nehta

Technical Service Specification

PCEHR Record Access Service

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Final

National E-Health Transition Authority

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Document Information

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Version History

Date	Version	Name	Comments/type of review
2011-11-10	1.0	PCEHR Design Team	Initial limited availability release to eHealth Lead Sites.
2011-12-20	1.1	PCEHR Design Team	Draft for limited release.
2012-01-18	1.2	PCEHR Design Team	Updated to reflect Tiger Team Feedback
2012-04-26	1.3	PCEHR Design Team	Updated to include ATS5821 signature profile implementation, typo corrections and error codes update.

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Preface

Purpose

The purpose of this document is to provide an implementable technical interface specification for the Record Access Service.

This document should be read in conjunction with the Record Access Service Logical Service Specification [PCEHR-RAS-LSS].

Intended Audience

This document is intended primarily for:

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

Document Map

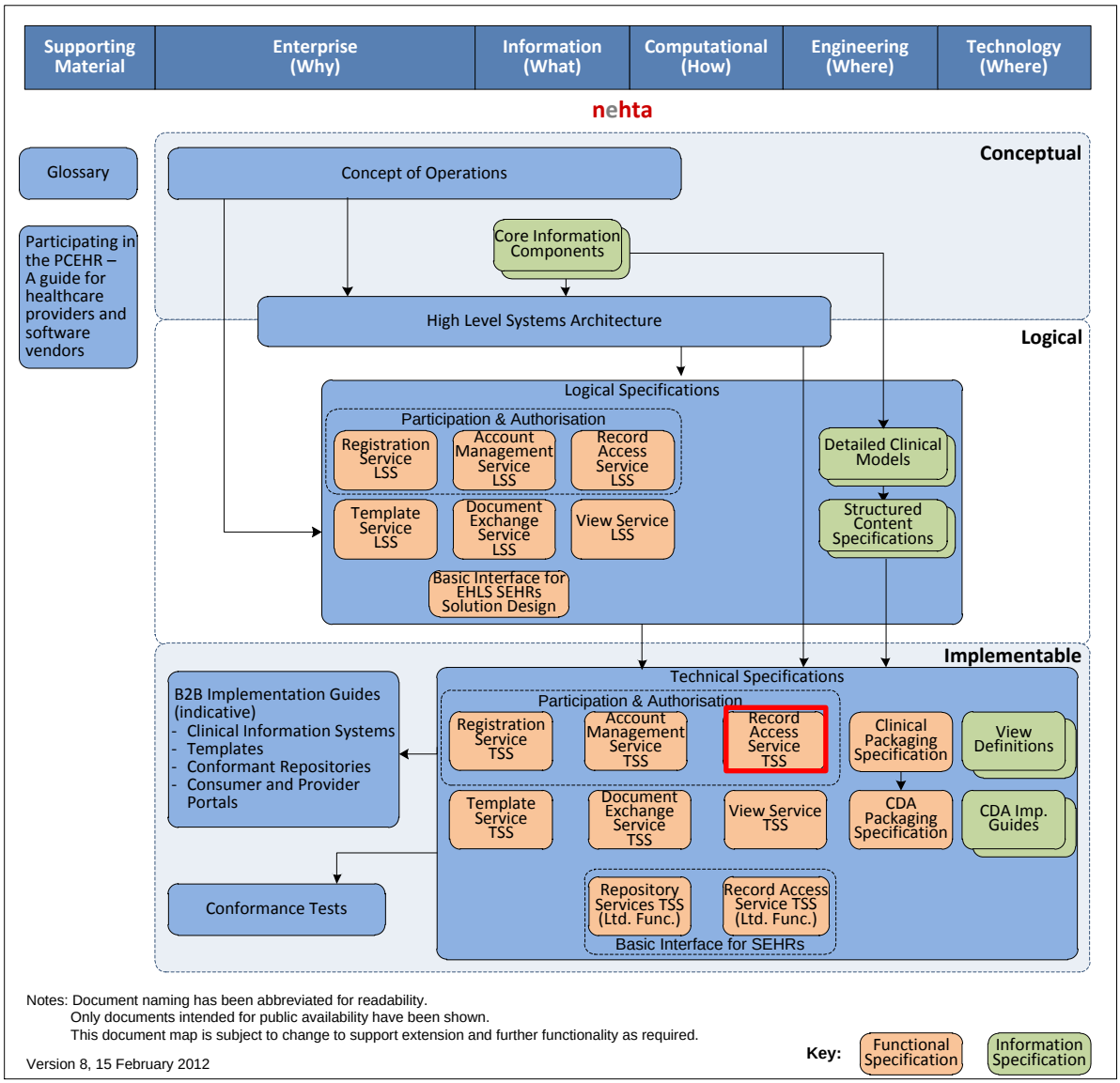

Figure 1 - Document Map

Acronyms and Terminology

Please refer to Appendix B for definitions of the acronyms and terminology used within 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 used within this document.

1 Introduction

1.1 Context

The *PCEHR Record Access Service Logical Service Specification* [PCEHR-RAS-LSS] presents a platform-independent specification of the PCEHR Record Access Service. This Technical Service Specification presents an implementable interface that is supported by the PCEHR System and can be used by systems integrating to the PCEHR System. This specification also extends the previous *PCEHR Record Access Technical Service Specification version 1.0* [PCEHR-RAS-V1.0]

Figure 2 shows how the set of operations addressed within this specification fit into the broader set of PCEHR functionality.

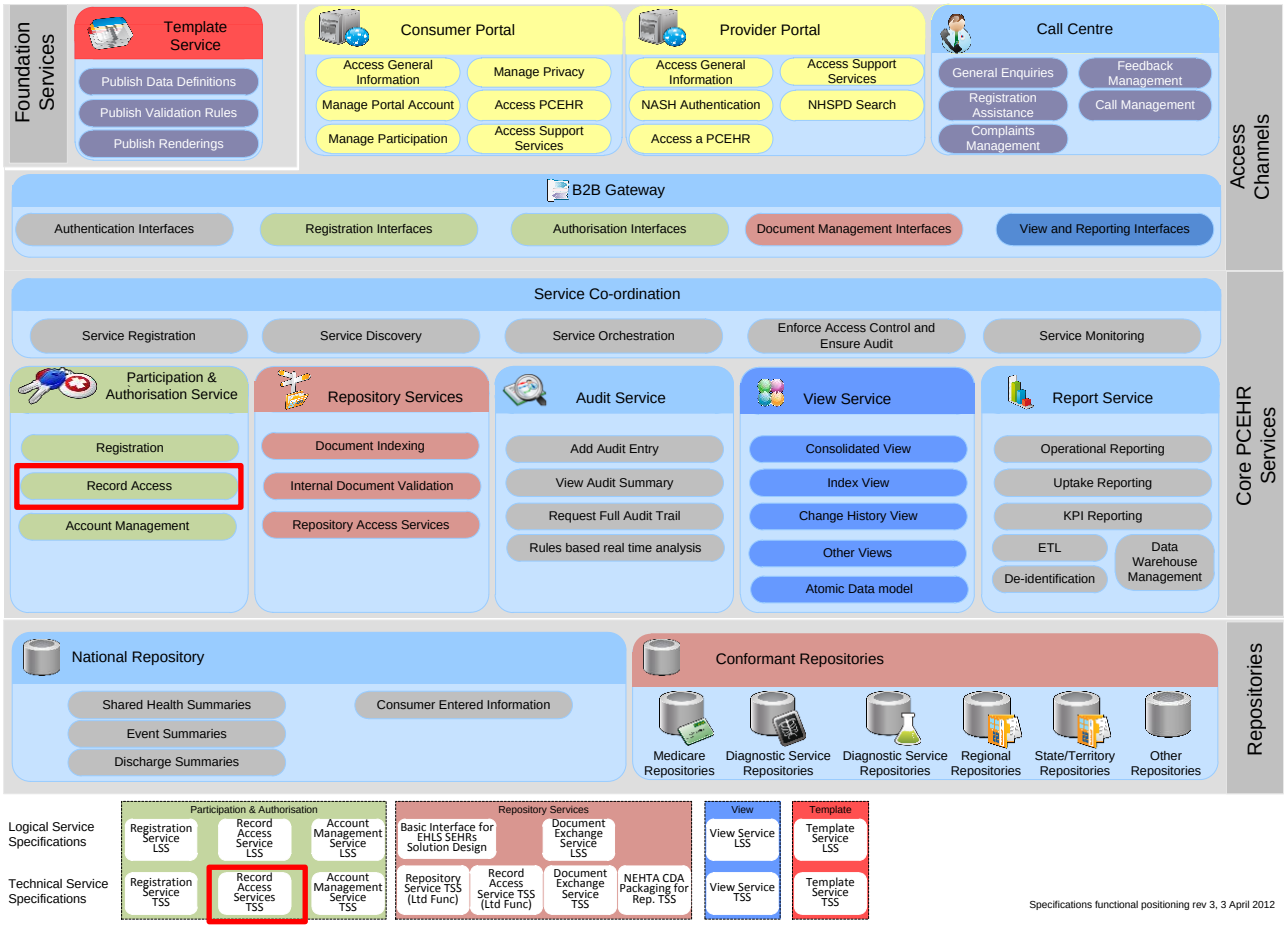

Figure 2 – PCEHR Functions Addressed

1.2 Scope of Document

This document provides a set of the functions required to search and access a personally controlled electronic health record (PCEHR). This specification may be evolved over time to encompass additional functions required, for example for conformant portals.

This specification extends the previous *PCEHR Record Access Technical Service Specification version 1.0* [PCEHR-RAS-V1.0] to include the ability for a healthcare provider to gain access to a PCEHR.

1.2.1 In Scope

The scope of this specification is to provide implementation level detail of the interfaces that external systems will use to interact with the PCEHR Record Access Service.

The main scope of this specification can be summarised as:

- interface technical details (e.g. communication protocol, encoding)
- request and reply message layouts
- message interactions
- error messages expected
- security considerations
- operational details.

1.2.2 Out of Scope

This document does not cover any user interaction via an integrated system or specify any user interface. This document deals solely with machine-level interactions.

1.3 Conformance Points

This specification contains conformance points that identify normative requirements that are to be met by identified members of the Record Access Service Interface Community (as described in the logical service specification) in order to comply with this specification when interacting with the Record Access Service Interface.

Conformance points include requirements on a party (Record Access User) invoking the service and the party (Record Access Service) providing the service.

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

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

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

2 Standards and Technology Platform

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

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

The technology platform for this technical service specification is comprised of interaction through web service interfaces that conform to identified elements of the E-health Web Services Profile [ATS 5820-2010].

This specification depends on the following infrastructure services:

- Healthcare Identifiers Service (HI Service) for identification of healthcare provider organisations (HPI-O), healthcare provider individuals (HPI-I) and the subject of care (an individual identified by an IHI).
- The National Authentication Service for Health (NASH) for the provision of X.509 certificates used for signing and encryption.

Conformance points

The following conformance points define the application of the E–health web services profile [ATS 5820-2010] to service interactions:

RCAS-T 1	All implementations SHALL conform to the Web Services Base Profile from the Standards Australia E-health Web Services Profiles [ATS 5820-2010] for all web service invocations.
RCAS-T 2	All implementations SHALL implement the TLS Security Profile from the Standards Australia E-health Web Services Profiles [ATS 5820-2010] for all web service invocations.

3 Computational Viewpoint

The Computational Viewpoint addresses how the Service Interfaces and Service Operations defined in the logical service specification map onto the operation and transport specifications provided by the Standards and Technology Platform.

3.1 Service Interface Realisation

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

Table 1 shows how the logical operations are realised in this technical service specification.

Table 1 - Mapping between logical and technical service operations

Logical Service Specification	Technical Service Specification
doesPCEHRExist	doesPCEHRExist
searchPCEHR	gainPCEHRAccess
gainAccessToPCEHR	

3.1.1 SOAP Signature

Conformance points

RCAS-T 42	The *Service Invoker* and *Service Provider* SHALL include a Transmission Signature (section 4.1.1.3) containing a signed attestation of elements contained within the SOAP message on all SOAP Request and Response messages, except where the response contains a SOAP Fault.
RCAS-T 43	The *Service Invoker* and *Service Provider* SHALL perform the signature using a certificate that asserts the same identity as that asserted in the TLS connection.
RCAS-T 44	The *Service Provider* SHOULD respond to an invalid [ATS 5820-2010] Transmission Signature by rejecting the entire message and respond with an error

3.1.2 doesPCEHRExist

Providers may have to spend time preparing data to be uploaded to the PCEHR system. To streamline the interaction between an integrated system and the PCEHR system and to avoid superfluous access attempts, a mechanism is required to quickly check for the existence of a record.

The ability to check for the presence of a record and receive information on how to access a record reduces the likelihood of an error occurring when accessing or uploading a document to a PCEHR. This operation thus allows an integrated system to indicate to the healthcare provider whether a PCEHR for a particular individual exists or not.

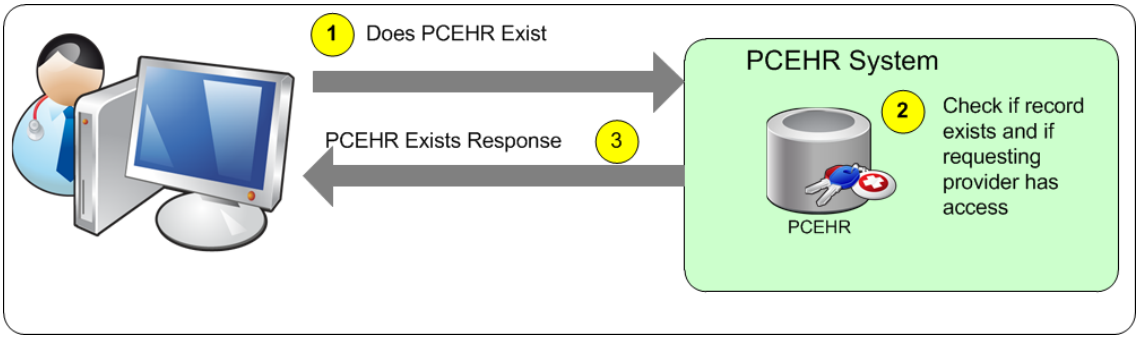

Figure 3 – doesPCEHRExist–Conceptual Interaction View

3.1.2.1 Actors and roles

Role 1: doesPCEHRExist Service Invoker

The *doesPCEHRExist Service Invoker* role represents the party responsible for invoking the doesPCEHRExist operation. This role will typically be realised by a Clinical Information System (CIS). This role will be referred to as the *Service Invoker*.

Role 2: doesPCEHRExist Service Provider

The *doesPCEHRExist Service Provider* role is the party responsible for fulfilling the doesPCEHRExist request. This role will be realised by PCEHR systems. This role will be referred to as the *Service Provider*.

3.1.2.2 Pre-conditions

Conformance points

RCAS-T 3	A mutually authenticated encrypted connection SHALL be established between the *Service Invoker* (CIS and CSP) and *Service Provider* in conformance with the TLS Security Profile set out in [ATS 5820-2010].

3.1.2.3 Postconditions

Conformance points

RCAS-T 4	The *Service Provider* SHALL return a response indicating whether a record exists.

The semantics of the response must be mirrored by subsequent actions to the PCEHR interface, specifically:

RCAS-T 5	The *Service Invoker (CIS and CSP)* SHALL be able to access the PCEHR for the given individual without the need to provide an access code if the *Service Provider* indicates that the record exists and the Access Code Required is Without Code.
RCAS-T 6	The *Service Invoker (CIS and CSP)* SHALL NOT be able to access the PCEHR for the given individual without first providing an access code if the *Service Provider* indicates that the record exists and the Access Code Required is With Code.

3.1.2.4 Interaction

Figure 4 shows the data associated with this request. It also shows the interaction between an example *Service Invoker (CIS and CSP)* and *Service Provider* and highlights the possible response conditions.

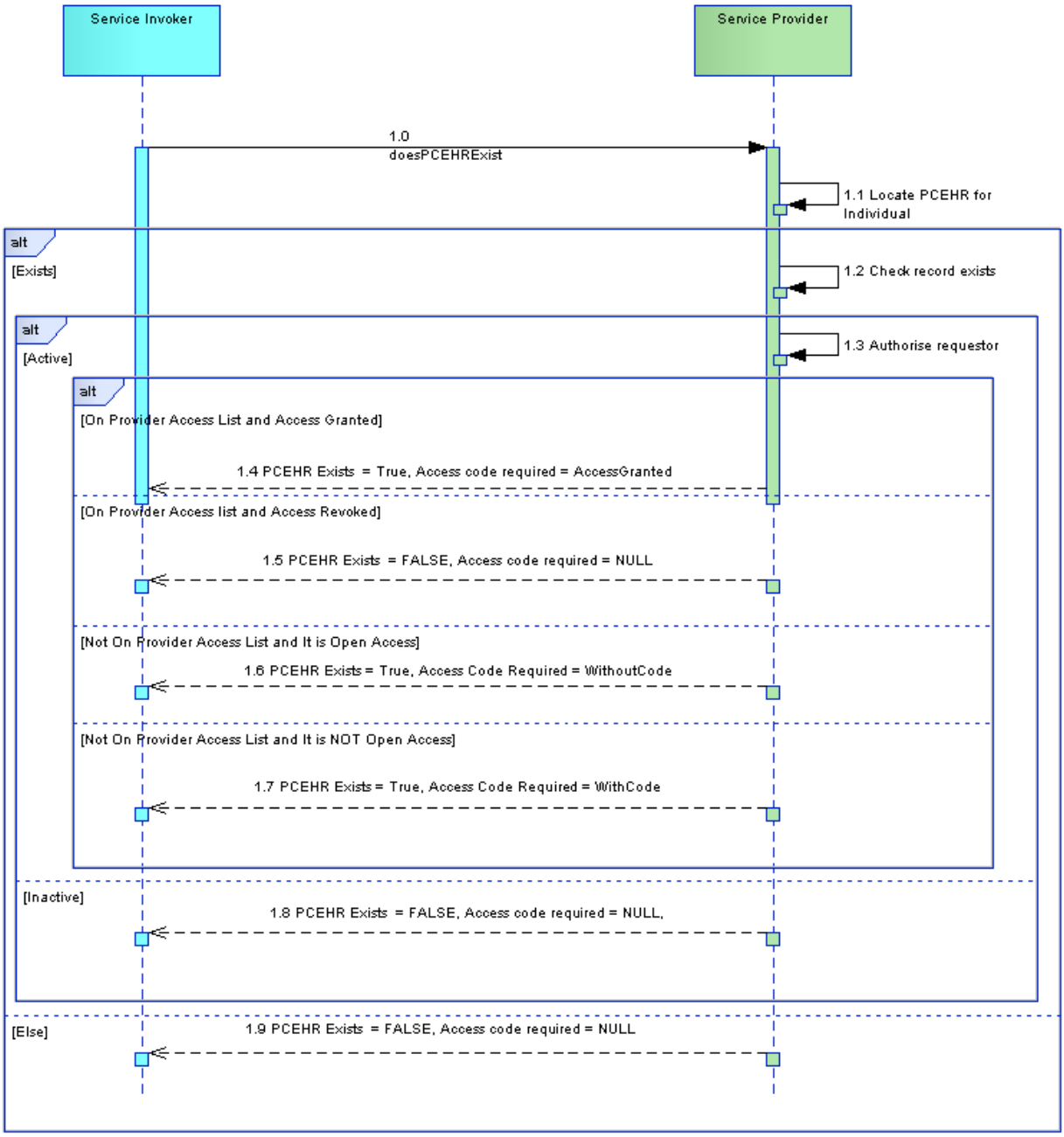

Figure 4 - doesPCEHRExist – Sequence Diagram

Conformance points

RCAS-T 7	This operation SHALL be realised as a synchronous call between the *Service Invoker* system (CIS and CSP) and the *Service Provider*.
RCAS-T 8	The response SHALL be returned on the same software communication connection.

3.1.2.5 Inputs, Outputs and Faults

This section details the data which is submitted to the service as an input, the response returned and the details of any faults. The data types are realised as XSDs within Appendix A.

The WSDL definition for this operation and the XML Schema Definitions for the underlying data types are provided in Appendix A.

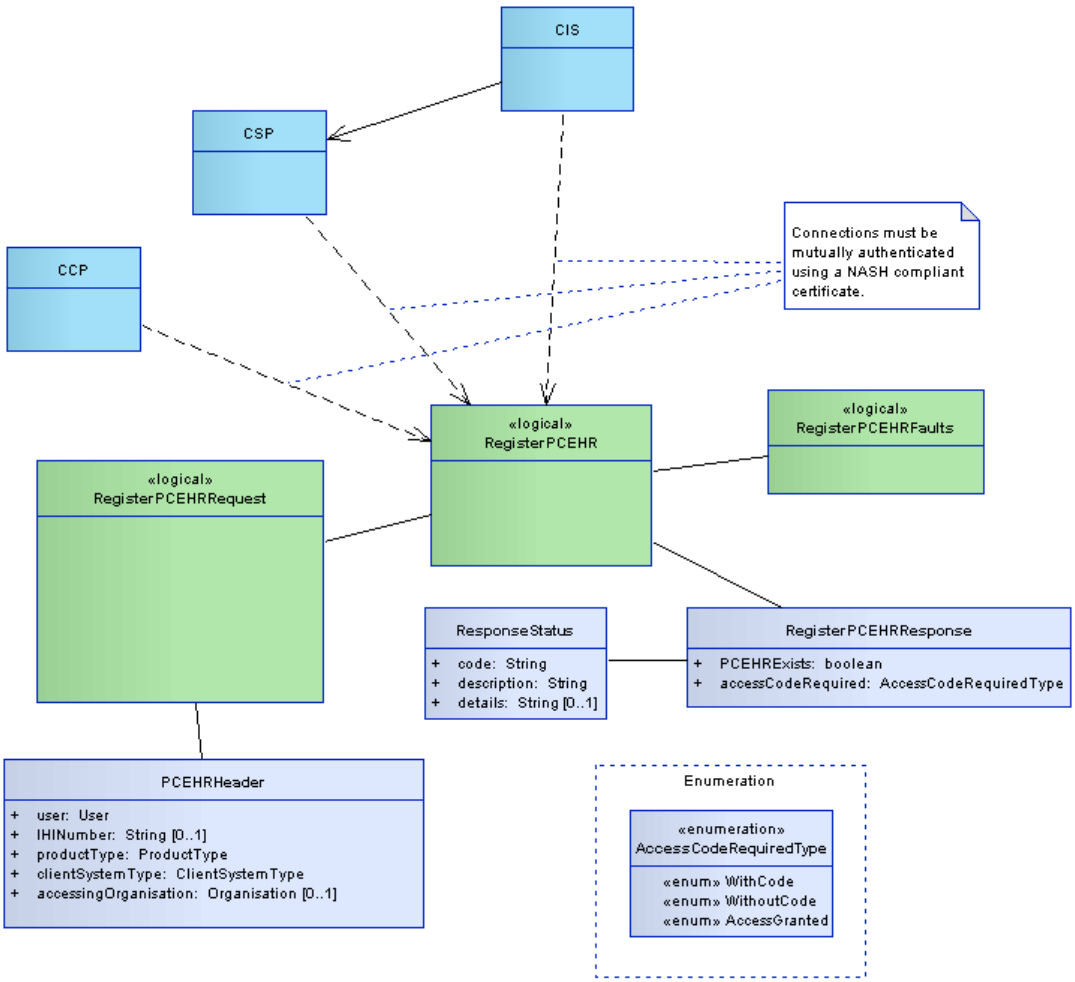

Figure 5 - doesPCEHRExist - Operation Data View

The doesPCEHRRequest message can be constructed entirely from the common PCEHRHeader. This header is re-used across all PCEHR functions.

Input message

Please refer to the PCEHRHeader in section 4.1.1.3.

Conformance points

RCAS-T 9	The Service Invoker (CIS and CSP) SHALL set the `IHINumber` to the IHI of the individual who owns the PCEHR.
RCAS-T 10	The Service Invoker (CIS and CSP) SHALL set the `accessingOrganisation` to the HPI-O of the organisation attempting to query the PCEHR.

3.1.2.6 Output Message

Table 2 doesPCEHRExist Responses

Element Name	Type	Cardinality	Remarks
DoesPCEHRExistResponse		**1..1**	
pcehrExists	Boolean	1..1	PCEHR Exists Boolean flag
accessCodeRequired	accessCodeRequiredType	0..1	An enumeration indicating whether the provider organisation must supply a code to access the PCEHR
/ DoesPCEHRExistResponse			

Conformance points

RCAS-T 11 The Service Provider SHALL set the `pcehrExists` flag to `true` if the following conditions are met:

- The individual identified by `IHINumber` has a PCEHR.
- The organisation identified by `accessingOrganisation` is NOT on the individual's revoked list.
- The PCEHR Individual sets their disclosure indicator.

Otherwise, the service provider SHALL set the `pcehrExists` flag to `false`.

RCAS-T 12 If the Service Provider has determined that `pcehrExists` is `false`, the service provider SHALL NOT set `accessCodeRequired`.

RCAS-T 13 If the Service Provider has determined that `pcehrExists` is `true`, the service provider SHALL set the `accessCodeRequired` to indicate whether an access code must be provided to obtain access to the individual's PCEHR.

Service Fault

The following conformance points apply to a provider of this service when creating a service fault.

Conformance Points

RCAS-T 14 The Service Provider SHALL respond with a SOAP fault if an error occurs in processing the `doesPcehrExist` operation.

RCAS-T 15 The Service Provider SHOULD respond with a fault containing a `se:standardError` element in the circumstances defined for this fault by [ATS 5820-2010].

3.1.3 gainPCEHRAccess

Healthcare providers or PCEHR Support Operators may need to access the individual's PCEHR at the point of care or at the request of the individual. In order to do this, they need to gain access to the individual's PCEHR with one of the following access modes:

- with an access code
- without an access code

- with emergency access.

This process can provide ongoing or time-limited access for a healthcare organisation, depending on what accessing mode is used, and one-time access for the PCEHR Support Operator.

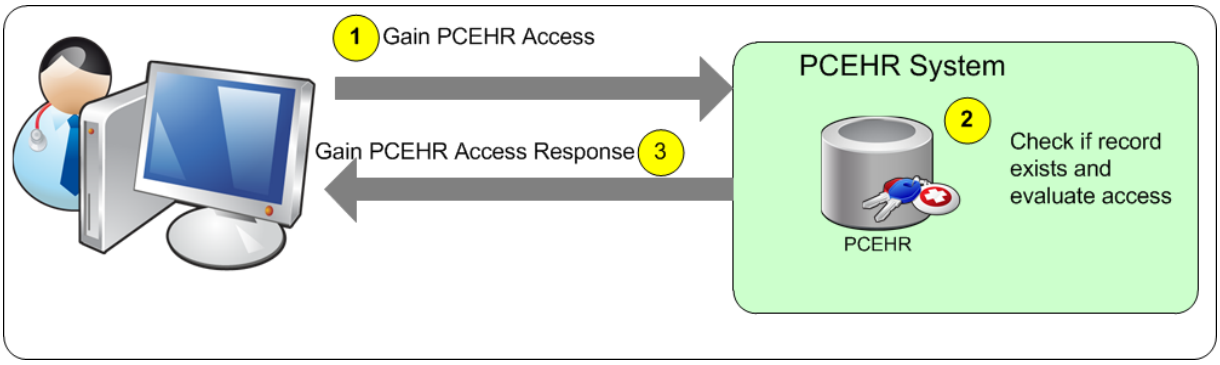

Figure 6 - gainPCEHRAccess – Conceptual Interaction View

3.1.3.1 Actors and Roles

Role 1: gainPCEHRAccess Service Invoker

The *gainPCEHRAccess Service Invoker* role represents the party responsible for invoking the *gainPCEHRAccess* operation. This role will typically be realised by CIS, CSP and Provider Portal. In the interests of readability within the scope of section 3.1.3, this role will be referred to as the *Service Invoker*.

Role 2: gainPCEHRAccess Service Provider

The *gainPCEHRAccess Service Provider* role is the party responsible for fulfilling the *gainPCEHRAccess* request. This role will be realised by the PCEHR system. In the interests of readability within the scope of section 3.1.3, this role will be referred to as the *Service Provider*.

3.1.3.2 Pre-conditions

Conformance points

RCAS-T 16	A mutually authenticated, encrypted connection SHALL be established between the *Service Invoker* and *Service Provider* in conformance with the TLS Security Profile set out in [ATS 5820-2010].

3.1.3.3 Postconditions

Conformance points

RCAS-T 17	The *Service Provider* SHALL return a response indicating whether the *Service Invoker* has obtained access to the PCEHR.
RCAS-T 18	The *Service Provider* SHALL return the individual demographic details if the *Service Invoker* has obtained access to the PCEHR.

3.1.3.4 Interaction

Figure 7 shows the data associated with this request. It also shows the interaction between an example *Service Invoker* and *Service Provider* and highlights the possible response conditions

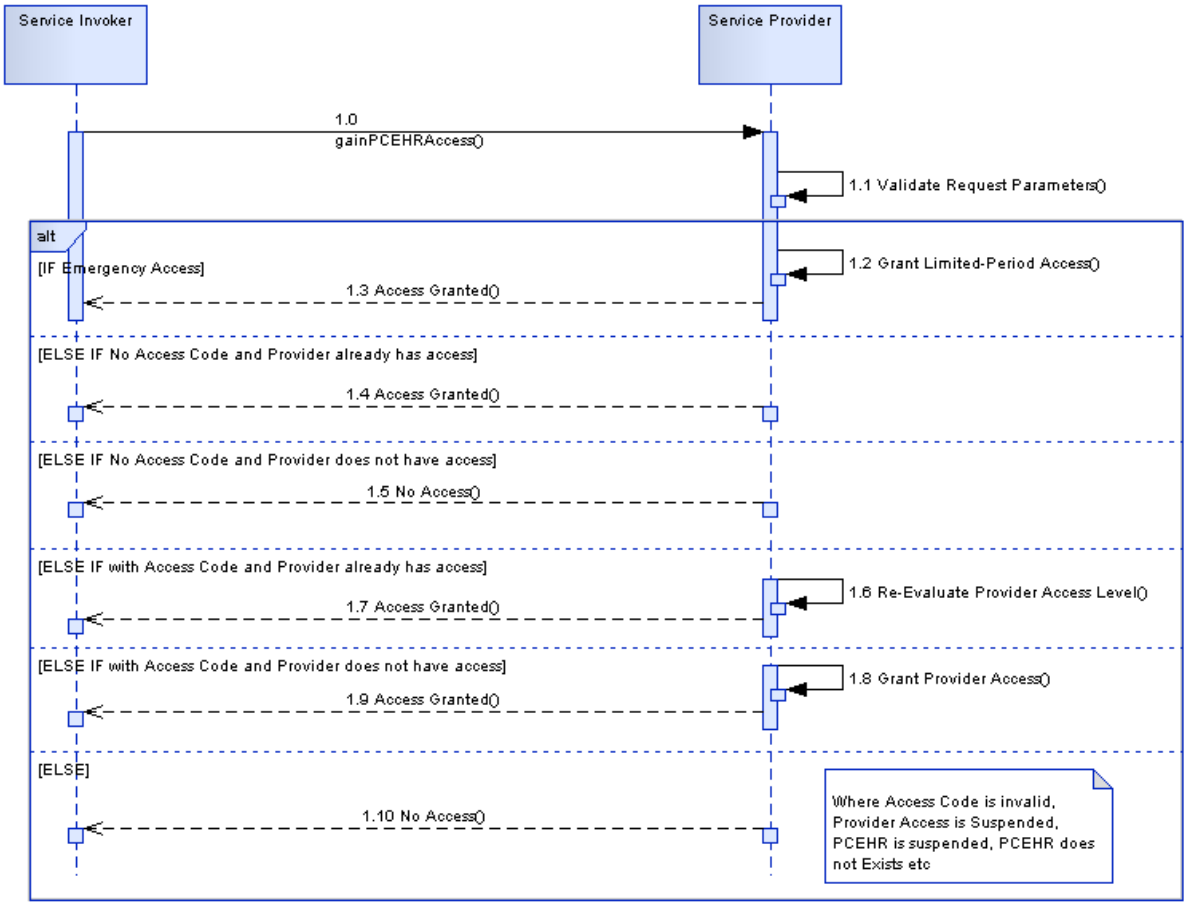

Figure 7 - gainPCEHRAccess – Sequence Diagram

Conformance Points

RCAS-T 19	This operation SHALL be realised as a synchronous operation between the *Service Invoker (CIS, CSP and Provider Portal)* system and the *Service Provider*. The response SHALL be returned on the same software communication connection.

3.1.3.5 Inputs, Outputs and Faults

This section details the data which is submitted to the service as an input, the response returned and the details of any faults. The data types are realised as XSDs within Appendix A.

The WSDL definition for this operation and the XML Schema Definitions for the underlying data types are provided in Appendix A.

Input message

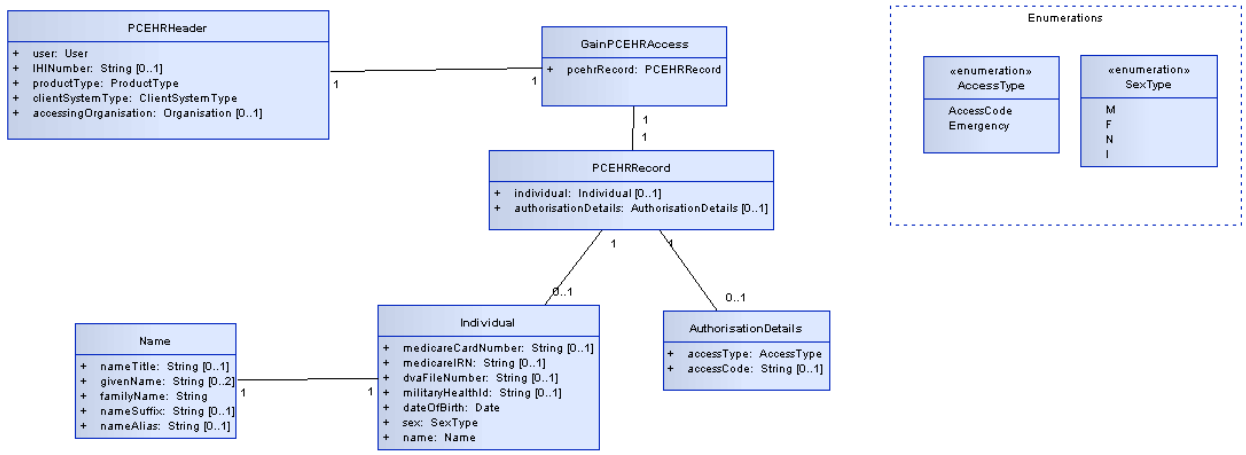

Figure 8 - gainPCEHRAccess - Operation Data View

Table 3 GainPCEHRAccess Parameters

Element Name	Type	Cardinality	Remarks
GainPCEHRAccess		**1..1**	
pcehrRecord	PCEHRRecord	1..1	The individual detail and the authorisation detail
/ GainPCEHRAccess			

Table 4 PCEHRRecord Parameters

Element Name	Type	Cardinality	Remarks
PCEHRRecord		**1..1**	
authorisationDetail	AuthorisationDetail	0..1	The gain access authorisation detail e.g. with an access code or emergency access
individual	Individual	0..1	The individual detail
/PCEHRRecord			

Conformance points

RCAS-T 20	The *Service Invoker (Provider Portal)* SHALL set the `individual` when it uses Individual demographic to gain access.
RCAS-T 21	The *Service Invoker (CIS and CSP)* SHALL set `ihiNumber` to the verified IHI of the individual the record relates to.
RCAS-T 22	The *Service Invoker (Provider Portal)* SHALL set the `individual` when `ihiNumber` is not set

Table 5 Individual Detail Parameters

Element Name	Type	Cardinality	Remarks
Individual		**0..1**	
medicareCardNumber	String	0..1	The Individual Medicare card number

Element Name	Type	Cardinality	Remarks
medicareIRN	String	0..1	The Individual Medicare card IRN
dvaFileNumber	String	0..1	The Individual DVA Card Number
dateOfBirth	Datetime	1..1	The Individual Date of Birth
sex	SexType	1..1	The Individual sex type
name	String	1..1	The Individual name
/Individual			

Table 6 Name Parameters

Element Name	Type	Cardinality	Remarks
Name		**1..1**	
nameTitle	String	0..1	The Individual Title
givenName	String	0..2	The Individual First Name and Middle Name
familyName	String	1..1	The Individual Family Name
nameSuffix	String	0..1	The Individual suffix
nameAlias	String	0..1	The Individual alias name
/Name			

Table 7 AuthorisationDetail Parameters

Element Name	Type	Cardinality	Remarks
AuthorisationDetail		**1..1**	
accessType	AccessType	1..1	Accessing mode type, with access code or emergency
accessCode	String	0..1	The access Code
/ AuthorisationDetail			

Conformance points

RCAS-T 23	The *Service Invoker (CIS, CSP and Provider Portal)* SHALL set the `accessCode` when `accessType` is AccessCode.

Output Message

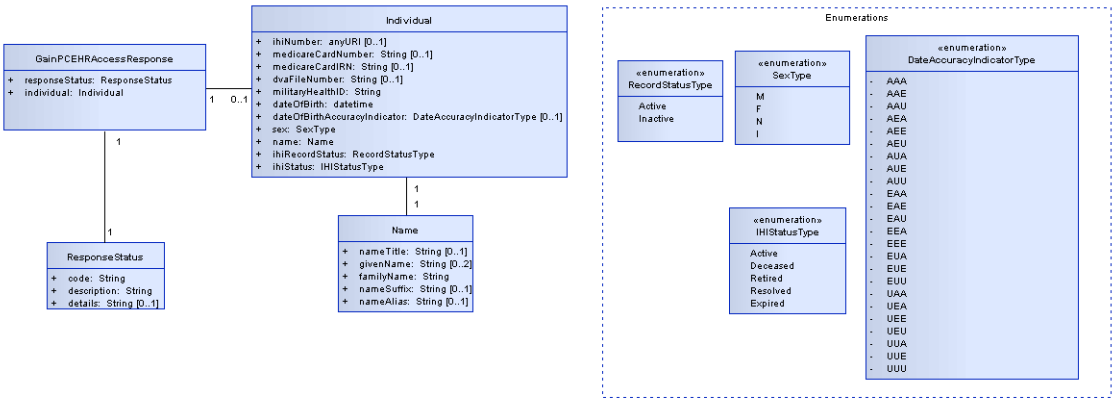

Figure 9 - GainPCEHRAccessResponse

Table 8 gainPCEHRAccess Responses

Element Name	Type	Cardinality	Remarks
GainPCEHRAccessResponse		**1..1**	
individual	Individual	0..1	The Individual IHI, only populated when PCEHR is found
/ GainPCEHRAccessResponse			

Conformance points

RCAS-T 24	The *Service Provider* SHALL set the appropriate code as mention in Table 16 for any business failure.

Table 9 Individual Parameters

Element Name	Type	Cardinality	Remarks
Individual		**0..1**	
ihiNumber	String	0..1	The Individual IHI
medicareCardNumber	String	0..1	The Individual Medicare card number
medicareIRN	String	0..1	The Individual medicare card IRN
dvaFileNumber	String	0..1	The Individual DVA Card Number
militaryHealthId	String	0..1	The Individual Military Health Id
dateOfBirth	Datetime	1..1	The Individual Date of Birth
dateOfBirthAccuracyIndicator	DateAccuracyType	0..1	values (“AAA”,”AAE”,”AAU”,”AEA”,”AEE”,”AEU”,”AUA”,”AUE”,”AUU”,”EAA”,”EAE”,”EAU”,”EEA”,”EEE”,”EUA”,”EUU”,”UAA”,”UAE”,”UAU”,”UEA”,”UEE”,”UEU”,”UUA”,”UUE”,”UUU”)
ihiRecordStatus	RecordStatusType	0..1	PCEHR Record status e.g. Active or Inactive

Element Name	Type	Cardinality	Remarks
ihiStatus	IHIStatysType	0..1	PCEHR Individual IHI Status e.g. Active, Deceased, Retired, Resolved or Expired
sex	SexType	1..1	PCEHR Individual Sex Type
name	String	1..1	The Individual name
/Individual			

Conformance points

RCAS-T 25	The *Service Provider* SHALL set the `ihiNumber, ihiRecordStatus` and `ihiStatus` if PCEHR exists.

Service Fault

The following conformance points apply to a provider of this service when creating a service fault.

Conformance Points

RCAS-T 26	The *Service Provider* SHALL respond with a SOAP fault if an error occurs in processing the `gainPCEHRAccess` operation.
RCAS-T 27	The *Service Provider* SHOULD respond with a fault containing a `se:standardError` element in the circumstances defined for this fault by [ATS 5820-2010].

4 Information Viewpoint

The Information Viewpoint addresses common information models that are used in the Service Operations defined in the Computational Viewpoint.

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

4.1 Information Data Type Realisation

This section shows the logical service specification [PCEHR-RAS-LSS] information data type realisation into this technical specification.

4.1.1 Common Header

Common Header is realised into the SOAP Header on web service calls as:

- WS-Addressing Header
- PCEHRHeader
- Timestamp
- Signature

4.1.1.1 WS-Addressing Header (Request)

Table 10 WS Addressing Header Request

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

Conformance points

RCAS-T 28	The *Service Invoker* SHALL set these values in accordance with the [ATS 5820-2010] Section 6 - Metadata.

4.1.1.2 WS-Addressing Header (Response)

Table 11 WS Addressing Header Response

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

Conformance points

RCAS-T 29	The *Service Provider* SHALL set these values in accordance with the [ATS 5820-2010] Section 6 - Metadata.

4.1.1.3 Timestamp

Table 12 Timestamp

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

4.1.1.4 Signature

Table 13 - Transmission Signature in SOAP Header

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

Conformance points

RCAS-T 45	The elements signed by the Transmission Signature by all parties SHALL include the SOAP Body element.

RCAS-T 46	The elements signed by the Transmission Signature by the Service Invoker SHALL also include the PCEHR Header element (as defined in section 4.1.1.5)
RCAS-T 47	The elements signed by the Transmission Signature SHOULD include the Transmission Timestamp element (as defined in section 4.1.1.3)
RCAS-T 48	The `ds:SignedInfo` element type SHALL be realised in conformance with "Section 4. XML Signature Profile" as specified in [ATS 5821-2010]
RCAS-T 49	The fragment identifier used within the ds:Reference element, specified in "Section 4. XML Signature Profile" of [ATS 5821-2010], SHALL refer to the "`id`" attribute specified in section 3.3 of [W3C-XML-1.1] of the element referenced
RCAS-T 50	The `ds:signature` element type SHALL be realised in conformance with "Section 4. XML Signature Profile" as specified in [ATS 5821-2010].

4.1.1.5 PCEHRHeader

PCEHRHeader is used for all interactions with the PCEHR System.

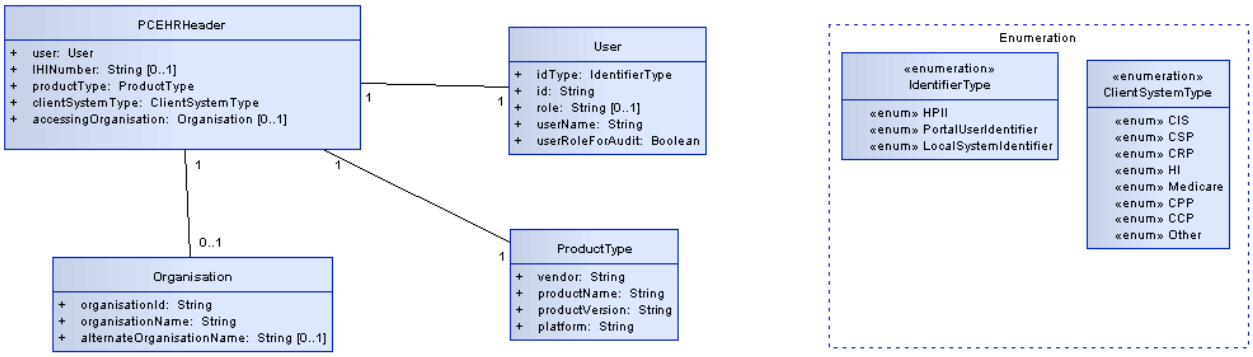

Figure 10 – PCEHRHeader

Table 14 PCEHRHeader

Element Name	Type	Cardinality	Remarks
PCEHRHeader		**1..1**	
User		**1..1**	
IDType	Identifier Type	1..1	Values ("HPII", "PortalUserIdentifier", "LocalSystemIdentifier")
ID	String	1..1	Portal User Identifier, 16 Digit HPI-I number or Other User ID
role	String	0..1	Optional User Role
userName	String	1..1	User's Name
useRoleForAudit	Boolean	1..1	if true PCEHR will use sourceSystemUserRole as the user name for audit, else PCEHR will use sourceSystemUserName as the user name for audit
/User			
ihiNumber	String	0..1	PCEHR individual's 16 digit IHI number

Element Name	Type	Cardinality	Remarks
productType		**1..1**	
vendor	String	1..1	client system's vendor name
productName	String	1..1	client system's product name
productVersion	String	1..1	client system's product version
platform	String	1..1	client system's platform
/productType			
clientSystemType	String	1..1	Values ("CCP","CPP", "CIS", "CSP", "CRP", "HI", "Medicare", "Other")
accessingOrganisation		**0..1**	
organisationID	String	1..1	The 16 digit Healthcare Organisation Identifier (HPI-O)
organisationName	String	1..1	Healthcare Organisation Name
alternateOrganisationName	String	0..1	Alternate Healthcare Organisation Name
/accessingOrganisation			
/PCEHRHeader			

Conformance points

RCAS-T 30	The *Service Invoker* (CIS and CSP) SHALL set the `ihiNumber` to the IHI of the Individual who owns the PCEHR.
RCAS-T 31	The Service Invoker (CIS, CSP and Provider Portal) SHALL set the `accessingOrganisation` to the accessing organisation attempting to query the PCEHR.

RCAS-T 32	The *Service Invoker* SHALL set the `User.ID` to either: • Preferably, if known, the 16-digit HPI-I of the provider attempting to access the PCEHR. • Or alternatively a local identifier of the provider attempting to access the PCEHR.
RCAS-T 33	The *Service Invoker* SHALL set the `User.IDType` to the relevant value to identify the type of `User.ID`.

RCAS-T 34	The *Service Invoker* (CIS, CSP and Provider Portal) SHALL set the `productType.vendor` to the vendor name of the client system.
RCAS-T 35	The *Service Invoker* (CIS, CSP and Provider Portal) SHALL set the `productType.productName` to the product name of the client system.
RCAS-T 36	The *Service Invoker* (CIS, CSP and Provider Portal) SHALL set the `productType.productVersion` to the product version of the client system.
RCAS-T 37	The *Service Invoker* (CIS, CSP and Provider Portal) SHALL set the `productType.platform` to the client system vendor.

RCAS-T 38	The *Service Invoker* (CIS) SHALL set the `clientSystemType` to CIS.
RCAS-T 39	The *Service Invoker* (CSP) SHALL set the `clientSystemType` to CSP.
RCAS-T 40	The *Service Invoker* (Provider Portal) SHALL set the `clientSystemType` to CPP.

4.2 Common Response Status

All PCEHR System operations will return common response field.

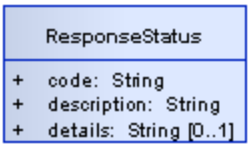

Figure 11 – ResponseStatus

Table 15 ResponseStatus Responses

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

Conformance points

RCAS-T 41	The *Service Provider* SHALL set the appropriate code as mentioned in Table 16 for any business failure.

Response Codes

Table 16 Response Codes

Code	Description
PCEHR_SUCCESS	SUCCESS
PCEHR_ERROR_5101	PCEHR not found
PCEHR_ERROR_5102	PCEHR is found but access code is required
PCEHR_ERROR_5103	PCEHR is found but access code is invalid
PCEHR_ERROR_5104	You are not authorised to access this record
PCEHR_ERROR_5001	The family name contains invalid characters
PCEHR_ERROR_5002	The birth year must not be before 1800
PCEHR_ERROR_5003	The date of birth must not be in the future
PCEHR_ERROR_5004	Medicare card fails check digit routine
PCEHR_ERROR_5005	The given name contains invalid characters
PCEHR_ERROR_5006	No unique active IHI found
PCEHR_ERROR_5007	IHI number fails the check digit routine

Code	Description
PCEHR_ERROR_5009	Multiple search criteria keyed. Please refine the search criteria.
PCEHR_ERROR_5011	The DVA file number entered is invalid
PCEHR_ERROR_5013	IHI number must be 16 digits

5 Engineering Viewpoint

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

Examples of such functions are:

- repository (e.g. storage and information organisation function)
- security (e.g. access control, authentication, security audit, integrity and confidentiality functions)
- network services (e.g. naming services, time services and directory)
- type repository functions.

The engineering viewpoint is relevant for those who are providing infrastructure services and functions, such as system architects, network architects, security architects and middleware specialists.

5.1 Discovery Services

The location of the doesPCEHRExist and gainPCEHRAccess operations will be shared between parties before interaction. Dynamic discovery mechanisms will not be provided.

Appendix A XSD and WSDL

A.1 Data Types

A.1.1 XML schema – PCEHR_DoesPCEHRExist.xsd

The following XML schema defines the XSD for data associated with the B2B_profileInterface-0.1.wsdl interface.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Version 1.0.1 issued 11 April 2012-->
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:ns1="http://ns.electronichealth.net.au/pcehr/xsd/common/CommonCoreElements/1.0"
xmlns:ns2="http://ns.electronichealth.net.au/pcehr/xsd/interfaces/PCEHRProfile/1.0"
targetNamespace="http://ns.electronichealth.net.au/pcehr/xsd/interfaces/PCEHRProfile/1.0"
elementFormDefault="qualified" attributeFormDefault="unqualified">
        <xs:import namespace="http://ns.electronichealth.net.au/pcehr/xsd/common/CommonCoreElements/1.0"
schemaLocation="../Common/PCEHR_CommonTypes.xsd"/>
        <xs:element name="doesPCEHRExist"/>
        <xs:element name="doesPCEHRExistResponse">
          <xs:annotation>
                  <xs:documentation>Comment describing your root element</xs:documentation>
          </xs:annotation>
          <xs:complexType>
                  <xs:sequence>
                          <xs:element name="PCEHRExists" type="xs:boolean"/>
                          <xs:element name="accessCodeRequired" minOccurs="0">
                                  <xs:simpleType>
                                          <xs:restriction base="xs:string">
                                                  <xs:enumeration value="WithCode"/>
                                                  <xs:enumeration value="WithoutCode"/>
                                                  <xs:enumeration value="AccessGranted"/>
                                          </xs:restriction>
                                  </xs:simpleType>
                          </xs:element>
                  </xs:sequence>
          </xs:complexType>
        </xs:element>
</xs:schema>
```

A.1.2 XML schema - PCEHR_GainPCEHRAccess.xsd

The following XML schema defines the XSD for data associated with the B2B_profileInterface-0.1.wsdl interface.

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Version 1.0.1 issued 11 April 2012-->
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:ns1="http://ns.electronichealth.net.au/pcehr/xsd/common/CommonCoreElements/1.0"
xmlns:ns2="http://ns.electronichealth.net.au/pcehr/xsd/interfaces/PCEHRProfile/1.0"
targetNamespace="http://ns.electronichealth.net.au/pcehr/xsd/interfaces/PCEHRProfile/1.0"
elementFormDefault="qualified" attributeFormDefault="unqualified">
        <xs:import namespace="http://ns.electronichealth.net.au/pcehr/xsd/common/CommonCoreElements/1.0"
schemaLocation="../Common/PCEHR_CommonTypes.xsd"/>
        <xs:element name="gainPCEHRAccess">
          <xs:complexType>
                  <xs:sequence>
                          <xs:element name="PCEHRRecord">
                                  <xs:complexType>
                                          <xs:sequence>
                                                  <xs:element name="authorisationDetails" minOccurs="0">
                                                          <xs:complexType>
                                                                  <xs:sequence>
                                                                          <xs:element
name="accessType">
                                                                                  <xs:simpleType>

        <xs:restriction base="xs:string">

        <xs:enumeration value="AccessCode"/>

        <xs:enumeration value="EmergencyAccess"/>
```

```
            </xs:restriction>
                                                                                    </xs:simpleType>
                                                                                </xs:element>
                                                                                <xs:element
name="accessCode" type="xs:string" minOccurs="0"/>
                                                                            </xs:sequence>
                                                                        </xs:complexType>
                                                                    </xs:element>
                                                                    <xs:element name="individual" minOccurs="0">
                                                                        <xs:complexType>
                                                                            <xs:sequence>
                                                                                <xs:element
ref="ns1:medicareCardNumber" minOccurs="0"/>
                                                                                <xs:element
ref="ns1:medicareIRN" minOccurs="0"/>
                                                                                <xs:element
ref="ns1:dvaFileNumber" minOccurs="0"/>
                                                                                <xs:element
ref="ns1:militaryHealthNumber" minOccurs="0"/>
                                                                                <xs:element
name="dateOfBirth" type="xs:date"/>
                                                                                <xs:element ref="ns1:sex"/>
                                                                                <xs:element name="name"
type="ns1:nameType"/>
                                                                            </xs:sequence>
                                                                        </xs:complexType>
                                                                    </xs:element>
                                                                </xs:sequence>
                                                            </xs:complexType>
                                                        </xs:element>
                                                    </xs:sequence>
                                                </xs:complexType>
                                            </xs:element>
                                            <xs:element name="gainPCEHRAccessResponse">
                                                <xs:complexType>
                                                    <xs:sequence>
                                                        <xs:element name="responseStatus" type="ns1:responseStatusType"/>
                                                        <xs:element name="individual" minOccurs="0">
                                                            <xs:complexType>
                                                                <xs:sequence>
                                                                    <xs:element ref="ns1:ihiNumber"/>
                                                                    <xs:element ref="ns1:medicareCardNumber"
minOccurs="0"/>
                                                                    <xs:element ref="ns1:medicareIRN" minOccurs="0"/>
                                                                    <xs:element ref="ns1:dvaFileNumber" minOccurs="0"/>
                                                                    <xs:element ref="ns1:militaryHealthNumber"
minOccurs="0"/>
                                                                    <xs:element name="ihiRecordStatus"
type="ns1:recordStatusType"/>
                                                                    <xs:element name="ihiStatus" type="ns1:statusType"/>
                                                                    <xs:element name="dateOfBirth" type="xs:date"/>
                                                                    <xs:element ref="ns1:dateAccuracyIndicatorType"/>
                                                                    <xs:element ref="ns1:sex"/>
                                                                    <xs:element name="name" type="ns1:nameType"/>
                                                                </xs:sequence>
                                                            </xs:complexType>
                                                        </xs:element>
                                                    </xs:sequence>
                                                </xs:complexType>
                                            </xs:element>
</xs:schema>
```

A.1.3 XML schema – wsp-StandardError-2010.xsd

The following XML schema defines the Standard Error data types for all WSDLs interface

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
        xmlns:tns="http://ns.electronichealth.net.au/wsp/xsd/StandardError/2010"
        targetNamespace="http://ns.electronichealth.net.au/wsp/xsd/StandardError/2010"
        elementFormDefault="qualified">
  <xsd:element name="standardError" type="tns:StandardErrorType"/>
  <xsd:simpleType name="StandardErrorCodeType">
    <xsd:restriction base="xsd:string">
      <xsd:enumeration value="servicePermanentUnavailable"/>
      <xsd:enumeration value="serviceTemporaryUnavailable"/>
```

```
        <xsd:enumeration value="certificateSkiMissing"/>
        <xsd:enumeration value="certificateKeyUsage"/>
        <xsd:enumeration value="invalidCredentials"/>
        <xsd:enumeration value="notAuthenticated"/>
        <xsd:enumeration value="notAuthorised"/>
        <xsd:enumeration value="badParam"/>
        <xsd:enumeration value="badlyFormedMsg"/>
        <xsd:enumeration value="badTimestamp"/>
        <xsd:enumeration value="badSignature"/>
        <xsd:enumeration value="badEncryption"/>
        <xsd:enumeration value="badSigEncOrder"/>
        <xsd:enumeration value="badCertificateTransmitted"/>
        <xsd:enumeration value="badWsaAction"/>
        <xsd:enumeration value="badWsaMessageId"/>
        <xsd:enumeration value="badWsaTo"/>
        <xsd:enumeration value="badAlgorithmDataEncryption"/>
        <xsd:enumeration value="badAlgorithmKeyEncryption"/>
        <xsd:enumeration value="badAlgorithmC14N"/>
        <xsd:enumeration value="badAlgorithmDigest"/>
        <xsd:enumeration value="badAlgorithmSignature"/>
      </xsd:restriction>
    </xsd:simpleType>
    <xsd:complexType name="StandardErrorType">
      <xsd:sequence>
        <xsd:element name="errorCode" type="tns:StandardErrorCodeType" minOccurs="1" maxOccurs="1"/>
        <xsd:element name="message" type="xsd:string" minOccurs="1" maxOccurs="1"/>
      </xsd:sequence>
    </xsd:complexType>
</xsd:schema>
```

A.1.4 XML Schema - PCEHR_CommonTypes.xsd

The following XML schema defines the XSD for common data associated with all the WSDLs interface

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Version 1.0.1 issued 11 April 2012-->
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:ns1="http://ns.electronichealth.net.au/pcehr/xsd/common/CommonCoreElements/1.0"
xmlns:ds="http://www.w3.org/2000/09/xmldsig#"
targetNamespace="http://ns.electronichealth.net.au/pcehr/xsd/common/CommonCoreElements/1.0"
elementFormDefault="qualified" attributeFormDefault="unqualified">
        <xs:import namespace="http://www.w3.org/2000/09/xmldsig#" schemaLocation="xmldsig-core-schema.xsd"/>
        <xs:element name="timestamp" type="ns1:timestampType"/>
        <xs:complexType name="timestampType">
          <xs:sequence>
                <xs:element name="created" type="xs:dateTime" minOccurs="1" maxOccurs="1"/>
                <xs:element name="expires" type="xs:dateTime" minOccurs="0" maxOccurs="1"/>
          </xs:sequence>
        </xs:complexType>
        <xs:element name="signature" type="ns1:signatureContainerType"/>
        <xs:complexType name="signatureContainerType">
          <xs:sequence>
                <xs:element ref="ds:Signature" minOccurs="1" maxOccurs="1"/>
          </xs:sequence>
        </xs:complexType>
        <xs:complexType name="nameType">
          <xs:sequence>
                <xs:element name="nameTitle" minOccurs="0" maxOccurs="1">
                        <xs:simpleType>
                                <xs:restriction base="xs:string">
                                        <xs:maxLength value="40"/>
                                </xs:restriction>
                        </xs:simpleType>
                </xs:element>
                <xs:element name="familyName" minOccurs="1" maxOccurs="1">
                        <xs:simpleType>
                                <xs:restriction base="xs:string">
                                        <xs:maxLength value="40"/>
                                        <xs:minLength value="1"/>
                                </xs:restriction>
                        </xs:simpleType>
                </xs:element>
                <xs:element name="givenName" minOccurs="0" maxOccurs="2">
                        <xs:simpleType>
                                <xs:restriction base="xs:string">
                                        <xs:minLength value="1"/>
                                        <xs:maxLength value="40"/>
                                </xs:restriction>
```

```
                        </xs:simpleType>
                    </xs:element>
                    <xs:element name="nameSuffix" minOccurs="0" maxOccurs="1">
                        <xs:simpleType>
                            <xs:restriction base="xs:string">
                                <xs:maxLength value="40"/>
                            </xs:restriction>
                        </xs:simpleType>
                    </xs:element>
                    <xs:element name="nameAlias" minOccurs="0" maxOccurs="1">
                        <xs:simpleType>
                            <xs:restriction base="xs:string">
                                <xs:maxLength value="40"/>
                            </xs:restriction>
                        </xs:simpleType>
                    </xs:element>
                </xs:sequence>
            </xs:complexType>
            <xs:complexType name="addressType">
                <xs:sequence>
                    <xs:element name="type" minOccurs="1" maxOccurs="1">
                        <xs:simpleType>
                            <xs:restriction base="xs:string">
                                <xs:enumeration value="International"/>
                                <xs:enumeration value="AustralianStreet"/>
                                <xs:enumeration value="AustralianPostal"/>
                            </xs:restriction>
                        </xs:simpleType>
                    </xs:element>
                    <xs:element name="state" type="xs:string" minOccurs="1" maxOccurs="1"/>
                    <xs:element name="postCode" minOccurs="0" maxOccurs="1">
                        <xs:simpleType>
                            <xs:restriction base="xs:string">
                                <xs:minLength value="1"/>
                                <xs:maxLength value="4"/>
                            </xs:restriction>
                        </xs:simpleType>
                    </xs:element>
                    <xs:element name="suburb" minOccurs="0" maxOccurs="1">
                        <xs:simpleType>
                            <xs:restriction base="xs:string">
                                <xs:minLength value="1"/>
                                <xs:maxLength value="30"/>
                            </xs:restriction>
                        </xs:simpleType>
                    </xs:element>
                    <xs:element name="postalDeliveryGroup" minOccurs="0" maxOccurs="1">
                        <xs:complexType>
                            <xs:sequence>
                                <xs:element name="postalDeliveryType" type="xs:string"
minOccurs="0" maxOccurs="1"/>
                                <xs:element name="postalDeliveryNumber" minOccurs="0"
maxOccurs="1">
                                    <xs:simpleType>
                                        <xs:restriction base="xs:string">
                                            <xs:minLength value="1"/>
                                            <xs:maxLength value="11"/>
                                        </xs:restriction>
                                    </xs:simpleType>
                                </xs:element>
                            </xs:sequence>
                        </xs:complexType>
                    </xs:element>
                    <xs:element name="addressSiteName" minOccurs="0" maxOccurs="1">
                        <xs:simpleType>
                            <xs:restriction base="xs:string">
                                <xs:maxLength value="30"/>
                            </xs:restriction>
                        </xs:simpleType>
                    </xs:element>
                    <xs:element name="unitGroup" minOccurs="0" maxOccurs="1">
                        <xs:complexType>
                            <xs:sequence>
                                <xs:element name="unitType" type="xs:string" minOccurs="0"
maxOccurs="1"/>
                                <xs:element name="unitNumber" minOccurs="0" maxOccurs="1">
                                    <xs:simpleType>
                                        <xs:restriction base="xs:string">
                                            <xs:minLength value="1"/>
                                            <xs:maxLength value="6"/>
                                        </xs:restriction>
                                    </xs:simpleType>
```

```
                                        </xs:element>
                                    </xs:sequence>
                                </xs:complexType>
                            </xs:element>
                            <xs:element name="levelGroup" minOccurs="0" maxOccurs="1">
                                <xs:complexType>
                                    <xs:sequence>
                                        <xs:element name="levelType" type="xs:string" minOccurs="0"
maxOccurs="1"/>
                                        <xs:element name="levelNumber" minOccurs="0" maxOccurs="1">
                                            <xs:simpleType>
                                                <xs:restriction base="xs:string">
                                                    <xs:minLength value="1"/>
                                                    <xs:maxLength value="4"/>
                                                </xs:restriction>
                                            </xs:simpleType>
                                        </xs:element>
                                    </xs:sequence>
                                </xs:complexType>
                            </xs:element>
                            <xs:element name="lotNumber" minOccurs="0" maxOccurs="1">
                                <xs:simpleType>
                                    <xs:restriction base="xs:string">
                                        <xs:minLength value="1"/>
                                        <xs:maxLength value="15"/>
                                    </xs:restriction>
                                </xs:simpleType>
                            </xs:element>
                            <xs:element name="streetNumber" minOccurs="0" maxOccurs="1">
                                <xs:simpleType>
                                    <xs:restriction base="xs:string">
                                        <xs:minLength value="1"/>
                                        <xs:maxLength value="12"/>
                                    </xs:restriction>
                                </xs:simpleType>
                            </xs:element>
                            <xs:element name="streetName" minOccurs="0" maxOccurs="1">
                                <xs:simpleType>
                                    <xs:restriction base="xs:string">
                                        <xs:minLength value="1"/>
                                        <xs:maxLength value="30"/>
                                    </xs:restriction>
                                </xs:simpleType>
                            </xs:element>
                            <xs:element name="streetType" type="xs:string" minOccurs="0" maxOccurs="1"/>
                            <xs:element name="streetSuffix" type="xs:string" minOccurs="0" maxOccurs="1"/>
                            <xs:element name="country" type="xs:string" minOccurs="0" maxOccurs="1"/>
                            <xs:element name="internationalAddressLine" minOccurs="0" maxOccurs="1">
                                <xs:simpleType>
                                    <xs:restriction base="xs:string">
                                        <xs:minLength value="1"/>
                                        <xs:maxLength value="120"/>
                                    </xs:restriction>
                                </xs:simpleType>
                            </xs:element>
                        </xs:sequence>
                    </xs:complexType>
                    <xs:complexType name="responseStatusType">
                        <xs:sequence>
                            <xs:element name="code" minOccurs="1" maxOccurs="1">
                                <xs:simpleType>
                                    <xs:restriction base="xs:string">
                                        <xs:minLength value="1"/>
                                    </xs:restriction>
                                </xs:simpleType>
                            </xs:element>
                            <xs:element name="description" type="xs:string" minOccurs="1" maxOccurs="1"/>
                            <xs:element name="details" type="xs:string" minOccurs="0" maxOccurs="1"/>
                        </xs:sequence>
                    </xs:complexType>
                    <xs:simpleType name="statusType">
                        <xs:restriction base="xs:string">
                            <xs:enumeration value="Active"/>
                            <xs:enumeration value="Deceased"/>
                            <xs:enumeration value="Retired"/>
                            <xs:enumeration value="Resolved"/>
                            <xs:enumeration value="Expired"/>
                        </xs:restriction>
                    </xs:simpleType>
                    <xs:element name="medicareCardNumber">
                        <xs:simpleType>
                            <xs:restriction base="xs:token">
```

```
                        <xs:minLength value="10"/>
                        <xs:maxLength value="10"/>
                    </xs:restriction>
                </xs:simpleType>
            </xs:element>
            <xs:element name="medicareIRN">
                <xs:simpleType>
                    <xs:restriction base="xs:integer">
                        <xs:minInclusive value="1"/>
                        <xs:maxInclusive value="9"/>
                    </xs:restriction>
                </xs:simpleType>
            </xs:element>
            <xs:element name="dvaFileNumber">
                <xs:simpleType>
                    <xs:restriction base="xs:token">
                        <xs:minLength value="2"/>
                        <xs:maxLength value="9"/>
                    </xs:restriction>
                </xs:simpleType>
            </xs:element>
            <xs:simpleType name="recordStatusType">
                <xs:restriction base="xs:string">
                    <xs:enumeration value="Verified"/>
                    <xs:enumeration value="Unverified"/>
                </xs:restriction>
            </xs:simpleType>
            <xs:element name="PCEHRHeader">
                <xs:complexType>
                    <xs:sequence>
                        <xs:element name="User" minOccurs="1" maxOccurs="1">
                            <xs:complexType>
                                <xs:sequence>
                                    <xs:element name="IDType" minOccurs="1"
maxOccurs="1">
                                        <xs:simpleType>
                                            <xs:restriction base="xs:string">
                                                <xs:enumeration
value="HPII"/>
                                                <xs:enumeration
value="PortalUserIdentifier"/>
                                                <xs:enumeration
value="LocalSystemIdentifier"/>
                                            </xs:restriction>
                                        </xs:simpleType>
                                    </xs:element>
                                    <xs:element name="ID" type="xs:string" minOccurs="1"
maxOccurs="1"/>
                                    <xs:element name="role" type="xs:string" minOccurs="0"
maxOccurs="1"/>
                                    <xs:element name="userName" type="xs:string"
minOccurs="1" maxOccurs="1"/>
                                    <xs:element name="useRoleForAudit" type="xs:boolean"
minOccurs="1" maxOccurs="1"/>
                                </xs:sequence>
                            </xs:complexType>
                        </xs:element>
                        <xs:element ref="ns1:ihiNumber" minOccurs="0" maxOccurs="1"/>
                        <xs:element name="productType" minOccurs="1" maxOccurs="1">
                            <xs:complexType>
                                <xs:sequence>
                                    <xs:element name="vendor" type="xs:string"
minOccurs="1" maxOccurs="1"/>
                                    <xs:element name="productName" type="xs:string"
minOccurs="1" maxOccurs="1"/>
                                    <xs:element name="productVersion" type="xs:string"
minOccurs="1" maxOccurs="1"/>
                                    <xs:element name="platform" type="xs:string"
minOccurs="1" maxOccurs="1"/>
                                </xs:sequence>
                            </xs:complexType>
                        </xs:element>
                        <xs:element name="clientSystemType" minOccurs="1" maxOccurs="1">
                            <xs:simpleType>
                                <xs:restriction base="xs:string">
                                    <xs:enumeration value="CIS"/>
                                    <xs:enumeration value="CSP"/>
                                    <xs:enumeration value="CRP"/>
                                    <xs:enumeration value="HI"/>
                                    <xs:enumeration value="Medicare"/>
                                    <xs:enumeration value="CPP"/>
                                    <xs:enumeration value="CCP"/>
```

```
                                                <xs:enumeration value="Other"/>
                                        </xs:restriction>
                                </xs:simpleType>
                        </xs:element>
                        <xs:element name="accessingOrganisation" minOccurs="0" maxOccurs="1">
                                <xs:complexType>
                                        <xs:sequence>
                                                <xs:element name="organisationID" type="xs:string"
minOccurs="1" maxOccurs="1"/>
                                                <xs:element name="organisationName" type="xs:string"
minOccurs="1" maxOccurs="1"/>
                                                <xs:element name="alternateOrganisationName"
type="xs:string" minOccurs="0" maxOccurs="1"/>
                                        </xs:sequence>
                                </xs:complexType>
                        </xs:element>
                </xs:sequence>
        </xs:complexType>
</xs:element>
<xs:element name="sex">
        <xs:simpleType>
                <xs:restriction base="xs:string">
                        <xs:enumeration value="M"/>
                        <xs:enumeration value="F"/>
                        <xs:enumeration value="I"/>
                        <xs:enumeration value="N"/>
                </xs:restriction>
        </xs:simpleType>
</xs:element>
<xs:complexType name="accessConditionsType">
        <xs:sequence>
                <xs:element name="accessLevel" minOccurs="0" maxOccurs="1">
                        <xs:simpleType>
                                <xs:restriction base="xs:string">
                                        <xs:enumeration value="Self"/>
                                        <xs:enumeration value="General"/>
                                        <xs:enumeration value="Limited"/>
                                </xs:restriction>
                        </xs:simpleType>
                </xs:element>
                <xs:element name="accessPermission" minOccurs="0" maxOccurs="1">
                        <xs:simpleType>
                                <xs:restriction base="xs:string">
                                        <xs:enumeration value="Permit"/>
                                        <xs:enumeration value="Deny"/>
                                </xs:restriction>
                        </xs:simpleType>
                </xs:element>
                <xs:element name="accessConditions" minOccurs="0" maxOccurs="1">
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                                <xs:restriction base="xs:string">
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                                        <xs:enumeration value="AccessRevoked"/>
                                        <xs:enumeration value="PACAccess"/>
                                        <xs:enumeration value="PACXAccess"/>
                                        <xs:enumeration value="EmergencyAccess"/>
                                        <xs:enumeration value="LocalConsentAccess"/>
                                        <xs:enumeration value="AuthorisedRepresentativeAccess"/>
                                        <xs:enumeration value="NominatedRepresentativeAccess"/>
                                        <xs:enumeration value="IncorrectCode"/>
                                        <xs:enumeration value="LocalConsentAccessDenied"/>
                                        <xs:enumeration value="AccessRevoked"/>
                                </xs:restriction>
                        </xs:simpleType>
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        </xs:sequence>
</xs:complexType>
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                <xs:element name="organisationType" minOccurs="1" maxOccurs="1">
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                                <xs:restriction base="xs:string">
                                        <xs:maxLength value="7"/>
                                </xs:restriction>
                        </xs:simpleType>
                </xs:element>
                <xs:element name="organisationServiceType" minOccurs="1" maxOccurs="1">
                        <xs:simpleType>
                                <xs:restriction base="xs:string">
                                        <xs:maxLength value="7"/>
                                </xs:restriction>
                        </xs:simpleType>
```

```
                        </xs:element>
                        <xs:element name="organisationServiceUnit" minOccurs="0" maxOccurs="1">
                                <xs:simpleType>
                                        <xs:restriction base="xs:string">
                                                <xs:maxLength value="1000"/>
                                        </xs:restriction>
                                </xs:simpleType>
                        </xs:element>
                        <xs:element name="serviceComments" minOccurs="0" maxOccurs="1">
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                                        <xs:restriction base="xs:string">
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                                        </xs:restriction>
                                </xs:simpleType>
                        </xs:element>
                        <xs:element name="complexDate" minOccurs="1" maxOccurs="unbounded">
                                <xs:complexType>
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                                                <xs:element name="type" minOccurs="1" maxOccurs="1">
                                                        <xs:simpleType>
                                                                <xs:restriction base="xs:string">
                                                                        <xs:enumeration value="StartDate"/>
                                                                        <xs:enumeration value="EndDate"/>
                                                                </xs:restriction>
                                                        </xs:simpleType>
                                                </xs:element>
                                                <xs:element name="date" type="xs:date" minOccurs="1"
maxOccurs="1"/>
                                                <xs:element name="accuracyIndicator" type="xs:string"
minOccurs="1" maxOccurs="1"/>
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                                </xs:complexType>
                        </xs:element>
                </xs:sequence>
        </xs:complexType>
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                        <xs:element name="name" type="xs:string" minOccurs="1" maxOccurs="unbounded"/>
                        <xs:element name="organisationService" type="ns1:organisationServiceType" minOccurs="1"
maxOccurs="unbounded"/>
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                                                <xs:element ref="ns1:ihiNumber" minOccurs="1" maxOccurs="1"/>
                                                <xs:element name="name" type="xs:string" minOccurs="1"
maxOccurs="unbounded"/>
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type="ns1:organisationServiceType" minOccurs="1" maxOccurs="unbounded"/>
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                        </xs:element>
                </xs:sequence>
        </xs:complexType>
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                <xs:sequence>
                        <xs:element name="providerID" minOccurs="0" maxOccurs="1">
                                <xs:simpleType>
                                        <xs:restriction base="xs:string"/>
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                        </xs:element>
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                        <xs:element name="accessingHPIO" minOccurs="0" maxOccurs="1">
                                <xs:simpleType>
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                                </xs:simpleType>
                        </xs:element>
                        <xs:element name="accessingHPIOName" minOccurs="0" maxOccurs="1">
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                        </xs:element>
                        <xs:element name="participatingHPIO" minOccurs="0" maxOccurs="1">
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                                </xs:simpleType>
                        </xs:element>
                        <xs:element name="participatingHPIOName" type="xs:string" minOccurs="0" maxOccurs="1"/>
                        <xs:element name="userID" type="xs:string" minOccurs="0" maxOccurs="1"/>
                        <xs:element name="userName" type="xs:string" minOccurs="0" maxOccurs="1"/>
                        <xs:element name="displayRole" minOccurs="0" maxOccurs="1">
                                <xs:simpleType>
```

```
                                        <xs:restriction base="xs:string"/>
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                            </xs:sequence>
                        </xs:complexType>
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                                <xs:element name="subjectType" type="xs:string" minOccurs="0" maxOccurs="1"/>
                                <xs:element name="subject" type="xs:string" minOccurs="0" maxOccurs="1"/>
                            </xs:sequence>
                        </xs:complexType>
                        <xs:complexType name="participantActionType">
                            <xs:sequence>
                                <xs:element name="actionType" minOccurs="0" maxOccurs="1">
                                    <xs:simpleType>
                                        <xs:restriction base="xs:string">
                                            <xs:enumeration value="Create"/>
                                            <xs:enumeration value="Read"/>
                                            <xs:enumeration value="Update"/>
                                            <xs:enumeration value="Delete"/>
                                        </xs:restriction>
                                    </xs:simpleType>
                                </xs:element>
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                                <xs:element name="reason" minOccurs="0" maxOccurs="1">
                                    <xs:simpleType>
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                                            <xs:enumeration value="IncorrectIdentity"/>
                                            <xs:enumeration value="MedicalInaccuracy"/>
                                            <xs:enumeration value="ElectToRemove"/>
                                            <xs:enumeration value="IHIStatusIsDeceased"/>
                                            <xs:enumeration value="NoLegallyAppointmentAuthorised"/>
                                            <xs:enumeration value="NoOwnershipOfPCEHR"/>
                                            <xs:enumeration value="IHINotActive"/>
                                            <xs:enumeration value="IHINotVerified"/>
                                            <xs:enumeration value="TermsAndConditionsWereNotAccepted"/>
                                            <xs:enumeration value="Death"/>
                                            <xs:enumeration value="WithdrawalFromParticipation"/>
                                        </xs:restriction>
                                    </xs:simpleType>
                                </xs:element>
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                                <xs:element name="approvalRole" type="xs:string" minOccurs="0" maxOccurs="1"/>
                                <xs:element name="approvalName" type="xs:string" minOccurs="0" maxOccurs="1"/>
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                            </xs:sequence>
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                            <xs:simpleType>
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                                </xs:restriction>
                            </xs:simpleType>
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                        <xs:element name="militaryHealthNumber" type="xs:string"/>
                        <xs:element name="dateAccuracyIndicatorType">
                            <xs:simpleType>
                                <xs:restriction base="xs:string">
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                                            <xs:documentation>Accurate day, accurate month, accurate
year</xs:documentation>
                                        </xs:annotation>
                                    </xs:enumeration>
                                    <xs:enumeration value="AAE">
                                        <xs:annotation>
                                            <xs:documentation>Accurate day, accurate month, estimated
year</xs:documentation>
                                        </xs:annotation>
                                    </xs:enumeration>
                                    <xs:enumeration value="AAU">
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year</xs:documentation>
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```

```
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year</xs:documentation>
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year</xs:documentation>
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year</xs:documentation>
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year</xs:documentation>
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year</xs:documentation>
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year</xs:documentation>
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                </xs:enumeration>
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year</xs:documentation>
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year</xs:documentation>
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year</xs:documentation>
                    </xs:annotation>
                </xs:enumeration>
                <xs:enumeration value="EEU">
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                        <xs:documentation>Estimated day, estimated month, unknown
year</xs:documentation>
                    </xs:annotation>
                </xs:enumeration>
                <xs:enumeration value="EUA">
                    <xs:annotation>
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                <xs:enumeration value="EUE">
                    <xs:annotation>
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year</xs:documentation>
                    </xs:annotation>
                </xs:enumeration>
```

```
                        <xs:enumeration value="EUU">
                                <xs:annotation>
                                        <xs:documentation>Estimated day, unknown month, unknown
year</xs:documentation>
                                </xs:annotation>
                        </xs:enumeration>
                        <xs:enumeration value="UAA">
                                <xs:annotation>
                                        <xs:documentation>Unknown day, accurate month, accurate
year</xs:documentation>
                                </xs:annotation>
                        </xs:enumeration>
                        <xs:enumeration value="UAE">
                                <xs:annotation>
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                        </xs:enumeration>
                        <xs:enumeration value="UAU">
                                <xs:annotation>
                                        <xs:documentation>Unknown day, accurate month, unknown
year</xs:documentation>
                                </xs:annotation>
                        </xs:enumeration>
                        <xs:enumeration value="UEA">
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                                        <xs:documentation>Unknown day, estimated month, accurate
year</xs:documentation>
                                </xs:annotation>
                        </xs:enumeration>
                        <xs:enumeration value="UEE">
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year</xs:documentation>
                                </xs:annotation>
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year</xs:documentation>
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                        <xs:enumeration value="UUA">
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year</xs:documentation>
                                </xs:annotation>
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year</xs:documentation>
                                </xs:annotation>
                        </xs:enumeration>
                        <xs:enumeration value="UUU">
                                <xs:annotation>
                                        <xs:documentation>Unknown day, unknown month, unknown
year</xs:documentation>
                                </xs:annotation>
                        </xs:enumeration>
                </xs:restriction>
        </xs:simpleType>
    </xs:element>
</xs:schema>
```

A.1.5 XML schema – xmldsig-core-schema.xsd

```
<!-- Schema for XML Signatures
   http://www.w3.org/2000/09/xmldsig#
   $Revision: 1.1 $ on $Date: 2002/02/08 20:32:26 $ by $Author: reagle $

   Copyright 2001 The Internet Society and W3C (Massachusetts Institute
   of Technology, Institut National de Recherche en Informatique et en
   Automatique, Keio University). All Rights Reserved.
   http://www.w3.org/Consortium/Legal/

   This document is governed by the W3C Software License [1] as described
   in the FAQ [2].

   [1] http://www.w3.org/Consortium/Legal/copyright-software-19980720
```

```
    [2] http://www.w3.org/Consortium/Legal/IPR-FAQ-20000620.html#DTD
-->
<schema xmlns="http://www.w3.org/2001/XMLSchema" xmlns:ds="http://www.w3.org/2000/09/xmldsig#"
targetNamespace="http://www.w3.org/2000/09/xmldsig#" elementFormDefault="qualified" version="0.1">
        <!-- Basic Types Defined for Signatures -->
        <simpleType name="CryptoBinary">
          <restriction base="base64Binary"/>
        </simpleType>
        <!-- Start Signature -->
        <element name="Signature" type="ds:SignatureType"/>
        <complexType name="SignatureType">
          <sequence>
                <element ref="ds:SignedInfo"/>
                <element ref="ds:SignatureValue"/>
                <element ref="ds:KeyInfo" minOccurs="0"/>
                <element ref="ds:Object" minOccurs="0" maxOccurs="unbounded"/>
          </sequence>
          <attribute name="Id" type="ID" use="optional"/>
        </complexType>
        <element name="SignatureValue" type="ds:SignatureValueType"/>
        <complexType name="SignatureValueType">
          <simpleContent>
                <extension base="base64Binary">
                        <attribute name="Id" type="ID" use="optional"/>
                </extension>
          </simpleContent>
        </complexType>
        <!-- Start SignedInfo -->
        <element name="SignedInfo" type="ds:SignedInfoType"/>
        <complexType name="SignedInfoType">
          <sequence>
                <element ref="ds:CanonicalizationMethod"/>
                <element ref="ds:SignatureMethod"/>
                <element ref="ds:Reference" maxOccurs="unbounded"/>
          </sequence>
          <attribute name="Id" type="ID" use="optional"/>
        </complexType>
        <element name="CanonicalizationMethod" type="ds:CanonicalizationMethodType"/>
        <complexType name="CanonicalizationMethodType" mixed="true">
          <sequence>
                <any namespace="##any" minOccurs="0" maxOccurs="unbounded"/>
                <!-- (0,unbounded) elements from (1,1) namespace -->
          </sequence>
          <attribute name="Algorithm" type="anyURI" use="required"/>
        </complexType>
        <element name="SignatureMethod" type="ds:SignatureMethodType"/>
        <complexType name="SignatureMethodType" mixed="true">
          <sequence>
                <element name="HMACOutputLength" type="ds:HMACOutputLengthType" minOccurs="0"/>
                <any namespace="##other" minOccurs="0" maxOccurs="unbounded"/>
                <!-- (0,unbounded) elements from (1,1) external namespace -->
          </sequence>
          <attribute name="Algorithm" type="anyURI" use="required"/>
        </complexType>
        <!-- Start Reference -->
        <element name="Reference" type="ds:ReferenceType"/>
        <complexType name="ReferenceType">
          <sequence>
                <element ref="ds:Transforms" minOccurs="0"/>
                <element ref="ds:DigestMethod"/>
                <element ref="ds:DigestValue"/>
          </sequence>
          <attribute name="Id" type="ID" use="optional"/>
          <attribute name="URI" type="anyURI" use="optional"/>
          <attribute name="Type" type="anyURI" use="optional"/>
        </complexType>
        <element name="Transforms" type="ds:TransformsType"/>
        <complexType name="TransformsType">
          <sequence>
                <element ref="ds:Transform" maxOccurs="unbounded"/>
          </sequence>
        </complexType>
        <element name="Transform" type="ds:TransformType"/>
        <complexType name="TransformType" mixed="true">
          <choice minOccurs="0" maxOccurs="unbounded">
                <any namespace="##other" processContents="lax"/>
                <!-- (1,1) elements from (0,unbounded) namespaces -->
                <element name="XPath" type="string"/>
          </choice>
          <attribute name="Algorithm" type="anyURI" use="required"/>
        </complexType>
        <!-- End Reference -->
```

```
<element name="DigestMethod" type="ds:DigestMethodType"/>
<complexType name="DigestMethodType" mixed="true">
  <sequence>
    <any namespace="##other" processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
  </sequence>
  <attribute name="Algorithm" type="anyURI" use="required"/>
</complexType>
<element name="DigestValue" type="ds:DigestValueType"/>
<simpleType name="DigestValueType">
  <restriction base="base64Binary"/>
</simpleType>
<!-- End SignedInfo -->
<!-- Start KeyInfo -->
<element name="KeyInfo" type="ds:KeyInfoType"/>
<complexType name="KeyInfoType" mixed="true">
  <choice maxOccurs="unbounded">
    <element ref="ds:KeyName"/>
    <element ref="ds:KeyValue"/>
    <element ref="ds:RetrievalMethod"/>
    <element ref="ds:X509Data"/>
    <element ref="ds:PGPData"/>
    <element ref="ds:SPKIData"/>
    <element ref="ds:MgmtData"/>
    <any namespace="##other" processContents="lax"/>
    <!-- (1,1) elements from (0,unbounded) namespaces -->
  </choice>
  <attribute name="Id" type="ID" use="optional"/>
</complexType>
<element name="KeyName" type="string"/>
<element name="MgmtData" type="string"/>
<element name="KeyValue" type="ds:KeyValueType"/>
<complexType name="KeyValueType" mixed="true">
  <choice>
    <element ref="ds:DSAKeyValue"/>
    <element ref="ds:RSAKeyValue"/>
    <any namespace="##other" processContents="lax"/>
  </choice>
</complexType>
<element name="RetrievalMethod" type="ds:RetrievalMethodType"/>
<complexType name="RetrievalMethodType">
  <sequence>
    <element ref="ds:Transforms" minOccurs="0"/>
  </sequence>
  <attribute name="URI" type="anyURI"/>
  <attribute name="Type" type="anyURI" use="optional"/>
</complexType>
<!-- Start X509Data -->
<element name="X509Data" type="ds:X509DataType"/>
<complexType name="X509DataType">
  <sequence maxOccurs="unbounded">
    <choice>
      <element name="X509IssuerSerial" type="ds:X509IssuerSerialType"/>
      <element name="X509SKI" type="base64Binary"/>
      <element name="X509SubjectName" type="string"/>
      <element name="X509Certificate" type="base64Binary"/>
      <element name="X509CRL" type="base64Binary"/>
      <any namespace="##other" processContents="lax"/>
    </choice>
  </sequence>
</complexType>
<complexType name="X509IssuerSerialType">
  <sequence>
    <element name="X509IssuerName" type="string"/>
    <element name="X509SerialNumber" type="integer"/>
  </sequence>
</complexType>
<!-- End X509Data -->
<!-- Begin PGPData -->
<element name="PGPData" type="ds:PGPDataType"/>
<complexType name="PGPDataType">
  <choice>
    <sequence>
      <element name="PGPKeyID" type="base64Binary"/>
      <element name="PGPKeyPacket" type="base64Binary" minOccurs="0"/>
      <any namespace="##other" processContents="lax" minOccurs="0"
maxOccurs="unbounded"/>
    </sequence>
    <sequence>
      <element name="PGPKeyPacket" type="base64Binary"/>
      <any namespace="##other" processContents="lax" minOccurs="0"
maxOccurs="unbounded"/>
    </sequence>
```

```
        </choice>
    </complexType>
    <!-- End PGPData -->
    <!-- Begin SPKIData -->
    <element name="SPKIData" type="ds:SPKIDataType"/>
    <complexType name="SPKIDataType">
        <sequence maxOccurs="unbounded">
            <element name="SPKISexp" type="base64Binary"/>
            <any namespace="##other" processContents="lax" minOccurs="0"/>
        </sequence>
    </complexType>
    <!-- End SPKIData -->
    <!-- End KeyInfo -->
    <!-- Start Object (Manifest, SignatureProperty) -->
    <element name="Object" type="ds:ObjectType"/>
    <complexType name="ObjectType" mixed="true">
        <sequence minOccurs="0" maxOccurs="unbounded">
            <any namespace="##any" processContents="lax"/>
        </sequence>
        <attribute name="Id" type="ID" use="optional"/>
        <attribute name="MimeType" type="string" use="optional"/>
        <attribute name="Encoding" type="anyURI" use="optional"/>
        <!-- add a grep facet -->
    </complexType>
    <element name="Manifest" type="ds:ManifestType"/>
    <complexType name="ManifestType">
        <sequence>
            <element ref="ds:Reference" maxOccurs="unbounded"/>
        </sequence>
        <attribute name="Id" type="ID" use="optional"/>
    </complexType>
    <element name="SignatureProperties" type="ds:SignaturePropertiesType"/>
    <complexType name="SignaturePropertiesType">
        <sequence>
            <element ref="ds:SignatureProperty" maxOccurs="unbounded"/>
        </sequence>
        <attribute name="Id" type="ID" use="optional"/>
    </complexType>
    <element name="SignatureProperty" type="ds:SignaturePropertyType"/>
    <complexType name="SignaturePropertyType" mixed="true">
        <choice maxOccurs="unbounded">
            <any namespace="##other" processContents="lax"/>
            <!-- (1,1) elements from (1,unbounded) namespaces -->
        </choice>
        <attribute name="Target" type="anyURI" use="required"/>
        <attribute name="Id" type="ID" use="optional"/>
    </complexType>
    <!-- End Object (Manifest, SignatureProperty) -->
    <!-- Start Algorithm Parameters -->
    <simpleType name="HMACOutputLengthType">
        <restriction base="integer"/>
    </simpleType>
    <!-- Start KeyValue Element-types -->
    <element name="DSAKeyValue" type="ds:DSAKeyValueType"/>
    <complexType name="DSAKeyValueType">
        <sequence>
            <sequence minOccurs="0">
                <element name="P" type="ds:CryptoBinary"/>
                <element name="Q" type="ds:CryptoBinary"/>
            </sequence>
            <element name="G" type="ds:CryptoBinary" minOccurs="0"/>
            <element name="Y" type="ds:CryptoBinary"/>
            <element name="J" type="ds:CryptoBinary" minOccurs="0"/>
            <sequence minOccurs="0">
                <element name="Seed" type="ds:CryptoBinary"/>
                <element name="PgenCounter" type="ds:CryptoBinary"/>
            </sequence>
        </sequence>
    </complexType>
    <element name="RSAKeyValue" type="ds:RSAKeyValueType"/>
    <complexType name="RSAKeyValueType">
        <sequence>
            <element name="Modulus" type="ds:CryptoBinary"/>
            <element name="Exponent" type="ds:CryptoBinary"/>
        </sequence>
    </complexType>
    <!-- End KeyValue Element-types -->
    <!-- End Signature -->
</schema>
```

A.2 doesPCEHRExist and gainPCEHRAccess interface

A.2.1 Interface Definition

A.2.1.1 B2B_PCEHRProfileInterface.wsdl

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Version 1.1 issued 11 April 2012-->
<wsdl:definitions xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:ns2="http://ns.electronichealth.net.au/pcehr/xsd/interfaces/PCEHRProfile/1.0"
xmlns:tns="http://ns.electronichealth.net.au/wsp/xsd/StandardError/2010"
xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata"
xmlns:ns4="http://ns.electronichealth.net.au/pcehr/xsd/common/CommonCoreElements/1.0"
xmlns:pcehr_b2b="http://ns.electronichealth.net.au/pcehr/b2b/svc/PCEHRProfile/1.1"
xmlns:sig="http://www.w3.org/2000/09/xmldsig#" name="PCEHRProfile"
targetNamespace="http://ns.electronichealth.net.au/pcehr/b2b/svc/PCEHRProfile/1.1">
        <wsdl:types>
          <xsd:schema targetNamespace="http://ns.electronichealth.net.au/pcehr/b2b/svc/PCEHRProfile/1.1"
elementFormDefault="qualified">
                <xsd:import
namespace="http://ns.electronichealth.net.au/pcehr/xsd/common/CommonCoreElements/1.0"
schemaLocation="../../schema/Common/PCEHR_CommonTypes.xsd"/>
                <xsd:import namespace="http://ns.electronichealth.net.au/pcehr/xsd/interfaces/PCEHRProfile/1.0"
schemaLocation="../../schema/External/PCEHR_DoesPCEHRExist.xsd"/>
                <xsd:import namespace="http://ns.electronichealth.net.au/pcehr/xsd/interfaces/PCEHRProfile/1.0"
schemaLocation="../../schema/External/PCEHR_GainPCEHRAccess.xsd"/>
                <xsd:import namespace="http://ns.electronichealth.net.au/wsp/xsd/StandardError/2010"
schemaLocation="../../schema/Common/wsp-StandardError-2010.xsd"/>
          </xsd:schema>
        </wsdl:types>
        <wsdl:message name="headerMsg">
          <wsdl:part name="timestampHeader" element="ns4:timestamp"/>
          <wsdl:part name="signatureHeader" element="ns4:signature"/>
          <wsdl:part name="PCEHRHeader" element="ns4:PCEHRHeader"/>
        </wsdl:message>
        <wsdl:message name="doesPCEHRExistInMsg">
          <wsdl:part name="parameters" element="ns2:doesPCEHRExist"/>
        </wsdl:message>
        <wsdl:message name="doesPCEHRExistOutMsg">
          <wsdl:part name="parameters" element="ns2:doesPCEHRExistResponse"/>
        </wsdl:message>
        <wsdl:message name="gainPCEHRAccessInMsg">
          <wsdl:part name="parameters" element="ns2:gainPCEHRAccess"/>
        </wsdl:message>
        <wsdl:message name="gainPCEHRAccessOutMsg">
          <wsdl:part name="parameters" element="ns2:gainPCEHRAccessResponse"/>
        </wsdl:message>
        <wsdl:message name="standardErrorMsg">
          <wsdl:part name="parameters" element="tns:standardError"/>
        </wsdl:message>
        <wsdl:portType name="PCEHRProfilePortType">
          <wsdl:operation name="doesPCEHRExist" parameterOrder="parameters">
                <wsdl:input message="pcehr_b2b:doesPCEHRExistInMsg"
wsam:Action="http://ns.electronichealth.net.au/pcehr/svc/PCEHRProfile/1.1/PCEHRProfilePortType/doesPCEHRExistR
equest"/>
                <wsdl:output message="pcehr_b2b:doesPCEHRExistOutMsg"
wsam:Action="http://ns.electronichealth.net.au/pcehr/svc/PCEHRProfile/1.1/PCEHRProfilePortType/doesPCEHRExistR
esponse"/>
                <wsdl:fault name="standardError" message="pcehr_b2b:standardErrorMsg"
wsam:Action="http://ns.electronichealth.net.au/pcehr/svc/PCEHRProfile/1.1/PCEHRProfilePortType/Fault/standardError
"/>
          </wsdl:operation>
          <wsdl:operation name="gainPCEHRAccess" parameterOrder="parameters">
                <wsdl:input message="pcehr_b2b:gainPCEHRAccessInMsg"
wsam:Action="http://ns.electronichealth.net.au/pcehr/svc/PCEHRProfile/1.1/PCEHRProfilePortType/gainPCEHRAccess
Request"/>
                <wsdl:output message="pcehr_b2b:gainPCEHRAccessOutMsg"
wsam:Action="http://ns.electronichealth.net.au/pcehr/svc/PCEHRProfile/1.1/PCEHRProfilePortType/gainPCEHRAccess
Response"/>
                <wsdl:fault name="standardError" message="pcehr_b2b:standardErrorMsg"
wsam:Action="http://ns.electronichealth.net.au/pcehr/svc/PCEHRProfile/1.1/PCEHRProfilePortType/Fault/standardError
"/>
          </wsdl:operation>
        </wsdl:portType>
</wsdl:definitions>
```

A.2.2 TLS Binding

A.2.2.1 B2B_PCEHRProfile.wsdl

```
<?xml version="1.0" encoding="UTF-8"?>
<!--Version 1.1 issued 11 April 2012-->
<wsdl:definitions xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/" xmlns:wsp="http://www.w3.org/ns/ws-policy"
xmlns:wsam="http://www.w3.org/2007/05/addressing/metadata" xmlns:sp="http://docs.oasis-open.org/ws-sx/ws-
securitypolicy/200702" xmlns:pcehr_b2b="http://ns.electronichealth.net.au/pcehr/b2b/svc/PCEHRProfile/1.1"
name="PCEHRProfile" targetNamespace="http://ns.electronichealth.net.au/pcehr/b2b/svc/PCEHRProfile/1.1">
        <wsdl:import namespace="http://ns.electronichealth.net.au/pcehr/b2b/svc/PCEHRProfile/1.1"
location="B2B_PCEHRProfileInterface.wsdl"/>
        <wsdl:binding name="PCEHRProfileServiceSOAP12Binding" type="pcehr_b2b:PCEHRProfilePortType">
          <soap12:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
          <wsp:PolicyReference URI="#AddressingPolicy"/>
          <wsp:PolicyReference URI="#TlsPolicy"/>
          <wsdl:operation name="doesPCEHRExist">
                <soap12:operation soapActionRequired="false" style="document"/>
                <wsdl:input>
                      <soap12:header message="pcehr_b2b:headerMsg" part="timestampHeader"
use="literal"/>
                      <soap12:header message="pcehr_b2b:headerMsg" part="signatureHeader"
use="literal"/>
                      <soap12:header message="pcehr_b2b:headerMsg" part="PCEHRHeader" use="literal"/>
                      <soap12:body use="literal" message="pcehr_b2b:doesPCEHRExistInMsg"
part="parameters"/>
                </wsdl:input>
                <wsdl:output>
                      <soap12:header message="pcehr_b2b:headerMsg" part="signatureHeader"
use="literal"/>
                      <soap12:body use="literal" message="pcehr_b2b:doesPCEHRExistOutMsg"
part="parameters"/>
                </wsdl:output>
                <wsdl:fault name="standardError">
                      <soap12:fault name="standardError" use="literal"/>
                </wsdl:fault>
          </wsdl:operation>
          <wsdl:operation name="gainPCEHRAccess">
                <soap12:operation soapActionRequired="false" style="document"/>
                <wsdl:input>
                      <soap12:header message="pcehr_b2b:headerMsg" part="timestampHeader"
use="literal"/>
                      <soap12:header message="pcehr_b2b:headerMsg" part="signatureHeader"
use="literal"/>
                      <soap12:header message="pcehr_b2b:headerMsg" part="PCEHRHeader" use="literal"/>
                      <soap12:body use="literal" message="pcehr_b2b:gainPCEHRAccessInMsg"
part="parameters"/>
                </wsdl:input>
                <wsdl:output>
                      <soap12:header message="pcehr_b2b:headerMsg" part="signatureHeader"
use="literal"/>
                      <soap12:body use="literal" message="pcehr_b2b:gainPCEHRAccessOutMsg"
part="parameters"/>
                </wsdl:output>
                <wsdl:fault name="standardError">
                      <soap12:fault name="standardError" use="literal"/>
                </wsdl:fault>
          </wsdl:operation>
        </wsdl:binding>
        <wsdl:service name="PCEHRProfileService">
          <wsdl:port name="PCEHRProfileSOAP12Port" binding="pcehr_b2b:PCEHRProfileServiceSOAP12Binding">
                <soap12:address location="http://localhost:8011/"/>
          </wsdl:port>
        </wsdl:service>
        <wsp:Policy xml:id="AddressingPolicy">
          <wsam:Addressing/>
        </wsp:Policy>
        <wsp:Policy xml:id="TlsPolicy">
          <sp:TransportBinding>
                <wsp:Policy>
                      <sp:TransportToken>
                            <wsp:Policy>
                                  <sp:HttpsToken>
                                        <wsp:Policy>
                                              <sp:RequireClientCertificate/>
                                        </wsp:Policy>
                                  </sp:HttpsToken>
                            </wsp:Policy>
                      </sp:TransportToken>
```

```
                        </wsp:Policy>
                    </sp:TransportBinding>
                </wsp:Policy>
            </wsdl:definitions>
```

Appendix B Acronyms and Terminology

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

Acronym	Explanation
CIS	Clinical Information System
CSP	Contracted Service Provider
HPI-I	Healthcare Provider Identifier Individual
HPI-O	Healthcare Provider Identifier Organisation
IHI	Individual Healthcare Identifier
LSS	Logical Service Specification
PCEHR	Personally Controlled Electronic Health Record
TLS	Transport Layer Security
TSS	Technical Service Specification
UML	Unified Modeling Language
WSDL	Web Service Definition Language
WSP	Web Service Profile – Commonly used to refer to the ATS-5820 Web Service Profile.
XSD	XML Schema Definition

Appendix C References

Tag	Name	Version Release/Date
[ATS 5820-2010]	ATS 5820-2010 Australian Technical Specification E-health Web Services Profile	5/3/2010
[ATS 5821-2010]	ATS 5821-2010 Australian Technical Specification E-health XML Secured Payload Profile	5/3/2010
[OASIS200401]	Web Services Security X.509 Certificate Token Profile http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-x509-token-profile-1.0.pdf	OASIS Standard 200401 March 2004
[PCEHR-CON-OPS]	PCEHR Concept of Operations	September 2011 Release
[PCEHR-RAS-LSS]	PCEHR Record Access Service Logical Service Specification	V0.8
[PCEHR-RAS-V1.0]	PCEHR Record Access Technical Service Specification	V1.0 10/11/2011
[PCEHR-SYSTEM-GLOSSARY]	PCEHR System - Glossary	1.0 6/05/2011
[RFC2119]	IETF, *RFC 2119: Keywords for use in RFCs to Indicate Requirement Levels*, S. Bradner, March 1997 http://ietf.org/rfc/rfc2119.txt	03/1997.
[RM-ODP]	Reference Model of Open Distributed Processing ISO/IEC 10746-3:2009	2009
[UML2010]	UML Version 2.3 http://www.omg.org/spec/UML/2.3/	Version 2.3 May 2010
[W3C-XML-1.1]	http://www.w3.org/TR/2006/REC-xml11-20060816	Version 1.1 September 2006