePatientId **SHALL** contain the 16-digit IHI number provided within the PCEHR Header.
45				**DEXS-T 57**	The XDSDocumentEntry.sourcePatientId **SHALL** be identical to the XDSDocumentEntry.patientId field within the supplied CDA Document.
46	N/A	This mandatory XDS.b field is not supported by PCEHR. It shall be set to a value of 'NA'.	XDSDocumentEntry. confidentialityCode	**DEXS-T 52**	The XDSDocumentEntry.confidentialityCode **SHALL** be set to 'NA'.

Row #	LSS field	Description	XDS.b field name	Conformance points	
47	N/A	This field is not required by the Logical Model presented within the LSS but is a mandatory field within XDS. This field shall be set to the same value as that provided in the classCode field.	XDSDocumentEntry. typeCode	**DEXS-T 54**	The XDSDocumentEntry.typeCode **SHALL** be set to the same value as the XDSDocumentEntry.classCode field.
48	N/A	This field is not required by the Logical Model presented within the LSS but is a mandatory field within XDS. This field shall be set to the same value as that provided in the typeCodeDisplayName field.	XDSDocumentEntry. typeCodeDisplayName	**DEXS-T 55**	The XDSDocumentEntry.typeCodeDisplayName **SHALL** be set to the value specified in the TypeCodeDisplayName column in Table 3 on page 37.
49	Common Header. IHI Number	This value **SHALL** be set to the 16 digits that is contained within the XDSDocumentEntry.sourcePatientId.	XDSDocumentEntry. patientId		Refer to conformance points **DEXS-T 57** in this table (row 45).
50	N/A	This field is not required by the Logical Model presented within the LSS but is a mandatory field within XDS. Set to a fixed value of 'en-AU'.	XDSDocumentEntry. languageCode	**DEXS-T 59**	The XDSDocumentEntry.languageCode field **SHALL** be set to a fixed value of 'en-AU'.
51	N/A	The MIME type of the document provided. This field is set to a fixed value of 'application/zip'.	XDSDocumentEntry. mimeType	**DEXS-T 93**	The XDSDocumentEntry.mimeType field **SHALL** be set to a fixed value of 'application/zip'.

Row #	LSS field	Description	XDS.b field name	Conformance points	
52	N/A	The symbolic ID of the document provided. (PCEHR creates the actual value for symbolic fields) This field is set to a fixed value of 'DOCUMENT_SYMBOLICID_01'.	XDSDocumentEntry.entryUUID	**DEXS-T 94**	The XDSDocumentEntry.entryUUID field **SHALL** be set to a symbolic id of "DOCUMENT_SYMBOLICID_01".
53	N/A	The size of the CDA package. This field is mandatory for ITI-42 document registrations.	XDSDocumentEntry.size	**DEXS-T 96**	The XDSDocumentEntry.size field **SHALL** be set for ITI-42 operations.
54				**DEXS-T 151**	The size of Medicare CDA packages (Australian Childhood Immunisation Register, Australian Organ Donor Register, Medicare/DVA Benefits Report, Pharmaceutical Benefits Report) shall have the size of 0. This is because these documents are generated at the time of request.

Table 3 XDSDocumentEntry Document Type and Class Code value set

Coding System	TypeCode ClassCode	ClassCodeDisplayName	TypeCodeDisplayName
LOINC	60591-5	Shared Health Summary	Shared Health Summary
LOINC	57133-1	e-Referral	e-Referral
LOINC	51852-2	Specialist Letter	Specialist Letter
LOINC	18842-5	Discharge Summary	Discharge Summary
LOINC	34133-9	Event Summary	Event Summary
NCTIS	100.16650	Pharmaceutical Benefits Report	Pharmaceutical Benefits Report
NCTIS	100.16659	Australian Childhood Immunisation Register	Australian Childhood Immunisation Register
NCTIS	100.16644	Medicare/DVA Benefits Report	Medicare/DVA Benefits Report
NCTIS	102.16671	Australian Organ Donor Register	Australian Organ Donor Register
NCTIS Data Components	100.16681	Personal Health Note	Personal Health Note
NCTIS Data Components	100.16685	Personal Health Summary	Personal Health Summary
NCTIS Data Components	100.16696	Advance Care Directive Custodian Record	Advance Care Directive Custodian Record
NCTIS Data Components	100.16764	eHealth Prescription Record	eHealth Prescription Record
NCTIS Data Components	100.16765	eHealth Dispense Record	eHealth Dispense Record
NCTIS Data Components	100.16957	Diagnostic Imaging Report	Diagnostic Imaging Report

Coding System	TypeCode ClassCode	ClassCodeDisplayName	TypeCodeDisplayName
NCTIS Data Components	100.32001	Pathology Report	Pathology Report
NCTIS Data Components	100.16870	Consumer Entered Measurements	Consumer Entered Measurements
NCTIS Data Components	100.16919	Child Parent Questionnaire	Child Parent Questionnaire

Note: All NCTIS and NCTIS Data Components use coding system with arc of 1.2.36.1.2001.1001.101.

Note: Medicare Documents are fixed with the description of "NCTIS".

Conformance points

DEXS-T 50 Any XDSDocumentEntry fields which are not shown in the XDS.b Field Name column of Table 2 **SHOULD NOT** be provided by connecting systems and **SHALL** be ignored by the National PCEHR System.

DEXS-T 98 The XDSDocumentEntry.repositoryUniqueId field **SHALL** be set for ITI-42 operations.

DEXS-T 99 All conformance points specified in the PCEHR Document Exchange Service LSS Specification for the DocumentMetadata entity **SHALL** apply, including any further document or section references therein, with the following conformance points taking precedence:

- DEXS-T 100 (page 26)
- DEXS-T 101 (page 27)
- DEXS-T 102 (page 32)

DEXS-T 117 The CDA Package **SHALL** be created according to the XDM –ZIP representation [CDA_PKG].

DEXS-T 125 Attachments included in the CDA Package **SHALL** be located in the same folder as the CDA_ROOT.XML for the purpose of sending to the PCEHR system.

DEXS-T 120 The XDSDocument **SHALL** be provided using the Clinical Package specification [CLN_PKG] and the Signed CDA Package profile [CDA_PKG].

DEXS-T 121 The CDA Package **SHALL** have exactly one Signature.

Informative note

The IHE XDS specification requires the usage of the Coordinated Universal Time (UTC) standard for XDS datetimes.

4.2.2 Submission metadata and XDS.b submission set types

The Submission Metadata entity presented within the logical model is realised entirely by the XDSSubmissionSet object. Table 4 below shows the mapping between these two entities. The XDSSubmissionSet duplicates much of the data which is already present within the XDSDocumentEntry (which is mandated to be represented as a singular occurrence within this specification).

Table 4 Submission metadata to XDS.b submission set mapping

LSS Field	Description	XDS.b Field Name	Conformance Points	
Submitter Type	This value is realised within the PCEHR Header.	N/A	None	
SubmissionDateTime	The date and time that the document was submitted to the PCEHR system.	XDSSubmissionSet. submissionTime	None	
Document Metadata. Authoring Individual	This value shall be set to the same value as the authorPerson specified in the XDSDocumentEntry.	XDSSubmissionSet. authorPerson	**DEXS-T 62**	The value provided within the XDSSubmissionSet.authorPerson entity **SHALL** be identical to the value provided within the XDSDocumentEntry.authorPerson entity.
Document Metadata. Authoring Organisation	This value shall be set to the same value as the authorInstitution specified in the XDSDocumentEntry.	XDSSubmissionSet. authorInstitution	**DEXS-T 63**	The value provided within the XDSSubmissionSet.authorInstitution entity **SHALL** be identical to the value provided within the XDSDocumentEntry.authorInstitution entity.
Document Metadata. Clinical specialty Code	This value shall be set to the same value as the classCode specified in the XDSDocumentEntry.	XDSSubmissionSet. contentTypeCode	**DEXS-T 64**	The value provided within the XDSSubmissionSet.contentTypeCode entity **SHALL** be identical to the value provided within the XDSDocumentEntry.classCode entity.

LSS Field	Description	XDS.b Field Name	Conformance Points	
Document Metadata. Clinical Specialty Code Display Name	This value shall be set to the same value as the classCodeDisplayName specified in the XDSDocumentEntry.	XDSSubmissionSet. contentTypeCodeDisplayName	**DEXS-T 65**	The value provided within the XDSSubmissionSet.contentTypeCodeDisplayName entity **SHALL** be identical to the value provided within the XDSDocumentEntry.classCodeDisplayName entity.
N/A	This field shall be populated using a symbolic identifier with a fixed value of 'SUBSET_SYMBOLICID_01'.	XDSSubmissionSet. entryUUID	**DEXS-T 61**	The XDSSubmissionSet.entryUUID **SHALL** have a symbolic identifier of 'SUBSET_SYMBOLICID_01' when used within the ITI-41 Provide & Register Document Set-b and ITI-42 RegisterDocument Set-b transactions.
Common Header. IHI Number	This value shall be set to the same value as the sourcePatientId specified in the XDSDocumentEntry.	XDSSubmissionSet. patientId	None	
N/A	This is not required by the Logical Model but is mandatory field within XDS. This element will be populated using the OID representation of the XDSDocumentEntry.authorInstitution field.	XDSSubmissionSet. sourceId	None	
N/A	A unique identifier for the submission set created by the source. This is not required by the Logical Model but is mandatory field within XDS. This field shall be an OID.	XDSSubmissionSet. uniqueId	None	

DEXS-T 60	Any XDSSubmissionSet fields which are not shown in the XDS.b Field Name column of Table 4 above **SHOULD NOT** be provided by connecting systems and **SHALL** be ignored by the National PCEHR System.
DEXS-T 103	All conformance points specified in the PCEHR Document Exchange Service LSS Specification for the DocumentMetadata entity **SHALL** apply, including any further document or section references therein, with the following conformance points taking precedence:
DEXS-T 104	The value provided within the XDSSubmissionSet.patientID entity **SHALL** be identical to the value provided within the XDSDocumentEntry.sourcePatientId entity.
DEXS-T 105	The value provided within the XDSSubmissionSet. uniqueId entity **SHALL** be identical to the value provided within the XDSDocumentEntry. uniqueId entity.

4.2.3 Document version information and XDS.b association types

Table 5 Document version information to XDS.b association mapping

LSS Field	Description	XDS.b Field Name
Previous Version Document ID	The unique identifier of the document which this document replaces.	targetObject A reference to the XDSDocumentEntry.UniqueID already stored in XDS.b Registry provided by the PCEHR system. The XDS meta data must be a UUID. If a Document ID is used, it must be an OID representation form.
Document Metadata	A reference to the document entry which will create a new document or replace the previous document (this will typically be part of the same submission as the association).	sourceObject The id of XDSDocumentEntry provided in the submission which replaces the previously stored document.
N/A	The type of association.	Association Type This shall have a value of 'urn:ihe:iti:2007:AssociationType:RPLC' (Replace).

Conformance points

DEXS-T 67	The XDS.b Association construct **SHALL** be used to manage document versioning.
DEXS-T 68	The XDS.b Association Type **SHALL** be set to 'urn:ihe:iti:2007:AssociationType:RPLC' to supersede a document.

DEXS-T 118 The XDS.b Association targetObject field name **SHALL** contain either the XDSDocumentEntry.uniqueID set to this value OR the Document ID, as explained below:

1. If the XDSDocumentEntry.uniqueID is used as the unique targetObject, then the format **SHALL** be UUID.
2. If the UUID format for the XDSDocumentEntry.uniqueID is used for the sourceObject, the superseding of a document **SHALL** first use the ITI-18 operation (to retrieve the PCEHR XDS Metadata EntryID) before superseding the original document.
3. If the Document Id is used as the unique targetObject, then the format **SHALL** be one of the following:
   a. The Document Identifier **SHALL** be represented as an OID without an extensions attribute; or
   b. The Document Identifier **SHALL** be represented as an OID and include an extension constructed as [OID]^[extension]; or
   c. The Document Identifier **SHALL** be represented as an OID representation of this UUID. The OID representation **SHALL** be constructed as specified in section 7 of [ITU-X.667].

Informative note

When the previous version Document ID OID is used for the targetObject, the ITI-18 Registry Stored Query (find documents) operation is not required. This provides

a mechanism for superseding a document in one ITI-41 Provide & Register Document Set–b operation by passing the Document Id in the metadata targetObject field and using the following Association type: 'urn:ihe:iti:2007: AssociationType:RPLC' (for 'Replace').

4.2.4 Document retrieval request and XDS.b retrieve document set request types

Table 6 Document Retrieval Request to XDS.b Retrieve Document Set Request

LSS Field	Description	XDS.b Field Name
Requested Document ID	The identifier of the document being retrieved.	documentUniqueId
N/A	This value is not supported within the Logical Model but is required by IHE XDS.b. This is the identifier of the XDS Repository containing the document. The value shall be set to the value returned by a call to RegistryStoredQuery (or provided by a view).	repositoryUniqueId

Conformance points

DEXS-T 69	Any XDS.b Retrieve Document Set Request fields which are not shown in the XDS.b Field Name column of Table 6 above **SHOULD NOT** be provided by connecting systems and **SHALL** be ignored by the National PCEHR System.
DEXS-T 70	The repositoryUniqueId **SHALL** be set to the value retrieved from the XDS.b Registry.
DEXS-T 71	The Document Consumer **SHALL** retrieve all documents directly from the National PCEHR System (regardless of the value provided within the repositoryUniqueId field).

4.2.5 FindDocumentsRequest and XDS.b registry stored queries

The XDS.b Specification uses a set of pre-defined parameterised stored queries to support searching for documents. The Document Consumer provides the name of the query to be executed along with the parameters required by the query. These parameters may include document ClassCodes if specific document types are required.

Section 3.18 of volume 2B of the IHE Specification [ITITF-2B] provides a definition of the queries supported and the associated data types.

4.2.6 Service faults

The XDS.b mechanism for returning the details of errors which occur during XDS.b transactions is provided in section 4.1.13 of volume 3 within the IHE IT Infrastructure specification [ITITF-3].

An XDS.b RegistryResponse or AdHocQueryResponse may return a RegistryError element.

An XDS.b RegistryError element is made up of an:

- errorCode – The code describing the type of error.
- codeContext – A detailed description of the error.
- location – name of system responsible for raising the error. This is set to 'PCEHR Interface'.
- severity – The severity of the error.
  - urn:oasis:names:tc:ebxml-regrep:ErrorSeverityType:Error

    or
  - urn:oasis:names:tc:ebxml-regrep:ErrorSeverityType:Warning

Section 4.4.3 XDS.b responses defines specific PCEHR responses returned.

Conformance points

DEXS-T 72	The RegistryResponse or AdHocQueryResponse element **SHALL** return a status code of 'urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Failure' upon error and **SHALL** include a RegistryError element but no response body.
DEXS-T 73	The service **SHALL** return a status code of 'urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:PartialSuccess' where the request was processed successfully but with a warning. This response **SHALL** include a registryError element and a response body.
DEXS-T 74	The errorCode returned **SHALL** be taken from table 4.1-11 within volume 3 of the IHE IT Infrastructure specification [ITITF-3].

4.2.7 removeDocument message operation message types

Table 7 RemoveDocumentRequest

Element Name	Type	Cardinality	Remarks
RemoveDocument		**1..1**	
DocumentID	xs:string	1..1	Unique id for the message. E.g. uuid:95b48e68-5dfc-4dbd-ab05-aaa855cec03f
reasonForRemoval	xs:string	1..1	The reason for removing the document. The accepted values for this field are: Withdrawn ElectToRemove IncorrectIdentity
/RemoveDocument			

Table 8 RemoveDocumentResponse

Element Name	Type	Cardinality	Remarks
RemoveDocumentResponse		**1..1**	
responseStatus	responseStatusType	1..1	The status of the service call.
/RemoveDocumentResponse			

4.3 Other data elements

4.3.1 Common Header

The PCEHR Common Header specified within the logical service specification [DOCX-LSS] is realised in this specification using the following SOAP Headers within the web service call. These are:

- WS-Addressing Header
- PCEHRHeader
- Transmission Timestamp
- Transmission Signature

4.3.1.1 WS-Addressing Header (Request)

Table 9 WS-Addressing Header (Request)

Element Name	Type	Cardinality	Remarks
WS Addressing		**1..1**	
MessageId	UUID	1..1	Unique id for the message. E.g. uuid:95b48e68-5dfc-4dbd-ab05-aaa855cec03f
To	anyURI	1..1	Value: e.g. http://www.w3.org/2005/08/addressing/anonymous
Action	anyURI	1..1	Identifier (full namespace) of the virtual service being invoked
/WS Addressing			

4.3.1.2 WS-Addressing Header (Response)

Table 10 WS-Addressing Header (Response)

Element Name	Type	Cardinality	Remarks
WS Addressing		**1..1**	
MessageId	UUID	1..1	Unique id for the message. E.g. uuid:95b48e68-5dfc-4dbd-ab05-aaa855cec03f
RelatesTo	UUID	1..1	MessageId of the original service request.
/WS Addressing			

Conformance points

DEXS-T 75	The service provider **SHALL** set these values is accordance with ATS 5820-2010 Section 6 – Metadata [ATS 5820-2010].

4.3.2 PCEHRHeader (Request)

PCEHRHeader is used for all interactions with the PCEHR system.

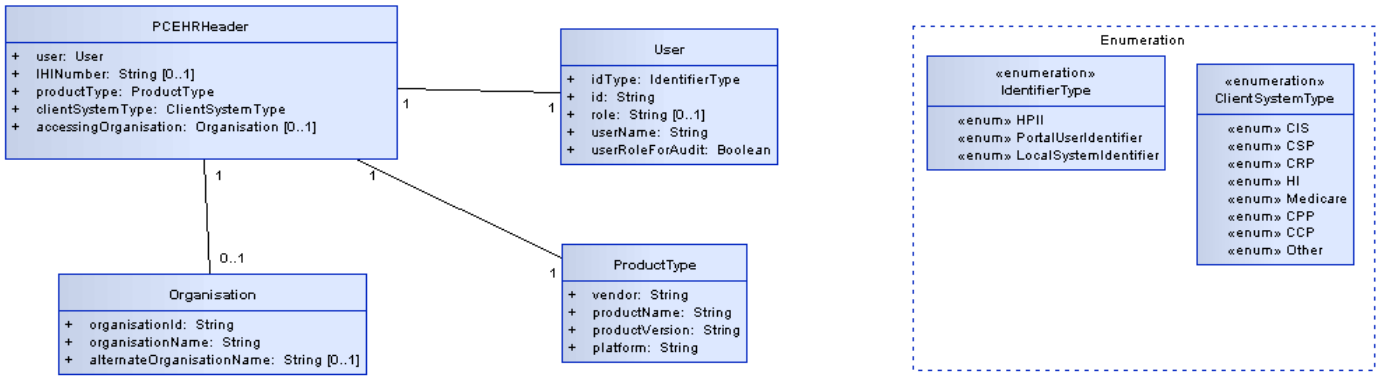

Figure 12 PCEHRHeader

Table 11 PCEHRHeader

Element Name	Type	Cardinality	Remarks
PCEHRHeader		**1..1**	
User		**1..1**	
IDType	String	1..1	Values ("HPII", "PortalUserIdentifier", "LocalSystemIdentifier")
ID	String	1..1	PCEHR identity, 16 digit HPI-I number or Other User ID
role	String	0..1	Optional User Role

Element Name	Type	Cardinality	Remarks
username	String	1..1	Username
useRoleForAudit	Boolean	1..1	if true PCEHR will use role as the user name for audit, else PCEHR will use username as the user name for audit
/User			
ihiNumber	String	0..1	PCEHR individual's 16 digit IHI number
productType		**1..1**	
vendor	String	1..1	client system's vendor name
productName	String	1..1	client system's product name
productVersion	String	1..1	client system's product version
platform	String	1..1	client system's platform
/productType			
clientSystemType	String	1..1	Values ("CCP","CPP", "CIS", "CSP", "CRP", "HI", "Medicare", "Other")
accessingOrganisation		**0..1**	
organisationId	String	1..1	The 16 digit Healthcare Organisation Identifier (HPI-O) or approved alternative (a unique identifier issued by the PCEHR System Operator e.g. a PAI-O).
organisationName	String	1..1	Organisation Name
alternateOrganisationName	String	0..1	Alternate Organisation Name
/accessingOrganisation			
/PCEHRHeader			

Conformance points

DEXS-T 76	The Service Invoker **SHALL** set the IHINumber to the IHI of the Individual who owns the record in the PCEHR System.
DEXS-T 77	The Service Invoker **SHALL** set the accessingOrganisation to the identifier of the organisation attempting to access the PCEHR.

DEXS-T 78	The Service Invoker **SHALL** set the user.id to either: a The 16-digit HPI-I of the provider attempting to access the PCEHR (where this is known) b Or, alternatively, a local identifier of the provider/support operator attempting to access the PCEHR.

DEXS-T 79	The Service Invoker **SHALL** set the productType.vendor to the vendor name of the client system.
DEXS-T 80	The Service Invoker **SHALL** set the productType.productName to the product name of the client system.

DEXS-T 81	The Service Invoker **SHALL** set the productType.productVersion to the product version of the client system.
DEXS-T 82	The Service Invoker **SHALL** set the productType.platform to the client system vendor.

4.3.3 Transmission timestamp

Table 12 SOAP Header timestamp

Element Name	Type	Cardinality	Remarks
timestamp		**1..1**	
created	dateTime	1..1	Time at SOAP message creation. Inclusive of Date, Time and UTC Timezone. E.g. 2011-10-25T03:06:13Z
expires	dateTime	0..1	For future use.
/timestamp	**-**	**-**	**-**

4.3.4 Transmission signature

Table 13 Transmission Signature in SOAP Header

Element Name	Type	Cardinality	Remarks
signature		**1..1**	
signature	ds:signature	1..1	A signed attestation of key SOAP message elements using the ATS 5821 specification.
/signature	**-**	**-**	**-**

Conformance points

DEXS-T 106	The element signed by the Transmission Signature by all parties **SHALL** include a SOAP Body Element.
DEXS-T 107	The element signed by the Transmission Signature by the Service Invoker **SHALL** also include a PCEHR Header element (as defined in Section 4.3.1).
DEXS-T 108	The element signed by the Transmission Signature **SHOULD** include a Transmission Timestamp element (as defined in Section 4.3.4).
DEXS-T 109	The Service Invoker and Service Provider **SHALL** calculate the ds:DigestValue as specified in "Section 4. XML Signature Profile" of ATS 5821-2010 prior to the application of MTOM/XOP.
DEXS-T 110	The ds:SignedInfo element type **SHALL** be realised in conformance with "Section 4. XML Signature Profile" as specified in ATS 5821-2010.
DEXS-T 111	The fragment identifier used within the ds:Reference element, specified in "Section 4. XML Signature Profile" of ATS 5821-2010 **SHALL** refer to the "ID" attribute specified in section 3.3 of W3C-XML-1.1 [W3C-XML-1.1] of the element referenced.
DEXS-T 112	The ds:signature element type **SHALL** be realised in conformance with "Section 4. XML Signature Profile" as specified in ATS 5821-2010.

4.4 PCEHR responses

The PCEHR responses are listed in this section. The returned response to a service call may contain the following response types:

- Common response status (Section 4.4.1),
- Standard SOAP faults (Section 4.4.2) or
- XDS.b responses (Section 4.4.3).

Conformance points

DEXS-T 83 The Service Provider **SHALL** set the appropriate response code as per below:

a All services **SHOULD** return the appropriate codes from Table 15 General responses and Table 17 SOAP responses

b removeDocument service **SHALL** return appropriate additional codes from Table 16 removeDocument responses.

c ITI-18 Registry Stored Query service **SHALL** return appropriate additional codes from Table 18 ITI-18 response.

d ITI-41 Provide & Register Document Set – b service **SHALL** return appropriate additional codes from Table 20 ITI-42 response.

e ITI-42 Register Document Set - b **SHALL** return appropriate additional codes from Table 21 ITI-43 response.

f ITI-43 Retrieve Document Set service **SHALL** return appropriate additional codes from Table 21 ITI-43 response.

4.4.1 Common response status

The PCEHR system supports the common response status.

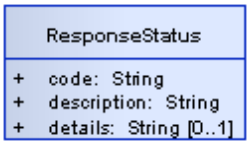

Figure 13 ResponseStatus

Table 14 ResponseStatus Responses

Element Name	Type	Cardinality	Remarks
ResponseStatus		**1..1**	
code	String	1..1	Status Code for the result of the transaction
description	String	1..1	Brief status description
details	String	0..1	Additional detail of the response
/ ResponseStatus			

Table 15 General responses

Code	description
PCEHR_SUCCESS	SUCCESS

Table 16 removeDocument responses

Code	description
PCEHR_ERROR_3002	Document metadata failed validation
PCEHR_ERROR_2501	Document not found

4.4.2 Standard SOAP faults

This section lists the standard SOAP codes as per the ATS 5820-2010 SOAP fault structure.

Table 17 SOAP responses

errorCode	codeContext
badWsaMessageId	PCEHR_ERROR_0001 - Message ID element is missing
badlyFormedMsg	PCEHR_ERROR_0002 - SOAP header fault
badlyFormedMsg	PCEHR_ERROR_0003 - SOAP body fault
notAuthorised	PCEHR_ERROR_0004 - Authorisation denied
serviceTemporaryUnavailable	PCEHR_ERROR_0005 - Back end system temporary unavailable
badParam	PCEHR_ERROR_0006 - Invalid common parameter
badParam	PCEHR_ERROR_0007 - Invalid IHI
badParam	PCEHR_ERROR_0008 - Invalid HPI-I
badParam	PCEHR_ERROR_0009 - Invalid HPI-O
badlyFormedMsg	PCEHR_ERROR_0010 - The request did not contain the expected message format
serviceTemporaryUnavailable	PCEHR_ERROR_0011 - Unexpected service exception error
serviceTemporaryUnavailable	PCEHR_ERROR_0012 - Unexpected back end exception error
serviceTemporaryUnavailable	PCEHR_ERROR_0013 - Invalid back end response
serviceTemporaryUnavailable	PCEHR_ERROR_0014 - Unknown back end error code
badParam	PCEHR_ERROR_0501 - Accessing organisation element is not required
badParam	PCEHR_ERROR_0502 - Accessing organisation element is missing
badParam	PCEHR_ERROR_0503 - User name for audit element is missing
badParam	PCEHR_ERROR_0504 - User role for audit element is missing
badParam	PCEHR_ERROR_0505 - Invalid HPI-O

errorCode	codeContext
badlyFormedMsg	PCEHR_ERROR_0506 - Invalid request
serviceTemporaryUnavailable	PCEHR_ERROR_0507 - Unexpected service exception error
badlyFormedMsg	PCEHR_ERROR_0509 - SOAP header fault
badlyFormedMsg	PCEHR_ERROR_0510 - SOAP body fault
badParam	PCEHR_ERROR_0511 - ClientSystemType is missing
badEncryption	PCEHR_ERROR_0512 - Not a HTTPS request
badWsaAction	PCEHR_ERROR_0513 - Invalid WS-addressing action
badWsaTo	PCEHR_ERROR_0514 - WS-addressing "to" field is missing
serviceTemporaryUnavailable	PCEHR_ERROR_0515 - Audit service temporary unavailable
serviceTemporaryUnavailable	PCEHR_ERROR_0516 - Access service temporary unavailable
serviceTemporaryUnavailable	PCEHR_ERROR_0517 - Service temporary unavailable
serviceTemporaryUnavailable	PCEHR_ERROR_0518 - Back end system temporary unavailable
notAuthorised	PCEHR_ERROR_0519 - System authorisation denied
badSignature	PCEHR_ERROR_0520 - The SOAP request has not been signed, or is signed incorrectly
badAlgorithmC14N	PCEHR_ERROR_0521 - The algorithm used for canonicalizing the data is not acceptable
badAlgorithmDigest	PCEHR_ERROR_0522 - The algorithm used for calculating the digest is not acceptable
badAlgorithmSignature	PCEHR_ERROR_0523 - The algorithm used for signing is not acceptable
badParam	PCEHR_ERROR_0524 - Attachment exceeds maximum supported size
badParam	PCEHR_ERROR_0525 - Request message must be XOP/MTOM
badParam	PCEHR_ERROR_0526 - Attachment MIME type is not supported

4.4.3 XDS.b responses

This section lists the supported XDS.b responses as per the structure identified in Section 4.2.6.

4.4.3.1 ITI-18 Registry Stored Query service

The following additional responses are supported for the ITI-18 service. The errorCode for the below is “XDSRegistryError”.

Table 18 ITI-18 response

contextCode
PCEHR_ERROR_3002 - Document metadata failed validation

4.4.3.2 ITI-41 Provide & Register Document Set – b service

The following additional responses are supported for the ITI-41 service. The errorCode for the below is "XDSRepositoryError".

Table 19 ITI-41 response

contextCode
PCEHR_ERROR_3001 - Invalid document folder structure
PCEHR_ERROR_3002 - Document metadata failed validation
PCEHR_ERROR_3003 - No metadata found
PCEHR_ERROR_3004 - Invalid clinical document
PCEHR_ERROR_3005 - Document validation returned with errors and warnings. Details:<![CDATA..%Validate Templates Response%]>
PCEHR_ERROR_3006 - Document validation returned with errors. Details:<![CDATA..%Validate Templates Response%]>
PCEHR_ERROR_3007 - Document validation returned warnings. Details:<![CDATA..%Validate Templates Response%]>
PCEHR_ERROR_3008 - Invalid template ID for PCEHR

4.4.3.3 ITI-42 Register Document Set - b service

The following additional responses are supported for the ITI-42 service. The errorCode for the contextCodes below is "XDSRegistryError".

Table 20 ITI-42 response

contextCode
PCEHR_ERROR_3002 - Document metadata failed validation
PCEHR_ERROR_3003 - No metadata found
PCEHR_ERROR_3008 - Invalid template ID for PCEHR

4.4.3.4 ITI-43 Retrieve Document Set service

The following additional responses are supported for the ITI-43 service.

The errorCode for below is "XDSRepositoryError".

Table 21 ITI-43 response

contextCode
PCEHR_ERROR_3501 - No metadata found
PCEHR_ERROR_3502 - Insufficient privileges to view the document
PCEHR_ERROR_3503 - Removed document not retrievable from PCEHR
PCEHR_ERROR_3002 - Document metadata failed validation

5 Engineering viewpoint

The engineering viewpoint includes definitions of mechanisms and functions to support distributed interactions between computational objects as a series of templates (i.e. patterns) for computational interactions. These, in turn, are parameterised to support a range of different policies defined in the enterprise, information or computational specifications.

5.1 Discovery services

The location of the services exposed by the PCEHR system will be shared between parties before interaction. Dynamic discovery mechanisms will not be provided.

Appendix A XSD and WSDL

A.1 Data types

A.1.1 IHE data types

The IHE XDS.b operations provided within this specification make use of a series of XML Schema Definitions provided by IHE. This specification does not extend, amend or otherwise update the IHE XML Schema Definitions (the WSDLs which use these definitions have been modified and are included in following sections).

The IHE XML Schema Definitions are available from the IHE TF Implementation Material [XDS.b SM].

A.1.2 PCEHR data types

Table 22 below provides the name and description of the XML schema relevant for this specification. The schemas (XSD files) are packaged with the PCEHR B2B Client Library - Schema WSDL v2.0.0. This is available from: http://www.nehta.gov.au/implementation-resources/ehealth-reference-platform/EP-1940-2014/NEHTA-1932-2014.

Table 22 XML schemas

XML schema	Schema description
PCEHR_CommonTypes.xsd	Defines the XSD for common data types that are used by all WSDL interfaces.
PCEHR_RemoveDocument.xsd	Defines the XSD for remove document data types that are used by all WSDL interfaces.

Note: Military Health Number (an element to support the Australian Defence Force's Joint eHealth Data Initiative, JeDHI) is included in the PCEHR_CommonTypes XSD to retain alignment of the PCEHR system with the change underway in the HI Service for Military Health Number to be added as a new demographic criteria.

A.2 XDS.b interfaces

A.2.1 Interface definition

Table 23 provides a list of WSDLs that defines the PCEHR specific versions of the IHE XDS.b web services. These WSDLs are packaged with the PCEHR B2B Client Library - Schema WSDL v2.0.0. This is available from: http://www.nehta.gov.au/implementation-resources/ehealth-reference-platform/EP-1940-2014/NEHTA-1932-2014.

Table 23 WSDLs

WSDL	Schema description
B2B_DocumentRepository.wsdl	The WSDL specification that defines the XDS.b document repository.
B2B_DocumentRegistry-.wsdl	The WSDL specification that defines the XDS.b document registry.
B2B_RemoveDocument.wsdl	The WSDL specification that defines the XDS.b remove document.
B2B_RemoveDocumentInterface.wsdl	The WSDL specification that defines the XDS.b remove document interface.

Appendix B PCEHR document link format

A PCEHR document link is denoted by a URI of the following format:

```
pcehr:1.2.36.1.2001.1007.10.[PAI-R]/[doc-id]
```

Where PAI-R is a PCEHR Assigned Identifier for a Repository and doc-id is the identifier of a clinical document stored within the repository. The PAI-R may identify the PCEHR Repository or it may identify a Registered Repository.

The format for [doc-id] is "[root]^[extension]" when an extension is present, otherwise it is "[root]", as shown by the following mappings:

Example 1 if doc-id is `013d5c25-1682-45bc-8984-ce0773df9a0d` then document id is represented as:

```
<id root="013d5c25-1682-45bc-8984-ce0773df9a0d"/>
```

Example 2 if doc-id is `2.25.295835386144617648525177275513132113508` then document id is represented as:

```
<id root="2.25.295835386144617648525177275513132113508"/>
```

Example 3 If doc-id is `2.25.295835386144617648525177275513132113508^1` then document id is represented as:

```
<id root="2.25.295835386144617648525177275513132113508" extension="1"/>
```

Acronyms

The core set of terms used within the PCEHR are specified within the PCEHR System Glossary [PCEHR-GLS].

Acronym	Description
CDA	Clinical Document Architecture
CIS	clinical information system
CRP	conformant repository provider
CSP	contracted service provider
HPI-I	Healthcare Provider Identifier Individual
HPI-O	Healthcare Provider Identifier Organisation
IHE XDS.b	Cross-Enterprise Document Sharing (XDS.b) IHE Integration Profile as specified in [ITITF-1] Chapter 10 and extended by material relevant to XDS.b in [ITITF-2A], [ITITF-2B], [ITITF-2x], [ITITF-3].
IHI	Individual Healthcare Identifier
LSS	logical service specification
MTOM	SOAP Message Transmission Optimization Mechanism.
NASH	National Authentication Service for Health
PAI-D	Participation Authentication Identifier for device, for example a computer
PAI-O	Participation Authentication Identifier for organisation
PCEHR	personally controlled electronic health record
TLS	Transport Layer Security
TSS	technical service specification
UML	Unified Modelling Language
WSDL	Web Service Definition Language
WSP	Web Service Profile – Commonly used to refer to the ATS-5820 Web Service Profile
XOP	XML-binary Optimized Packaging
XSD	XML Schema Definition

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