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**Logical Service Specification**

**PCEHR Document Exchange Service**

Version 1.1 — 18 January 2012

Final

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# Document Information

|                        |   |
|------------------------|---|
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## Version History

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# Preface

## Purpose

The purpose of this document is to define the logical service interfaces and associated conformance points for the PCEHR Document Exchange Service.

The PCEHR Document Exchange Service encapsulates the set of document exchange related interactions between clinical information systems, PCEHR portals and the National PCEHR System and the interactions between the National PCEHR System and PCEHR conformant repositories (these sets of interactions are shown at a high level in Figure 3 and are discussed in detail in section 2).

This specification considers the computational and information viewpoints of the solution and provides a logical consideration of these areas. It defines the set of system roles and associated responsibilities and provides context for technical service specifications that follow this specification.

Technical service specifications will provide a realisation of the interfaces for a given technical platform and will not repeat the logical role definitions or conformance points.

## Intended Audience

This document is intended primarily for:

- Developers and implementers of the National PCEHR System, PCEHR Conformant Repositories, Clinical Information Systems seeking to interact with the PCEHR System and PCEHR Conformant Portals (normative).
- Organisations that produce software products which seek to interact with the National PCEHR System (normative).
- Jurisdictional eHealth programs (informative).
- The Australian Health Informatics Standards development community (informative).

This is a technical document which makes use of the UML2.3 standard [UML2010]. 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].

# Document Map

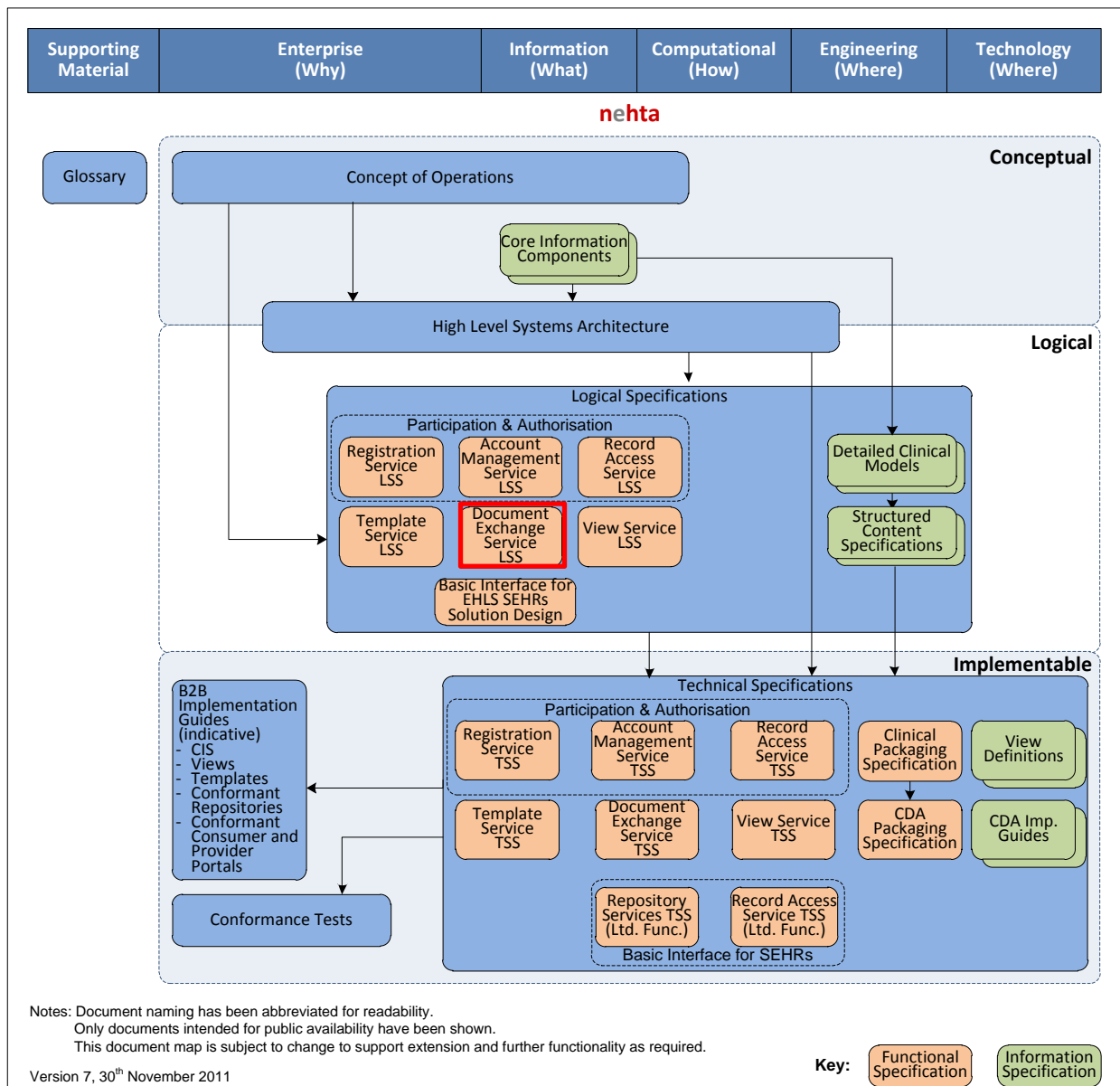


Figure 1 - Document Map

## Acronyms and Terminology

Please refer to Appendix C for definitions of the acronyms and terminology used in this document.

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

## References

Please refer to Appendix D for details of the references used within this document.



# 1 Introduction

## 1.1 Context

This document describes the PCEHR Document Exchange Service. This document describes the functions available for submitting documents to the *PCEHR system*, retrieving documents from the PCEHR system, finding documents, removing documents, changing document access levels and the interfaces required for Conformant Repositories to register and deregister documents within the *PCEHR System* and for the *PCEHR System* to retrieve documents which have been registered from a *Conformant Repository*.

The set of interfaces required to support Document Exchange forms a key part of the PCEHR interface set. However there is a wide range of additional functional areas.

The black highlighted areas in Figure 2 show how this logical service specification fits into the complete set of PCEHR functionality.

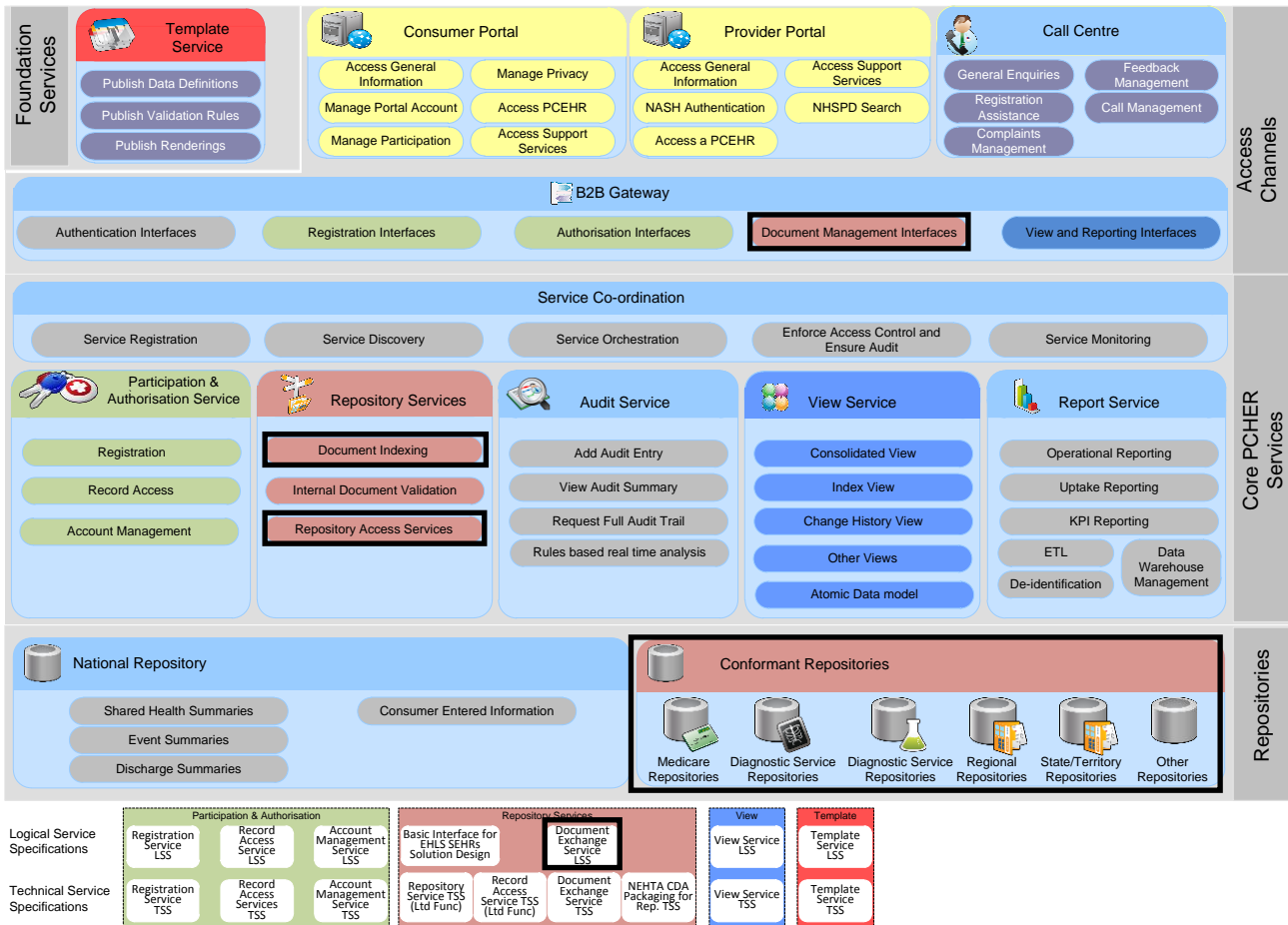


Figure 2 – PCEHR functions addressed

As illustrated in Figure 3 below, the Document Exchange Service is expected to be utilised by Clinical Systems (which, for the purposes of this illustration, includes Contracted Service Providers and Conformant Provider Portals), Conformant Consumer Portals and Conformant Repositories. This is further described in later sections of this document.

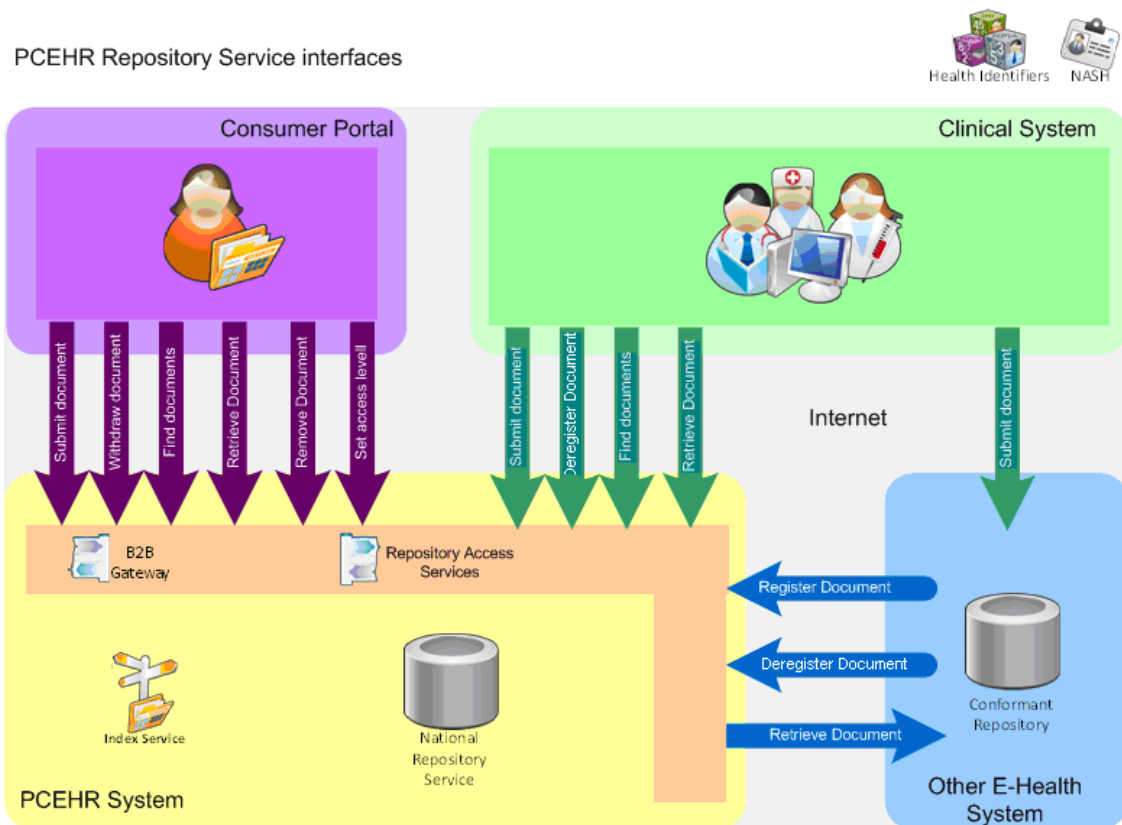


Figure 3 - Document Exchange Service - systems and interactions

## 1.2 Scope of Document

This document specifies the behaviour that is required of a set of interworking systems. This behaviour is specified in terms of a catalogue of related services that are provided and consumed by those systems. Services are specified in terms of interface contracts.

### 1.2.1 In Scope

The following items are in scope for this specification.

- The conceptual and logical platform-agnostic specification for the services offered within a shared electronic health record community.
- The definition of key roles and interaction patterns.
- The specification of formal conformance points.

### 1.2.2 Out of Scope

The following items are explicitly out of scope for this specification:

- Consideration of standards such as Web Services, IHE XDS.b or HSSP's RLUS specification.
- The specification of PCEHR Conformant Portals, PCEHR Conformant Clinical Information Systems or PCEHR Conformant Repositories.
- The internal design for national PCEHR components such as the Index Service.
- Administrative and support related operations which are internal to the PCEHR System.

## 1.3 Relationship to eHealth Interoperability Framework

This specification has been produced in accordance with the eHealth Interoperability Framework [EIF], which considers three layers of abstraction and five viewpoints (see summary in Appendix A). The viewpoints relevant to this logical service specification are each covered in a separate section.

## 1.4 Conformance Points

This specification contains conformance points that identify normative requirements that are to be complied with by systems fulfilling roles identified in this specification.

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

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:

|                 |   |
|-----------------|---|
| <b>DEXS-L 0</b> | This is an example only. Conformance points SHALL be numbered and contain an identifier of 'DEXS-L' which identifies them as being applicable to the Document Exchange Service logical service specification. |
|-----------------|---|

## 2 Computational Viewpoint

The computational viewpoint is concerned with describing the functional decomposition of the system into computational objects which interact at their interfaces, including descriptions of services that objects offer and other objects consume, i.e. service contracts in general terms. These objects describe the key functionality of the system to be built, while assuming that necessary infrastructure support and services are specified elsewhere, using engineering and technology viewpoint concepts described below.

This viewpoint is mainly relevant for solution architects and software developers, although a high-level computational description of the interaction between IT systems and users may also be relevant to other readers.

This section of the document contains conformance statements that specify the services in terms of the:

- messages exchanged
- processing required of the Service Invoker before invoking a service
- dependency between the response messages generated and the request message and the prior state of the Service Provider
- resulting effect (if any) on the state of the Service Provider
- required processing of response message by the Service Invoker.

### 2.1 Services Architecture

#### 2.1.1 Overview

This section provides a summary of the system roles and interactions.

Figure 4 illustrates the key system roles and interactions within the scope of the PCEHR Document Exchange Service.

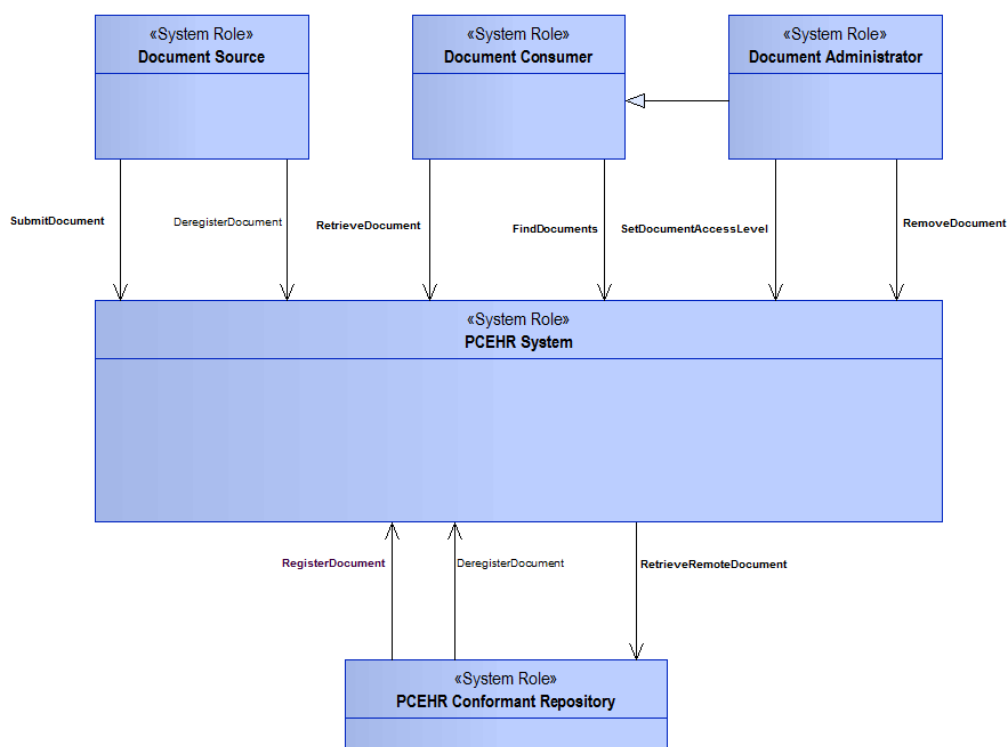


Figure 4 – PCEHR Document Exchange Service interactions

## 2.1.2 System Roles

Table 1 provides a summary of the roles in order to give context to the following sections. The full detail of each role is provided in the section in the right hand column.

Table 1 - PCEHR Document Exchange Service system roles

| System Role                        | Description and Rationale  | Section |
|------------------------------------|--|---------|
| <i>Document Source</i>             | The <i>Document Source</i> represents the creator or submitter of the document within the National PCEHR System.<br>Sources are identified at the Healthcare Organisation level and are associated with a Participating Healthcare Provider Identifier – Organisation (HPI-O). | 2.10    |
| <i>PCEHR Conformant Repository</i> | A <i>PCEHR Conformant Repository</i> represents a PCEHR Document Repository which is separate from the PCEHR System.   | 2.7     |
| <i>Document Administrator</i>      | The <i>Document Administrator</i> role is responsible for managing the state of documents. An administrator may change the access level associated with a document or logically remove the document.   | 2.8     |
| <i>PCEHR System</i>                | The <i>PCEHR System</i> role is responsible for maintaining the set of documents (and associated metadata) linked to each PCEHR, enforcing access policies and providing interfaces to Clinical Systems and portals.   | 2.6     |
| <i>Document Consumer</i>           | The <i>Document Consumer</i> represents a consumer of documents within the PCEHR community.  | 2.9     |

## 2.2 Services

Figure 5 shows how the interactions between system roles may be grouped together into logical services. These services provide a logical grouping and are not intended to dictate the physical realisation of the solution.



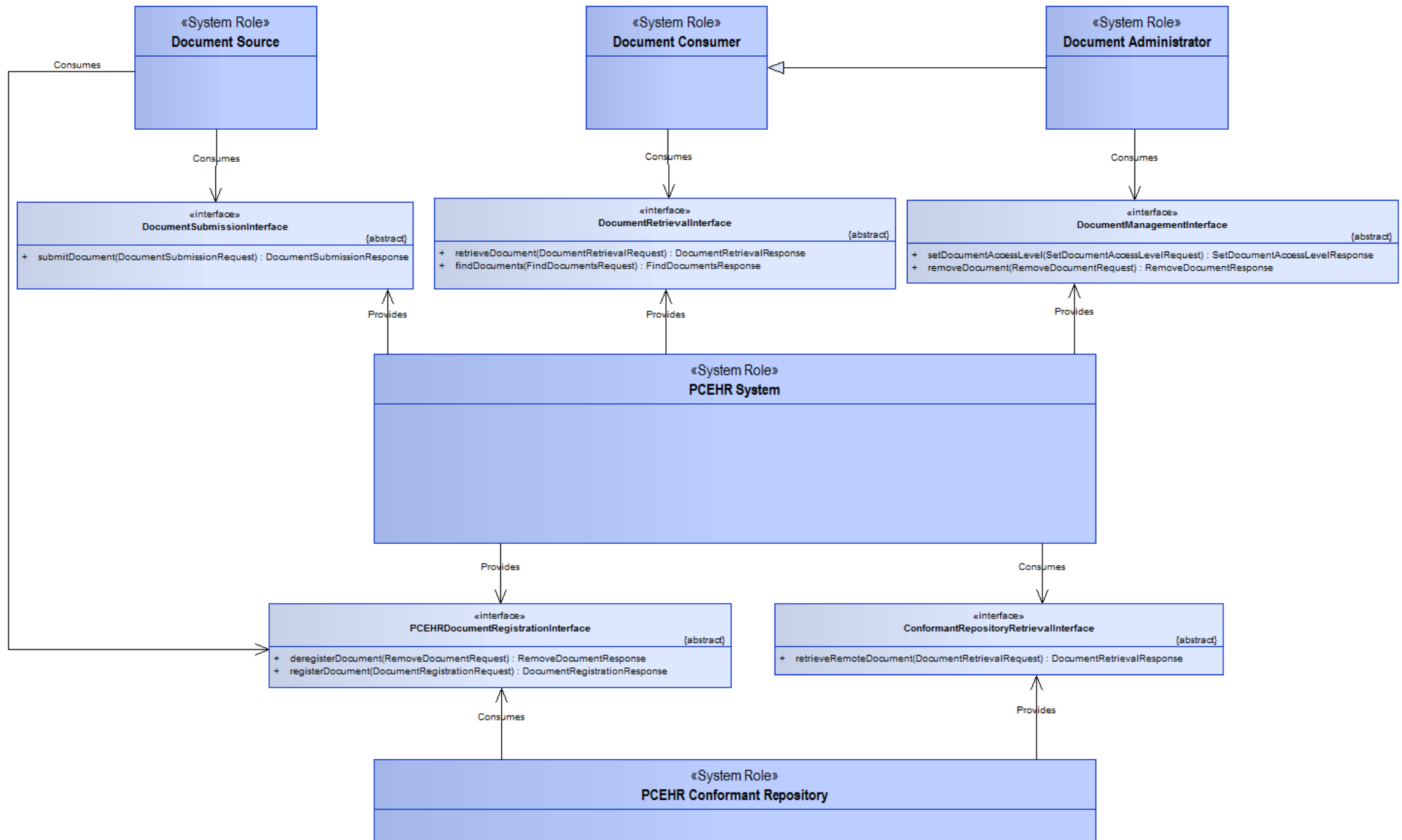


Figure 5 - Mapping of interactions to services

The following sections list the Service Interface and Service Operations identified in Figure 5. It is intended that this section be used as a reference to understand the purpose of each function and the responsibilities attributed to the System roles involved in each operation.

Figure 5 shows the PCEHRDocumentRegistration interface being consumed by the Document Source role, however this role only consumes the deregisterDocument operation within this interface. This is further explained in section 2.10.

Throughout this section, the terms Document and Document Package are used interchangeably to refer to the document or set of documents associated with a PCEHR Document Exchange interaction.

## 2.3 PCEHR Document Exchange Service Contract

### 2.3.1 Service Interface – DocumentSubmissionInterface

The DocumentSubmissionInterface encapsulates the set of operations which support the submission of documents to the PCEHR system.

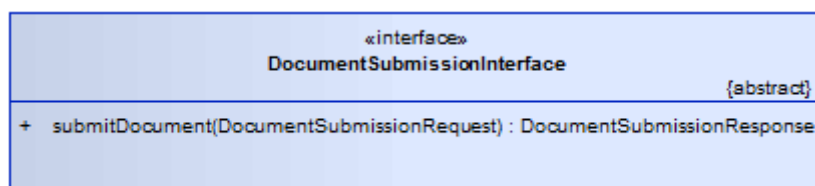


Figure 6 – DocumentSubmissionInterface

This interface provides the following operations.

Table 2 - DocumentSubmissionInterface – Operations

| Service Interface – Operations | Mandatory | Comment  |
|--------------------------------|-----------|--|
| submitDocument                 | Yes       | This function is used to submit documents to the PCEHR System. |

The following sub-sections provide operation-specific considerations and conformance points for each of the operations defined in the above table.

#### 2.3.1.1 Service Operation – submitDocument

A Service Operation is a specific function which supports communication between two participants.

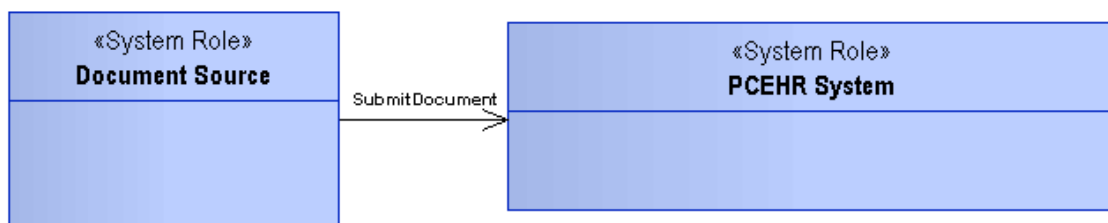


Figure 7 - submitDocument operation



## Description

The submitDocument operation is used to submit a document (and the metadata required to support a submission) to the *PCEHR System*. If the request is successful, documents sent across this interface will be stored in the national PCEHR System. Documents which are to be stored in *Conformant Repositories* will be stored directly on these repositories and then registered with the *PCEHR System*. The mechanism for submitting documents to *Conformant Repositories* is not described in this document (although it is suggested that the same interface as that offered by the *PCEHR System* be used).

Systems such as Clinical Information Systems and Consumer Portals may submit documents to the *PCEHR System* in order to allow these documents to be associated with an Individual's record. The role responsible for performing this submission is called *Document Source* and provides a common abstraction across all interacting system types.

Upon successful execution of this operation, the document will be associated with the Individual's record and will be immediately viewable by all appropriately authorised parties.

## Preconditions

### Conformance Points

|                 |   |
|-----------------|---|
| <b>DEXS-L 1</b> | The <i>Document Source</i> SHALL construct a message conformant with the definition contained within section 3.1.1.   |
| <b>DEXS-L 2</b> | All inter-system communication SHALL occur over a mutually authenticated secure and encrypted communication channel.  |
| <b>DEXS-L 3</b> | The <i>PCEHR System</i> SHALL validate the Root Document within the Document Package against the definition of the document related to the Template Identifier asserted within the Document Submission. |
| <b>DEXS-L 4</b> | This operation SHALL only be invoked by systems fulfilling the <i>Document Source</i> Role as defined in section 2.10.  |

## Postconditions

### Conformance Points

|                 |  |
|-----------------|--|
| <b>DEXS-L 5</b> | On successful execution, the <i>PCEHR System</i> SHALL store the document and associated metadata and return a response message conformant with the response definition contained within section 3.1.11. |
| <b>DEXS-L 6</b> | The <i>PCEHR System</i> SHALL calculate the hash value and size of the Document Package and store these alongside the document submission metadata.  |

## Input, Output and Fault

| Operation data fields | Data structures           |
|-----------------------|---------------------------|
| Input                 | DocumentSubmissionRequest |
| Output                | GenericServiceResponse    |
| Fault                 | GenericServiceFault       |

## Exception Conditions

### Conformance Points

|                 |   |
|-----------------|---|
| <b>DEXS-L 7</b> | If an error occurs while processing the request, the <i>PCEHR System</i> SHALL construct a response message conformant with the fault definition contained within section 3.1.12. |
|-----------------|---|

- DEXS-L 8** Upon receipt of a request relating to a PCEHR that does not exist, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 9** Upon receipt of a request relating to a PCEHR that is not active, the *PCEHR System* SHALL return an error and discard the request, other than an amendment to an existing document regardless of the status of the PCEHR.
- DEXS-L 10** If the *PCEHR System* receives a DocumentSubmissionRequest containing the same Document ID as a document that has been removed, the PCEHR System SHALL return an error.

**Informative note**

Documents which have been removed may be amended. Where a removed document is subsequently amended, the DocumentSubmissionRequest providing the amendment will contain a *new* Document ID (and a DocumentVersionInformation entity specifying the relationship to the document being amended).

- DEXS-L 11** If the *Document Source* does not receive a response within *n* seconds (where *n* is configurable) then the Document Source SHALL cease waiting for a response and MAY repeat the request. The repeat request SHALL contain a new Message ID.
- DEXS-L 12** Upon receipt of a Document Submission containing a Document UUID field which matches the identifier of a document that has already been successfully stored, the *PCEHR System* SHALL return an error and discard the new submission request. The error returned SHALL indicate that the document had been previously stored. The *Document Source* SHALL initiate a process to resolve the conflict.

**Informative note**

It is likely that this error will occur due to the *Document Source* timing out when waiting for a response to a DocumentSubmissionRequest. As such, the *Document Source* will need to identify this form of error and correlate the response back to previous calls to submitDocument and any associated timeout errors.

- DEXS-L 13** Upon receipt of a DocumentSubmissionRequest containing the same Message ID as a message that has been previously received, the *PCEHR System* SHALL return an error and discard the submission request.

### 2.3.2 Service Interface – DocumentRetrievalInterface

The Document Retrieval Interface encapsulates the functions supporting searching for and retrieving documents.

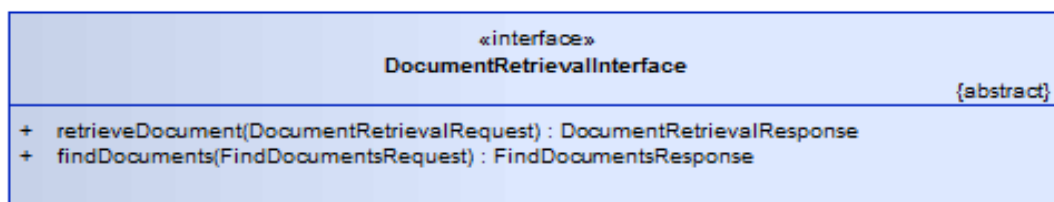


Figure 8 – DocumentRetrievalInterface

A Service Interface is a logical grouping of operations which are offered by a participant within the context of a Service.

Table 3 – Document Retrieval Interface – Operations

| Service Interface – Operations | Mandatory | Comment   |
|--------------------------------|-----------|---|
| retrieveDocument               | Yes       | The retrieveDocument function is used to retrieve documents from the PCEHR System.<br>It may not be used to retrieve documents directly from Conformant Repositories. |
| findDocuments                  | Yes       | The findDocuments operation is used to find or locate documents which match specified search criteria.  |

The following sub-sections provide operation-specific considerations and conformance points for each of the operations defined in the above table.

### 2.3.2.1 Service Operation – retrieveDocument

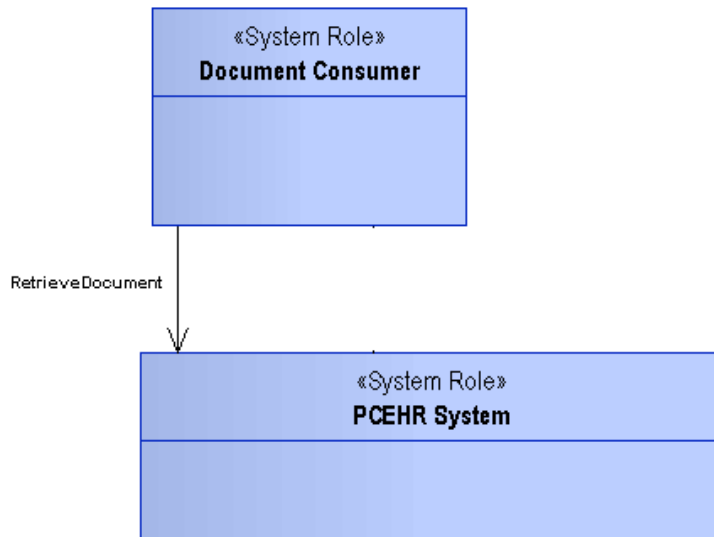


Figure 9 - retrieveDocument operation

#### Description

The retrieveDocument operation is used to retrieve a specified document from the PCEHR System. All document retrieval is mediated through the PCEHR System, irrespective of whether the document is stored centrally or in a Conformant Repository.

Systems such as Clinical Information Systems, Provider Portals and Consumer Portals may retrieve documents from the PCEHR System. Within the scope of the PCEHR System, all documents associated with PCEHRs may only be retrieved through the central PCEHR System.

This operation allows the retrieval of exactly one document using the document’s unique identifier.

The role responsible for retrieving documents is called the *Document Consumer* and provides a common abstraction across all interacting system types.

Once downloaded from the *PCEHR System*, the retrieved document is deemed to be uncontrolled and the *Document Consumer* has no responsibility to monitor and apply any changes in document state which may occur within the PCEHR system.

**Preconditions***Conformance Points*

- DEXS-L 14** The *Document Consumer* SHALL construct a message conformant with the definition contained within section 3.1.4.
- DEXS-L 15** This operation SHALL only be invoked by systems fulfilling the *Document Consumer* role as defined in section 2.9.

**Postconditions***Conformance Points*

- DEXS-L 16** On successful execution the *PCEHR System* SHALL return a response message conformant with the response definition contained within section 3.1.9.
- DEXS-L 17** The *PCEHR System* SHALL validate that the hash of the document retrieved from the PCEHR System or Conformant Repository matches the hash value stored within the document metadata. Where these values do not match, the *PCEHR System* SHALL return an error and SHALL NOT return the document to the *Document Consumer*.

**Input, Output and Fault**

| Operation data fields | Data structures           |
|-----------------------|---------------------------|
| Input                 | DocumentRetrievalRequest  |
| Output                | DocumentRetrievalResponse |
| Fault                 | GenericServiceFault       |

**Exception Conditions***Conformance Points*

- DEXS-L 18** If an error occurs while processing the request, the *PCEHR System* SHALL construct a response message conformant with the fault definition contained within section 3.1.12.
- DEXS-L 19** Upon receipt of a request relating to a PCEHR that does not exist or is not active, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 20** If the *Document Consumer* does not receive a response within *n* seconds (where *n* is agreed with the service operator), the *Document Consumer* SHALL cease waiting for a response and MAY repeat the request. The repeat request SHALL contain a new Message ID.
- DEXS-L 21** Upon receipt of a DocumentRetrievalRequest containing the same Message ID as a message that has been previously received, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 22** Upon receipt of a DocumentRetrievalRequest relating to a document that is not associated with the PCEHR or does not exist, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 23** Upon receipt of a DocumentRetrievalRequest from a Document Consumer other than the individual, document author or system operator relating to a document that has been removed or deregistered, the *PCEHR System* SHALL return an error and discard the request.

### 2.3.2.2 Service Operation – findDocuments

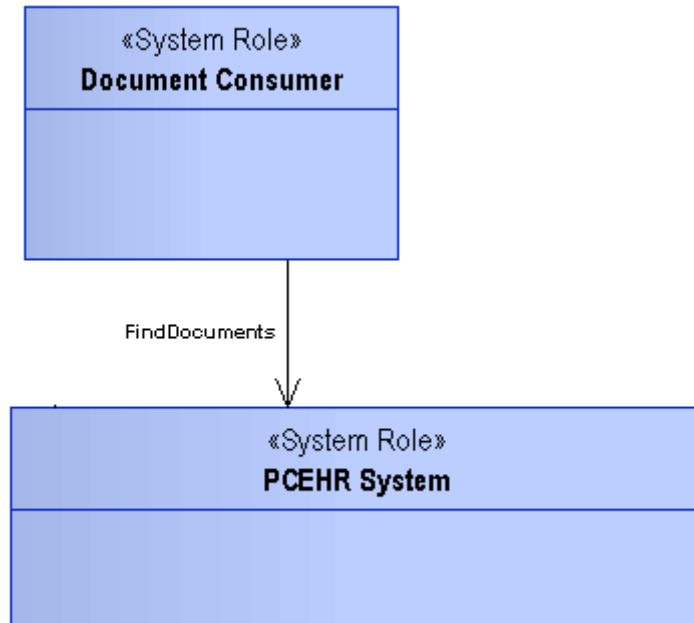


Figure 10 - findDocuments Operation

#### Description

The findDocuments operation may be used to search for one or more documents associated with a PCEHR within the PCEHR System which match the search criteria provided by the *Document Consumer*. The operation does not return the set of documents themselves, but rather returns the details required to retrieve each document and the metadata which describes each entry.

The search criteria is limited to data extracted from the metadata which was provided when the document was submitted and it is not possible to find documents based on contents within the body of the document. To reflect this there is no Conformant Repository involvement within the execution of the findDocuments operation.

#### Preconditions

##### Conformance Points

- |                  |   |
|------------------|---|
| <b>DEXS-L 24</b> | The <i>Document Consumer</i> SHALL construct a message conformant with the definition contained within section 3.1.5.   |
| <b>DEXS-L 25</b> | All inter-system communication SHALL occur over a mutually authenticated secure and encrypted communication channel.    |
| <b>DEXS-L 26</b> | This operation SHALL only be invoked by systems fulfilling the <i>Document Consumer</i> role as defined in section 2.9. |

#### Postconditions

##### Conformance Points

- |                  |  |
|------------------|--|
| <b>DEXS-L 27</b> | On successful execution, the <i>PCEHR System</i> SHALL return a response message conformant with the response definition contained within section 3.1.10.  |
| <b>DEXS-L 28</b> | If the <i>PCEHR System</i> does not find any documents which match the provided search criteria, the <i>PCEHR System</i> SHALL return a success response indicating that no matches were found. The <i>PCEHR System</i> SHALL NOT return an error. |

### ***Input, Output and Fault***

| <b>Operation data fields</b> | <b>Data structures</b> |
|------------------------------|------------------------|
| Input                        | FindDocumentsRequest   |
| Output                       | FindDocumentsResponse  |
| Fault                        | GenericServiceFault    |

### ***Exception Conditions***

#### *Conformance Points*

|                  |  |
|------------------|--|
| <b>DEXS-L 29</b> | If an error occurs while processing the request the <i>PCEHR System</i> SHALL construct a response message conformant with the fault definition contained within section 3.1.12.   |
| <b>DEXS-L 30</b> | Upon receipt of a request relating to a PCEHR that does not exist or is not active the <i>PCEHR System</i> SHALL return an error and discard the request.  |
| <b>DEXS-L 31</b> | If the <i>Document Consumer</i> does not receive a response within <i>n</i> seconds (where <i>n</i> is agreed with the service operator), the <i>Document Consumer</i> SHALL cease waiting for a response and MAY repeat the request. The repeat request SHALL contain a new Message ID. |
| <b>DEXS-L 32</b> | Upon receipt of a FindDocumentsRequest containing the same Message ID as a message that has been previously received, the <i>PCEHR System</i> SHALL return an error and discard the request.   |

### **2.3.3 Service Interface - DocumentManagementInterface**

The Document Management Interface provides the set of operations required to perform operations such as document deletion and the changing of document access levels.

| «interface»<br>DocumentManagementInterface |  |
|--|--|
|  | {abstract}   |
| +  | setDocumentAccessLevel(SetDocumentAccessLevelRequest) : SetDocumentAccessLevelResponse |
| +  | removeDocument(RemoveDocumentRequest) : RemoveDocumentResponse                         |

A Service Interface is a logical grouping of operations which are offered by a participant within the context of a Service.

*Table 4 – Document Management Interface – Operations*

| <b>Service Interface – Operations</b> | <b>Mandatory</b> | <b>Comment</b>  |
|---------------------------------------|------------------|---|
| setDocumentAccessLevel                | Yes              | The setDocumentAccessLevel operation is used to change the access level associated with a document. |
| removeDocument                        | Yes              | The removeDocument operation is used to logically delete the document from the PCEHR.               |

The following sub-sections provide operation specific considerations and conformance points for each of the operations defined in the above table.

### 2.3.3.1 Service Operation – setDocumentAccessLevel

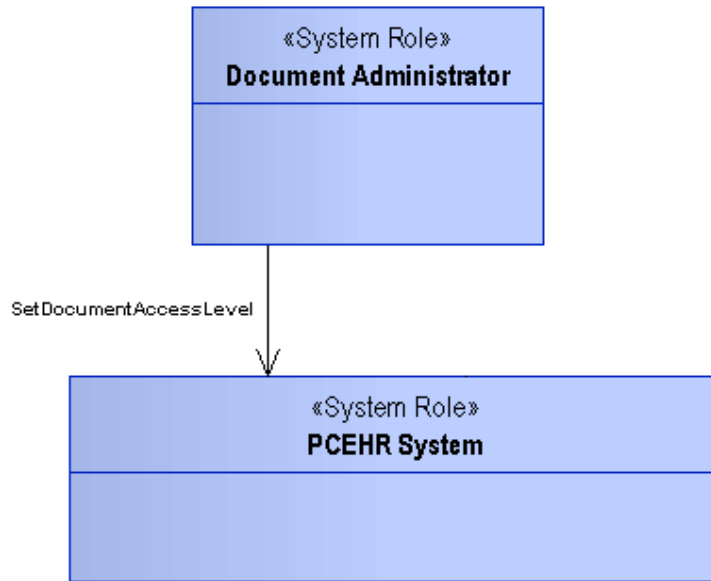


Figure 11 - setDocumentAccessLevel operation

#### Description

The setDocumentAccessLevel operation may be used to change the access level associated with the document.

The management of this information may only be performed by an Individual or their representative. The Document Administrator role provides an abstraction of the system role allowed to perform this operation and is expected to only be realised by instances of the Consumer Portal.

#### Preconditions

##### Conformance Points

|                  |  |
|------------------|--|
| <b>DEXS-L 33</b> | The <i>Document Administrator</i> SHALL construct a message conformant with the definition contained within section 3.1.6.   |
| <b>DEXS-L 34</b> | All inter-system communication SHALL occur over a mutually authenticated secure and encrypted communication channel.         |
| <b>DEXS-L 35</b> | This operation SHALL only be invoked by systems fulfilling the <i>Document Administrator</i> role as defined in section 2.8. |

#### Postconditions

##### Conformance Points

|                  |  |
|------------------|--|
| <b>DEXS-L 36</b> | On successful execution the <i>PCEHR System</i> SHALL return a response message conformant with the response definition contained within section 3.1.11. |
|------------------|--|

#### Input, Output and Fault

| Operation data fields | Data structures               |
|-----------------------|-------------------------------|
| Input                 | SetDocumentAccessLevelRequest |
| Output                | GenericServiceResponse        |
| Fault                 | GenericServiceFault           |

## Exception Conditions

### Conformance Points

- DEXS-L 37** If an error occurs while processing the request, the *PCEHR System* SHALL construct a response message conformant with the fault definition contained within section 3.1.12.
- DEXS-L 38** Upon receipt of a request relating to a PCEHR that does not exist or is not active, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 39** If the *Document Administrator* does not receive a response within *n* seconds (where *n* is agreed with the service operator), the *Document Administrator* SHALL cease waiting for a response and MAY repeat the request. The repeat request SHALL contain a new Message ID.
- DEXS-L 40** Upon receipt of a SetDocumentAccessLevelRequest containing the same Message ID as a message that has been previously received, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 41** Upon receipt of a SetDocumentAccessLevelRequest containing an invalid access level, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 42** Upon receipt of a SetDocumentAccessLevelRequest containing the same access level as the one currently assigned to the document, the *PCEHR System* SHALL return a successful response.
- DEXS-L 43** Upon receipt of a SetDocumentAccessLevelRequest relating to a document that is not associated with the specified PCEHR, is inactive, or does not exist, the *PCEHR System* SHALL return an error and discard the request.

### 2.3.3.2 Service Operation – removeDocument

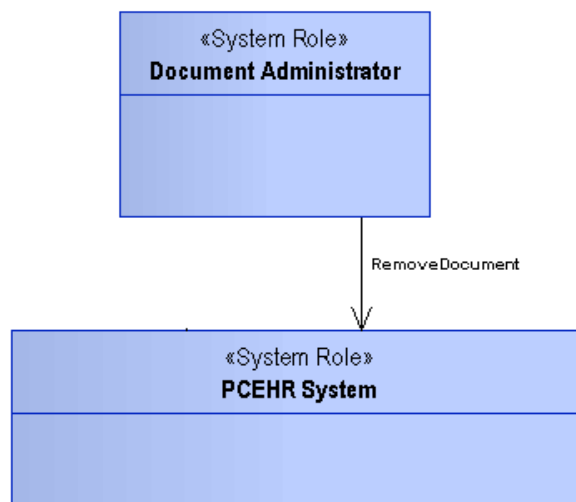


Figure 12 - removeDocument operation

#### Description

The removeDocument operation may be used to logically remove a document from a PCEHR. The function retains the document and underlying metadata but removes the document from certain views of the PCEHR. The presence of the document may still be seen by the Individual, the document author and system administrators.

While the document is removed from the visible PCEHR, it may still be stored within the National Repository or a Conformant Repository and may still be viewed by actors in other communities who share the underlying repository.

The removal of documents from a PCEHR may only be performed by the Individual or their representative. The *Document Administrator* role provides an abstraction of the system role allowed to perform this operation and is expected to only be realised by instances of the Consumer Portal.



**Preconditions***Conformance Points*

- DEXS-L 44** The *Document Administrator* SHALL construct a message conformant with the definition contained within section 3.1.7.
- DEXS-L 45** All inter-system communication SHALL occur over a mutually authenticated secure and encrypted communication channel.
- DEXS-L 46** This operation SHALL only be invoked by systems fulfilling the *Document Administrator* role as defined in section 2.8.

**Postconditions***Conformance Points*

- DEXS-L 47** On successful execution, the *PCEHR System* SHALL return a response message conformant with the response definition contained within section 3.1.11.

**Input, Output and Fault**

| Operation data fields | Data structures        |
|-----------------------|------------------------|
| Input                 | RemoveDocumentRequest  |
| Output                | GenericServiceResponse |
| Fault                 | GenericServiceFault    |

The RemoveDocumentRequest data type is used across all registration and removal data operations.

**Exception Conditions***Conformance Points*

- DEXS-L 48** If an error occurs while processing the request, the *PCEHR System* SHALL construct a response message conformant with the fault definition contained within section 3.1.12.
- DEXS-L 49** Upon receipt of a request relating to a PCEHR that does not exist or is not active, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 50** If the *Document Administrator* does not receive a response within  $n$  seconds (where  $n$  is agreed with the service operator), the *Document Administrator* SHALL cease waiting for a response and MAY repeat the request. The repeat request SHALL contain a new Message ID.
- DEXS-L 51** Upon receipt of a RemoveDocumentRequest containing the same Message ID as a message that has been previously received the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 52** Upon receipt of a RemoveDocumentRequest relating to a document that is not associated with the identified PCEHR, has already been removed or does not exist, the *PCEHR System* SHALL return an error and discard the request.

## 2.4 Conformant Repository Service Contract

### 2.4.1 Service Interface – PCEHRDocumentRegistrationInterface

The PCEHRDocumentRegistration interface encapsulates the operations required to support the registration and deregistration of documents within the PCEHR System by Conformant Repositories.

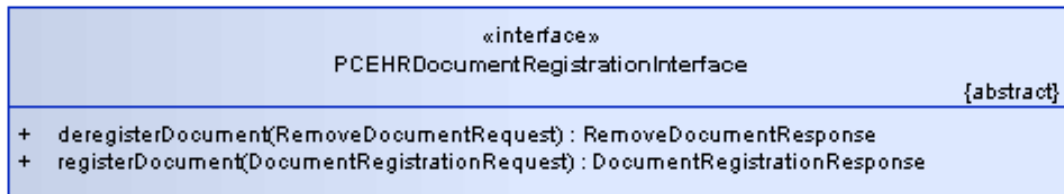


Figure 13 - PCEHRDocumentRegistration interface

A Service Interface is a logical grouping of operations which are offered by a participant within the context of a Service.

Table 5 - Service Interface PCEHRDocumentRegistrationInterface – Operations

| Service Interface – Operations | Mandatory | Comment   |
|--------------------------------|-----------|---|
| registerDocument               | Yes       | The registerDocument operation registers a document stored within a Conformant Repository within the PCEHR index.   |
| deregisterDocument             | Yes       | The deregisterDocument operation allows a conformant repository to logically remove a document from the national PCEHR index on behalf of the document author.<br><br>Documents may only be deregistered by the party that registered the document. |

The following sub-sections provide operation specific considerations and conformance points for each of the operations defined in the above table.

#### 2.4.1.1 Service Operation – registerDocument

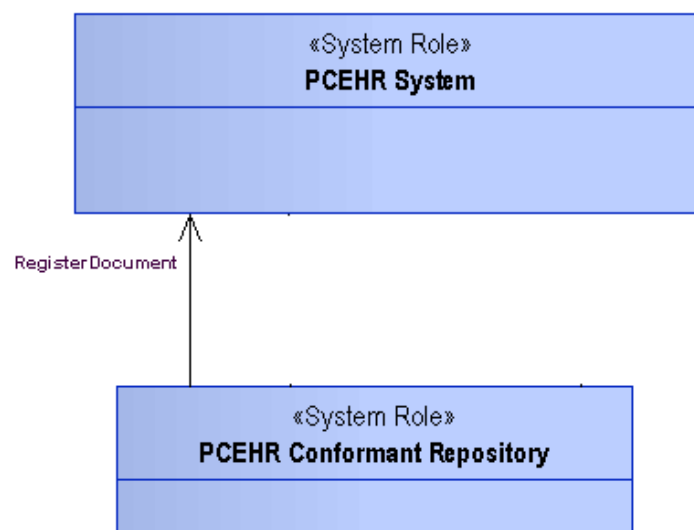


Figure 14 - registerDocument operation

**Description**

The registerDocument operation allows documents stored within a Conformant Repository to be associated with a PCEHR within the national PCEHR System. Until a document is registered with the PCEHR System, it will not be accessible via the PCEHR System retrieval interfaces.

The entity fulfilling the *PCEHR Conformant Repository* role is responsible for validating the document and creating the PCEHR registration metadata.

Documents may only be registered by systems fulfilling the *PCEHR Conformant Repository* role.

**Preconditions***Conformance Points*

- DEXS-L 53** The *PCEHR Conformant Repository* SHALL construct a message conformant with the definition contained within section 3.1.8.
- DEXS-L 54** All inter-system communication SHALL occur over a mutually authenticated secure and encrypted communication channel.
- DEXS-L 55** The *PCEHR Conformant Repository* SHALL validate the document against the definition of the document type asserted by the Template Identifier.
- DEXS-L 56** This operation SHALL only be invoked by systems fulfilling the *PCEHR Conformant Repository* role as defined in section 2.7.

**Postconditions***Conformance Points*

- DEXS-L 57** On successful execution, the *PCEHR System* SHALL return a response message conformant with the response definition contained within section 3.1.11.
- DEXS-L 58** The *PCEHR Conformant Repository* SHALL retain the document relating to the registration request in accordance with the PCEHR retention policies.

**Input, Output and Fault**

| Operation data fields | Data structures             |
|-----------------------|-----------------------------|
| Input                 | DocumentRegistrationRequest |
| Output                | GenericServiceResponse      |
| Fault                 | GenericServiceFault         |

**Exception Conditions***Conformance Points*

- DEXS-L 59** If an error occurs while processing the request, the *PCEHR System* SHALL construct a response message conformant with the fault definition contained within section 3.1.12.
- DEXS-L 60** Upon receipt of a request relating to a PCEHR that does not exist or is not active, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 61** If the *PCEHR Conformant Repository* does not receive a response within  $n$  seconds (where  $n$  is agreed with the service operator), the *PCEHR Conformant Repository* SHALL cease waiting for a response and MAY repeat the request. The repeat request SHALL contain a new Message ID.
- DEXS-L 62** Upon receipt of a DocumentRegistrationRequest containing the same Message ID as a message that has been previously received, the *PCEHR System* SHALL return an error and discard the request.

**DEXS-L 63** Upon receipt of a `DocumentRegistrationRequest` containing a `Document ID` field which matches the identifier of a document that has already been successfully stored, the *PCEHR System* SHALL return an error and discard the new submission request. The error returned SHALL indicate that the document had been previously stored. The *PCEHR Conformant Repository* SHALL initiate a process to resolve the conflict.

### Informative note

It is likely that this error will occur due to the *Document Source* timing out when waiting for a response to a `DocumentRegistrationRequest`. As such, the *PCEHR Conformant Repository* will need to identify this form of error and correlate the response back to previous calls to `registerDocument` and any associated timeout errors.

### 2.4.1.2 Service Operation – `deregisterDocument`

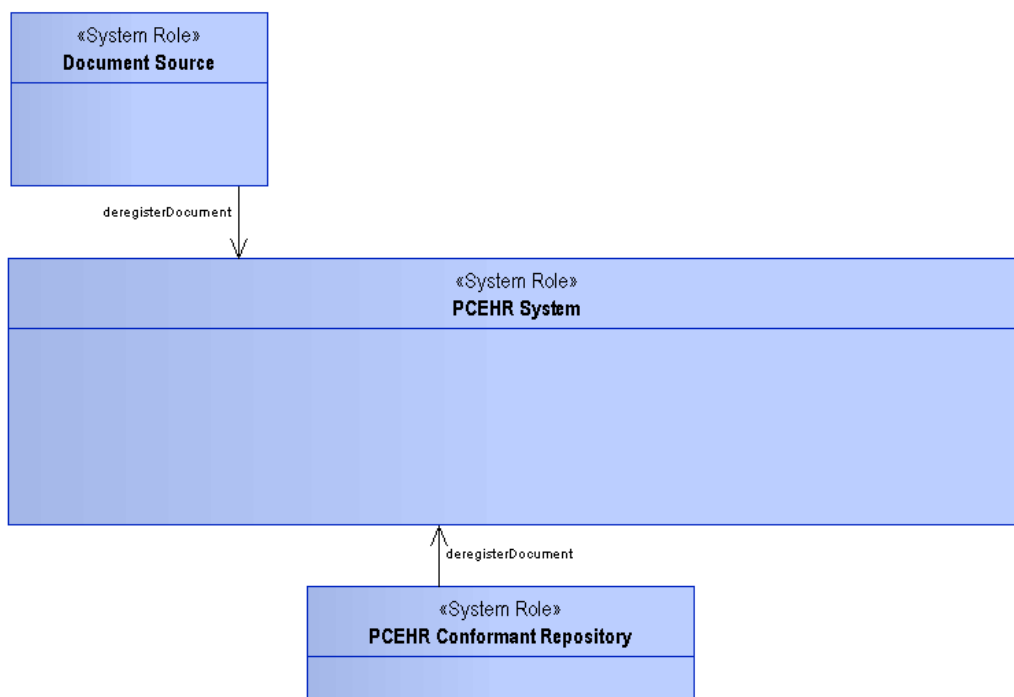


Figure 15 - `deregisterDocument` operation

### Description

The `deregisterDocument` operation may be used to withdraw a document which has previously been registered with the PCEHR System by a *PCEHR Conformant Repository*.

The function removes the document from some views of the PCEHR. The presence of the document may still be seen by the Individual, the document author and PCEHR System Administrators. While the document is removed from the visible PCEHR using the `deregisterDocument` operation, it may still be stored within the Conformant Repository and may be viewed by actors in other communities who share the underlying repository.

At the logical level, this function is included in addition to the `removeDocument` operation in order to illustrate the difference in behaviour between entities fulfilling the *Document Source* and *PCEHR Conformant Repository* roles and an Individual or Representative managing a PCEHR (and fulfilling the *Document Administrator*) role.

A *Document Source* or *PCEHR Conformant Repository* may deregister a document which they have submitted or registered in the PCEHR System, and an Individual or representative fulfilling the *Document Administrator* role may remove any documents associated with the PCEHR they administrate.

**Preconditions***Conformance Points*

- DEXS-L 64** The *PCEHR Conformant Repository* or *Document Source* SHALL construct a message conformant with the definition contained within section 3.1.7.
- DEXS-L 65** All inter-system communication SHALL occur over a mutually authenticated secure and encrypted communication channel.
- DEXS-L 66** This operation SHALL only be invoked by systems fulfilling the *Document Source* or *PCEHR Conformant Repository* roles as defined in section 2.7 and 2.10 and may only be performed by the organisation that registered or submitted the document.

**Postconditions***Conformance Points*

- DEXS-L 67** On successful execution, the *PCEHR System* SHALL return a response message conformant with the response definition contained within section 3.1.11.

**Input, Output and Fault**

| Operation data fields | Data structures        |
|-----------------------|------------------------|
| Input                 | RemoveDocumentRequest  |
| Output                | GenericServiceResponse |
| Fault                 | GenericServiceFault    |

The RemoveDocumentRequest data type is used across all registration and removal data operations.

**Exception Conditions***Conformance Points*

- DEXS-L 68** If an error occurs while processing the request, the *PCEHR System* SHALL construct a response message conformant with the fault definition contained within section 3.1.12.
- DEXS-L 69** If the *PCEHR Conformant Repository* or *Document Source* does not receive a response within  $n$  seconds (where  $n$  is agreed with the service operator), the *PCEHR Conformant Repository* or *Document Source* SHALL cease waiting for a response and MAY repeat the request. The repeat request SHALL contain a new Message ID.
- DEXS-L 70** Upon receipt of a RemoveDocumentRequest containing the same Message ID as a message that has been previously received, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 71** Upon receipt of a RemoveDocumentRequest relating to a document that is not associated with the PCEHR, or does not exist, the *PCEHR System* SHALL return an error and discard the request.
- DEXS-L 72** Upon receipt of a RemoveDocumentRequest from an entity asserting an identity other than that used to register the document, the *PCEHR System* SHALL return an error and discard the request.

## 2.4.2 Service Interface – ConformantRepositoryRetrievalInterface

The ConformantRepositoryRetrieval interface encapsulates the functions required for the PCEHR System to retrieve documents from a Conformant Repository.

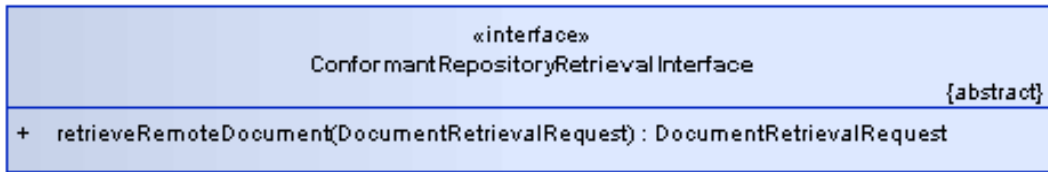


Figure 16 - ConformantRepositoryRetrieval interface

Table 6 – ConformantRepositoryRetrieval interface – Operations

| Service Interface – Operations | Mandatory | Comment   |
|--------------------------------|-----------|---|
| retrieveRemoteDocument         | Yes       | This operation allows the PCEHR System to retrieve a document from a Conformant Repository.<br><br>This interface is not intended to allow Clinical Information Systems or Portals to retrieve documents directly from a Conformant Repository. |

The following sub-sections provide operation specific considerations and conformance points for each of the operations defined in the above table.

### 2.4.2.1 Service Operation - retrieveRemoteDocument

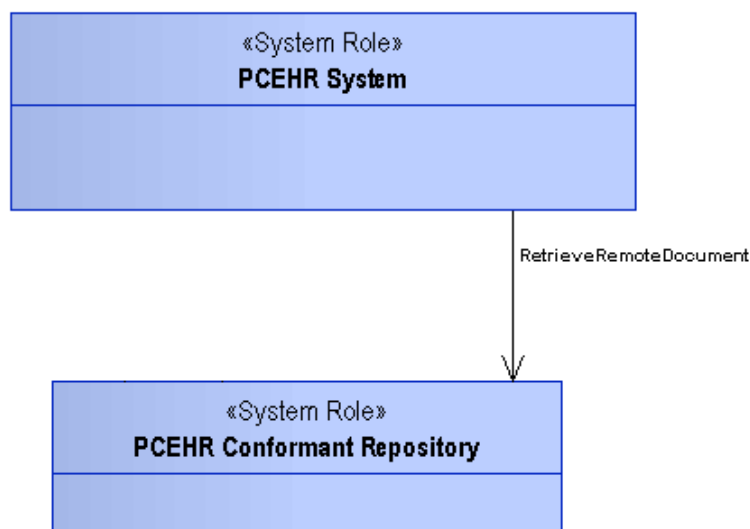


Figure 17 - retrieveRemoteDocument operation

#### Description

The retrieveRemoteDocument operation is used to allow the PCEHR System to retrieve documents from a Conformant Repository. This interface is not intended to allow Clinical Information Systems or Portals to access conformant repositories directly, as all such interaction will be mediated through the PCEHR System.

The link between the entity fulfilling the PCEHR System role and entities fulfilling the PCEHR Conformant Repository role is deemed to be a trusted connection and all access control is performed centrally by the PCEHR System role.

## Preconditions

### Conformance Points

- DEXS-L 73** The *PCEHR System* SHALL construct a message conformant with the definition contained within section 3.1.4.
- DEXS-L 74** All inter-system communication SHALL occur over a mutually authenticated secure and encrypted communication channel.
- DEXS-L 75** This operation SHALL only be invoked by systems fulfilling the *PCEHR System* role as defined in section 2.6.

## Postconditions

### Conformance Points

- DEXS-L 76** On successful execution, the *PCEHR System* SHALL return a response message conformant with the response definition contained within section 3.1.11.
- DEXS-L 77** The entity fulfilling the *PCEHR Conformant Repository* role SHALL return the document directly to the entity fulfilling the *PCEHR System* role and SHALL NOT apply any additional policy enforcement or access filtering on the request.
- DEXS-L 78** The *PCEHR System* SHALL validate that the hash value of the document retrieved from the *PCEHR Conformant Repository* matches the hash value stored within the document metadata. Where these values do not match, the *PCEHR System* SHALL log an error and initiate a process to inform the *PCEHR Conformant Repository*. Where this operation invocation forms part of a retrieveDocument operation initiated by an entity fulfilling the Document Consumer role, the document SHALL not be returned to the Document Consumer if the document does not match the stored hash value.

## Input, Output and Fault

| Operation data fields | Data structures           |
|-----------------------|---------------------------|
| Input                 | DocumentRetrievalRequest  |
| Output                | DocumentRetrievalResponse |
| Fault                 | GenericServiceFault       |

## Exception Conditions

### Conformance Points

- DEXS-L 79** If an error occurs while processing the request, the *PCEHR Conformant Repository* SHALL construct a response message conformant with the fault definition contained within section 3.1.12.
- DEXS-L 80** If the *PCEHR System* does not receive a response within  $n$  seconds (where  $n$  is agreed with the service operator), the *PCEHR System* SHALL cease waiting for a response and MAY repeat the request. The repeat request SHALL contain a new Message ID.
- DEXS-L 81** Upon receipt of a RemoteDocumentRetrievalRequest containing the same Message ID as a message that has been previously received, the *PCEHR Conformant Repository* SHALL return an error and discard the request.
- DEXS-L 82** Upon receipt of a RemoteDocumentRetrievalRequest relating to a document that is not stored within the Conformant Repository, the *PCEHR Conformant Repository* SHALL return an error and discard the request.

## 2.5 Common Specifications

### 2.5.1 Audit

The auditing of interaction with the PCEHR System is the responsibility of the PCEHR System. The *PCEHR System* will retain a record of all access attempts. Other actors are not required to record audit data, although they may do so to satisfy local requirements.

The *PCEHR System* will not provide a central auditing service.

#### *Conformance Points*

- DEXS-L 83** The entity fulfilling the *PCEHR System* role SHALL audit all invocation attempts and results.
- DEXS-L 84** Entities who are not fulfilling the *PCEHR System* role, but are realising other roles defined within this specification, SHOULD audit all interaction invocation attempts and the associated results. These audit entries SHOULD be logged in alignment with RFC3881 [RFC3881].

## 2.6 System role – PCEHR System

The PCEHR System role encompasses all of the functionality relating to indexing documents, retrieving documents and managing access through to conformant repositories.

### 2.6.1 Role Considerations

The National *PCEHR System* is the only provider of the *PCEHR System*.

#### 2.6.1.1 Identification

PCEHR System Identification is deferred to implementable detail within the Technical Service Specification.

#### 2.6.1.2 Authentication and Authorisation

#### *Conformance Points*

- DEXS-L 85** All inter-system communication SHALL occur over a mutually authenticated secure and encrypted communication channel.

### 2.6.2 Services Provided

The PCEHR System performs a service provider role for most of the functions which support the core Document Exchange Service Document Exchange functionality.

#### *Conformance Points*

- DEXS-L 86** The *PCEHR System* role SHALL provide all of the operations defined within the PCEHR Document Registration interface in accordance with the specification set out in section 2.4.1.
- DEXS-L 87** The *PCEHR System* role SHALL provide all of the operations defined within the PCEHR Document Submission interface in accordance with the specification set out in section 2.3.1.
- DEXS-L 88** The *PCEHR System* role SHALL provide all of the operations defined within the Document Management interface in accordance with the specification set out in section 2.3.3.



**DEXS-L 89** The *PCEHR System* role SHALL provide all of the operations defined within the Document Retrieval interface in accordance with the specification set out in section 2.3.2.

### 2.6.3 Services Consumed

#### *Conformance Points*

**DEXS-L 90** The *PCEHR System* role SHALL be able to consume all of the operations defined within the Conformant Repository Retrieval interface in accordance with the specification set out in section 2.4.2.

## 2.7 System role – PCEHR Conformant Repository

The *PCEHR Conformant Repository* role encompasses the functionality related to storing PCEHR data within repositories external to the PCEHR System.

This role will typically be fulfilled by entities such as eHealth Lead Site Shared EHR Systems, Prescription Exchange Services and Pathology Repositories.

### 2.7.1 Role Considerations

#### 2.7.1.1 Identification

#### *Conformance Points*

**DEXS-L 91** The *PCEHR Conformant Repository* SHALL be identified using a Conformant Repository Provider (CRP) Identifier provided by the National HI Service.

#### 2.7.1.2 Authentication and Authorisation

#### *Conformance Points*

**DEXS-L 92** All inter-system communication SHALL occur over a mutually authenticated secure and encrypted communication channel.

### 2.7.2 Services Provided

#### *Conformance Points*

**DEXS-L 93** The *PCEHR System* role SHALL provide all of the operations defined within the PCEHR Conformant Repository Retrieval interface in accordance with the specification set out in section 2.4.2.

### 2.7.3 Services Consumed

#### *Conformance Points*

**DEXS-L 94** The *PCEHR Conformant Repository* role SHALL be able to consume all of the operations defined within the PCEHR Document Registration interface in accordance with the specification set out in section 2.4.1.

## 2.8 System Role – Document Administrator

The Document Administrator role encompasses all of the functionality related to managing document confidentiality levels or removing documents within the context of a single PCEHR.

This role will typically be fulfilled by a Consumer Portal.

### 2.8.1 Role Considerations

#### Conformance Points

**DEXS-L 95** Entities fulfilling the *Document Administrator* role SHALL also fulfil the *Document Consumer* role.

### 2.8.2 Services Consumed

#### Conformance Points

**DEXS-L 96** The *Document Administrator* role SHALL be able to consume all of the operations defined within the Document Management interface in accordance with the specification set out in section 2.3.3.

## 2.9 System Role – Document Consumer

The Document Consumer role encompasses the functionality relating to searching for, downloading and viewing documents with a single PCEHR.

This role will typically be fulfilled by Provider Portals, Consumer Portals and Clinical Information Systems.

### 2.9.1 Services Consumed

#### Conformance Points

**DEXS-L 97** The *Document Consumer* role SHALL be able to consume all of the operations defined within the Document Retrieval interface in accordance with the specification set out in section 2.3.2.

## 2.10 System Role – Document Source

The *Document Source* role is responsible for submitting documents to the PCEHR System.

This role will typically be fulfilled by a Clinical Information System but may be fulfilled via a Consumer Portal (for documents such as Consumer Entered Notes).

### 2.10.1 Role Considerations

#### Conformance Points

**DEXS-L 98** Entities fulfilling the *Document Source* role SHALL maintain a copy of all Document Packages submitted to the PCEHR System.

### 2.10.2 Services Consumed

#### Conformance Points

**DEXS-L 99** The *Document Source* role SHALL be able to consume all of the operations defined within the Document Submission interface in accordance with the specification set out in section 2.3.1.

**DEXS-L 100** The *Document Source* role SHALL be able to consume the deregisterDocument operation defined within the Document Registration interface in accordance with the specification set out in section 2.4.1.

**DEXS-L 101** The *Document Source* role SHALL NOT consume the registerDocument operation defined within the Document Registration interface shown in section 2.4.1.

# 3 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 and information modellers. The major contribution here is expected from subject matter experts (i.e. clinicians), health informatics experts, (i.e. clinical terminologists and informaticians) and information architects who document information components and the appropriate clinical terminology concepts according to their preferred style of expression.

## 3.1 Service Operation Data Types

### 3.1.1 DocumentSubmissionRequest

The DocumentSubmissionRequest Entity provides a definition for the submitDocument interface input parameter.

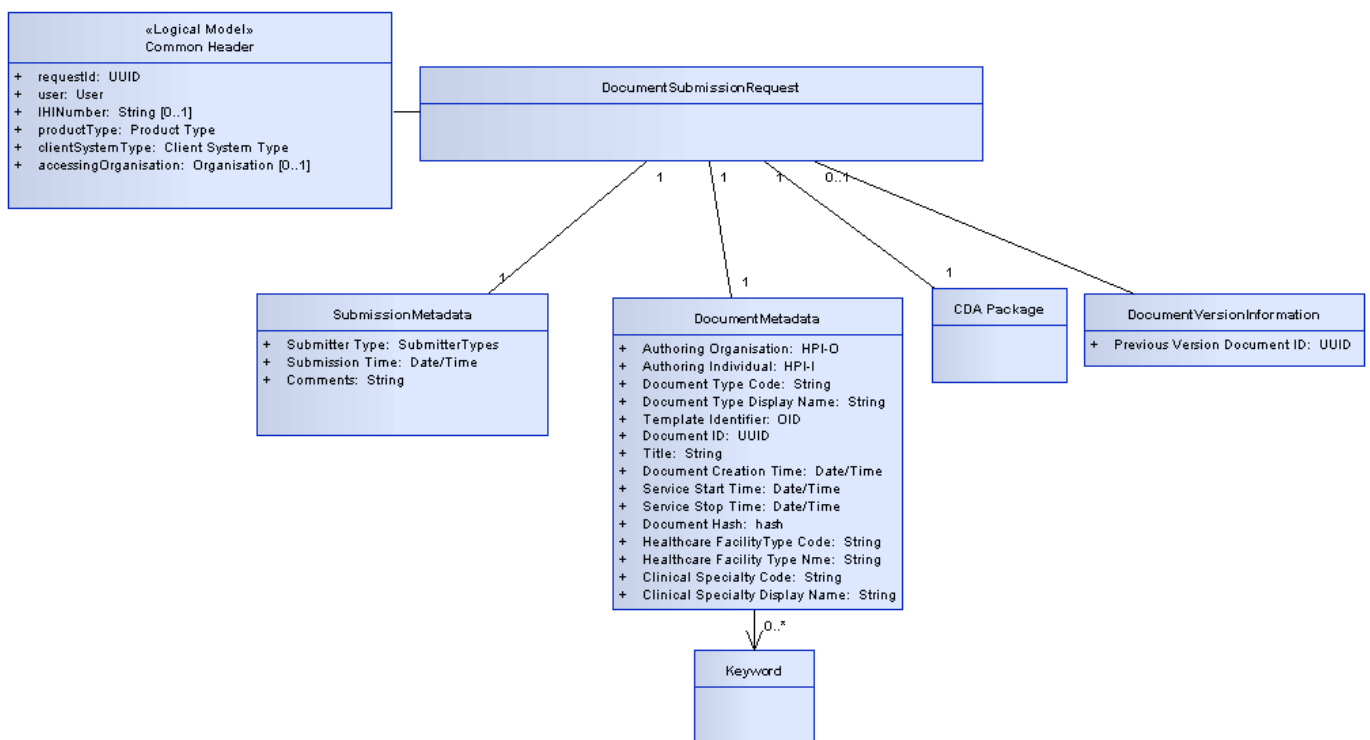


Figure 18 - DocumentSubmissionRequest

Table 7 - DocumentSubmissionRequest

| DocumentSubmissionRequest   |                    |  |             |
|-----------------------------|--------------------|--|-------------|
| Field                       | Data Type          | Description  | Cardinality |
| Common Header               | Common Header      | An instance of the PCEHR common service header.          | 1           |
| Submission Request Metadata | SubmissionMetadata | The metadata which relates to the entire the submission. | 1           |
| Document Metadata           | DocumentMetadata   | The metadata for the document.                           | 1           |

| <b>DocumentSubmissionRequest</b> |                            |  |      |
|----------------------------------|----------------------------|--|------|
| Document Package                 | CDA Package                | The entity encapsulating the root document and any related artefacts.  | 1    |
| Document Version Information     | DocumentVersionInformation | This entity encapsulates the relationship between the current document version and previously stored versions. | 0..1 |

### *Conformance Points*

- DEXS-L 102** A DocumentSubmissionRequest SHALL contain exactly one Document Package.
- DEXS-L 103** A DocumentSubmissionRequest SHALL only contain a Document Version Information entity where the current document is intended to be submitted as a revision to a document already stored within the PCEHR System.
- DEXS-L 104** When submitting a document on behalf of a healthcare provider, the Source System User ID within the Common Header SHALL be provided and the Source System User Type SHALL be set to HPI-I.
- DEXS-L 105** When submitting a document, the IHI Number field within the Common Header SHALL be provided.

### **3.1.2 SubmissionMetadata**

The SubmissionMetadata encapsulates the set of metadata that describes a Document Submission. Additional data is provided at the document level.

*Table 8 - SubmissionMetadata*

| <b>SubmissionMetadata</b> |                  |  |                    |
|---------------------------|------------------|--|--------------------|
| <b>Field</b>              | <b>Data Type</b> | <b>Description</b>   | <b>Cardinality</b> |
| Submitter Type            | String           | This is an enumeration and must be either:<br>HEALTHCARE_ORG<br>INDIVIDUAL     | 1                  |
| SubmissionDateTime        | Date time        | The date and time that the document was submitted to the PCEHR System.         | 1                  |
| Comments                  | String           | Comments deemed relevant by the entity submitting or registering the document. | 0..1               |

### 3.1.3 DocumentMetadata

The DocumentMetadata entity encapsulates the set of metadata associated with a document.

Table 9: DocumentMetadata

| <b>DocumentMetadata</b>          |                  |   |                    |
|----------------------------------|------------------|---|--------------------|
| <b>Field</b>                     | <b>Data Type</b> | <b>Description</b>  | <b>Cardinality</b> |
| Authoring Organisation           | HPI-O            | The identifier of the organisation that authored the document.  | 0..1               |
| Authoring Individual             | HPI-I            | The identifier of the individual that authored the document.  | 0..1               |
| Document Type Code               | String           | A code relating to the type of document being submitted.  | 1                  |
| Document Type Display Name       | String           | A display-friendly name for the document type.  | 0..1               |
| PCEHR Template Identifier        | OID              | The identifier of the template this document conforms to.   | 1                  |
| Document ID                      | UUID             | A universally unique identifier relating to the document. This must be unique within the PCEHR System.  | 1                  |
| Title                            | String           | An optional title for the given document.   | 0..1               |
| Document Creation Time           | Date time        | The time the document was created.  | 1                  |
| Service Start Time               | Date time        | The datetime that the service being performed, which caused the document to be created, started.  | 1                  |
| Service Stop Time                | Date time        | The datetime that the service being performed, which caused the document to be created, stopped.<br>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. | 1                  |
| Document Hash                    | Hash             | A SHA-512 hash representation of the document.  | 0..1               |
| Keyword                          | String           | One or more keywords which are related to the document submission.  | 0..*               |
| Healthcare Facility Type Code    | String           | A code identifying the type of healthcare facility where the event relating to this document submission request initiated.  | 1                  |
| Healthcare Facility Type Name    | String           | A display friendly name for the above code.   | 1                  |
| Clinical Speciality Code         | String           | A code identifying the clinical speciality where the event relating to this document submission request initiated.  | 1                  |
| Clinical Speciality Display Name | String           | A display friendly name for the above speciality.   | 1                  |

### Conformance Points

- DEXS-L 106** The Document ID field SHALL be universally unique within the entire PCEHR system.
- DEXS-L 107** The Document Hash field SHALL only be populated when the DocumentMetadata is provided as part of a DocumentRegistrationRequest. If the Document Hash value is provided as part of any other operation, the value SHALL be disregarded.
- DEXS-L 108** The Document Hash field SHALL be generated using the SHA-512 hashing algorithm.
- DEXS-L 109** The Replacement Document Identifier SHALL be provided where this document is intended to replace an existing document. Where this value is provided, the PCEHR System SHALL associate the new document with the document identified by the replacement document identifier and mark the new document as superseding the document identified by the replacement document identifier.
- DEXS-L 110** Where the Replacement Document Identifier does not match a document ID stored within the PCEHR System, the PCEHR System SHALL return an error and discard the submission request.
- DEXS-L 111** The *Document Source* SHALL store the Document ID of all documents submitted to the PCEHR system for use when replacing or deregistering documents.
- DEXS-L 112** Where the document is submitted on behalf of a Healthcare Provider, the *Document Source* SHALL provide the Authoring Organisation and Authoring Individual.
- DEXS-L 113** The Document Type Code SHALL be set to a value specified within the Concept Code column in Table 30 in Appendix B.
- DEXS-L 114** The Document Type Display Name SHALL be set to the Display Name in Table 30 in Appendix B, which directly corresponds to the Document Type Code provided within the message.
- DEXS-L 115** The Healthcare Facility Type Code SHALL be set to a value specified within the Concept Code column in Table 31 in Appendix B.
- DEXS-L 116** The Healthcare Facility Type Name SHALL be set to the Display Name in Table 31 in Appendix B, which directly corresponds to the Healthcare Facility Type Code provided within the message.
- DEXS-L 117** The Clinical Specialty Code SHALL be set to a value specified within the Concept Code column in Table 32 in Appendix B.
- DEXS-L 118** The Clinical Specialty Name SHALL be set to the Display Name in Table 32 in Appendix B, which directly corresponds to the Clinical Specialty Code provided within the message.

#### 3.1.3.1 Document Version Information

The Document Version Information entity allows a Document Source or Conformant Repository to relate two individual documents as being versions of the same root document.

Table 10: DocumentVersionInformation

| DocumentVersionInformation   |           |   |             |
|------------------------------|-----------|---|-------------|
| Field                        | Data Type | Description   | Cardinality |
| Previous Version Document ID | UUID      | The unique identifier of the document which this document replaces. | 1           |

*Conformance Points*

- DEXS-L 119** The *PCEHR System* SHALL return an error and discard the request where the Previous Version Document ID does not relate to a document associated with the targeted Individual’s PCEHR.
- DEXS-L 120** A document SHALL be deemed to be the current version of a document if it has not been replaced by another Document Submission or Registration request within the *PCEHR System*.
- DEXS-L 121** The *PCEHR System* SHALL return an error and discard the request where the document identified by the Previous Version Document ID does not represent the current version of the document.

**Informative note**

Situations may occur where all versions of a document are not sent to the PCEHR System. Where this occurs, the Document Source or PCEHR Conformant Repository will be required to provide the identifier of the version previously sent to the PCEHR System in the Previous Document ID field. This may require entities fulfilling the above roles to maintain the state of which document versions have been presented to the PCEHR System and the identifiers used.

**Informative note**

The PCEHR System will not validate or compare any replacement definitions which may be specified within the CDA Package against those provided within the Document Version Information.

**3.1.4 DocumentRetrievalRequest**

The DocumentRetrievalRequest entity represents the data associated with the retrieveDocument operation.

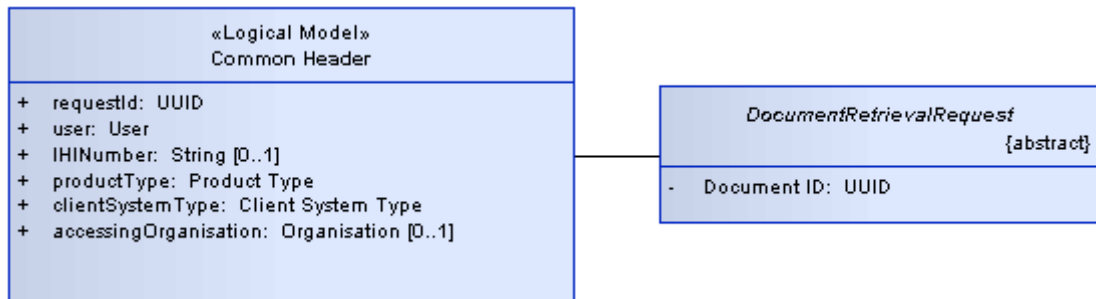


Figure 19 – DocumentRetrievalRequest

Table 11: DocumentRetrievalRequest

| DocumentRetrievalRequest |               |   |             |
|--------------------------|---------------|---|-------------|
| Field                    | Data Type     | Description                                     | Cardinality |
| Common Header            | Common Header | An instance of the PCEHR common service header. | 1           |
| Requested Document ID    | UUID          | The identifier of the document being retrieved. | 1           |

*Conformance Points*

- DEXS-L 122** The Requested Document ID SHALL exist within the specified PCEHR.
- DEXS-L 123** The IHI Number field within the Common Header SHALL be provided.

### 3.1.5 FindDocumentsRequest

This entity represents the data associated with the findDocuments operation.

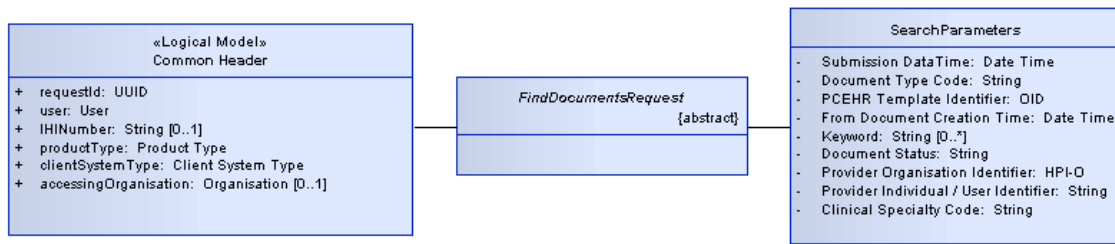


Figure 20 – FindDocumentsRequest

Table 12 – FindDocumentsRequest

| FindDocumentsRequest |                  |  |             |
|----------------------|------------------|--|-------------|
| Field                | Data Type        | Description  | Cardinality |
| Common Header        | Common Header    | An instance of the PCEHR common service header.<br>The search is limited to the IHI contained within the header.<br>The remainder of the data is not used to constrain the search results. | 1           |
| Search Parameters    | SearchParameters | The set of search criteria which should be applied to the search criteria.   | 1           |

Table 13 - SearchParameters

| SearchParameters   |           |  |             |                   |
|--------------------|-----------|--|-------------|-------------------|
| Field              | Data Type | Description  | Cardinality | Wildcards allowed |
| SubmissionDateTime | Date time | The date and time that the document was submitted to the PCEHR System.<br>If this parameter is supplied the query will only return documents submitted on or after this time.              | 0..1        | No                |
| Document Type Code | String    | A code relating to the type of document being submitted.<br>If this parameter is supplied, the query will only return documents which where asserted as being of this type when submitted. | 0..*        | No                |



| SearchParameters                 |           |  |             |                   |
|----------------------------------|-----------|--|-------------|-------------------|
| Field                            | Data Type | Description  | Cardinality | Wildcards allowed |
| PCEHR Template Identifier        | OID       | The identifier of the template this document conforms to.<br><br>If this parameter is supplied the query will only return documents which where asserted as conforming to this Template ID when submitted.   | 0..*        | No                |
| From Document Creation Time      | Date time | The Date time that the document was created.<br><br>If this parameter is supplied, the query will only return documents created on or after this time.   | 0..1        | No                |
| Keyword                          | String    | One or more keywords which are related to the document submission.<br><br>If this parameter is supplied, the query will only return documents which contain the specified keyword items on the PCEHR index entry.  | 0..*        | Yes               |
| Provider Organisation Identifier | HPI-O     | An assertion of the Organisations identity. This must be an HPI-O of accessing, participating or submitting healthcare organisation<br><br>If this parameter is supplied, the query will only return documents which were associated with this HPI-O on submission | 0..*        | No                |
| Clinical Speciality Code         | String    | A code identifying the clinical specialty where the event relating to this document submission request initiated.<br><br>If this parameter is supplied, the query will only return documents which were associated with this Clinical Specialty Type on submission | 0..1        | No                |

### Conformance Points

**DEXS-L 124** Where multiple instances of a repeating field identified within Table 12 occur, the PCEHR System SHALL combine the fields using an OR relationship.

**Informative Note**

For example, where a request message includes three Document Type entities with values of 'A', 'B' and 'C', the PCEHR System will find documents within the specified PCEHR where (Document Type = 'A' OR Document Type = 'B' OR Document Type = 'C').

**DEXS-L 125** The PCEHR System SHALL combine the fields specified in individual rows in Table 12 using an AND relationship. Only those fields that match the criteria set in all fields SHALL be returned.

**Informative Note**

For example, where a request message includes a Provider Organisation Identifier of 'HPI-O-1' and three Document Type entities with values of 'A', 'B' and 'C', the PCEHR System will find documents within the specified PCEHR where (Provider Organisation Identifier = 'HPI-O-1' AND (Document Type = 'A' OR Document Type = 'B' OR Document Type = 'C') ).

**3.1.6 SetDocumentAccessLevelRequest**

This entity represents the interface data associated with the SetDocumentAccessLevel operation.

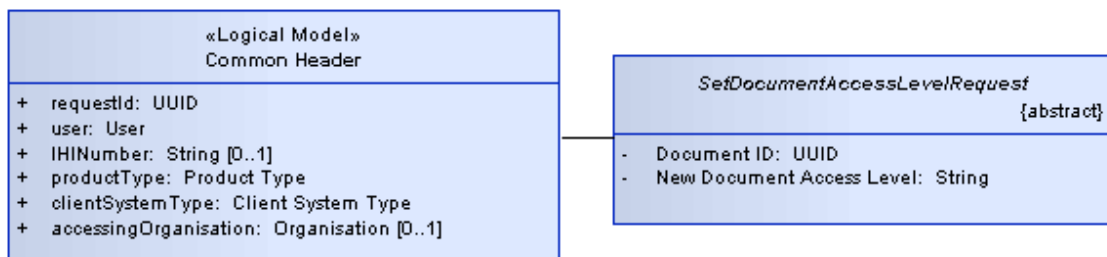


Figure 21 – SetDocumentAccessLevelRequest

Table 14 – SetDocumentAccessLevelRequest

| SetDocumentAccessLevelRequest |               |  |             |
|-------------------------------|---------------|--|-------------|
| Field                         | Data Type     | Description  | Cardinality |
| Common Header                 | Common Header | An instance of the PCEHR common service header.  | 1           |
| Document ID                   | UUID          | The identifier of the document being retrieved.  | 1           |
| New Document Access Level     | String        | The new value the access level should be set to. The actual values are platform specific and will be specified within the Technical Service Specification. | 1           |

*Conformance Points*

**DEXS-L 126** The IHI Number field within the Common Header SHALL be provided.

**3.1.7 RemoveDocumentRequest**

The RemoveDocumentRequest entity represents the data associated with the removeDocument and deregisterDocument operations.

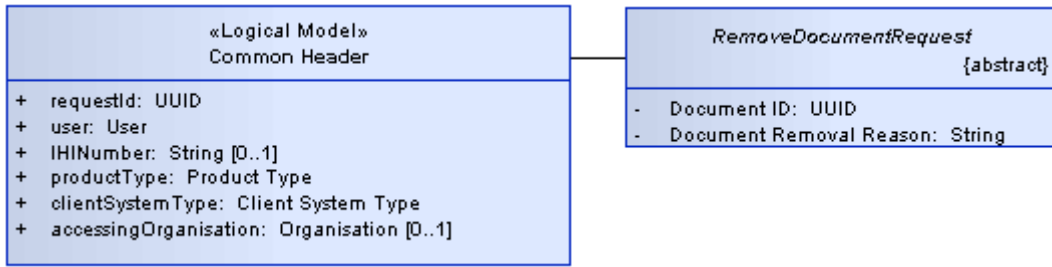


Figure 22 - RemoveDocumentRequest

Table 15 - RemoveDocumentRequest

| RemoveDocumentRequest   |               |   |             |
|-------------------------|---------------|---|-------------|
| Field                   | Data Type     | Description                                     | Cardinality |
| Common Header           | Common Header | An instance of the PCEHR common service header. | 1           |
| Document ID             | UUID          | The identifier of the document to be removed.   | 1           |
| Document removal reason | String        | The reason the document is being removed.       | 1           |

Conformance Points

**DEXS-L 127** The IHI Number field within the Common Header SHALL be provided.

### 3.1.8 DocumentRegistrationRequest

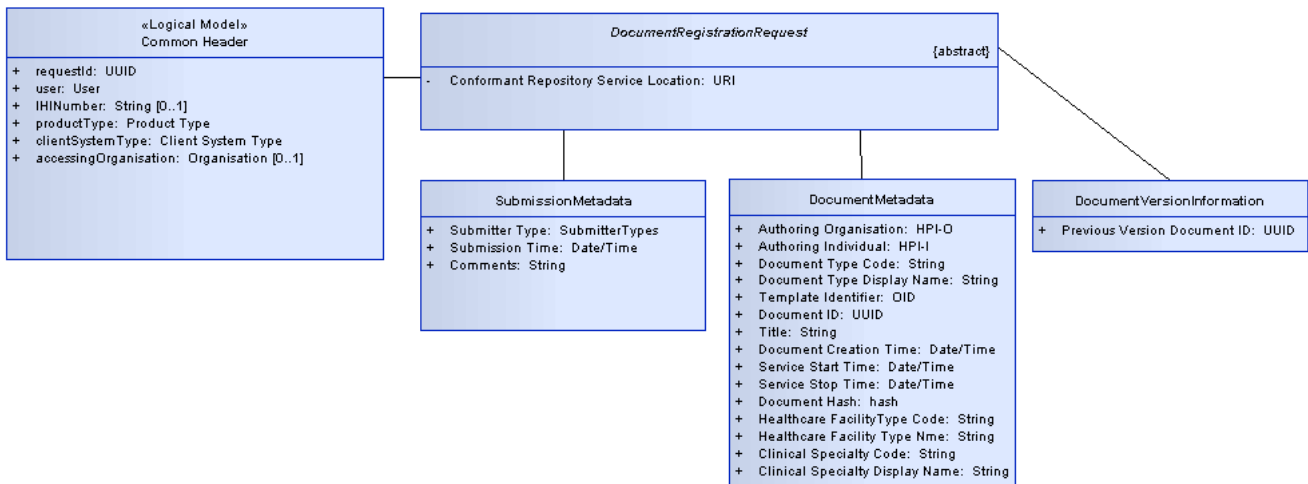


Figure 23 - DocumentRegistrationRequest

The DocumentRegistrationRequest entity encapsulates the data associated with the registerDocument operation request.

Table 16 – DocumentRegistrationRequest

| DocumentRegistrationRequest |               |   |             |
|-----------------------------|---------------|---|-------------|
| Field                       | Data Type     | Description                                     | Cardinality |
| Common Header               | Common Header | An instance of the PCEHR common service header. | 1           |

| DocumentRegistrationRequest            |                            |   |      |
|--|----------------------------|---|------|
| Submission Request Metadata            | SubmissionMetadata         | The metadata which relates to the entire the submission.  | 1    |
| Document Metadata                      | DocumentMetadata           | The metadata for the document.  | 1    |
| Document Version Information           | DocumentVersionInformation | This entity encapsulates the relationship between the current document version and previously stored versions.  | 0..1 |
| Conformant Repository Service Location | URI                        | The URI of the Conformant Repository retrieval service.<br><br>The structure of this reference is platform specific and as such is deferred to a Technical Service Specification. | 1    |

*Conformance Points*

- DEXS-L 128** The Conformant Repository Document ID SHALL be unique within the scope of the Conformant Repository storing the document.
- DEXS-L 129** The Conformant Repository Document ID SHALL not be re-used for other documents within a Conformant Repository even if the original document is removed.
- DEXS-L 130** The PCEHR Conformant Repository SHALL store the Document ID of all documents submitted to the PCEHR system for use when replacing or deregistering documents.
- DEXS-L 131** A DocumentRegistrationRequest SHALL only contain a Document Version Information entity where the current document is intended to be registered as a revision to a document already stored within the PCEHR System.
- DEXS-L 132** The IHI Number field within the Common Header SHALL be provided.

**3.1.9 DocumentRetrievalResponse**

This data type represents the response data associated with the retrieveDocument operation. This operation returns exactly one document and an error is returned if the request matches a number of documents greater or less than one.

This operation does not return the metadata associated with the document.

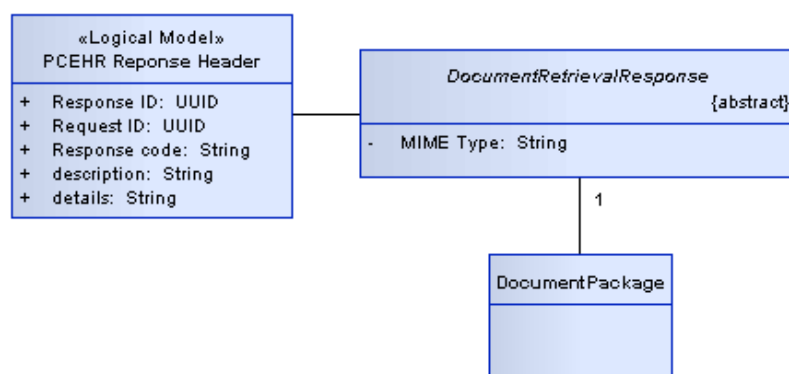


Figure 24 – DocumentRetrievalResponse

Table 17 - DocumentRetrievalResponse

| DocumentRetrievalResponse |                       |  |             |
|---------------------------|-----------------------|--|-------------|
| Field                     | Data Type             | Description  | Cardinality |
| Common Response Header    | PCEHR Response Header | An instance of the PCEHR common service header.  | 1           |
| MIME Type                 | String                | Multipart Internet Mail Extension. This is a common cross platform code set which allows systems to understand how to process a data item. | 1           |
| Document Package          | DocumentPackage       | The document package being retrieved.  | 1           |

### 3.1.10 FindDocumentsResponse

The FindDocumentsResponse data type represents the data associated with a response to a call to the findDocuments operation. The response returns a list of zero or more document IDs which match the supplied search criteria.

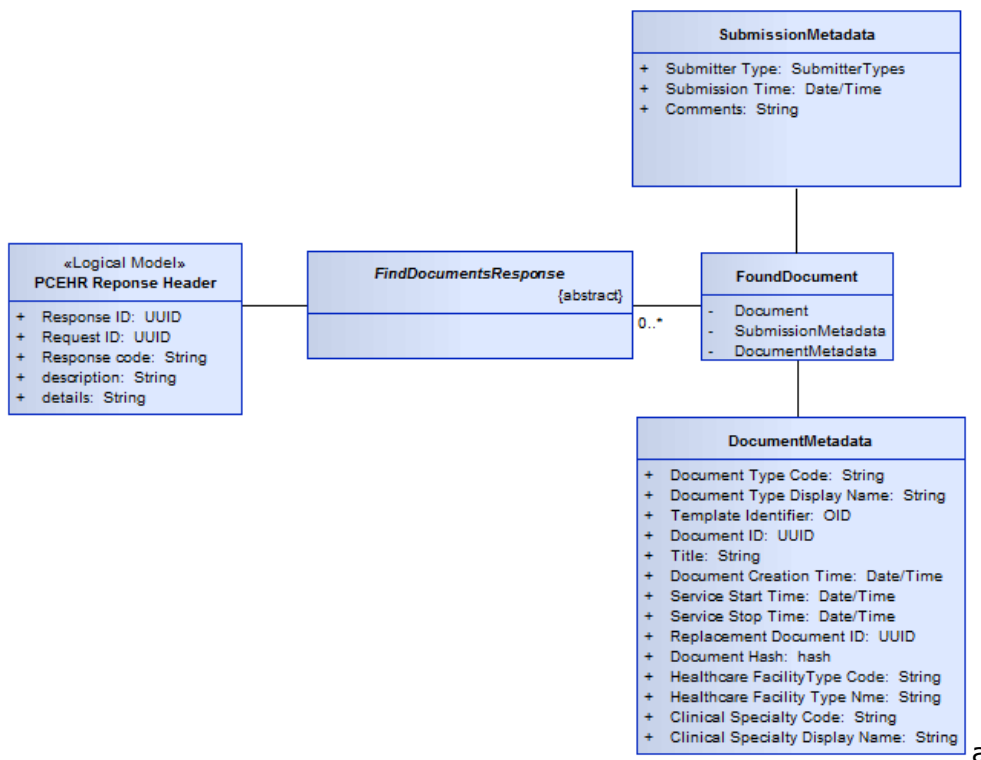


Figure 25 - Find Document Response

Table 18 – FindDocumentsResponse

| FindDocumentsResponse  |                       |   |             |
|------------------------|-----------------------|---|-------------|
| Field                  | Data Type             | Description   | Cardinality |
| Common Response Header | PCEHR Response Header | An instance of the PCEHR common service header.             | 1           |
| Found Document         | FoundDocument         | The identifier for a document matching the search criteria, | 0..*        |

Table 19 – FoundDocument

| FoundDocument               |                    |  |             |
|-----------------------------|--------------------|--|-------------|
| Field                       | Data Type          | Description  | Cardinality |
| Submission Request Metadata | SubmissionMetadata | The metadata which relates to the entire submission. | 1           |
| Document Metadata           | DocumentMetadata   | The metadata for the document.                       | 1           |

Conformance Points

**DEXS-L 133** The PCEHR System SHALL return one found document element for each document matching the search results (and policy enforcement criteria).

### 3.1.11 GenericServiceResponse

The GenericServiceResponse is the default response returned by most operations.

Table 20 - GenericServiceResponse

| GenericServiceResponse |                             |   |             |
|------------------------|-----------------------------|---|-------------|
| Field                  | Data Type                   | Description                                     | Cardinality |
| Common Response Header | CommonServiceResponseHeader | An instance of the PCEHR common service header. | 1           |

### 3.1.12 GenericServiceFault

The GenericServiceFault data type represents the data which may be returned by a Service in the event of an error.

Table 21 - GenericServiceFault

| GenericServiceFault    |                             |   |             |
|------------------------|-----------------------------|---|-------------|
| Field                  | Data Type                   | Description                                     | Cardinality |
| Common Response Header | CommonServiceResponseHeader | An instance of the PCEHR common service header. | 1           |

### 3.1.13 PCEHR Response Header

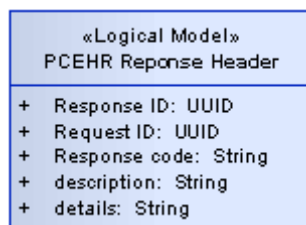


Figure 26 - PCEHR Response Header

Table 22 - PCEHR Response Header

| PCEHR Response Header |           |   |             |
|-----------------------|-----------|---|-------------|
| Field                 | Data Type | Description   | Cardinality |
| Response ID           | UUID      | A unique identifier for this request.                   | 1           |
| Request ID            | UUID      | The identifier of the original request.                 | 1           |
| Response code         | String    | A code indicating the processing status of the request. | 1           |
| Description           | String    | String describing the processing status of the request. | 0..1        |
| Details               | String    | A string providing extended details of the response.    | 0..1        |

### 3.2 Common Header

This section encompasses the set of attributes which make up the Common Header used in all PCEHR Service Requests.

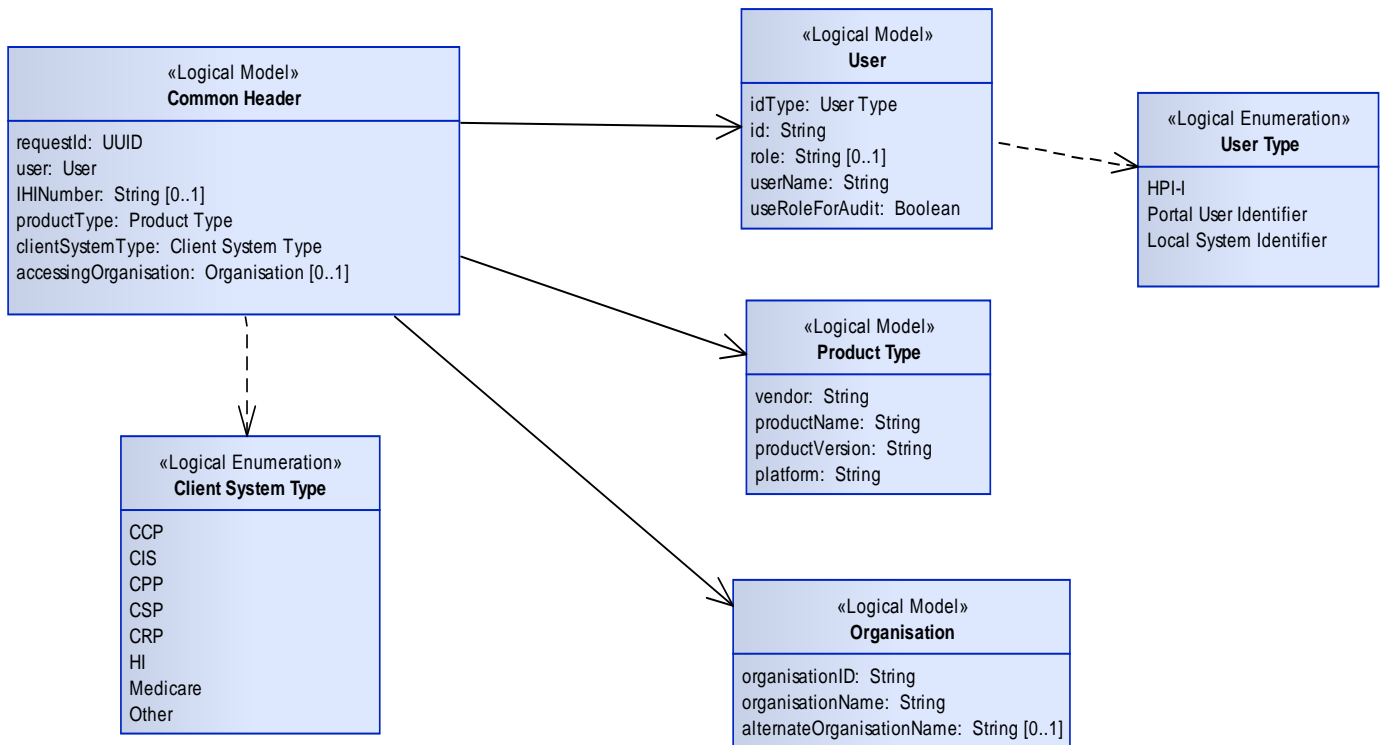


Figure 27 - Common Header

Table 23 – Common Header

| Common Header |           |  |             |
|---------------|-----------|--|-------------|
| Field         | Data Type | Description  | Cardinality |
| Request Id    | UUID      | Unique identification of the request                       | 1           |
| User          | User      | Identification details of the user originating the request | 1           |
| IHI Number    | String    | Individual IHI number                                      | 0..1        |

| Common Header          |              |   |             |
|------------------------|--------------|---|-------------|
| Field                  | Data Type    | Description   | Cardinality |
| Product Type           | Product Type | Identification of the system originating the request  | 1           |
| Client System Type     | Enumeration  | The type of client system. <ul style="list-style-type: none"> <li>Conformant Consumer Portal (CCP)</li> <li>Clinical Information System (CIS)</li> <li>Conformant Provider Portal (CPP)</li> <li>Contracted Service Provider System (CSP)</li> <li>Conformant Repository Provider System (CRP)</li> <li>HI Service (HI)</li> <li>Medicare</li> <li>Other</li> </ul> | 1           |
| Accessing Organisation | Organisation | The healthcare organisation on behalf of which the request is being made  | 0..1        |

### Conformance Points

- DEXS-L 134** The `Request Id` SHALL be a different value for every request made. It SHALL be created in a way which ensures that the value is unique across all service requests from any system.
- DEXS-L 135** The `IHI Number` SHALL be supplied for ALL requests specified within this document.
- DEXS-L 136** If the `IHI Number` is supplied, it SHALL contain a string representation using only numeric digits of a valid Individual Healthcare Identifier issued by the HI Service.

### 3.2.1 User

The User entity encompasses the identity information relating to the end user of the system originating a request.

Table 24 – User

| User               |             |  |             |
|--------------------|-------------|--|-------------|
| Field              | Data Type   | Description  | Cardinality |
| Id Type            | Enumeration | The type of user ID supplied. <ul style="list-style-type: none"> <li>HPI-I</li> <li>Portal User Identifier</li> <li>Local System Identifier</li> </ul> | 1           |
| Id                 | String      | User identifier  | 1           |
| Role               | String      | Optional field to enter the role of the user for use in audit logging if User Name is not appropriate  | 0..1        |
| User Name          | String      | The name of the user   | 1           |
| Use role for audit | Boolean     | If true, indicates that the role is to be used for audit display purposes rather than the User name  | 1           |



### Conformance Points

- DEXS-L 137** The `Id` SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
- DEXS-L 138** If the `Id Type` value of `HPI-I` is supplied, the `Id` SHALL contain a string representation using only numeric digits of a valid Healthcare Provider Identifier - Individual issued by the HI Service.
- DEXS-L 139** If the `Id Type` value of `Portal User Identity` is supplied, the `Id` SHALL contain a value issued by a trusted identity provider which relates a conformant portal user to a PCEHR identity.
- DEXS-L 140** If the `Id Type` value of `Local System Identifier` is supplied, the `Id` SHALL contain a representation of the access credential utilised to access the system originating the request
- DEXS-L 141** If the `Id Type` value of `Local System Identifier` is supplied, the `Id` SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
- DEXS-L 142** If the `Use role for audit flag` is set to `True`, the `Role` SHALL be a supplied
- DEXS-L 143** If the `Role` is supplied it SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
- DEXS-L 144** The `User Name` SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.

### 3.2.2 Product Type

The Product type entity encompasses the information identifying the system originating the request.

Table 25 – Product Type

| Product Type    |           |   |             |
|-----------------|-----------|---|-------------|
| Field           | Data Type | Description                                     | Cardinality |
| Vendor          | String    | The name of the vendor that produced the system | 1           |
| Product Name    | String    | A name used to identify the system              | 1           |
| Product Version | String    | System version number                           | 1           |
| Platform        | String    | The system platform being used                  | 1           |

### Conformance Points

- DEXS-L 145** The `Vendor` SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
- DEXS-L 146** The `Product Name` SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
- DEXS-L 147** The `Product Version` SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
- DEXS-L 148** The `Platform` SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.

### 3.2.3 Organisation

The Organisation entity encompasses the organisation identity information.

Table 26 – Organisation

| Organisation                |           |   |             |
|-----------------------------|-----------|---|-------------|
| Field                       | Data Type | Description   | Cardinality |
| Organisation ID             | String    | An HPI-O identifier for the Healthcare organisation         | 1           |
| Organisation Name           | String    | The name of the Healthcare organisation                     | 1           |
| Alternate Organisation Name | String    | An alternative display name for the Healthcare organisation | 0..1        |

#### Conformance Points

- DEXS-L 149** The `Organisation ID` SHALL contain a string representation using only numeric digits of a valid Healthcare Provider Identifier - Organisation issued by the HI Service.
- DEXS-L 150** The `Organisation Name` SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
- DEXS-L 151** The `Organisation Name` SHALL correspond to the name of the organisation asserted by the Healthcare Provider Identifier - Organisation contained in the `Organisation ID` field
- DEXS-L 152** If the `Alternate Organisation Name` is supplied it SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.

### 3.2.4 Client System Type

An enumeration of Client System Types which are supported by the PCEHR System, and as such, are allowable values for the common header when interacting with the PCEHR.

Table 27 – Client System Type

| Field                       | Description  |
|-----------------------------|--|
| Conformant Consumer Portal  | Conformant Consumer Portal   |
| Clinical Information System | A Clinical Information System such as a PAS, RIS, PMS, ED System, etc. |
| Conformant Provider Portal  | Conformant Provider Portal   |
| Contracted Service Provider | Contracted Service Provider  |
| Conformant Repository       | A Conformant Repository  |
| HI Service                  | The national Health Care Identifier service                            |
| Medicare                    | DHS Medicare systems   |
| Other                       | Any other system type  |

### 3.2.5 User Type

An enumeration of Source system user identifiers which are supported by the PCEHR System, and as such, are allowable values for the common header when interacting with the PCEHR System.

Table 28 – Source System User Type

| Field                   | Description   |
|-------------------------|---|
| HPI-I                   | A Health Care Provider Individual identifier issued by the HI Service.                                      |
| Portal User Identifier  | An identity which is managed and verified by the PCEHR system and identifies a user of a conformant portal. |
| Local System Identifier | A local user id not managed by the PCEHR system.  |

## 3.3 Other data types

### 3.3.1 CDA Package

The logical document package data model is re-used across both Provider-to-Provider and Provider-to-PCEHR interactions.

#### Conformance Points

- DEXS-L 153** A CDA package SHALL be created in conformance with the specification set out in the CDA Packaging Specification [CDA-PACKAGING], but with conformance points DEXS-L 154, DEXS-L 155 and DEXS-L 156 taking precedence.
- DEXS-L 154** The CDA Package SHALL ONLY contain the root (i.e. CDA\_ROOT.XML), eSignature (i.e. CDA\_SIGN.XML) and packaged attachment parts.
- DEXS-L 155** The CDA Package SHALL NOT contain the INDEX.HTM, README.TXT or Repository Metadata parts outlined in the CDA-Packaging Specification.
- DEXS-L 156** The CDA Package SHALL NOT contain any packaged attachment parts which are themselves CDA Packages or CDA Documents.

# Appendix A eHealth Interoperability Framework

This document has been produced in accordance with the eHealth Interoperability Framework [EIF]. The eHealth Interoperability Framework is based on a combination of the Australian Government Architecture (AGA)<sup>1</sup>, RM-ODP [RM-ODP] and HL7's Service Aware Interoperability Framework (SAIF)<sup>2,3</sup>.

The eHealth Interoperability Framework is used across NEHTA products to help deliver consistent and cohesive eHealth specifications. It provides a common specification language for teams involved in working in eHealth, supports the identification of secure and interoperable services and assists in analysing eHealth solutions to ensure that they will deliver the intended outcome.

## A.1 Three Layers of Abstraction

The framework has three layers of abstraction. The top layer focuses on defining the system in a stakeholder centric fashion at the conceptual level. The detail and refinement of the system definition is covered at the logical level and the implementable level maps the logical specification onto a number of technology-specific implementable specifications.

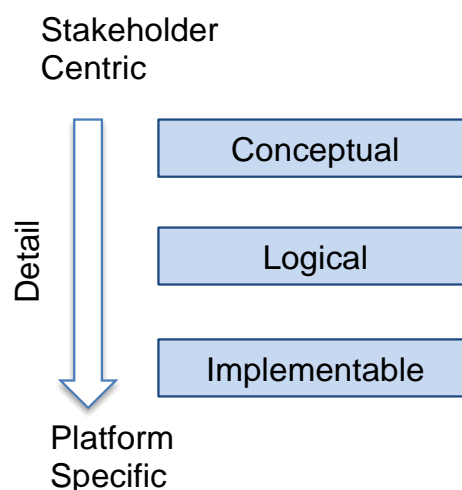


Figure 28 - Layers of abstraction

Separating the conceptual from the logical and the logical from the implementable allows service or other system components to be defined independently of technology choices. It also ensures that different stakeholder groups can play to their strengths at the different layers of abstraction.

In particular, the conceptual level is aimed at consumers, healthcare providers and government stakeholders. The logical level is aimed at more technical stakeholders, including health informaticians, implementers and the ICT industry. The implementable level is aimed at developers and testers.

<sup>1</sup> <http://www.finance.gov.au/e-government/strategy-and-governance/aga-rm/AGA-RM.html>

<sup>2</sup> <http://gforge.hl7.org/gf/project/saeaf/docman/?subdir=320>

<sup>3</sup> The EIF differs from other popular frameworks such as TOGAF. TOGAF is a process-oriented framework for creating and managing architectural artefacts. EIF is a specification framework used to describe system architectures. EIF, and the SAIF framework it is based on, are strongly influenced by ISO 10746, which is an international standard reference model for open distributed processing (RM ODP). The viewpoints and levels of abstraction in the EIF are more similar to the categories that underpin the Zachman framework. However, RM-ODP also provides a specification language that is compatible with UML.

## A.2 Five Viewpoints

The framework has five “viewpoints”:

- The *enterprise viewpoint*, which focuses on the purpose, scope, policies and business requirements for the system.
- The *information viewpoint*, which focuses on the semantics of the information and the information processing performed. It describes the information managed by the system and the structure and content type of the supporting data.
- The *computational viewpoint*, which describes the functionality provided by the system and its functional decomposition into objects and interfaces.
- The *engineering viewpoint*, which focuses on describing how the different elements described in the information and computational viewpoints will be deployed or distributed and how the system will meet the operational requirements.
- The *technology viewpoint*, which focuses on the choice of technology of the system and includes both the software and hardware platforms.

This document focuses on the enterprise, information and computational viewpoints and each viewpoint is covered in a separate section.

In addition to the viewpoints, the framework also prescribes three abstraction layers, namely the Conceptual Layer, the Logical Layer and the Implementable Layer.

The interaction between the viewpoints and the layers of abstraction can be represented as a matrix of views, as shown below. This document covers the cells shown.

Table 29 –Matrix of views

|               | Enterprise | Information          | Computational        | Engineering | Technology |
|---------------|------------|----------------------|----------------------|-------------|------------|
| Conceptual    |            |                      |                      |             |            |
| Logical       |            | <b>This Document</b> | <b>This Document</b> |             |            |
| Implementable |            |                      |                      |             |            |

## Appendix B Code Sets

Table 30 – Document Type Code value set

| Coding System | Concept Code | Display Name                  |
|---------------|--------------|-------------------------------|
| LOINC         | 60591-5      | Patient Summary               |
| LOINC         | 57133-1      | Referral note                 |
| LOINC         | 51852-2      | Letter                        |
| LOINC         | 18842-5      | Discharge Summarisation Note  |
| LOINC         | 34133-9      | Summarisation of episode note |
| NCTIS         | 100.16100    | e-Prescription                |
| NCTIS         | 100.16112    | Dispense Record               |
| NCTIS         | 100.16285    | Prescription Request          |

Table 31 – Healthcare Facility Type Code value set

| Coding System | Concept Code | Display Name                                |
|---------------|--------------|---|
| ANZSIC        | 8533         | Physiotherapy Services                      |
| ANZSIC        | 8520         | Pathology and Diagnostic Imaging Services   |
| ANZSIC        | 8710         | Child Care Services                         |
| ANZSIC        | 8790         | Other Social Assistance Services            |
| ANZSIC        | 7294         | Call Centre Operation                       |
| ANZSIC        | 8402         | Mental Health Hospitals                     |
| ANZSIC        | 5922         | Electronic Information Storage Services     |
| ANZSIC        | 7000         | Computer System Design and Related Services |
| ANZSIC        | 7291         | Office Administrative Services              |
| ANZSIC        | 6910         | Scientific Research Services                |
| ANZSIC        | 8534         | Chiropractic and Osteopathic Services       |
| ANZSIC        | 8511         | General Practice                            |
| ANZSIC        | 8102         | Higher Education                            |
| ANZSIC        | 8609         | Other Residential Care Services             |
| ANZSIC        | 6961         | Corporate Head Office Management Services   |
| ANZSIC        | 8591         | Ambulance Services                          |
| ANZSIC        | 5921         | Data Processing and Web Hosting Services    |
| ANZSIC        | 7561         | General Health Administration               |
| ANZSIC        | 7531         | Local Government Healthcare Administration  |
| ANZSIC        | 6321         | Health Insurance                            |

| <b>Coding System</b> | <b>Concept Code</b> | <b>Display Name</b>  |
|----------------------|---------------------|--|
| ANZSIC               | 8601                | Aged Care Residential Services                               |
| ANZSIC               | 9111                | Health and Fitness Centres and Gymnasia Operation            |
| ANZSIC               | 4623                | Transport  |
| ANZSIC               | 7521                | State Government Healthcare Administration                   |
| ANZSIC               | 8599                | Other Healthcare Services nec                                |
| ANZSIC               | 4271                | Retail Pharmacy  |
| ANZSIC               | 5910                | Internet Service Providers and Web Search Portals            |
| ANZSIC               | 7562                | Provision and administration of public health program        |
| ANZSIC               | 8401                | Hospitals (except Psychiatric Hospitals)                     |
| ANZSIC               | 8539                | Other Allied Health Services                                 |
| ANZSIC               | 7511                | Central Government Healthcare Administration                 |
| ANZSIC               | 6999                | Other Professional, Scientific and Technical Services n.e.c. |
| ANZSIC               | 8512                | Specialist Medical Services                                  |
| ANZSIC               | 8531                | Dental Services  |
| ANZSIC               | 8532                | Optometry and Optical Dispensing                             |

*Table 32 – Clinical Specialty Code value set*

| <b>Coding System</b> | <b>Concept Code</b> | <b>Display Name</b>                        |
|----------------------|---------------------|--|
| ANZSIC               | 7000-6              | Software installation service              |
| ANZSIC               | 8401-17             | Veterans Affairs Hospital                  |
| ANZSIC               | 8511-2              | General medical practitioner service       |
| ANZSIC               | 8539-11             | Midwifery service                          |
| ANZSIC               | 8531-4              | Dental practitioner service                |
| ANZSIC               | 5910-1              | Internet access provision                  |
| ANZSIC               | 8539-14             | Occupational therapy service               |
| ANZSIC               | 8532-6              | Spectacles dispensing                      |
| ANZSIC               | 8531-6              | Endodontic service                         |
| ANZSIC               | 8591-2              | Ambulance service                          |
| ANZSIC               | 8609-3              | Government nursing home for young disabled |
| ANZSIC               | 8790-9              | Youth welfare service                      |
| ANZSIC               | 8532-3              | Optical dispensing                         |
| ANZSIC               | 8531-9              | Orthodontic service                        |
| ANZSIC               | 6999-3              | Translation service                        |
| ANZSIC               | 8609-7              | Public alcohol and drug treatment centre   |

| <b>Coding System</b> | <b>Concept Code</b> | <b>Display Name</b>  |
|----------------------|---------------------|--|
| ANZSIC               | 8539-5              | Dental hygiene service   |
| ANZSIC               | 8601-6              | Local government hostel for the aged                                 |
| ANZSIC               | 8539-15             | Podiatry service   |
| ANZSIC               | 5921-12             | Electronic data processing service                                   |
| ANZSIC               | 8599-3              | Healthcare service nec   |
| ANZSIC               | 8102-5              | Teachers' college operation  |
| ANZSIC               | 8520-2              | Medical laboratory service   |
| ANZSIC               | 8511-4              | Rural general medical practice service                               |
| ANZSIC               | 8609-2              | Private profit nursing home for young disabled                       |
| ANZSIC               | 5921-2              | Application service provision  |
| ANZSIC               | 8401-6              | Hospital (except psychiatric or veterinary hospitals                 |
| ANZSIC               | 8401-2              | Day Hospital nec   |
| ANZSIC               | 8599-4              | Community Health Facility  |
| ANZSIC               | 7000-2              | Computer programming service   |
| ANZSIC               | 8532-1              | Contact lens dispensing  |
| ANZSIC               | 8710-1              | Before and/or after school care service                              |
| ANZSIC               | 8710-2              | Child care service   |
| ANZSIC               | 8790-3              | Aged care assistance service   |
| ANZSIC               | 8401-14             | Private freestanding day surgery centre.                             |
| ANZSIC               | 5921-15             | Web hosting  |
| ANZSIC               | 8512-11             | Paediatric service   |
| ANZSIC               | 7511-1              | Divisions of General Practice  |
| ANZSIC               | 8512-3              | Dermatology Service  |
| ANZSIC               | 8512-14             | Specialist medical clinic service                                    |
| ANZSIC               | 8539-13             | Nursing service  |
| ANZSIC               | 7000-4              | Internet and web design consulting service                           |
| ANZSIC               | 8534-1              | Chiropractic   |
| ANZSIC               | 8102-6              | Undergraduate school, university operation                           |
| ANZSIC               | 9111-1              | Health and Fitness Centres and Gymnasia Operation                    |
| ANZSIC               | 8512-10             | Orthopaedic service  |
| ANZSIC               | 8102-2              | Postgraduate school, university operation                            |
| ANZSIC               | 5922-1              | Computer data storage and retrieval service (except library service) |
| ANZSIC               | 8532-4              | Optician service   |



| <b>Coding System</b> | <b>Concept Code</b> | <b>Display Name</b>  |
|----------------------|---------------------|--|
| ANZSIC               | 7562-1              | Provision and administration of public health program              |
| ANZSIC               | 8790-1              | Adoption service   |
| ANZSIC               | 5910-5              | Internet service provision (ISP)                                   |
| ANZSIC               | 7294-2              | Telephone call centre operation                                    |
| ANZSIC               | 5921-13             | Microfiche or microfilm recording and imaging service              |
| ANZSIC               | 8401-11             | Public day centre/hospital   |
| ANZSIC               | 8601-3              | Private charitable nursing home for the aged                       |
| ANZSIC               | 8512-7              | Neurology service  |
| ANZSIC               | 8401-4              | Eye Hospital   |
| ANZSIC               | 8401-1              | Children's Hospital  |
| ANZSIC               | 7000-5              | Software development (customised) service (except publishing)      |
| ANZSIC               | 8601-4              | State government hostel for the aged                               |
| ANZSIC               | 8790-8              | Welfare counselling service  |
| ANZSIC               | 8531-11             | Periodontic service  |
| ANZSIC               | 8599-9              | Community health facility %oÿ other                                |
| ANZSIC               | 5921-8              | Data capture imaging service                                       |
| ANZSIC               | 8401-7              | Infectious diseases hospital (including human quarantine stations) |
| ANZSIC               | 8539-4              | Clinical psychology service  |
| ANZSIC               | 5921-6              | Computer time leasing or renting                                   |
| ANZSIC               | 5921-3              | Audio and visual media streaming service                           |
| ANZSIC               | 5921-1              | Application hosting  |
| ANZSIC               | 8539-6              | Dietician service  |
| ANZSIC               | 5910-3              | Internet search portal operation                                   |
| ANZSIC               | 8599-1              | Blood bank operation   |
| ANZSIC               | 8601-1              | Private profit nursing home for the aged                           |
| ANZSIC               | 8531-12             | Prosthodontics service   |
| ANZSIC               | 8609-6              | Other Local government hostel                                      |
| ANZSIC               | 8531-3              | Dental practice service  |
| ANZSIC               | 8512-18             | Urology service  |
| ANZSIC               | 8401-5              | General Hospital   |
| ANZSIC               | 8512-16             | Specialist surgical service  |
| ANZSIC               | 8512-19             | Emergency Department Services                                      |

| <b>Coding System</b> | <b>Concept Code</b> | <b>Display Name</b>  |
|----------------------|---------------------|--|
| ANZSIC               | 7291-6              | Reception service  |
| ANZSIC               | 8532-5              | Orthoptic service  |
| ANZSIC               | 8601-2              | Government nursing home for the aged                         |
| ANZSIC               | 8512-1              | Allergy specialist service                                   |
| ANZSIC               | 7531-1              | Local Government Healthcare Administration                   |
| ANZSIC               | 8532-2              | Eye testing (optometrist)                                    |
| ANZSIC               | 8512-4              | Ear, nose and throat specialist service                      |
| ANZSIC               | 8531-2              | Dental hospital (out-patient)                                |
| ANZSIC               | 8512-17             | Thoracic specialist service                                  |
| ANZSIC               | 8512-9              | Ophthalmology service  |
| ANZSIC               | 8401-15             | Public acute care Hospital                                   |
| ANZSIC               | 8520-4              | X-ray clinic service   |
| ANZSIC               | 8531-8              | Oral surgery service   |
| ANZSIC               | 8533-1              | Physiotherapy Services                                       |
| ANZSIC               | 8401-16             | Private acute care Hospital                                  |
| ANZSIC               | 6321-3              | Health insurance provision                                   |
| ANZSIC               | 7000-7              | Systems analysis service                                     |
| ANZSIC               | 8790-7              | Operation of soup kitchen (including mobile)                 |
| ANZSIC               | 8401-8              | Maternity Hospital   |
| ANZSIC               | 5921-10             | Data processing computer service                             |
| ANZSIC               | 8512-13             | Rheumatology service   |
| ANZSIC               | 5921-11             | Disk and diskette conversion and recertification service     |
| ANZSIC               | 5921-5              | Computer input preparation service                           |
| ANZSIC               | 8511-5              | Community Health Care  |
| ANZSIC               | 5921-4              | Automated data processing service                            |
| ANZSIC               | 8539-9              | Homoeopathic service   |
| ANZSIC               | 8531-1              | Conservative dental service                                  |
| ANZSIC               | 8512-6              | Hair transplant service (by registered medical practitioner) |
| ANZSIC               | 8601-5              | Charitable hostels for the aged                              |
| ANZSIC               | 4271-2              | Community Pharmacy   |
| ANZSIC               | 8401-9              | Obstetric Hospital   |
| ANZSIC               | 8401-13             | Private day centre/hospital.                                 |
| ANZSIC               | 8591-1              | Aerial ambulance service                                     |

| <b>Coding System</b> | <b>Concept Code</b> | <b>Display Name</b>   |
|----------------------|---------------------|---|
| ANZSIC               | 8609-8              | Private alcohol and drug treatment centre                                     |
| ANZSIC               | 7294-3              | Voice mailbox service   |
| ANZSIC               | 8102-4              | Specialist institute or college   |
| ANZSIC               | 8531-5              | Dental surgery service  |
| ANZSIC               | 8539-16             | Speech pathology service  |
| ANZSIC               | 5910-2              | Internet access service, on-line  |
| ANZSIC               | 8539-18             | Extended Allied Health services   |
| ANZSIC               | 8710-6              | Children's play programs  |
| ANZSIC               | 8609-5              | Other State government hostel   |
| ANZSIC               | 7291-4              | Office administrative service n.e.c.  |
| ANZSIC               | 8539-12             | Naturopathic service  |
| ANZSIC               | 5921-14             | Optical scanning service  |
| ANZSIC               | 8534-2              | Osteopathic Services  |
| ANZSIC               | 4623-1              | Transport   |
| ANZSIC               | 5910-6              | Portal web search operation   |
| ANZSIC               | 7561-1              | General Health Administration   |
| ANZSIC               | 8539-7              | Hearing aid dispensing  |
| ANZSIC               | 8512-2              | Anaesthetist service  |
| ANZSIC               | 8512-5              | Gynaecology services  |
| ANZSIC               | 8790-6              | Marriage guidance service   |
| ANZSIC               | 7294-1              | Telephone answering service   |
| ANZSIC               | 8710-5              | Family day care service   |
| ANZSIC               | 6910-1              | Medical research service  |
| ANZSIC               | 8599-5              | Public Community Health Centre  |
| ANZSIC               | 5922-2              | Electronic information storage and retrieval service (except library service) |
| ANZSIC               | 8401-18             | Defence Force Hospital  |
| ANZSIC               | 7521-1              | State Government Healthcare Administration                                    |
| ANZSIC               | 8599-8              | Community health facility - mental  |
| ANZSIC               | 8609-4              | Other charitable hostel   |
| ANZSIC               | 6910-2              | Social science research service   |
| ANZSIC               | 6961-1              | Corporate head office management  |
| ANZSIC               | 5910-7              | Web search portal operation   |
| ANZSIC               | 7000-3              | Computer software consulting service  |

| <b>Coding System</b> | <b>Concept Code</b> | <b>Display Name</b>                                    |
|----------------------|---------------------|--|
| ANZSIC               | 8710-3              | Childminding service                                   |
| ANZSIC               | 6999-2              | Professional, scientific and technical services n.e.c. |
| ANZSIC               | 8531-10             | Pedodontics service                                    |
| ANZSIC               | 8790-4              | Alcoholics anonymous operation                         |
| ANZSIC               | 8520-3              | Pathology laboratory service                           |
| ANZSIC               | 8520-1              | Diagnostic imaging service                             |
| ANZSIC               | 8539-10             | Hydropathic service                                    |
| ANZSIC               | 7291-1              | Billing and record-keeping service                     |
| ANZSIC               | 8539-2              | Aromatherapy service                                   |
| ANZSIC               | 7291-3              | Clerical service                                       |
| ANZSIC               | 8512-8              | Obstetrics service                                     |
| ANZSIC               | 7291-5              | Payroll processing                                     |
| ANZSIC               | 8402-2              | Private Mental Health Hospital                         |
| ANZSIC               | 8401-3              | Ear, nose and throat hospital                          |
| ANZSIC               | 6321-2              | Funeral benefit provision                              |
| ANZSIC               | 8512-15             | Specialist medical practitioner service nec            |
| ANZSIC               | 6321-1              | Dental insurance provision                             |
| ANZSIC               | 8402-1              | Public Mental Health Hospital                          |
| ANZSIC               | 8511-3              | General practice medical clinic service                |
| ANZSIC               | 8790-2              | Adult day care centre operation                        |
| ANZSIC               | 8102-7              | University operation                                   |
| ANZSIC               | 8599-2              | Health assessment service                              |
| ANZSIC               | 8531-7              | Oral pathology service                                 |
| ANZSIC               | 6999-1              | Interpretation service                                 |
| ANZSIC               | 8599-6              | Private (non-profit) Community Health Centre           |
| ANZSIC               | 8539-17             | Therapeutic massage service                            |
| ANZSIC               | 8539-8              | Herbalist service                                      |
| ANZSIC               | 4271-1              | Pharmacy, retail, operation                            |
| ANZSIC               | 8512-12             | Psychiatry service                                     |
| ANZSIC               | 8102-3              | Research school, university operation                  |
| ANZSIC               | 8401-12             | Public freestanding day surgery centre.                |
| ANZSIC               | 8401-10             | Women's Hospital                                       |
| ANZSIC               | 7000-1              | Computer hardware consulting service                   |

| <b>Coding System</b> | <b>Concept Code</b> | <b>Display Name</b>                                |
|----------------------|---------------------|--|
| ANZSIC               | 5921-9              | Data entry service (electronic)                    |
| ANZSIC               | 8511-1              | Flying doctor service                              |
| ANZSIC               | 8609-1              | Private charitable nursing home for young disabled |
| ANZSIC               | 8790-5              | Disabilities assistance service                    |

# Appendix C Acronyms and Terminology

A glossary of terms used within PCEHR is provided in the PCEHR System Glossary [PCEHR-SYSTEM-GLOSSARY]

## C.1 Acronyms

| Acronym  | Explanation   |
|----------|---|
| EHR      | Electronic Health Record                            |
| ID       | Identifier  |
| IETF RFC | Internet Engineering Task Force Request For Comment |
| IT       | Information Technology                              |
| MIME     | Multipurpose Internet Mail Extensions               |
| PCEHR    | Personally Controlled Electronic Health Record      |
| RLUS     | Retrieve, Locate and Update Service                 |
| RM-ODP   | Reference Model of Open Distributed Processing      |
| UML      | Unified Modelling Language                          |
| UUID     | Universally Unique Identifier                       |

## C.2 Specialised Terminology

| Term                        | Explanation   |
|-----------------------------|---|
| Clinical Information System | An Information System used to help support clinical activity.   |
| Conformant Repository       | A repository that conforms to the appropriate PCEHR standards and specifications required to ensure interoperability, privacy, integrity and long term availability of the healthcare information it holds. |
| Consumer Portal             | A consumer portal is a nationally operated portal to allow individuals to access their own PCEHR.   |
| Provider Portal             | A provider portal complements existing local health record systems by providing an alternative form of access to the PCEHR for healthcare providers.  |
| Service                     | A Service encapsulates the collaboration which occurs between two or more parties to achieve a goal. Each participant in the service may offer multiple Service Interfaces.                                 |
| Service Interface           | A Service Interface is a logical grouping of operations which can be offered by a participant within the context of a Service.  |
| Service Operation           | A Service Operation is a specific function which supports communication between two participants.   |

## Appendix D References

| Tag                     | Name  | Version<br>Release Date  |
|-------------------------|---|--------------------------|
| [CDA-PACKAGING]         | CDA Packaging Specification   | V1.0                     |
| [EIF]                   | eHealth Interoperability Framework<br>Nehta managed publication<br><a href="http://www.nehta.gov.au/connecting-australia/ehealth-architecture">http://www.nehta.gov.au/connecting-australia/ehealth-architecture</a>  | V1.0<br>02/12/2011       |
| [PCEHR_CON_OPS]         | PCEHR Concept of Operations: relating to a Personally Controlled Electronic Health Record System<br><a href="http://www.yourhealth.gov.au/internet/yourhealth/publishing.nsf/Content/pcehr-document">http://www.yourhealth.gov.au/internet/yourhealth/publishing.nsf/Content/pcehr-document</a> | 0.13.6<br>September 2011 |
| [PCEHR-SYSTEM-GLOSSARY] | PCEHR System - Glossary   | 1.0<br>6/05/2011         |
| [RM-ODP]                | Reference Model of Open Distributed Processing<br>ISO/IEC 10746-3:2009  | 2009                     |
| [RFC2119]               | IETF, <i>RFC 2119: Keywords for use in RFCs to Indicate Requirement Levels</i> , S. Bradner, March 1997<br><a href="http://ietf.org/rfc/rfc2119.txt">http://ietf.org/rfc/rfc2119.txt</a>  | 03/1997.                 |
| [RFC3881]               | RFC 3881<br><a href="http://www.ietf.org/rfc/rfc3881.txt">http://www.ietf.org/rfc/rfc3881.txt</a>   | September 2004           |
| [UML2010]               | UML Version 2.3<br><a href="http://www.omg.org/spec/UML/2.3/">http://www.omg.org/spec/UML/2.3/</a>  | Version 2.3<br>May 2010  |