nehta

Logical Service Specification

PCEHR Registration Service

Version 1.1 — 19 November 2012

Final

National E-Health Transition Authority

National E-Health Transition Authority Ltd
Level 25
56 Pitt Street
Sydney, NSW, 2000
Australia.
www.nehta.gov.au

Document Information

Approver	PCEHR Design Authority
Owner	Head of PCEHR
Contact officer	PCEHR Design Team
Contributors	PCEHR - Standards, Foundation and Architecture (SFA) Team

Version History

Date	Version	Name	Comments
3 February 2012	1.0	PCEHR Design Team	Final
19 November 2012	1.1	PCEHR Design Team	Updated to reflect policy changes enabling healthcare organisations to register consumers for a PCEHR. See release note for full details.

Table of Contents

Preface

Purpose

The purpose of this document is to define the logical interaction with the PCEHR Registration Service for conformant healthcare provider systems to enable the exchange of patient information and clinical records across the wider healthcare community.

This specification covers Computational and Informational viewpoints of the PCEHR Registration Service solution and is focused on providing all the information required for a healthcare provider, system integrator or software vendor to plan the inclusion of this functionality within their application.

At a functional level, the logical service specification (LSS) defines a set of system roles and the responsibilities associated with these roles, and sufficient elaboration of the functions and services that are available externally.

The logical service specification for the Registration Service will allow implementers of healthcare systems and portals to design standardised integration to the PCEHR System to enable registration for a PCEHR.

This logical service specification is supported by one or more technical service specifications which will allow more technical resources to execute the integration with the PCEHR System and to migrate through the Conformance and Certification process before commissioning.

The technical service specifications will also provide a technical realisation of the interfaces that are supported by the PCEHR System, along with details of how to authenticate and authorise service requests across secure channels to utilise those interfaces.

Intended Audience

This document is intended for:

- Developers and implementers of the National PCEHR System, 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 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 [PCEHRCONOPS], September 2011 release
- RM-ODP (Reference Model of Open Distributed Processing) reference model [RM-ODP].

Document Map

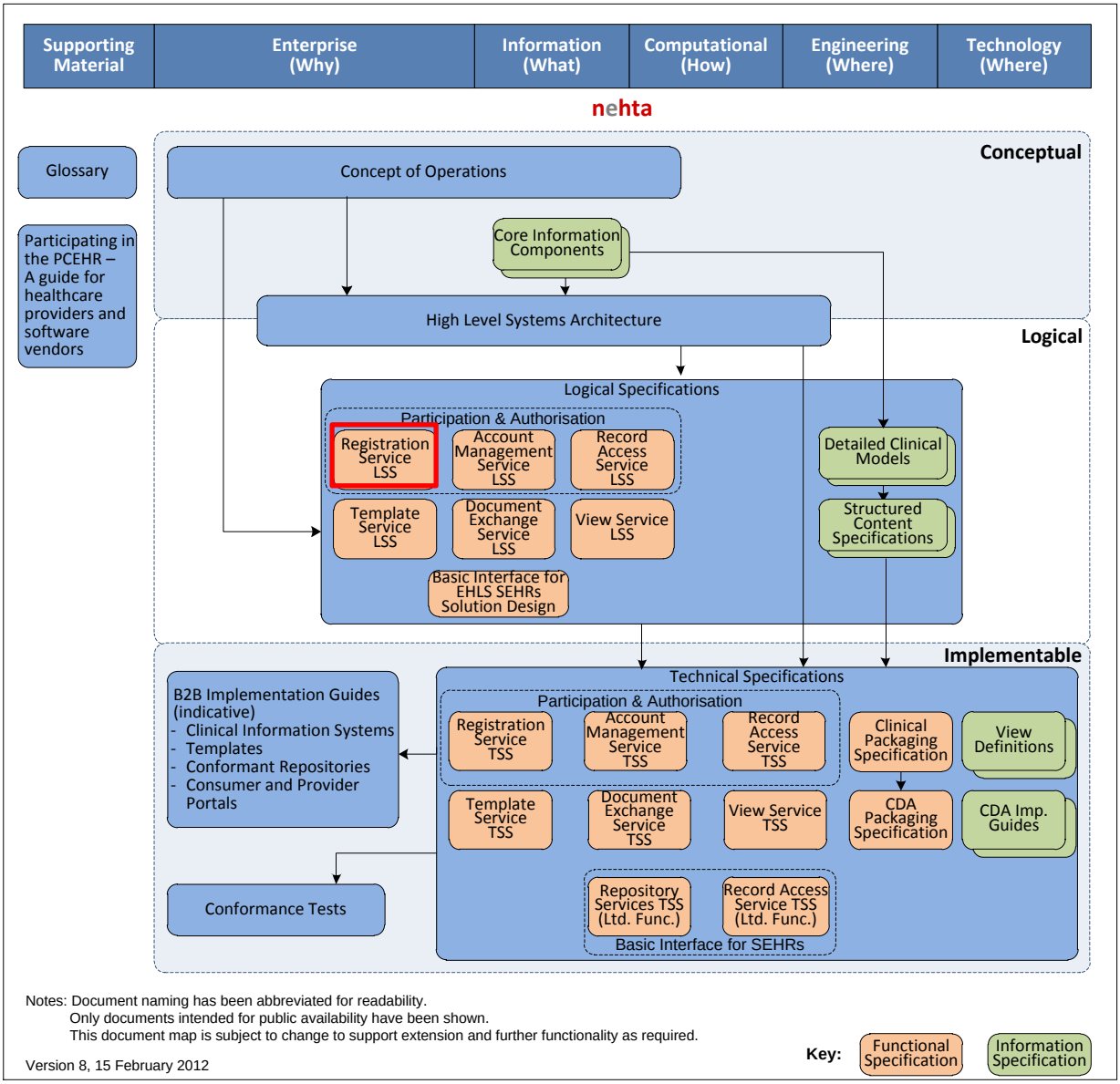

Figure 1 – Document map

Acronyms and Terminology

Please refer to Appendix B 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 C for details of the references in this document.

1 Introduction

1.1 Context

This document describes the Registration Service that forms part of the PCEHR Participation and Authorisation Service. Additional services that comprise the Participation and Authorisation Service are specified in separate documents. This document describes the functions available to register, deactivate and reactivate a PCEHR, link a Conformant Consumer Portal to a PCEHR.

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

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

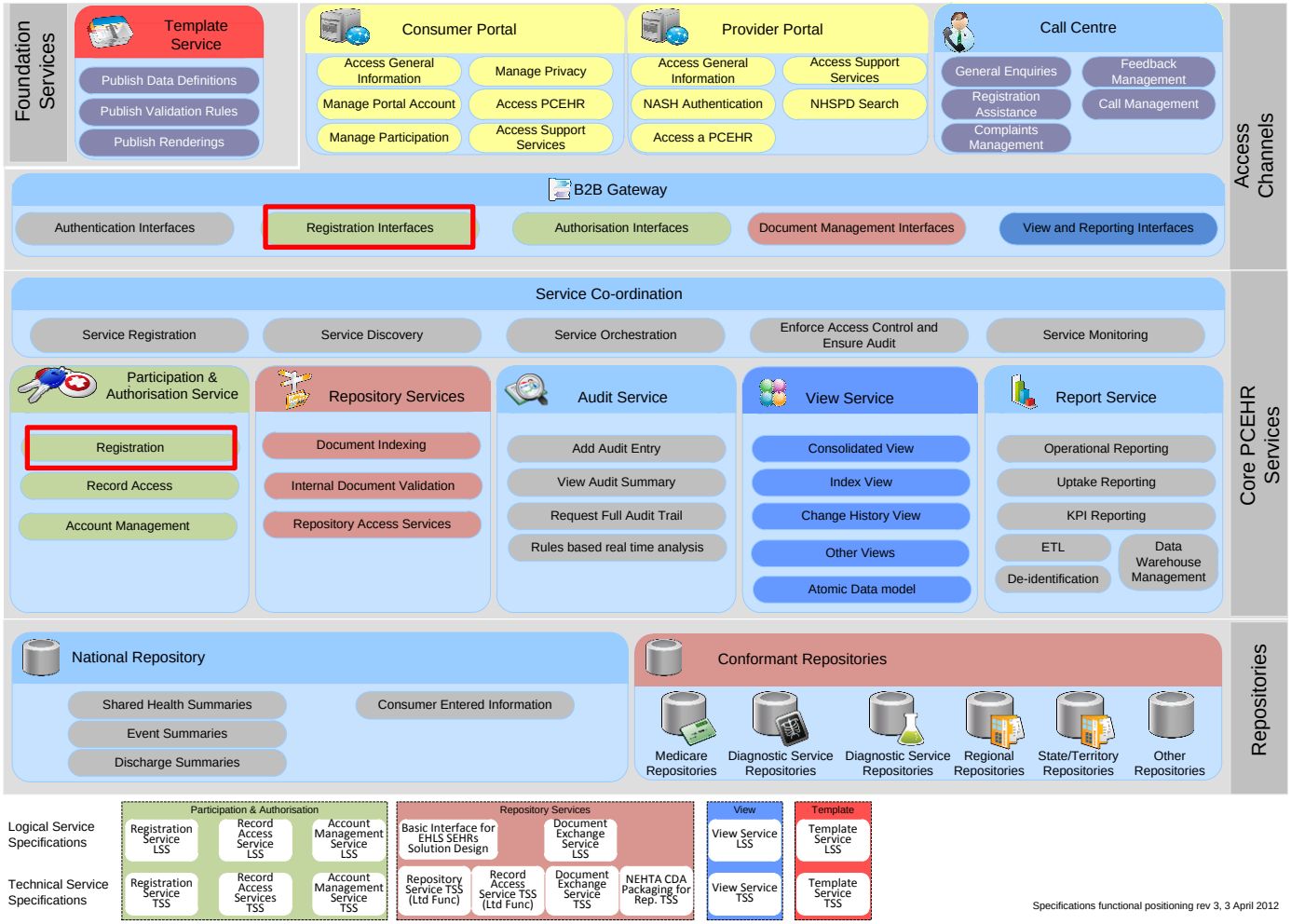

Figure 2 – PCEHR and the Registration Service

Registration is expected to be used by Clinical Information Systems (including Contracted Service Providers) and Conformant Consumer Portals. This is described in later sections of this document and illustrated in Figure 3 on page 11.

For further information and more context around the Registration Service and the PCEHR System, please refer to the Concept of Operations [PCEHRCONOPS].

1.2 Scope of Document

1.2.1 In Scope

The following items are in scope for this specification:

- A logical platform-agnostic specification for services offered to:
  - Register an individual's PCEHR
  - Deactivate an individual's PCHER
  - Reactiviate an individual's PCEHR
  - Link a Conformant Consumer Portal to an existing PCEHR.
- The specification of formal conformance points.

1.2.2 Out of Scope

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

- The specifications of how to implement the *Registration Service* on a particular technology platforms (such as via specific types of Web service stacks, messages or electronic documents) . These aspects are addressed in the related technical service specification.
- The specification of Conformant Portals or Clinical Information Systems.
- The internal design for national PCEHR components such as the Participation and Authorisation Service.
- Administrative and support related operations which are internal to the PCEHR System.
- Those services covered under other logical service specifications for the PCEHR System (shown in Figure 1 and Figure 2).

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 on page 31). 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:

REG-L 0	This is an example only. Conformance points SHALL be numbered and contain an identifier of 'REG-L' which identifies them as being applicable to the Registration Service Interface 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 prescribe the key functionality of the system to be built, while assuming that necessary infrastructure support and services are specified elsewhere (in the technical service specification [TSS]).

This viewpoint is mainly relevant for solution architects and software developers, although a high-level computational description of the interaction between information technology systems and users may also be relevant. This can be a refinement of the interactions defined in an enterprise viewpoint and can involve subject matter experts and business analysts.

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

The Registration Service will be exposed to external systems by the PCEHR System.

2.1.1 Overview

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

Figure 3 illustrates the key system roles and interactions within the scope of the PCEHR Registration Service.

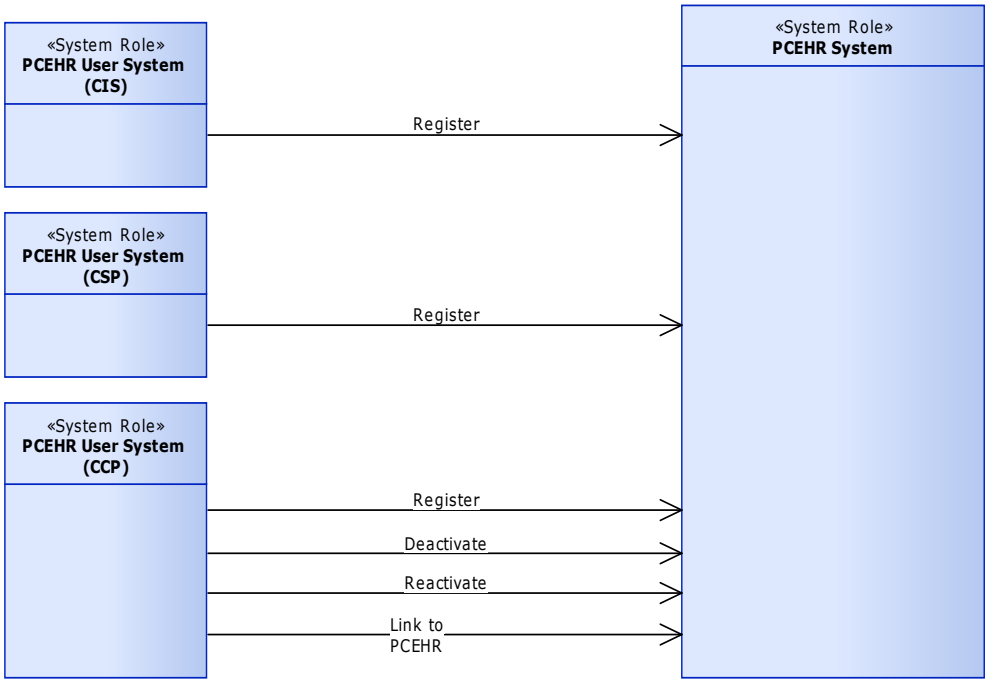

Figure 3 – Registration Service Interactions

2.1.2 System Roles

Table 1 provides a summary of the roles to give context to the following sections. The full detail of each role is provided in the sections indicated.

Table 1 - Registration Roles

System Role	Description and Rationale	Sections
PCEHR System	The *PCEHR System* allows consumers and their representatives to register for a PCEHR. The registration services are intended to allow registration in different ways for different categories of users with different needs.	2.5
PCEHR User System (CIS)	*PCEHR User System (CIS)* is the client software that is used by healthcare providers to interact with the PCEHR System. It is associated with a Healthcare Organisation.	2.6
PCEHR User System (CSP)	*PCEHR User System (CSP)* is a hosted practice management solution that is used by healthcare providers to interact with the *PCEHR System*. It may be associated with multiple Healthcare Organisations (HPI-Os).	2.7
PCEHR User System (CCP)	*PCEHR User System (CCP)* may be fulfilled by the third party conformant consumer portal like for example a private health insurer, who already has a range of registered consumers.	0

2.2 Services

Figure 4 shows how the interactions between the system roles defined above can be grouped into a service.

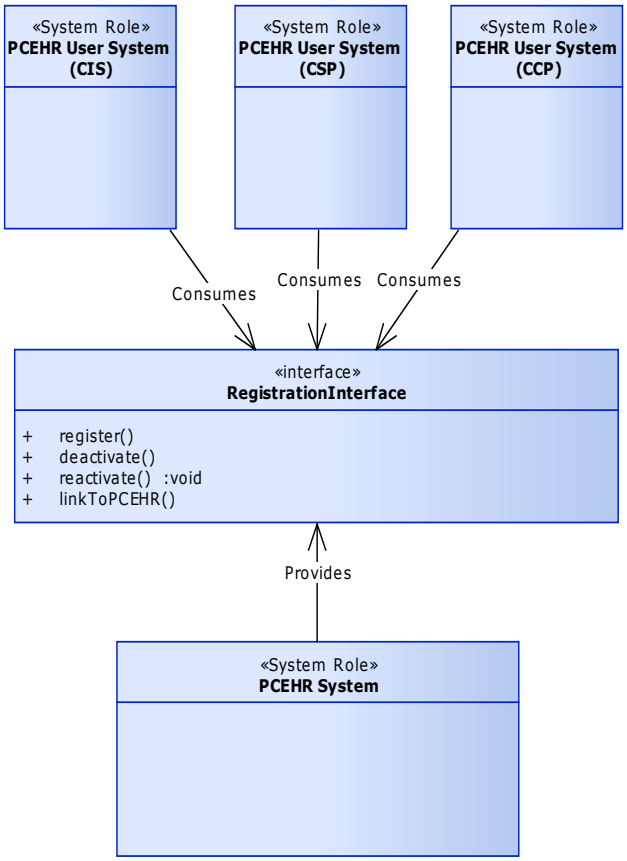

Figure 4 – Mapping of interactions to services

2.3 Registration Service Contract

The RegistrationInterface encapsulates the set of operations which support the registration, deactivation and reactivation of a PCEHR and linking of a Conformant Consumer Portal to a PCEHR.

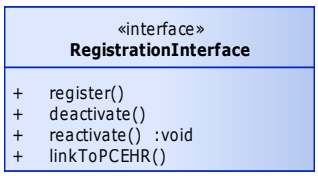

Figure 5 –RegistrationInterface

This interface provides the following operations.

Table 2 – Service Interface RegistrationInterface - Operations

Service Interface - Operations	Mandatory	Comment
register	Yes	This operation provides the ability for individuals or their representatives to register for a PCEHR.

Service Interface - Operations	Mandatory	Comment
dactivate	Yes	The deactivate operation provides the ability to deactivate an existing PCEHR.
reactivate	Yes	The reactivate operation provides the ability to reactivate an existing PCEHR.
linkToPCEHR	Yes	The linkToPCEHR operation provides the ability for a Conformant Consumer Portal to establish a link from a local user account to a PCEHR identity.

The following sub-sections provide operation-specific considerations and conformance points for each of the operations defined in Table 2.

2.3.1 Service Operation – register

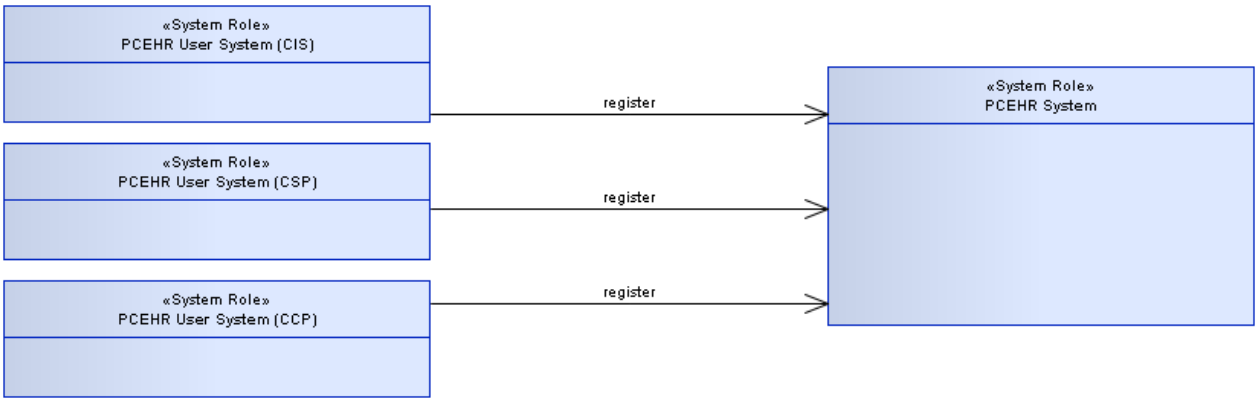

Figure 6 - register operation

Description

This operation provides the ability for individuals or their authorised representatives to register for a PCEHR by providing either a verified IHI or a set of demographic details.

Once this operation is completed, the individual will either be registered for a PCEHR or will receive an appropriate error message.

The register operation may be invoked by Service Consumer to create a PCEHR for a given individual. The individual will be matched using a verified IHI or demographic details.

Precondition

Conformance Points

REG-L 1	The *PCEHR User System* SHALL construct a message conformant with the definition in section 3.1.1 of this document
REG-L 2	To register an individual, the *PCEHR User System* (CIS, CSP and CCP) SHALL provide either a verified IHI or a set of demographic details for the individual.
REG-L 3	To register a dependant, the *PCEHR User System* (CIS, CSP and CCP) SHALL provide either the representative's verified IHI or the representative's demographic details and either the dependant's verified IHI or the dependant's demographic details.

REG-L 4	*PCEHR User System* (CCP) that does not act on behalf of a healthcare provider organisation (without an HPI-O) SHALL always use demographic details for registration.
REG-L 5	When a *PCEHR User System* (CIS, CSP and CCP) acts on behalf of a healthcare provider organisation *(*with an HPI-O), the IHI provided SHALL be verified by the HI Service prior to being used in the context of the PCEHR System.

Postcondition

Conformance Points

REG-L 8	On successful execution, the *PCEHR System* SHALL return a response message conformant with the response definition in section 3.1.2 of this document.

Input, Output and Fault

Table 3 – register Input, Output and Fault

Operation data fields	Data structures
Input	RegisterRequest
Output	RegisterResponse
Fault	GenericServiceFault

Exception Conditions

REG-L 9	If an error occurs while processing the request, the *PCEHR System* SHALL construct a response message conformant with the fault definition in section 3.1.9.
REG-L 10	If the *PCEHR System* finds that there is already an active PCEHR associated with the individual, the *PCEHR System* SHALL return an error response message conformant with the fault definition in section 3.1.9 that clearly indicates that the PCEHR already exists.

2.3.2 Service Operation – deactivate

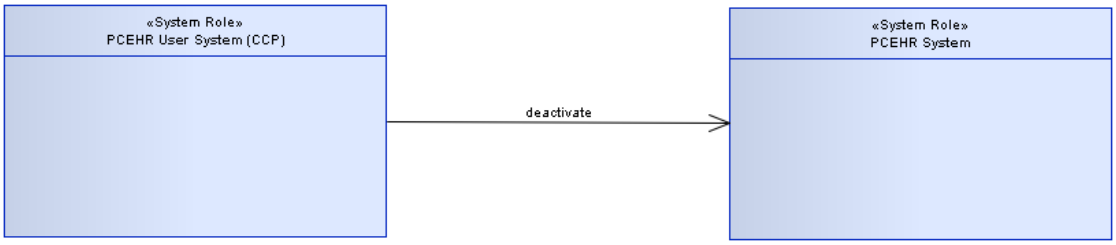

Figure 7 - deactivate operation

Description

The deactivate operation provides the ability to deactivate an existing PCEHR.

Precondition

Conformance Points

REG-L 11	The *PCEHR User System* SHALL construct a message conformant with the definition in section 3.1.3.

Postcondition

Conformance Points

REG-L 12	On successful execution, the PCEHR System SHALL return a response message conformant with the response definition in section 3.1.4.

Input, Output and Fault

Table 4 –deactivate Input, Output and Fault

Operation data fields	Data structures
Input	DeactivateRequest
Output	DeactivateResponse
Fault	GenericServiceFault

Exception Conditions

REG-L 13	If an error occurs while processing the request, the *PCEHR System* SHALL construct a response message conformant with the fault definition in section 3.1.9.
REG-L 14	If the *PCEHR System* finds that the PCEHR has already been deactivated, the *PCEHR System* SHALL return a response message conformant with the fault definition in section 3.1.9 that clearly indicates that the PCEHR has already been deactivated.
REG-L 15	If the *PCEHR System* finds that the PCEHR does not exist, the *PCEHR System* SHALL construct a response message conformant with the fault definition in section 3.1.9 that clearly indicates that the PCEHR does not exist.

2.3.3 Service Operation – reactivate

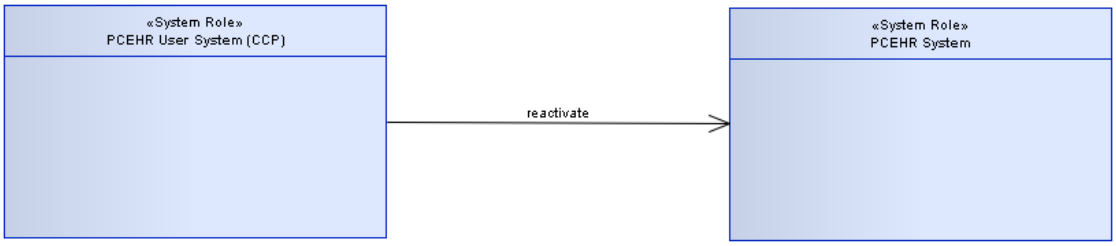

Figure 8 - reactivate operation

Description

The reactivate operation provides the ability to reactivate an existing PCEHR.

Precondition

Conformance Points

REG-L 16	The *PCEHR User System* SHALL construct a message conformant with the definition in section 3.1.5.
REG-L 17	*When the PCEHR User Systems* (CIS, CSP and CCP) perform this operation, the individual or their authorised representatives SHALL have accepted the terms and conditions.

Postcondition

Conformance Points

REG-L 18	On successful execution, the PCEHR System SHALL return a response message conformant with the response definition in section 3.1.6.

Input, Output and Fault

Table 5 - reactivate Input, Output and Fault

Operation data fields	Data structures
Input	ReactivateRequest
Output	ReactivateResponse
Fault	GenericServiceFault

Exception Conditions

REG-L 19	If an error occurs while processing the request, the *PCEHR System* SHALL construct a response message conformant with the fault definition in section 3.1.9.
REG-L 20	If the *PCEHR System* finds that the PCEHR is already active, the *PCEHR System* SHALL return a response message conformant with the fault definition in section 3.1.9 that clearly indicates that the PCEHR is already active.
REG-L 21	If the *PCEHR System* finds that the PCEHR does not exist, the *PCEHR System* SHALL construct a response message conformant with the fault definition in section 3.1.9 that clearly indicates that the PCEHR does not exist.

2.3.4 Service Operation – linkToPCEHR

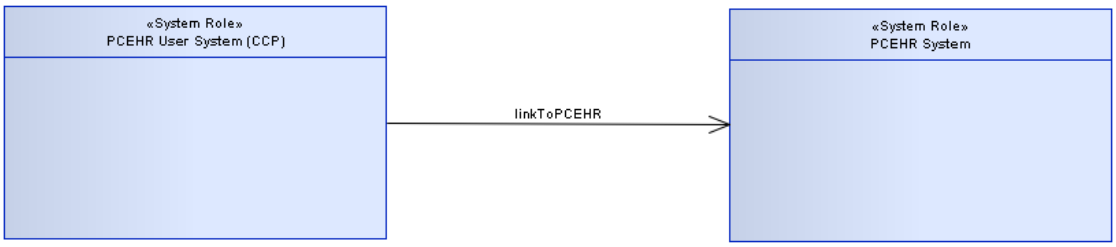

Figure 9 – linkToPCEHR operation

Description

By using the linkToPCEHR operation a Conformant Consumer Portal (CCP) can establish a link from a local user account to a PCEHR identity.

On successful execution, the *PCEHR User System* will be granted access to the PCEHR in a federated fashion by passing the unique identifier of the linked local user account to the National Consumer Portal Single Sign-On (SSO) service.

The CCP will need to create an unique identifier for the local user account to be linked and pass it to the linkToPCEHR operation together with a verified IHI or a set of demographic details. The *PCEHR User System* will validate the IHI or the set of demographic details provided and then link it to the PCEHR identity.

Precondition

Conformance Points

REG-L 28	The *PCEHR User System* SHALL construct a message conformant with the definition in section 3.1.7.
REG-L 29	To perfom this operation, the *PCEHR User System* (CCP) SHALL provide a unique identifier for the local user account and either a verified IHI or a set of demographic details for the individual.
REG-L 30	To perfom this operation, a *PCEHR User Systems* (CCP) that does not act on behalf of a healthcare provider organisation (without an HPI-O) SHALL always provide a unique identifier for the local user account and a set of demographic details for the individual.
REG-L 31	To perfom this operation, the *PCEHR User System* (CCP) SHALL set the unique identifier for the local user account in the common PCEHR header field *User Id*.
REG-L 32	To perfom this operation, the *PCEHR User System* (CCP) SHALL set the common PCEHR header field *Id Type* to *"Portal User Identifier"*.
REG-L 33	*When a PCEHR User Systems* (CIS, CSP and CCP) acts on behalf of a healthcare provider organisation *(*with an HPI-O), the status of the IHI SHALL always be verified in the context of the HI Service.

Postcondition

Conformance Points

REG-L 34	On successful execution, the *PCEHR System* SHALL return a response message conformant with the response definition in section 3.1.8.

Input, Output and Fault

Table 6 –inkToPCEHR Input, Output and Fault

Operation data fields	Data structures
Input	LinkToPCEHRRequest
Output	LinkToPCEHRResponse
Fault	GenericServiceFault

Exception Conditions

REG-L 35	If an error occurs while processing the request, the *PCEHR System* SHALL construct a response message conformant with the fault definition in section 3.1.9.
REG-L 36	If the *PCEHR System* finds that the conformant user account has already been linked to a PCEHR identity, the *PCEHR System* SHALL return a response message conformant with the fault definition in section 3.1.9 that clearly indicates that the conformant user account has already been linked to a PCEHR identity.
REG-L 37	If the *PCEHR System* finds that the PCEHR identity to be linked does not exist, the *PCEHR System* SHALL return a response message conformant with the fault definition in section 3.1.9 that clearly indicates that the PCEHR identity to be linked does not exist.

2.4 Common Specifications

2.4.1 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. The *PCEHR User System* is not required to record audit data, but it is recommended that it does.

Conformance Points

REG-L 38	The *PCEHR System* role SHALL audit all invocation attempts and results.
REG-L 39	The *PCEHR User System* SHOULD audit all interaction invocation attempts and the associated results. The audit entry SHOULD be logged in alignment with [RFC3881].
REG-L 40	The *PCEHR System* will use transaction details and message information for audit purposes and the *PCEHR User System* does not need to send any additional information.

2.5 System Role – PCEHR System

This section covers the provision of the Registration Service only. Other services provided by the *PCEHR System* are addressed in separate logical service specifications (see Figure 1).

2.5.1 Role Considerations

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

Identification

PCEHR System Identification is deferred to implementable detail within the technical service specification.

Authentication and Authorisation

Conformance Points

REG-L 41	All inter-system communication shall occur over a mutually authenticated secure and encrypted communication channel.

2.5.2 Services Provided

The PCEHR System provides the following logical services.

Conformance Points

REG-L 42	The *PCEHR System* SHALL provide the Registration Service.
REG-L 43	The *PCEHR System* SHALL provide the register service operation.
REG-L 44	The *PCEHR System* SHALL provide the deactivate service operation.
REG-L 45	The *PCEHR System* SHALL provide the reactivate service operation.
REG-L 46	The *PCEHR System* SHALL provide the linkToPCEHR service operation.

2.5.3 Services Consumed

The *PCEHR System* does not consume other services in the context of the Registration Service.

2.6 System Role – PCEHR User System (Clinical Information System)

2.6.1 Role Considerations

The *PCEHR User System (CIS)* may be fulfilled by a number of systems, including GP desktop Practice Management System, Public/Private Acute Care Patient Administration System, Emergency Department System and Community Care System.

Identification

The system role identification is derived from the information below.

Conformance Points

REG-L 49	The *PCEHR User System (CIS)* SHALL provide the Vendor, Product Name, Version Number and Platform for system identification when interacting with the *PCEHR System.*

Authentication and Authorisation

Conformance Point

REG-L 50	The *PCEHR User System (CIS)* SHALL use a NASH healthcare provider organisation (HPI-O) certificate for Transport Layer Security (TLS) when interacting with the *PCEHR System* for authentication.
REG-L 51	The *PCEHR System* SHALL use the HPI-O number from the NASH healthcare provider organisation (HPI-O) certificate for the *PCEHR User System (CIS)* authorisation.

PKI

Conformance Points

REG-L 52	The Service Invoker SHALL use a NASH healthcare provider organisation (HPI-O) certificate when interacting with the *PCEHR System*.

2.6.2 Services Provided

The *PCEHR User System (CIS)* does not provide any services.

2.6.3 Services Consumed

Conformance Points

REG-L 53	The *PCEHR User System (CIS)* SHALL consume the Registration Service.
REG-L 54	The *PCEHR User System (CIS)* SHALL use the register operation to create a new PCEHR.

2.7 System Role – PCEHR User System (Contracted Service Provider)

2.7.1 Role Considerations

The *PCEHR User System (CSP)* may be fulfilled by a hosted practice management system.

Identification

The system role identification is derived from the following information.

Conformance Points

REG-L 56	The *PCEHR User System (CSP)* SHALL provide the Vendor, Product Name, Version Number and Platform for system identification when interacting with the PCEHR System.
REG-L 57	The *PCEHR System* SHALL retrieve the *PCEHR User System (CSP)* identifier from the certificate used on the Transport Layer Security (TLS) by the *PCEHR User System (CSP)*.

Authentication and Authorisation

Conformance Points

REG-L 58	The *PCEHR User System (CSP)* SHALL use NASH compliant certificate for Transport Layer Security (TLS) when interacting with *PCEHR System* for authentication.
REG-L 59	The *PCEHR User System (CSP)* SHALL provide an HPI-O that the user is currently represented for *PCEHR User System (CSP)* authorisation.
REG-L 60	The *PCEHR System* SHALL use a HPI-O number provided by the *PCEHR User System (CSP)* for authorisation.
REG-L 61	The *PCEHR system* SHALL validate the relationship between the Healthcare Organisation (HPI-O) with the Contracted Service Provider (CSP).

2.7.2 Services Provided

The *PCEHR User System (CSP)* does not provide any services.

2.7.3 Services Consumed

Conformance Points

REG-L 62	The *PCEHR User System (CSP)* SHALL consume the Registration Service.
REG-L 63	The *PCEHR User System (CSP)* SHALL use the register operation to create a new PCEHR.

2.8 System Role – PCEHR User System (Conformant Consumer Portal)

2.8.1 Role Considerations

The *PCEHR User System (Conformant Consumer Portal)* may be fulfilled by the Conformant Consumer Portal.

Identification

The system role identification is derived from the following information.

Conformance Points

REG-L 66	*The PCEHR User System (*Conformant Consumer Portal*)* Vendor, Product Name, Version Number and Platform SHALL be used when interacting with the *PCEHR System* for system identification.

Authentication and Authorisation

Conformance Points

REG-L 67	The *PCEHR User System (Conformant Consumer Portal)* SHALL use NASH compliant certificate for Transport Layer Security (TLS) when interacting with the *PCEHR System* for authentication.

2.8.2 Services Provided

The *PCEHR User System (Conformant Consumer Portal)* does not provide any services.

2.8.3 Services Consumed

Conformance Points

REG-L 68	The *PCEHR User System (Conformant Consumer Portal)* SHALL consume the Registration Service.
REG-L 69	The *PCEHR User System (Conformant Consumer Portal)* SHALL use the register operation to create and activate a new PCEHR.
REG-L 70	The *PCEHR User System (Conformant Consumer Portal)* SHOULD use the deactivate operation to deactivate an existing PCEHR.
REG-L 71	The *PCEHR User System (Conformant Consumer Portal)* SHOULD use the reactivate operation to reactivate an existing PCEHR.
REG-L 74	The *PCEHR User System (Conformant Consumer Portal)* SHALL use the linkToPCEHR operation to link a confomant account to a PCEHR.

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 interest 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 RegisterRequest

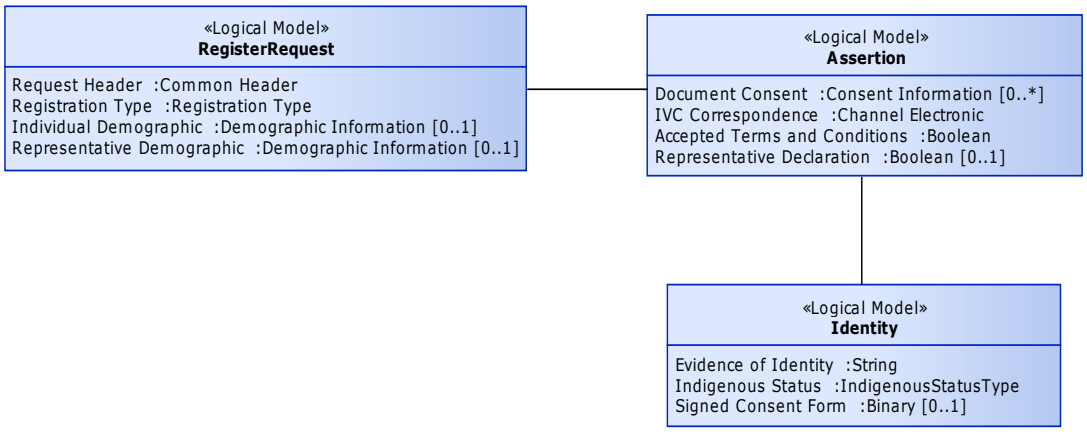

Figure 10 – RegisterRequest

Table 7 – RegisterRequest

RegisterRequest			
Field	**Data Type**	**Description**	**Cardinality**
Request Header	Common Header	Common request header	1..1
Registration Type	Enumeration	PCEHR Registration Type (Individual / Child)	1..1
Individual Demographic	Demographic Information	The Individual Demographic Information	0..1
Representative Demographic	Demographic Information	The Representative Demographic Information	0..1

Table 8 – Assertion

Assertion			
Field	**Data Type**	**Description**	**Cardinality**
Document Consent	Consent Information	Consent and status for different types of documents	0..*

Assertion			
IVC Correspondence	Channel	Mobile number or email address	1..1
Accepted Terms and Conditions	Boolean	Indicating if terms and conditions have been accepted	1..1
Representative Declaration	Boolean	Declaration must be registered if request is by a representative	0..1

Table 9 – Identity

Identity (Assertion)			
Field	**Data Type**	**Description**	**Cardinality**
Evidence of Identity Assertion	String	Identity verification methods	1..1
Indigenous Status	Indigenous Status Type	Standard indigenous status codes	1..1
Signed Consent Form	Binary	Scanned image of consent form	0..1

3.1.2 RegisterResponse

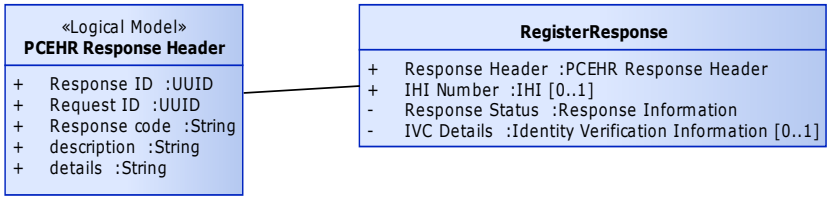

Figure 11 – RegisterResponse

Table 10 – RegisterResponse

RegisterResponse			
Field	**Data Type**	**Description**	**Cardinality**
Response Header	PCEHR Common Response	Common response header	1
IHI Number	IHI	PCEHR Individual IHI number	0..1
IVC Details	Identity verification information	Code and expiry date	0..1

3.1.3 DeactivateRequest

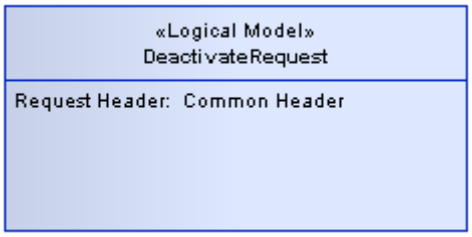

Figure 12 – DeactivateRequest

Table 11 – DeactivateRequest

DeactivateRequest			
Field	**Data Type**	**Description**	**Cardinality**
Request Header	Common Header	Common request header	1

3.1.4 DeactivateResponse

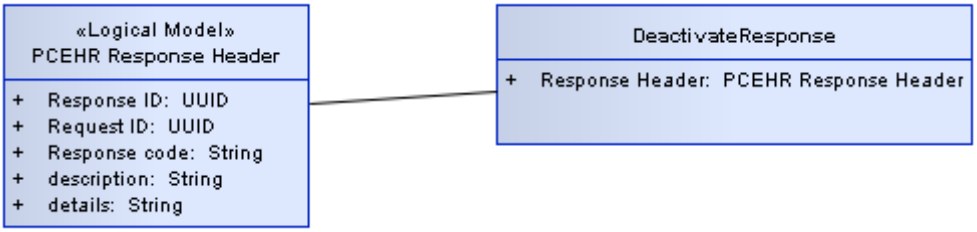

Figure 13 – DeactivateResponse

Table 12 – DeactivateResponse

DeactivateResponse			
Field	**Data Type**	**Description**	**Cardinality**
Response Header	PCEHR Common Response	Common response header	1

3.1.5 ReactivateRequest

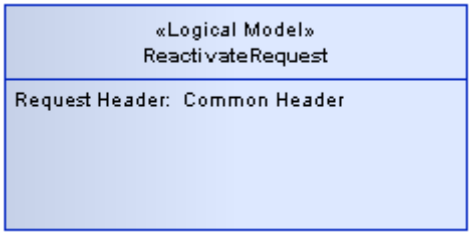

Figure 14 – ReactivateRequest

Table 13 – ReactivateRequest

DeactivateRequest			
Field	**Data Type**	**Description**	**Cardinality**
Request Header	Common Header	Common request header	1

3.1.6 ReactivateResponse

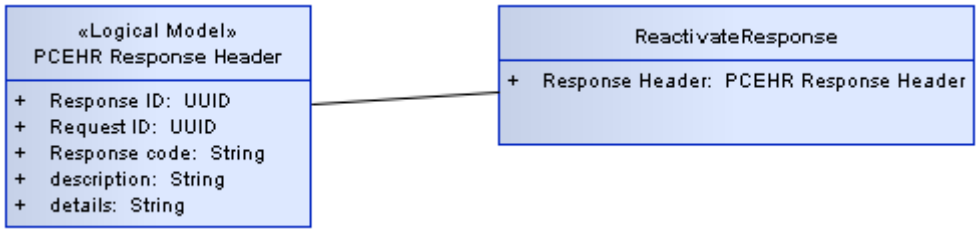

Figure 15 – ReactivateResponse

Table 14 – ReactivateResponse

DeactivateResponse			
Field	**Data Type**	**Description**	**Cardinality**
Response Header	PCEHR Common Response	Common response header	1

3.1.7 LinkToPCEHRRequest

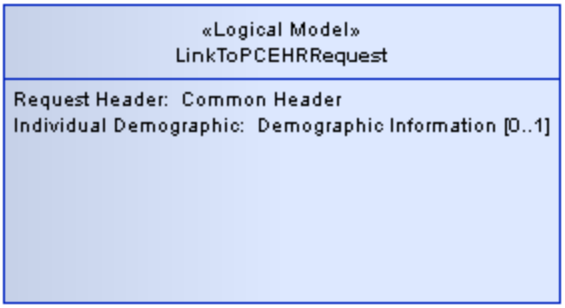

Figure 16 – LinkToPCEHRRequest

Table 15 – LinkToPCEHRRequest

LinkToPCEHRRequest			
Field	**Data Type**	**Description**	**Cardinality**
Request Header	Common Header	Common request header	1
Individual Demographic	Demographic Information	The Individual's demographic information	0…1

3.1.8 LinkToPCEHRResponse

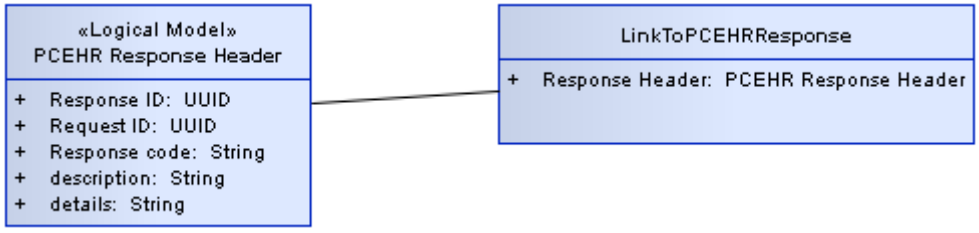

Figure 17 – LinkToPCEHRResponse

Table 16 – LinkToPCEHRResponse

LinkToPCEHRResponse			
Field	**Data Type**	**Description**	**Cardinality**
Response Header	PCEHR Common Response	Common response header	1

3.1.9 GenericServiceFault

Table 17 – GenericServiceFault

GenericServiceFault			
Field	**Data Type**	**Description**	**Cardinality**
Status Code	String	The status of the request	1..1
Status Description	String	A text description of the status	1..1
Status Detail	String	Optional additional information about the status, especially for warnings.	0..1

3.2 Common Data Types

3.2.1 Common Header

This section encompasses the set of attributes which make up the Common Header used in all PCEHR Service Requests. All fields referring to Source or Client systems convey information about the Service Invoker to the Service Provider.

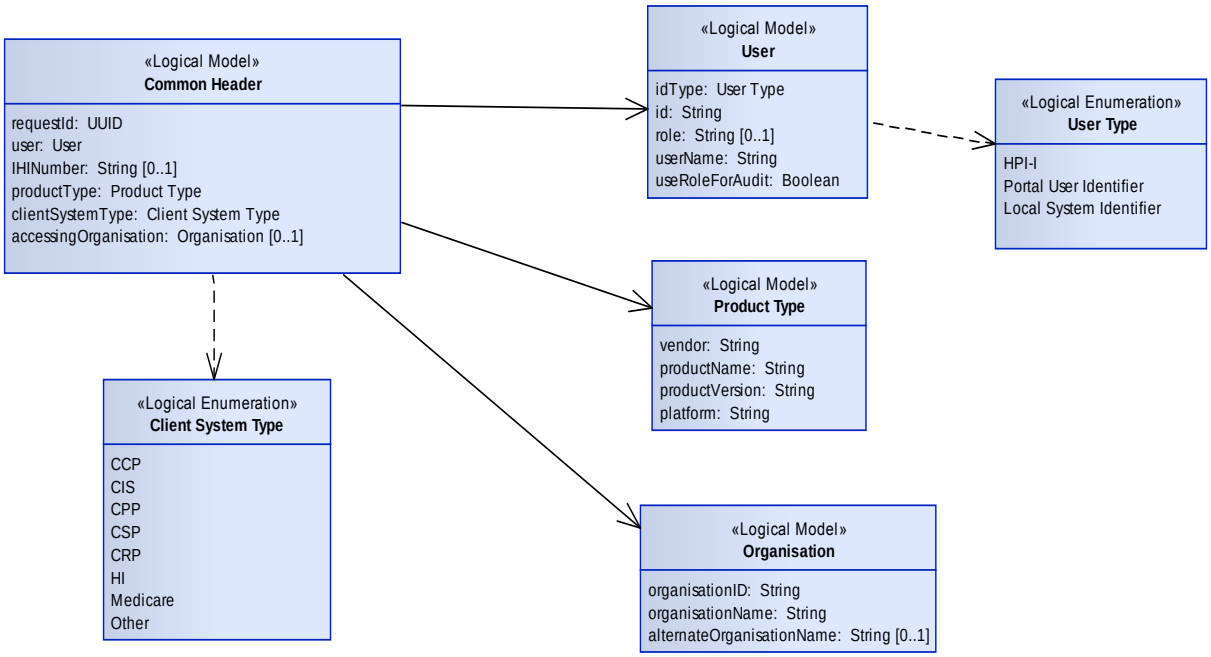

Figure 18 – Common Header

Table 18 – Common Header

Common Header			
Field	**Data Type**	**Description**	**Cardinality**
Request Id	UUID	Unique identification of the request	1..1
User	User	Identification details of the user originating the request	1..1
IHI Number	String	Individual IHI number	0..1
Product Type	Product Type	Identification of the system originating the request	1..1
Client System Type	Enumeration	The type of client system. • Conformant Consumer Portal (CCP) • Clinical Information System (CIS) • Conformant Provider Portal (CPP) • Contracted Service Provider System (CSP) • Conformant Repository Provider System (CRP) • HI Service (HI) • Medicare • Other	1..1
Accessing Organisation	Organisation	The healthcare organisation on behalf of which the request is being made	0..1

Conformance Points

REG-L 75	The **`Request Id`** SHALL be a different value for every request made. It SHALL be created in a way that ensures the value is unique across all service requests from any system.

3.2.2 User

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

Table 19 – User

User			
Field	**Data Type**	**Description**	**Cardinality**
Id Type	Enumeration	The type of user ID supplied. • HPI-I • Portal User Identifier • Local System Identifier	1..1
Id	String	User identifier	1..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..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..1

Conformance Points

REG-L 76	The **Id** SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
REG-L 77	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.
REG-L 78	If the **Id Type** value of **Portal User Identifier** is supplied, the **Id** SHALL contain a value issued by a trusted identity provider which relates a conformant portal user to a PCEHR identity.
REG-L 79	If the **Id Type** value of **Local System Identifier** is supplied, the **Id** SHALL contain a representation of the access credential used to access the system originating the request.
REG-L 80	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.
REG-L 81	If the **Use role for audit** flag is set to True, the **Role** SHALL be supplied.
REG-L 82	If the **Role** is supplied, it SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
REG-L 83	The **User Name** SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.

3.2.3 Product Type

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

Table 20 – Product Type

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

Conformance Points

REG-L 84	The **Vendor** SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
REG-L 85	The **Product Name** SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
REG-L 86	The **Product Version** SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
REG-L 87	The **Platform** SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.

3.2.4 Organisation

The Organisaton entity encompasses the organisation identity information.

Table 21 – Organisation

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

Conformance Points

REG-L 88	The **`Organisation ID`** SHALL contain a string representation using only numeric digits of a valid Healthcare Provider Identifier - Organisation issued by the HI Service.
REG-L 89	The **`Organisation Name`** SHALL NOT contain leading or trailing spaces. It SHALL NOT be a null or zero length string.
REG-L 90	The **`Organisation Name`** SHALL correspond to the name of the organisation asserted by the Healthcare Provider Identifier – Organisation contained in the **`Organisation ID`** field.
REG-L 91	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.

3.2.5 Client System Type

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

Table 22 – Client System Type

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

3.2.6 User Type

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

Table 23 – User Type

Field	Description
HPI-I	A Healthcare Provider Identifier – Individual 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 Demographic Information

Table 24 – Demographic Information

Demographic Information			
Field	**Data Type**	**Description**	**Cardinality**
Date Of Birth	Date	Date of birth	1
Sex	Enumeration	Sex enumeration (male, female, intersex, not stated)	1
Given Names	String	First name and middle name	0..2
Family Name	String	Family name	1
IHI Number	String	IHI number	0..1
Medicare Card Number	String	Medicare Card Number	0..1
Medicare Card IRN	String	Medicare Card IRN	0..1
DVA File Number	String	DVA File number	0..1
Military Health Identifier	String	Military Health Identifier (future use)	0..1
Indigenous Status	Enumeration	Standard codes	1..1

Informative note

The Demographics entity encapsulates the set of demographic data required to support a query for an individual on the Health Identifiers (HI) Service. When a match is found, the HI Service will return the full set of demographic data associated with the individual. This response data will be stored within the PCEHR System and may be richer than the data provided in the original matching request.

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)[1], RM-ODP [RM-ODP] and HL7's Service Aware Interoperability Framework (SAIF).[2][3]

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.

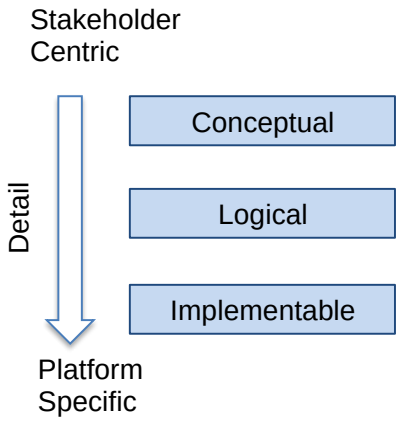

Figure 25- Layers of abstraction

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.

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

[2] http://gforge.hl7.org/gf/project/saeaf/docman/?subdir=320

[3] 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 25 - TableMatrix of views

	Enterprise	**Information**	**Computation**	**Engineering**	**Technology**
Conceptual					
Logical		**This Document**	**This Document**		
Implementable					

Appendix B Acronyms and Terminology

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

B.1 Acronyms

Acronym	Explanation
B2B	Business to Business
CCP	Conformant Consumer Portal
CIS	Clinical Information System
CPP	Conformant Provider Portal
CSP	Contracted Service Provider
EIF	eHealth Interoperability Framework
HPI-I	Healthcare Provider Identifier - Individual
HPI-O	Healthcare Provider Identifier - Organisation
IETF	Internet Engineering Task Force
IHI	Individual Healthcare Identifier
LSS	Logical Service Specification
NEHTA	National E-Health Transition Authority
PCEHR	Personally Controlled Electronic Health Record
TSS	Technical Service Specification
UML	Unified Modelling Language

B.2 Specialised Terminology

Term	Explanation
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 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 C References

Tag	Name	Version Release Date
[EIF]	eHealth Interoperability Framework Nehta Managed Publication http://www.nehta.gov.au/connecting-australia/ehealth-architecture	V1.0 2 December 2011
[PCEHRCONOPS]	PCEHR Concept of Operations: relating to a Personally Controlled Electronic Health Record System http://www.yourhealth.gov.au/internet/yourhealth/publishing.nsf/Content/pcehr-document	0.13.6 September 2011
[PCEHRGLOSS]	PCEHR System - Glossary	1.0 6/05/2011
[RFC2119]	IETF, *RFC 2119: Keywords for use in RFCs to Indicate Requirement Levels*, S. Bradner http://ietf.org/rfc/rfc2119.txt	March 1997
[RFC3881]	Security Audit and Access Accountability Message XML Data Definitions for Healthcare Applications http://tools.ietf.org/pdf/rfc3881.pdf	September 2004
[RM-ODP]	Reference Model of Open Distributed Processing ISO/IEC 10746-3:2009	2009
[TSS]	Registration Service Interface Technical Service Specification	To be released
[UML2010]	UML Version 2.3 http://www.omg.org/spec/UML/2.3/	Version 2.3 Release May 2010