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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

E-health multimedia services and applications – Interoperability compliance testing of personal health systems (HRN, PAN, LAN, TAN and WAN)

Conformance of ITU-T H.810 personal health system: Healthcare information system interface

Recommendation ITU-T H.821

International Telecommunication Union

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Recommendation ITU-T H.821

Conformance of ITU-T H.810 personal health system: Healthcare information system interface

Summary

Recommendation ITU-T H.821 provides a test suite structure (TSS) and the test purposes (TP) for the healthcare information system (HIS) interface, based on the requirements defined in the Recommendations of the ITU-T H.810 sub-series, of which Recommendation ITU-T H.810 (2016) is the base Recommendation. The objective of this test specification is to provide a high probability of interoperability at this interface.

Recommendation ITU-T H.821 is a transposition of Continua Test Tool DG2016, Test Suite Structure & Test Purposes, HIS Interface (Version 1.6, 2017-03-14), that was developed by the Personal Connected Health Alliance. A number of versions of this specification existed before transposition.

This Recommendation includes an electronic attachment with the protocol implementation conformance statements (PICS) and the protocol implementation extra information for testing (PIXIT) required for the implementation of Annex A.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T H.821	2014-10-29	16	11.1002/1000/12248
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Keywords

Conformance testing, Continua Design Guidelines, e-health, health record network interface, healthcare information system, ITU-T H.810.

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* To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, http://handle.itu.int/11.1002/1000/11830-en.

FOREWORD

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The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure, e.g., interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had not received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementers are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database at http://www.itu.int/ITU-T/ipr/.

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Introduction

This Recommendation is a transposition of Continua Test Tool DG2016, Test Suite Structure & Test Purposes, HIS Interface (Version 1.6, 2017-03-14), that was developed by the Personal Connected Health Alliance. The table below shows the revision history of this test specification; it may contain versions that existed before transposition.

Version	Date	Revision history
1.1	2012-10-05	Initial release for Test Tool DG2011. It uses "TSS&TP_1.5_ HRN_Sender_v1.1.doc" as a baseline and adds new features included in [b-CDG 2011]: • Digital signature, Patient ID and Consent management
1.2	2013-05-24	Initial release for Test Tool DG2012. This is the same version as "TSS&TP_DG2011_HRN_Sender_v1.2.doc" because the Test Tool DG2012 scope did not include HRN enhancements
1.2	2014-01-24	Initial release for Test Tool DG2013. This is the same version as "TSS&TP_DG2012_HRN_Sender_v1.2.doc" because the new features included in [b-ITU-T H.810 (2013)]/[b-CDG 2013] did not include HRN enhancements.
1.3	2014-04-24	TM Lite & Doc Enhancements (Test Tool v4.0 Maintenance Release 1). It uses "TSS&TP_DG2013_HRN_Sender_v1.2.doc" as a baseline and adds new features included in Documentation Enhancements: • "Other PICS" row added
1.4	2015-07-01	Initial release for Test Tool DG2015. It uses "TSS&TP_ DG2013_HRN_Sender_v1.3.doc" as a baseline and adds some fixes found in the documentation [b-ITU-T H.810 (2015)]/ [b-CDG 2015]: • Section number has changed in the IETF RFC 3881. Now it is "Section 6" instead. • Change from "Section 4" to "Annex B.5" for consistency.
1.5	2016-09-20	Initial release for Test Tool DG2016. It implements changes according to [ITU-T H.810 (2016)]/[b-CDG 2016] (Iris + Errata) refreshments.
1.6	2017-03-14	Minor editorial changes (*Service* instead of *System*).

Recommendation ITU-T H.821

Conformance of ITU-T H.810 personal health system: Healthcare information system interface

1 Scope

The scope of this Recommendation[1] is to provide a test suite structure (TSS) and the test purposes (TP) for the healthcare information system (HIS) interface based on the requirements defined in [ITU-T H.813], which is part of the ITU-T H.810-series and is a transposition of the Continua Design Guidelines (CDG) [ITU-T H.810 (2016)]. The objective of this test specification is to provide a high probability of interoperability between different devices through the HIS interface to transfer patient information from a Health & Fitness Service (HIS sender) to a healthcare information system (HIS receiver).

This Recommendation focuses only on the TSS and TP for the HIS sender because, at this moment, certification of the HIS receiver is out of the scope of the developed test tool.

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

[ITU-T H.810 (2016)] Recommendation ITU-T H.810 (2016), *Interoperability design guidelines for personal health systems*.

[ITU-T H.813] Recommendation ITU-T H.813 (2016), *Interoperability design guidelines for personal health systems: Healthcare information system (HIS) interface.*

[HL7 CDA IG] Health Level Seven (2011), *HL7 Implementation Guide for Clinical Document Architecture, Release 2: Consent Directives, Release 1, HL7 Draft Standard for Trial Use*. http://www.hl7.org/documentcenter/public/standards/dstu/CDAR2_IG%20_CONSENTDIR_DSTU_2011JAN.pdf

[HL7 CDA-PHMR] Health Level Seven (2010), *HL7 Implementation Guide for CDA Release 2: Personal Healthcare Monitoring Report, DSTU Release 1.1*. http://www.hl7.org/documentcenter/public/standards/dstu/CDAR2_IG_PHMRPTS_R1.1_DSTU_2010OCT.zip

[IETF RFC 3195] IETF RFC 3195 (2001), *Reliable Delivery for syslog*. https://datatracker.ietf.org/doc/rfc3195

[1] This Recommendation includes an electronic attachment with the protocol implementation conformance statements (PICS) and the protocol implementation extra information for testing (PIXIT) required for the implementation of Annex A.

[IETF RFC 3881] IETF RFC 3881 (2004), Security Audit and Access Accountability *Message XML Data Definitions for Healthcare Applications.* https://datatracker.ietf.org/doc/rfc3881

[IHE ITF PIX PDQ] IHE ITF PIX PDQ (2010), *IHE IT Infrastructure, Technical Framework Supplement – Patient Identifier Cross-Reference HL7 V3 (PIXV3) and Patient Demographic Query HL7 V3 (PDQV3) – Trial Implementation*. http://www.ihe.net/Technical_Framework/upload/IHE_ITI_Suppl_PIX_PDQ_HL7v3_Rev2-1_TI_2010-08-10.pdf

[IHE ITI-TF-1] IHE ITI TF 1 (2009), *IHE IT Infrastructure Technical Framework, Volume 1 (ITI TF-1): Integration Profiles, Revision 6.0*. http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_6-0_Vol1_FT_2009-08-10-2.pdf

[IHE ITI-TF-2] IHE ITI TF 2 (2009), *IHE IT Infrastructure Technical Framework, Volume 2 (ITI TF-2), Revision 6.0*. It comprises three sub-volumes: 2a (Transactions Part A), 2b (Transactions Part B) and 2x (Appendices). http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_6-0_Vol2a_FT_2009-08-10.pdf http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_6-0_Vol2b_FT_2009-08-10.pdf http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_6-0_Vol2x_FT_2009-08-10.pdf

[IHE TFS XUA++] IHE TFS XUA++ (2010), IHE IT Infrastructure (ITI), *Technical Framework Supplement: Cross-Enterprise User Assertion - Attribute Extension (XUA++). Trial Implementation.* http://www.ihe.net/Technical_Framework/upload/IHE_ITI_Suppl_XUA-_Rev1-1_TI_2010-08-10.pdf

[ITU-T X.290] Recommendation ITU-T X.290 (1995), *OSI conformance testing methodology and framework for protocol Recommendations for ITU-T applications – General concepts*.

3 Definitions

3.1 Terms defined elsewhere

None.

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

AM Adherence Monitor

ATNA Audit Trail and Node Authentication

ATS Abstract Test Suite

CDA Clinical Document Architecture

CDG Continua Design Guidelines

CGM Continuous Glucose Monitor

DSG Digital Signature Validation

DUT	Device Under Test
ebXML	electronic business using extensible Markup Language
EHR	Electronic Health Record
GUI	Graphical User Interface
HIS	Healthcare Information System
HFS	Health & Fitness Service
HFSS	Health & Fitness Service Sender
HFSR	Health & Fitness Service Receiver
HRN	Health Record Network
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
INR	International Normalized Ratio
IP	Insulin Pump
IUT	Implementation Under Test
MDS	Medical Device System
MTOM	Message Transmission Optimization Mechanism
NFC	Near Field Communication
NTP	Network Time Protocol
PAN	Personal Area Network
PCO	Point of Control and Observation
PCT	Protocol Conformance Testing
PHD	Personal Health Device
PHDC	Personal Healthcare Device Class
PHM	Personal Healthcare Monitoring (report)
PHG	Personal Health Gateway
PHR	Personal Healthcare Record
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation extra Information for Testing
PO	Point of Observation
SABTE	Sleep Apnoea Breathing Therapy Equipment
SCR	Static Conformance Review
S/MIME	Secure/Multipurpose Internet Mail Extensions
SMTP	Simple Mail Transfer Protocol
SOAP	Simple Object Access Protocol
SUT	System Under Test
SSL	Secure Socket Layer
TCWG	Test and Certification Working Group

TE	Test Equipment
TI	Testable Item
TLS	Transport Level Security
TP	Test Purpose
TSS	Test Suite Structure
USB	Universal Serial Bus
XDM	cross-enterprise Document Media interchange
XDR	cross-enterprise Document Reliable interchange
XDS	cross-enterprise Document Sharing
XDS.b	cross-enterprise Document Sharing-b
XML	extensible Markup Language
XOP	XML-binary Optimized Packaging
XPath	XML Path language
XSD	XML Schema
WAN	Wide Area Network
WDM	Windows Driver Model
WS	Web Service

5 Conventions

The key words "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "MAY", "MAY NOT" in this Recommendation are to be interpreted as in [b-ETSI SR 001 262].

– SHALL is equivalent to 'must' or 'it is required to'.

– SHALL NOT is equivalent to 'must not' or 'it is not allowed'.

– SHOULD is equivalent to 'it is recommended to'.

– SHOULD NOT is equivalent to 'it is not recommended to'.

– MAY is equivalent to 'is permitted'.

– MAY NOT is equivalent to 'it is not required that'.

NOTE – The above-mentioned key words are capitalized for illustrative purposes only and they do not appear capitalized within this Recommendation.

Reference is made in the ITU-T H.800-series of Recommendations to different versions of the Continua Design Guidelines (CDG) by a specific designation. The list of terms that may be used in this Recommendation is provided in Table 1.

Table 1 – List of designations associated with the various versions of the CDG

CDG release	Transposed as	Version	Description	Designation
2016 plus errata	[ITU-T H.810 (2016)]	6.1	Release 2016 plus errata noting all ratified bugs [b-CDG 2016].	–
2016	–	6.0	Release 2016 of the CDG including maintenance updates of the CDG 2015 and additional guidelines that cover new functionalities.	Iris
2015 plus errata	[b-ITU-T H.810 (2015)]	5.1	Release 2015 plus errata noting all ratified bugs [b-CDG 2015]. The 2013 edition of H.810 is split into eight parts in the H.810-series.	–
2015	–	5.0	Release 2015 of the CDG including maintenance updates of the CDG 2013 and additional guidelines that cover new functionalities.	Genome
2013 plus errata	[b-ITU-T H.810 (2013)]	4.1	Release 2013 plus errata noting all ratified bugs [b-CDG 2013].	–
2013	–	4.0	Release 2013 of the CDG including maintenance updates of the CDG 2012 and additional guidelines that cover new functionalities.	Endorphin
2012 plus errata	–	3.1	Release 2012 plus errata noting all ratified bugs [b-CDG 2012].	–
2012	–	3.0	Release 2012 of the CDG including maintenance updates of the CDG 2011 and additional guidelines that cover new functionalities.	Catalyst
2011 plus errata	–	2.1	CDG 2011 integrated with identified errata.	–
2011	–	2.0	Release 2011 of the CDG including maintenance updates of the CDG 2010 and additional guidelines that cover new functionalities [b-CDG 2011].	Adrenaline
2010 plus errata	–	1.6	CDG 2010 integrated with identified errata	–
2010	–	1.5	Release 2010 of the CDG with maintenance updates of the CDG Version 1 and additional guidelines that cover new functionalities [b-CDG 2010].	1.5
1.0	–	1.0	First released version of the CDG [b-CDG 1.0].	–

6 Test suite structure (TSS)

The test purposes (TPs) for the healthcare information system (HIS) interface are described in Annex A and have been divided into two main groups:

– **Group 1**: HIS sender (SEN)

  • **Group 1.1**: HIS direct sender (XDR) message acquisition and validation (DSMA)

- **Group 1.2**: HIS indirect sender (XDM) message acquisition and validation (ISMA)
- **Group 1.3**: HIS message syntactic validation (XSV)
- **Group 1.4**: HIS message body (PHM report) CDG CDA conformance (CCDA)
- **Group 1.5**: HIS message body (PHM report) CDG CCD conformance (CCCD)
- **Group 1.6**: HIS message header (Metadata) semantic validation (mapping with PHM report) (XMSV)
- **Group 1.7**: HIS adherence monitor validation (AM)
- **Group 1.8**: HIS ATNA validation (ATNA)
- **Group 1.9**: HIS document digital signature validation (DSG)
- **Group 1.10**: HIS patient identification validation (PIX)
- **Group 1.11**: HIS consent management (CM)

– **Group 2**: HIS receiver (REC)

NOTE – TPs for Group 2 are for further study.

7 Electronic attachment

The protocol implementation conformance statements (PICS) and the protocol implementation extra information for testing (PIXIT) required for the implementation of Annex A can be downloaded from http://handle.itu.int/11.1002/2000/12067.

In the electronic attachment, letters "C" and "I" in the column labelled "Mandatory" are used to distinguish between "PICS" and "PIXIT" respectively during testing. If the cell is empty, the corresponding PICS is "independent". If the field contains a "C", the corresponding PICS is dependent on other PICS, and the logical expression is detailed in the "SCR_Expression" field. The static conformance review (SCR) is used in the test tool to assert whether the PICS selection is consistent.

Annex A

Test purposes

(This annex forms an integral part of this Recommendation.)

A.1 TP definition conventions

The test purposes (TPs) are defined according to the following rules:

– **TP Id**: This is a unique identifier (TP/<TT>/<DUT>/<GR>/<XX> – <NNN>). It is specified according to the naming convention defined below:

- Each test purpose identifier is introduced by the prefix "TP".
- <TT>: This is the test tool that will be used in the test case.
  - HIS: Healthcare Information System
- <DUT>: This is the device under test.
  - SEN: HIS sender
  - REC: HIS receiver (not used because it is out of scope of the developed test tool)
- <GR>: This identifies a group of test cases.
- <XX>: This identifies the type of testing.
  - BV: Valid behaviour test
  - BI: Invalid behaviour test
- <NNN>: This is a sequential number that identifies the test purpose.

– **TP label**: This is the TP's title.

– **Coverage**: This contains the specification reference and clause to be checked by the TP.

- Spec: This indicates the earliest version of the specification from which the testable items to be checked by the TP were included.
- Testable item: This contains the testable items to be checked by the TP.

– **Test purpose**: This is a description of the requirements to be tested.

– **Applicability**: This contains the PICS items that define if the test case is applicable or not for a specific device.

– **Other PICS**: This contains additional PICS items (apart from the PICS specified in the Applicability row) which are used within the test case implementation and can modify the final verdict. When this row is empty, it means that only the PICS specified in the Applicability row are used within the test case implementation

– **Initial condition**: This indicates the state to which the DUT needs to be moved at the beginning of TC execution.

Test procedure: This describes the steps to be followed in order to execute the test case.

– **Pass/Fail criteria**: This provides criteria to decide whether the DUT passes or fails the test case.

A.2 Test purposes structure

The HIS protocol is based on the interchange of a single but complex XML message from the HIS sender (Health & Fitness Service) to the HIS receiver (Healthcare Information System). The HIS test tool has to verify the sender mode of the protocol only, which includes the HTTP and SOAP (HIS direct sender) or SMTP and S/MIME (HIS indirect sender) communication and the syntax and

semantics of the XML message transmitted from the HIS sender. Test cases defined to implement these verifications are described below:

– **HIS direct sender (XDR) message acquisition and validation (DSMA)**: This test case runs the HTTP/HTTPS server (configured with TLS and a key length of 128 bits) and the web service (WS) that is going to receive the XDR message from the HIS direct sender under test (XDR Transport). Once the HIS sender has sent the message and if it conforms with the HTTP/HTTPS and SOAP 1.2 protocols [b-SOAP 1.2], it will be received by the web server and stored in an internal structure that will be used by the subsequent XDR test cases. If there is an error with the communication, the test case timeout expires and it shows the HTTP/HTTPS server log which verifies that there has been a communication error or the received message is not conformant to minimal XML syntax requirements. This test case also runs the audit record repository server (configured with TLS) that is going to receive the audit record message from the HIS direct sender. Once the HIS sender has sent the audit record message and if it conforms with the RFC 3195 protocol it will be stored in a file that will be used in subsequent XDR test cases. In case of errors in the communication, the test case timeout expires and it shows the audit repository log. Figure A.1 shows message acquisition and HTTP and SOAP validation.

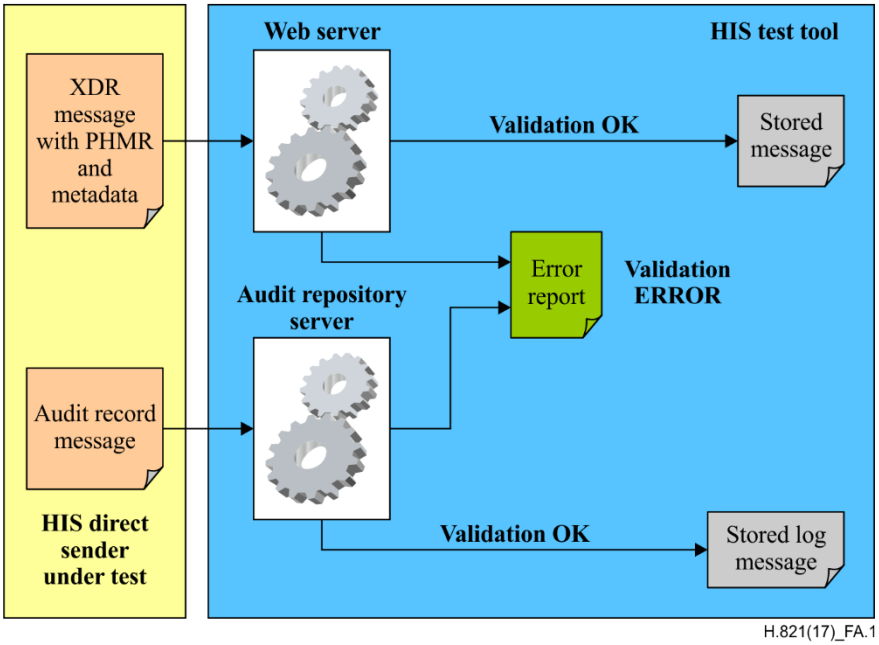

Figure A.1 – Message acquisition and HTTP and SOAP validation

– **HIS indirect sender (XDM) message acquisition and validation (ISMA)**: This test case runs the SMTP mail server (configured with transport level security (TLS) and a key length of 128 bits) that is going to receive the XDM message from the HIS indirect sender (XDM transport) under test. Once the HIS sender under test has sent the message and if it conforms to the SMTP protocol and S/MIME standard, it will be received by the mail server and stored in an internal structure that will be used by the subsequent XDM test cases. If there is an error with the communication, the test case timeout expires and it shows the mail server log which verifies that there has been a communication error or that the received message is not conformant to minimal XML syntax requirements. This test case also runs the audit record repository server (configured with TLS) that is going to receive the audit record message from the HIS indirect sender. Once the HIS sender has sent the audit record message and if it conforms with the RFC 3195 protocol it will be stored in a file that will be used in subsequent test cases. In case of errors in the communication, the

test case timeout expires and it shows the audit repository log. Figure A.2 shows message acquisition and SMTP and S/MIME validation.

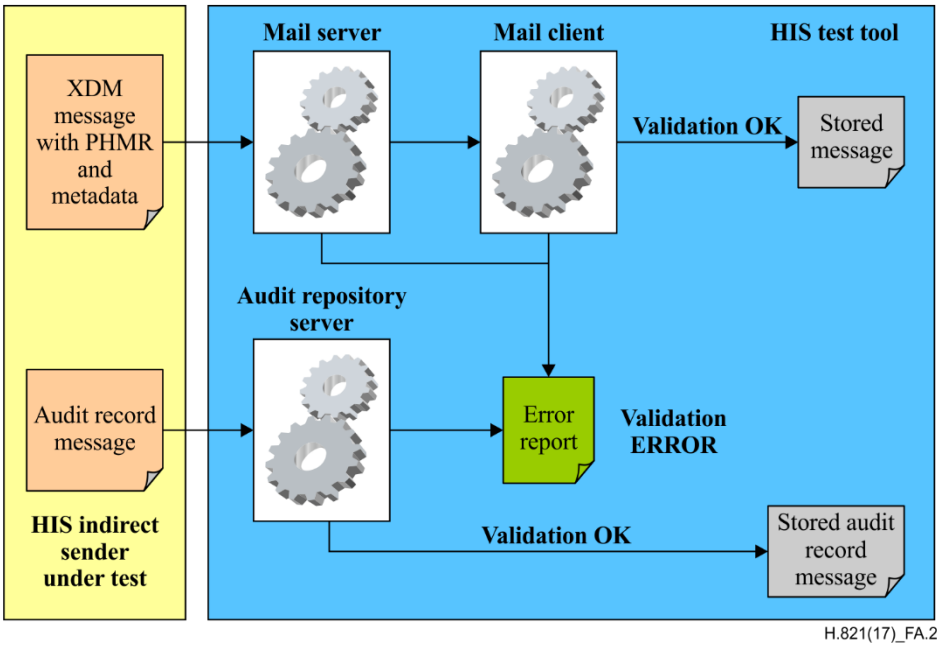

Figure A.2 – Message acquisition and SMTP and S/MIME validation

– **HIS message syntax validation (XSV)**: The HIS message is based on the IHE XDS profile, and corresponds to the specific form of ebXML "Provide And Register Document Set-b Request" element. The syntax verification of the HIS message is based on the conformance with the XSD template that describes the XML format of the ebXML message. This verification is performed with an XSD validation, a one step verification that includes all testable items related to the syntax of the HIS message. Its result is an XSD error report that shows details about any syntax errors detected. In this test case, the personal healthcare monitoring (PHM) report document is seen as a codec document (base-64 codification) or as part of the MIME multipart message (binary) using the message transmission optimization mechanism (MTOM), so its syntax will not have been checked yet. Figure A.3 shows message syntax validation.

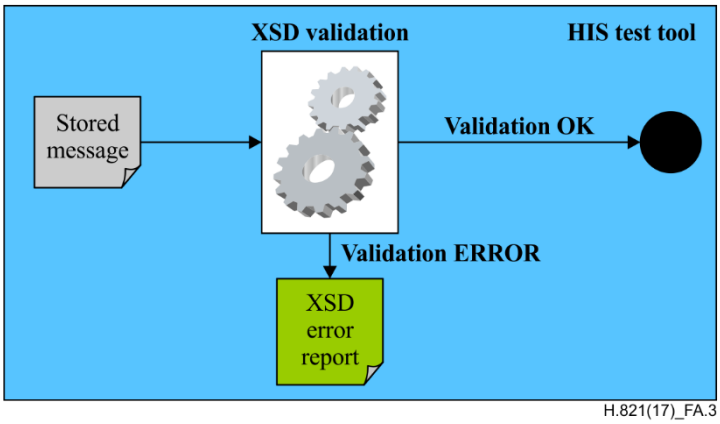

Figure A.3 – Message syntax validation

– **Message body (PHM reports) CDG CDA (CCDA) validation**: This test case validates the syntax and semantics of the PHM report with the CDA format and CDG CDA constraints. It is done in two steps, the first using an XSD template and the second using Schematron validation [b-ISO/IEC 19757-3]. Syntax validation is performed using both steps due to the fact that some syntactic testable items might be out of scope of the XSD template, whereas semantic validation is performed using the Schematron template. Figure A.4 shows message body (PHM reports) CDG CDA validation.

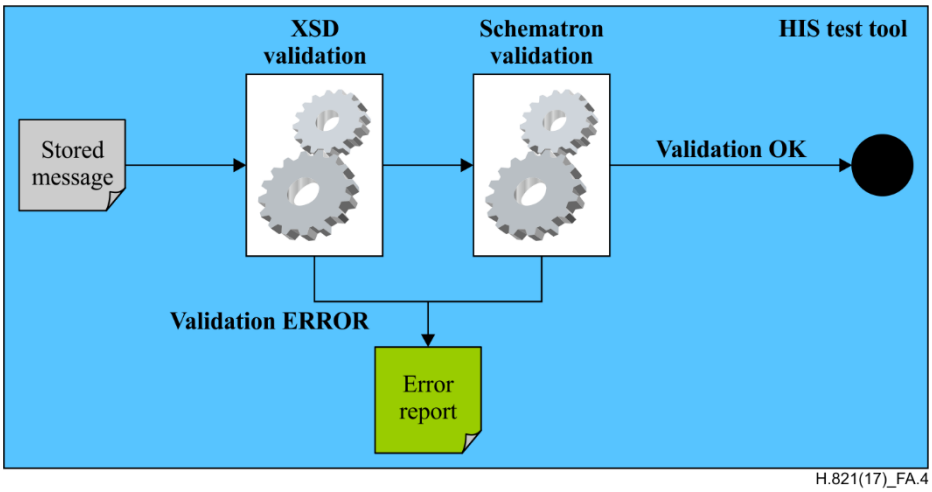

Figure A.4 – Message body (PHM reports) CDG CDA validation

– **Message body (PHM reports) CDG CCD validation (CCCD)**: This test case validates the syntax and semantics of the PHM report with the CCD format and CDG CCD constraints. It is done in two steps, the first using an XML file and the second using Schematron validation. Syntax validation is performed using both steps due to the fact that some syntactic testable items might be out of scope of the XML file, whereas semantic validation is performed using the Schematron template. Figure A.5 shows message body (PHM reports) CDG CCD validation.

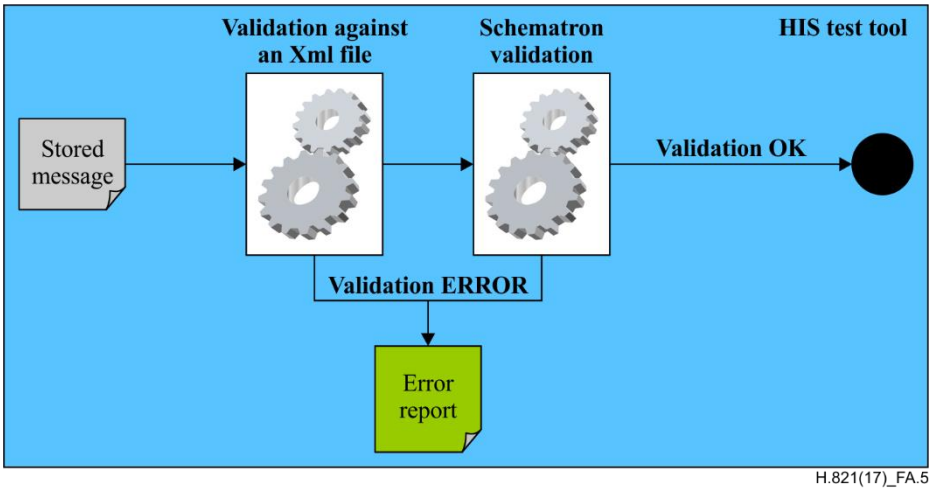

Figure A.5 – Message body (PHM reports) CDG CCD validation

– **Message header (metadata) semantic validation (XMSV) (Mapping with PHM reports)**: The semantics test of the message metadata includes testable items related to the mapping of the metadata fields of the HIS message with the message body (PHM report) ones using XPath expressions. The errors detected with the mapping will be sent to the error report file. Figure A.6 shows message metadata semantic validation.

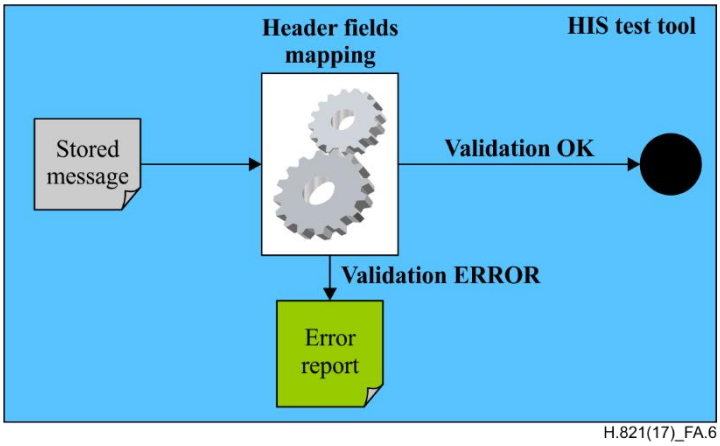

Figure A.6 – Message metadata semantic validation

– **Medication adherence monitor CDG validation (AM)**: This test case validates the syntax and semantics of the PHM report with the CDG constraints for medication adherence monitors. This is done using Schematron validation. Figure A.7 shows adherence monitor CDG validation.

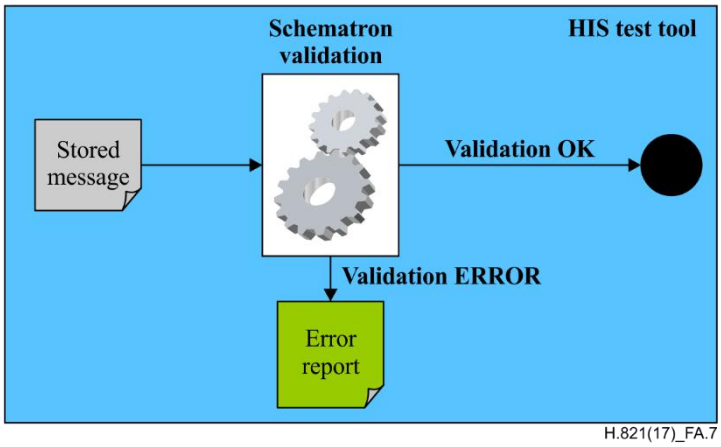

Figure A.7 – Adherence monitor CDG validation

– **Audit trail and node authentication (ATNA) validation**: ATNA testing is performed using two different test cases applicable to both XDR and XDM communication.

- The first test case validates the syntax and semantics of the audit record received by the audit repository server during the message acquisition and validation (DSMA or ISMA). The syntactic validation is performed using an XSD template and the semantic validation is performed using Schematron validation. Figure A.8 shows ATNA message validation.

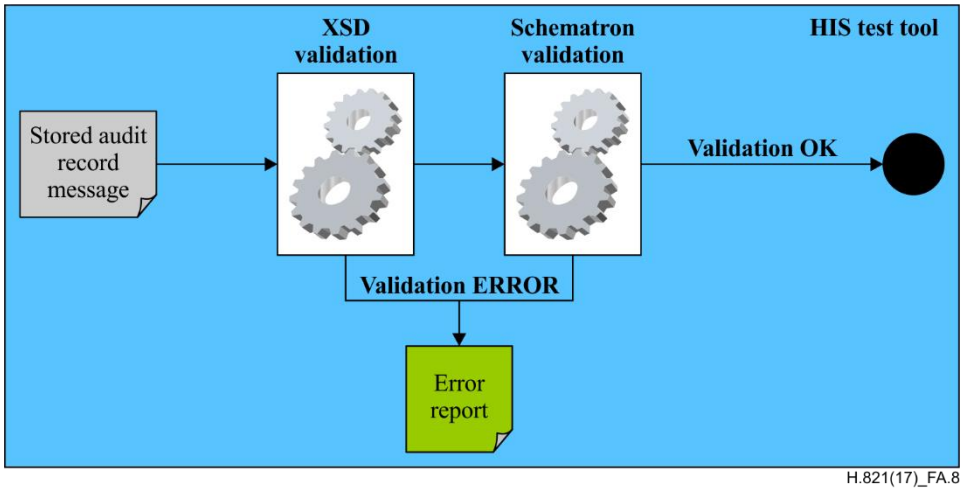

Figure A.8 – ATNA message validation

- The second test case checks the behaviour of the audit record sender when the audit record receiver is not ready to receive the audit message. In this case, the audit record sender must store the audit record message and send it when the audit record receiver is available. Figure A.9 shows audit record sender error verification.

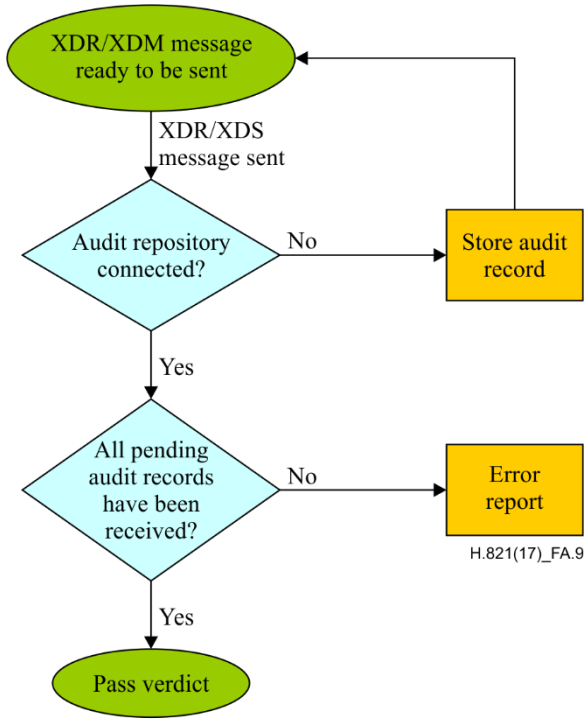

Figure A.9 – Audit record sender error verification

– **HIS document digital signature validation (DSG) syntax and semantics**: This test case validates the syntax and semantics of the digital signature document, as well as validating the signature of the PHM report. In order to do so, the test case enables the simulated HIS receiver to receive the XDS message and to extract both the PHM report and the digital signature document. The test case also checks the syntax and the semantics of the DSG document using and XSD schema and Schematron validation. Finally the test tool uses the PHM report and the DSG document to verify the signature. Figure A.10 shows document digital signature validation (DSG) syntax and semantics.

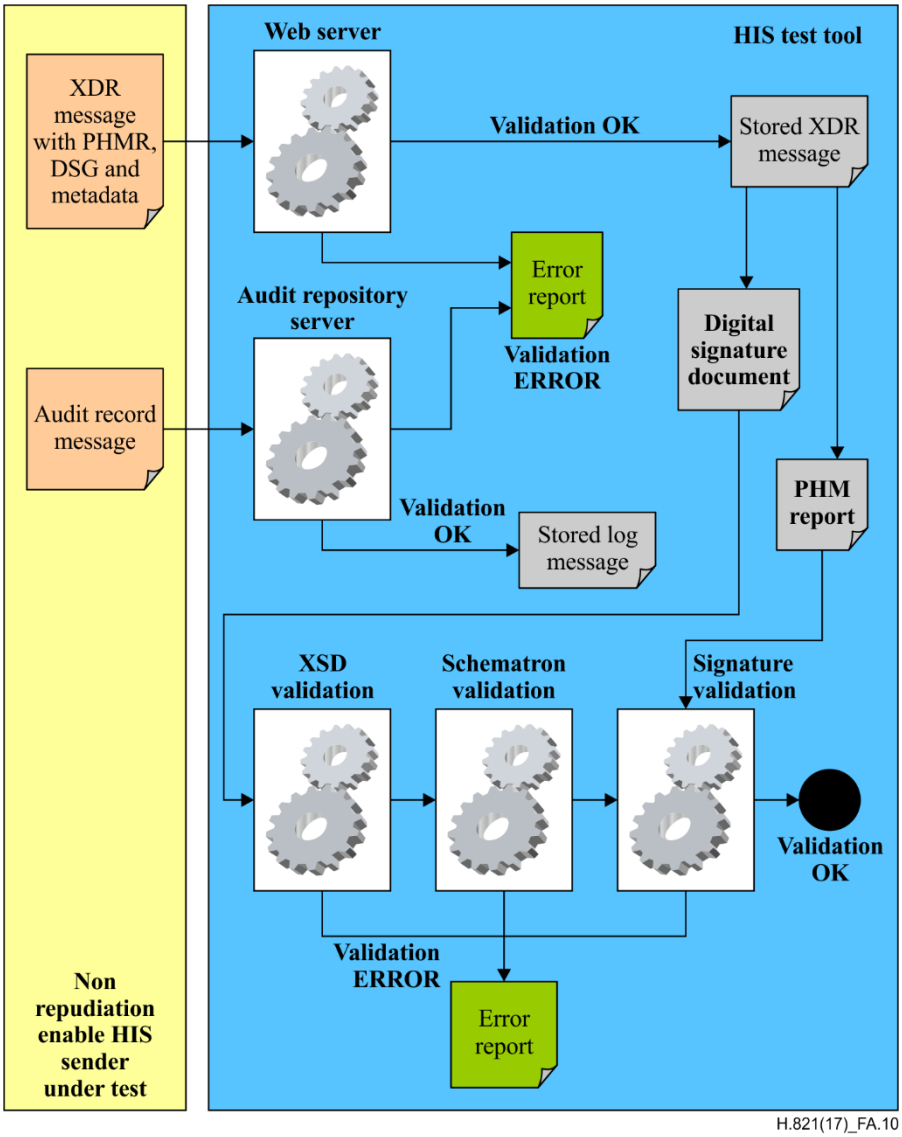

Figure A.10 – Document digital signature validation (DSG) syntax and semantics

A.3 Group 1.1: HIS direct sender (XDR) message acquisition and validation (DSMA)

TP Id		TP/HIS/SEN/DSMA/BV-000	
TP label		HIS Direct Sender (XDR) Message Acquisition and Validation	
Coverage	**Spec**	[ITU-T H.813]	
	Testable items	RDC_XDR-2; M	RDC_XDR-3; M
		RDC_XDR-5; M	RDC_XDR-7; M
		MGDC_XDR-3; M	MGDC_XDR-5; M
		GenSDC_XDR-1; M	GenSDC_XDR-2; M
		GenSDC_XDR-4; R	
	Spec	[IHE ITI-TF-1]	
	Testable items	XDSMD-1; M	XDSMD-4; O
		XDSMD-17; M	XDSMD-18; M
		XDSMD-20; M	XDSMD-23; M
		XDSMD-24; M	XDSMD-25; M
		XDSMD-26; M	XDSMD-27; M
		XDSMD-30; M	XDSMD-32; M
		XDSMD-33; M	XDSMD-34; M
		XDSMD-35; M	XDSMD-36; M
		XDSMD-37; M	XDSMD-40; C
		XDSMD-41; M	XDSMD-42; R
		XDSMD-44; M	AuditTT-1
		Audit_RT-2	ChainTrust-3
		Audit_RT-3	OtherCert-2
		Rel_Syslog-1	HTTP_Conn-1
		Rel_Syslog-2	HTTP_Conn-2
Test purpose		Check that: HIS message is received from the SUT and it is conformant to the HTTPS and SOAP protocols [AND] Is conformant to minimal XML requirements [AND] Audit Record message is conformant to minimal transport requirements	
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001	
Other PICS			

Initial condition	The SUT is ready to send the message to the test equipment (TE)
Test procedure	1. The simulated HIS receiver (test tool) initiates the server applications and the web service (as an XDR receiver) which will receive the HIS message from the HIS direct sender under test during a specific time. 2. The simulated HIS receiver (test tool) initiates the audit repository that will receive the ATNA message. 3. The simulated HIS receiver (test tool) sends a public certificate to the HIS direct sender under test and it has to accept it. 4. The audit repository of the simulated HIS receiver (test tool) sends a public certificate to the secure application with the following characteristics: a. X509 certificate b. based on RSA key c. key length in the range of 1024-4096. 5. The HIS direct sender under test sends an XDR message to the simulated HIS receiver (test tool) which receives the message and verifies that it conforms to HTTP/HTTPS and SOAP 1.2 protocols; if TLS is used, the encryption suite should be TLS_RSA_WITH_AES_128_CBC_SHA. 6. The MIME header for this metadata part shall be set to text/xml 7. Attributes that shall be present in the SOAP envelope: a. @eb:id b. @xlink:href c. @xlink:role=http://www.ihe.net/roles/iti/xds/SubmitObjectsRequest d. eb:Schema:@eb:location=http://www.ihe.net/schemas/iti/xds/SubmitObjectsRequest eb:version=1.0. 8. The registry metadata in an XML file containing the SubmitObjectsRequest shall be inside the payload of the SOAP message. 9. Check that if the message contains a "multipart document": a. The multipart packaging transmits the MIME-type of each part. b. Each part containing a document has associated with it a document ID that is unique within the scope of this message. c. Each part shall contain a Content-Location header set to the name of "start" part file preceded by the name of the "sub-directory" where to save the part. 10. The HIS direct sender under test sends an audit record message to the audit repository. 11. The audit repository receives the audit record message and verifies that: a. TLS is used and the encryption suite is TLS_RSA_WITH_AES_128_CBC_SHA. b. It conforms to a reliable syslog´s COOKED profile ([IETF RFC 3195]).
Pass/Fail criteria	• The received HIS message conforms to the HTTP/HTTPS and SOAP 1.2 protocols and conforms to the minimal XML requirements (i.e. it contains a well-formed XML document with the PHM report attachment). • Checked values are as detailed in steps 5 to 9. • In step 4, the HIS sender under test must accept the public certificate. • The received audit message conforms to Reliable Syslog ([IETF RFC 3195]) and complies with the values detailed in step 11.
Notes	The test tool stores the received XDR message and audit record message in internal files that will be used by the subsequent test cases.

A.4 Group 1.2: HIS indirect sender (XDM) message acquisition and validation (ISMA)

TP Id		TP/HIS/SEN/ISMA/BV-000	
TP label		HIS indirect sender (XDM) Message Acquisition and Validation (ISMA)	
Coverage	**Spec**	[ITU-T H.813]	
	Testable items	RIC_XDM-2; M	RIC_XDM-3; R
		RIC_XDM-4; O	MGIC_XDM-18; M
		RIC_XDM-5; M	RIC_XDM-6; M
		MGIC_XDM-1; M	MGIC_XDM-2; M
		MGIC_XDM-3; M	MGIC_XDM-4; M
		MGIC_XDM-5; M	MGIC_XDM-6; M
		MGIC_XDM-7; M	MGIC_XDM-8; M
		MGIC_XDM-9; M	MGIC_XDM-10; M
		MGIC_XDM-11; M	MGIC_XDM-12; M
		MGIC_XDM-13; M	MGIC_XDM-14; M
		MGIC_XDM-16; R	MGIC_XDM-17; R
		GenSIC_XDM-1; M	GenSIC_XDM-2; M
		GenO_XDM-2; R	
	Spec	[IHE ITI-TF-1]	
	Testable items	ActTrans_XDM-1; M	ZIPOverEma-1; C
		MediaCont-1; O	MessS_XDM-2; M
		MessS_XDM-3; O	MedF_XDM-3; M
		MedF_XDM-4; M	ContOverw-1; M
		ContOverw-2; M	ContOverw-3; M
		ContOverw-5; M	ContOverw-6; M
		ContOverw-7; M	ContOverw-8; M
		ContOverw-9; O	ContOverw-10; M
		ContOverw-11; M	ContOverw12; M
		ContOverw-13; O	ContOverw-14; M
		ContOverw-15; M	ContOverw-16; M
		ContOverw-17; O	ContOverw-18; M
		ContOverw-19; M	ContOverw-20; M
		ContOverw-21 M	ContOverw-22; R

		ContOverw-23; M	ContOverw-24; O
		ContOverw-25; M	ContOverw-26; M
		ContOverw-27; M	ContOverw-28; M
		ContOverw-29; M	ContOverw-30; M
		RespMsg_XDM-1; M	RespMsg_XDM-2; R
		MediaID-2; C	MediaID-4; M
		MediaID-5; M	MediaID-6; R
		BasicPat-1; C	BasicPat-2; C
		BasicPat-3; C	BasicPat-4; C
		BasicPat-5; C	BasicPat-6; C
		BasicPat-7; C	BasicPat-8; C
		SecConsider-2; M	SecConsider-3; M
		SecConsider-4; M	AuditTT-1
		Audit_RT-2	ChainTrust-3
		Audit_RT-3	OtherCert-2
		Rel_Syslog-1	HTTP_Conn-1
		Rel_Syslog-2	HTTP_Conn-2
Test purpose		Check that: HIS message is received from the SUT and it is conformant to the XDM specifications [AND] Audit Record message is conformant to minimal transport requirements	
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_002	
Other PICS			
Initial condition		The SUT is ready to send an email containing a ZIP file to the test tool.	
Test procedure		1. The simulated HIS receiver (test tool) initiates the SMTP client that will receive the XDM message from the HIS sender under test during a specific time. 2. The simulated HIS receiver (test tool) initiates the audit repository that will receive the ATNA message. 3. The audit repository of the simulated HIS receiver (test tool) will send a public certificate to the secure application with the following characteristics and it has to be accepted: a. X509 certificate b. based on RSA key c. key length in the range of 1024-4096. 4. The HIS indirect sender under test sends an XDM message to the simulated HIS indirect receiver (test tool). 5. The HIS indirect receiver (test tool) receives the message and verifies that it conforms to SMTP and S/MIME protocols. 6. Check within the email subject:	

	a. Email subject shall start with XDM/1.0/DDM. b. It is recommended to add the document ID (within the subject). 7. Check within the email attachments: a. The email message shall contain a ZIP file. 8. The ZIP´s contents are extracted and the resulting structure is checked: a. files "README.TXT" and "INDEX.HTM" and the folder "IHE_XDM" are in the root directory level; b. the "IHE_XDM" folder shall contain only one subfolder named "SUBSET01"; c. file "METADATA.XML" exists; d. "METADATA.XML" file has to contain a "URI" element referencing the location of the PHM report file; e. The PHM file is located in the specified element of the METADATA.XML; f. executable files (.exe, .msi, .bat, .com) are not allowed. 9. The test tool stores the documents in an internal structure (i.e. file) that will be used by the subsequent test cases. 10. The HIS direct sender under test sends an audit record message to the audit repository. 11. The audit repository receives the audit record message and verifies: a. TLS is used and the encryption suite is TLS_RSA_WITH_AES_128_CBC_SHA. b. It conforms to a reliable syslog´s COOKED profile ([IETF RFC 3195]).
Pass/Fail criteria	• Email must conform to steps 3 to 5. • Attached zip file must be conformant to step 6. • The received audit message conforms to Reliable Syslog ([IETF RFC 3195]) • Checked values are as detailed in steps 3 and 11.
Notes	The test tool stores the received XDM message and audit record message in internal files that will be used by the subsequent test cases.

A.5 Group 1.3: HIS message syntactic validation (XSV)

TP Id		TP/HIS/SEN/XSV/BV-000	
TP label		HIS Message Syntactic Validation	
Coverage	**Spec**	[ITU-T H.813]	
	Testable items	GenDFG 2; M	GenDFG 3; M
		GenDFG 4; M	GenDFG 5; M
		GenDFG 6; M	GenDFG 7; R
		GenDFG 8; M	XDSSSMD-1; O
		XDSSSMD-8; M	XDSSSMD-12; M
		XDSSSMD-13; M	XDSDEMD-7; M
		XDSDEMD-13; M	XDSDEMD-18; M
		XDSDEMD-19; M	XDSDEMD-29; M
		XDSDEMD-30; M	XDSDEMD-33; M
		XDSDEMD-41; M	XDSDEMD-42; M

		XDSDEMD-43; M	
	Spec	[IHE ITI-TF-1]	
	Testable items	XDSMD-6; O	XDSMD-28; M
		XDSMD-29; M	
Test purpose		Check that: HIS message syntax is based on the conformance with the XDS profile and SNOMED specifications.	
Applicability		C_HRN_SEN_000	
Other PICS			
Initial condition		HIS message has been received and saved as an XML file in the test tool.	
Test procedure		1. The test tool checks the mapping of the metadata fields with the message body of the structure received (stored in the test tool during the execution of test case TP/HIS/SEN/DSMA/BV-000) from HIS direct senders OR (stored in the test tool during the execution of TP/HIS/SEN/ISMA/BV-000) from HIS indirect senders under test using XPath. 2. Details of the XPath constraints can be found in clause B.1.1.	
Pass/Fail criteria		The received HIS message conforms to the XSD template that describes the XML format structure. This implies that all mandatory elements shall be present, that all recommended elements should be present and that optional elements may be present.	
Notes			

A.6 Group 1.4: HIS message body (PHM report) CDG CDA conformance (CCDA)

TP Id		TP/HIS/SEN/CCDA/BV-000	
TP label		HIS Message Body (PHM Report) CDG CDA Conformance	
Coverage	**Spec**	[HL7 CDA-PHMR]	
	Testable items	CONF-PHMR-1; M	CONF-PHMR-2; M
		CONF-PHMR-3; M	CONF-PHMR-4; M
		CONF-PHMR-5; R	CONF-PHMR-6; R
		CONF-PHMR-7; M	CONF-PHMR-8; M
		CONF-PHMR-9; M	CONF-PHMR-10; M
		CONF-PHMR-11; M	CONF-PHMR-12; M
		CONF-PHMR-13; M	CONF-PHMR-14; M
		CONF-PHMR-15; M	CONF-PHMR-16; R
		CONF-PHMR-17; M	CONF-PHMR-18; M
		CONF-PHMR-19; M	CONF-PHMR-20; M
		CONF-PHMR-21; M	CONF-PHMR-22; M
		CONF-PHMR-23; M	CONF-PHMR-24; M

		CONF-PHMR-25; M	CONF-PHMR-26; M
		CONF-PHMR-27; R	CONF-PHMR-28; O
		CONF-PHMR-29; M	CONF-PHMR-30; M
		CONF-PHMR-31; M	CONF-PHMR-32; R
		CONF-PHMR-33; M	CONF-PHMR-34; O
		CONF-PHMR-35; O	CONF-PHMR-36; M
		CONF-PHMR-37; M	CONF-PHMR-38; M
		CONF-PHMR-39; M	CONF-PHMR-40; M
		CONF-PHMR-41; M	CONF-PHMR-42; M
		CONF-PHMR-43; M	CONF-PHMR-44; M
		CONF-PHMR-45; M	CONF-PHMR-46; M
		CONF-PHMR-47; M	CONF-PHMR-48; M
		CONF-PHMR-49; M	CONF-PHMR-50; R
		CONF-PHMR-51; M	CONF-PHMR-52; M
		CONF-PHMR-53; R	CONF-PHMR-54; M
		CONF-PHMR-55; O	CONF-PHMR-56; C
		CONF-PHMR-57; M	CONF-PHMR-58; R
		CONF-PHMR-59; O	CONF-PHMR-60; M
		CONF-PHMR-61; C	CONF-PHMR-62; C
		CONF-PHMR-63; C	CONF-PHMR-64; R
		CONF-PHMR-65; R	CONF-PHMR-66; M
		CONF-PHMR-67; R	CONF-PHMR-68; R
		CONF-PHMR-69; M	CONF-PHMR-70; M
		CONF-PHMR-72; O	CONF-PHMR-71; M
		CONF-PHMR-74; O	CONF-PHMR-73; O
		CONF-PHMR-76; M	CONF-PHMR-75; O
		CONF-PHMR-78; M	CONF-PHMR-77; M
		CONF-PHMR-80; M	CONF-PHMR-79; O
		CONF-PHMR-82; R	CONF-PHMR-81; M
		CONF-PHMR-84; M	CONF-PHMR-83; M
		CONF-PHMR-86; M	CONF-PHMR-85; M
		CONF-PHMR-88; M	CONF-PHMR-87; M

		CONF-PHMR-90; M	CONF-PHMR-89; M
		CONF-PHMR-92; M	CONF-PHMR-91; M
		CONF-PHMR-94; M	CONF-PHMR-93; M
		CONF-PHMR-96; M	CONF-PHMR-95; M
		CONF-PHMR-98; M	CONF-PHMR-97; M
		CONF-PHMR-100; M	CONF-PHMR-99; M
		CONF-PHMR-102; M	CONF-PHMR-101; M
		CONF-PHMR-104; M	CONF-PHMR-103; M
		CONF-PHMR-106; M	CONF-PHMR-105; M
		CONF-PHMR-108; M	CONF-PHMR-107; R
		CONF-PHMR-110; M	CONF-PHMR-109; M
		CONF-PHMR-112; R	CONF-PHMR-111; M
		CONF-PHMR-114; R	CONF-PHMR-113; R
		CONF-PHMR-116; M	CONF-PHMR-115; M
		CONF-PHMR-118; M	CONF-PHMR-117; M
		CONF-PHMR-120; M	CONF-PHMR-119; M
		CONF-PHMR-122; M	CONF-PHMR-121; M
		CONF-PHMR-124; C	CONF-PHMR-123; M
		CONF-PHMR-126; M	CONF-PHMR-125; M
		CONF-PHMR-128; M	CONF-PHMR-127; M
		CONF-PHMR-130; C	CONF-PHMR-129; R
		GenDF-3; M	GenDF-4; M
		GenDF-5; M	GenDF-7; O
		CONF-PHMR-133; M	CONF-PHMR-134; M
		G1_Snom_1; M – G1_Snom_33; M	G2_Snom_1; M – G2_Snom_18; M
		G3_Snom_1; M – G3_Snom_39; M	G4_Snom_1; M – G4_Snom_22; M
Test purpose		Check that: PHM Report syntax is based on the conformance with the CDA R2 standard and Continua constraints	
Applicability		C_HRN_SEN_000	
Other PICS			
Initial condition		HIS message has been received and saved as an XML file in the test tool.	
Test procedure		1. The test tool verifies that the syntax of the PHM report of the received HIS message from the HIS direct sender under test (stored in the test tool during the execution of test	

	case TP/HIS/SEN/DSMA/BV-000) OR from the HIS indirect sender under test (stored in the test tool during the execution of TP/HIS/SEN/ISMA/BV-000) is based on the conformance with the CDA R2 standard and CDG constraints. This verification uses an XML template (XSD). Details on the XSD constraints can be found in clause B.2.1. 2. The test tool verifies that the snomed codes are correctly translated using an XML file. Details can be found in clause B.3.1. 3. The test tool verifies that the semantics of the PHM report of the received HIS message HIS direct sender under test (stored in the test tool during the execution of test case TP/HIS/SEN/DSMA/BV-000) OR from the HIS indirect sender under test (stored in the test tool during the execution of TP/HIS/SEN/ISMA/BV-000) is based on the conformance with the CDA R2 standard and CDG constraints. This verification uses Schematron. Details on the Schematron constraints can be found in clause B.4.1.
Pass/Fail criteria	The CDA R2 standard and CDG constraints syntax and semantic verification of the message is based on the conformance with the XSD template and the Schematron template. This implies that all mandatory elements shall be present, that all recommended elements should be present and that optional elements may be present.
Notes	Constraint CONF-PHMR-81 has an opened bug (bug 287) in CDG to clarify the structure of manufacturerModelName node.

A.7 Group 1.5: HIS message body (PHM report) CDG CCD conformance (CCCD)

TP Id		TP/HIS/SEN/CCCD/BV-000	
TP label		HIS Message Body (PHM Report) CDG CCD Conformance	
Coverage	**Spec**	[ITU-T H.813]	
	Testable items	GenDF 9; M	GenDF 13; M
		GenDF 14; M	GenDF 15; R
		GenDF 16; M	
	Spec	[HL7 CDA-PHMR]	
	Testable items	CONF-371; M	CONF-372; M
		CONF-373; M	CONF-374;M
		CONF-375; R	CONF-304; M
		CONF-305; M	CONF-306; M
		CONF-307; R	CONF-308; R
		CONF-309; R	CONF-310; R
		CONF-311; R	CONF-312; O
		CONF-313; O	CONF-314;O
		CONF-316; M	CONF-317; M
		CONF-318; M	CONF-319; R
		CONF-320; R	CONF-321; O
		CONF-322; O	CONF-323; O

		CONF-324; O	CONF-325; O
		CONF-327; O	CONF-328; C
		CONF-329; M	CONF-330; O
		CONF-331; M	CONF-332; M
		CONF-333; M	CONF-334; O
		CONF-335 ; M	CONF-336 ; M
		CONF-337; M	CONF-338; O
		CONF-339; M	CONF-340; M
		CONF-341; M	CONF-342; M
		CONF-343; M	CONF-344; M
		CONF-345; M	CONF-346; M
		CONF-347; M	CONF-348; O
		CONF-349; M	CONF-350; O
		CONF-351; O	CONF-352; M
		CONF-353; M	CONF-354; M
		CONF-355; O	CONF-356; M
		CONF-357; M	CONF-358; M
		CONF-359; R	CONF-363; M
		CONF-364; O	CONF-365; O
		CONF-366; O	CONF-367; R
		CONF-368; O	CONF-369; O
		CONF-381; M	CONF-382; M
		CONF-383; M	CONF-384; M
		CONF-385; R	CONF-386;M
		CONF-393; M	CONF-394; M
		CONF-395; M	CONF-396; M
		CONF-397; M	CONF-398; R
		CONF-399; R	CONF-400; M
		CONF-402; M	CONF-403; O
		CONF-405; M	CONF-407; M
		CONF-408; M	CONF-409; M
		CONF-410; M	CONF-411; R

		CONF-412; M	CONF-413; R
		CONF-414; O	CONF-415; M
		CONF-416; M	CONF-417; M
		CONF-418; R	CONF-419; R
		CONF-420; M	CONF-15; M
		CONF-16; M	CONF-17; M
		CONF-18; M	CONF-19; R
		CONF-20; M	CONF-21; M
		CONF-22; M	CONF-23; M
		CONF-24; M	CONF-25; M
		CONF-26; M	CONF-27; M
		CONF-123; M	CONF-124; M
		CONF-125; M	CONF-126; M
		CONF-127; R	CONF-128; R
		CONF-129; O	CONF-133; R
		CONF-134; O	CONF-135; O
		CONF-136; M	CONF-137; M
		CONF-138; M	CONF-139; M
		CONF-145; M	CONF-146; M
		CONF-147; M	CONF-148; M
		CONF-149; M	CONF-150; O
		CONF-151; M	CONF-152; O
		CONF-153; R	CONF-154; M
		CONF-155; M	CONF-156; M
		CONF-157; M	CONF-158; R
		CONF-159; O	CONF-160; O
		CONF-162; O	CONF-163; M
		CONF-164; M	CONF-165; O
		CONF-166; M	CONF-167; M
		CONF-287; M	CONF-288; M
		CONF-289; M	CONF-290; M
		CONF-291; M	CONF-292; M

		CONF-293; M	CONF-294; M
		CONF-295; M	CONF-282; M
		CONF-283; M	CONF-284; M
		CONF-285; M	CONF-286; M
		CONF-448; O	CONF-449; M
		CONF-450; M	CONF-451; R
		CONF-225; M	CONF-226; M
		CONF-227; M	CONF-228; M
		CONF-229; M	CONF-230; M
		CONF-388;M	CONF-389;M
		CONF-390;M	CONF-391;M
Test purpose		Check that: PHM Report syntax is based on the conformance with the CCD standard and Continua constraints	
Applicability		C_HRN_SEN_000	
Other PICS			
Initial condition		HIS message has been received and saved as an XML file in the test tool.	
Test procedure		1. The test tool verifies that the semantics of the PHM report of the received HIS message from the HIS direct sender under test (stored in the test tool during the execution of test case TP/HIS/SEN/DSMA/BV-000) OR from the HIS indirect sender under test (stored in the test tool during the execution of TP/HIS/SEN/ISMA/BV-000) is based on the conformance with the CCD standard and CDG constraints. This verification uses Schematron. 2. Details of the Schematron constraints can be found in clause B.4.2.	
Pass/Fail criteria		The CCD standard and CDG constraints syntax and semantic verification of the message is based on conformance with the Schematron template. This implies that all mandatory elements shall be present, that recommended elements should be present and that optional elements may be present.	
Notes			

A.8 Group 1.6: HIS message header (metadata) semantic validation (mapping with PHM report) (XMSV)

TP Id		TP/HIS/SEN/XMSV/BV-000	
TP label		HIS Message Header (Metadata) Semantic Validation (Mapping with PHM Report) (XMSV)	
Coverage	**Spec**	[ITU-T H.813]	
	Testable items	MGDC_XDR-6; R	MGDC_XDR-7; M
		PHMAG 1; M	PHMAG 2; M
		XDSSSMD-2; M	XDSSSMD-3; M
		XDSSSMD-4; M	XDSSSMD-5; M

		XDSSSMD-6; M	XDSSSMD-7; O
		XDSSSMD-9; O	XDSSSMD-10; M
		XDSSSMD-11; M	XDSSSMD-14; M
		XDSSSMD-15; M	XDSDEMD-1; O
		XDSDEMD-2; M	XDSDEMD-3; M
		XDSDEMD-4; M	XDSDEMD-5; M
		XDSDEMD-6; M	XDSDEMD-8; O
		XDSDEMD-9; O	XDSDEMD-10; M
		XDSDEMD-11; M	XDSDEMD-12; M
		XDSDEMD-14; M	XDSDEMD-15; O
		XDSDEMD-16; M	XDSDEMD-17; O
		XDSDEMD-20; M	XDSDEMD-21; M
		XDSDEMD-22; M	XDSDEMD-23; M
		XDSDEMD-24; M	XDSDEMD-25; O
		XDSDEMD-26; O	XDSDEMD-27; O
		XDSDEMD-28; M	XDSDEMD-31; M
		XDSDEMD-32; M	XDSDEMD-34; M
		XDSDEMD-35; M	XDSDEMD-36; M
		XDSDEMD-37; M	XDSDEMD-38; M
		XDSDEMD-39; M	XDSDEMD-40; O
Test purpose		Check that: Specific elements of the header (metadata) match up with elements of the body of the message body (PHM Report)	
Applicability		C_HRN_SEN_000	
Other PICS			
Initial condition		HIS message has been received and saved as an XML file in the test tool.	
Test procedure		1. The test tool checks the mapping of the metadata fields with the message body of the structure received from the HIS direct sender under test (stored in the test tool during the execution of test case TP/HIS/SEN/DSMA/BV-000) OR from the HIS indirect sender under test (stored in the test tool during the execution of TP/HIS/SEN/ISMA/BV-000) using XPath queries. 2. Details of the mapping constraints can be found are in clause B.1.2.	
Pass/Fail criteria		The metadata fields of the HIS message match the message body ones that have been specified in the mapping section of the CDG. This implies that all mandatory elements shall be present, that recommended elements should be present and that optional elements may be present.	
Notes			

A.9 Group 1.7: HIS adherence monitor validation (AM)

TP Id		TP/HIS/SEN/AM/BV-000	
TP label		HIS Adherence Monitor Validation (AM)	
Coverage	**Spec**	[ITU-T H.813]	
	Testable items	GenMDG-1; M	GenMDG-2; M
		GenMDG-3; M	GenMDG-4; M
		GenMDG-5; M	GenMDG-6; M
		GenMDG-7; M	GenMDG-8; M
		MMG-1; M	MMG-2; M
		MMG-3; M	MMG-4; M
		MMG-5; M	
Test purpose		Check that: PHM Report syntax is based on the conformance with the CDA R2 standard and Continua constraints	
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_003	
Other PICS		C_HRN_SEN_005	
Initial condition		The HIS message has been received and saved as an XML file in the test tool.	
Test procedure		1. Value of the PICS C_HRN_SEN_005 is checked. 2. The test tool verifies that the semantics of the PHM report of the received message from the HIS direct sender under test (stored in the test tool during the execution of test case TP/HIS/SEN/DSMA/BV-000) or from the HIS indirect sender under test (stored in the test tool during the execution of TP/HIS/SEN/ISMA/BV-000) is based on the conformance with the CDA R2 standard and CDG constraints related to adherence monitor device specialization. This verification uses Schematron. 3. Details of the Schematron constraints can be found in clause B.4.3.	
Pass/Fail criteria		The CDA R2 standard and CDG constraints syntax and semantic verification of the message is based on the conformance with the Schematron template. This implies that all mandatory elements shall be present, that all recommended elements should be present and that optional elements may be present. PICS C_HRN_SEN_005 shall be set to 'TRUE'.	
Notes			

A.10 Group 1.8: HIS ATNA validation (ATNA)

TP Id		TP/HIS/SEN/ATNA/PHMR/BV-000	
TP label		HIS ATNA validation (ATNA) Audit Record Syntax and Semantics	
Coverage	**Spec**	[IHE ITI-TF-1]	
	Testable items	AuditMess-2; R	AuditMess-3; M
		ActTrans-8; O	ActTrans-6; O
		ATNA_IP-2; O	ATNA_PF-1; M

		ChainTrust-2; M	DirectCert-1; M
		DirectCert-2; M	DirectCert-3; M
		Trigg_Event-15; M	Audit_RF-1; M
		SAAAM-DD-01; M	SAAAM-DD-02; O
		SAAAM-DD-03; M	SAAAM-DD-04; M
		SAAAM-DD-05; O	SAAAM-DD-06; M
		SAAAM-DD-07; O	SAAAM-DD-08; O
		SAAAM-DD-09; O	SAAAM-DD-10; O
		SAAAM-DD-11; O	SAAAM-DD-12; O
		SAAAM-DD-13; O	SAAAM-DD-14; M
		SAAAM-DD-15; O	SAAAM-DD-16; O
		SAAAM-DD-17; O	SAAAM-DD-18; O
		SAAAM-DD-19; M	SAAAM-DD-20; O
		SAAAM-DD-21; M	
Test purpose		Check that: Audit log message is received from the SUT and it is conformant to the ATNA specifications	
Applicability		C_HRN_SEN_000	
Other PICS			
Initial condition		Audit record message has been received and saved as XML file into the test tool.	
Test procedure		1. The test tool checks the syntax and semantics of the received audit record file from the HIS direct sender under test (stored in the test tool during the execution of test case TP/HIS/SEN/DSMA/BV-000) OR from the HIS indirect sender under test (stored in the test tool during the execution of TP/HIS/SEN/ISMA/BV-000) 2. The ATNA XML log is checked for compliance with [IETF RFC 3881] using the XSD schema in clause B.5.	
Pass/Fail criteria		• The ATNA XML log file conforms to the RFC 3881 schema included in clause B.5. • The attribute "code" of the element EventID is set to "110106". • The value of the attribute EventDateTime of the element EventIdentification is inside a one minute bracket of the reception time of the XDR or XDM message.	
Notes		• All network time protocol (NTP) -related testable items (TIs) have been changed to non-testable because accuracy cannot be guaranteed due to operating systems / platform limitations (e.g. no better than 2 seconds in Windows, see http://support.microsoft.com/kb/939322). • In NTP terminology, a "time client" is always a whole system; however, this test is only testing the application (the HIS sender).	

TP Id	TP/HIS/SEN/ATNA/PIX/BV-000
TP label	HIS Patient Identity Feed – ATNA

Coverage	**Spec**	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	SecurityReq-2; M	SecurityReq-3; M	
Test purpose		Check that: When SUT sends a Patient Identity Feed message, then an audit log message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_HRN_SEN_000 AND (C_HRN_SEN_008 OR C_HRN_SEN_009 OR C_HRN_SEN_011)		
Other PICS				
Initial condition		The SUT is ready to send a PIX message using SOAP 1.2 to the simulated PIXManager service or DocumentRegistry service launched in the test tool.		
Test procedure		1. The HIS sender under test sends a SOAP 1.2 message containing a patient identity feed to the simulated receiver running in the test tool. 2. The HIS sender under test sends the corresponding audit record message to the audit repository. 3. The audit repository receives the audit record message and verifies that: a. TLS is used and the encryption suite is TLS_RSA_WITH_AES_128_CBC_SHA. 4. It conforms to a reliable syslog´s COOKED profile ([IETF RFC 3195])		
Pass/Fail criteria		• The ATNA XML log file conforms to the RFC 3881 schema included in clause B.5. • In the audit record, the EventDateTime attribute of the EventIdentification element is set at least one minute before the expedition time of the SOAP message sent in step 1. • The received audit message conforms to a reliable syslog´s COOKED profile ([IETF RFC 3195])		
Notes		The current version (v6) used of the IHE ITI documents ([IHE ITI-TF-1] and [IHE ITI-TF-2]) does not define the exact ATNA message to be sent with the PIX message. Once a decision is made to use v8, this test case will be updated to reflect the additional constraints of the IHE.		

TP Id		TP/HIS/SEN/ATNA/PIX/BV-001		
TP label		HIS PIXV3 Query – ATNA		
Coverage	**Spec**	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	SecurityReq-2; M	SecurityReq-3; M	
Test purpose		Check that: When SUT sends a PIXV3 Query, then an audit log message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_HRN_SEN_000 AND (C_HRN_SEN_008 OR C_HRN_SEN_009 OR C_HRN_SEN_011)		
Other PICS				
Initial condition		The SUT is ready to send a PIX message using SOAP 1.2 to the simulated PIXManager service or DocumentRegistry service launched in the test tool.		
Test procedure		1. The HIS sender under test sends a SOAP 1.2 message containing a PIX query to the simulated receiver running in the test tool. 2. The HIS sender under test sends the corresponding audit record message to the audit repository.		

	3. The audit repository receives the audit record message and verifies that: a. TLS is used and the encryption suite is TLS_RSA_WITH_AES_128_CBC_SHA. 4. It conforms to a reliable syslog´s COOKED profile ([IETF RFC 3195])
Pass/Fail criteria	• The ATNA XML log file conforms to the RFC 3881 schema included in clause B.5. • In the audit record, the EventDateTime attribute of the EventIdentification element is set at least one minute before the expedition time of the SOAP message sent in step 1. • The received audit message conforms to a reliable syslog´s COOKED profile ([IETF RFC 3195]).
Notes	The current version (v6) used of the IHE ITI documents ([IHE ITI-TF-1] and [IHE ITI-TF-2]) does not define the exact ATNA message to be sent with the PIX message. Once a decision is made to use v8, this test case will be updated to reflect the additional constraints of the IHE.

TP Id		TP/HIS/SEN/ATNA/CM/BV-000		
TP label		HIS Repository Retrieve Document Set Transaction – ATNA		
Coverage	**Spec**	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	RepSecCons_01		
Test purpose		Check that: When SUT receives a Retrieve Document Set Transaction, then an audit log message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				
Initial condition		The SUT is ready to send a PIX message using SOAP 1.2 to the simulated PIXManager service or DocumentRegistry service launched in the test tool.		
Test procedure		1. The test tool sends a SOAP 1.2 message containing a PIX query to the XDS.b repository of the HIS sender under test. 2. The HIS sender under test sends the corresponding audit record message to the audit repository. 3. The audit repository receives the audit record message and verifies that: a. TLS is used and the encryption suite is TLS_RSA_WITH_AES_128_CBC_SHA. 4. It conforms to a reliable syslog´s COOKED profile ([IETF RFC 3195]).		
Pass/Fail criteria		• The ATNA XML log file conforms to the RFC 3881 schema included in clause B.5. • In the audit record, the EventDateTime attribute of the EventIdentification element is set at least one minute before the expedition time of the SOAP message sent in step 1. • The received audit message conforms to a reliable syslog´s COOKED profile ([IETF RFC 3195]).		
Notes		The current version (v6) used of the IHE ITI documents ([IHE ITI-TF-1] and [IHE ITI-TF-2]) does not define the exact ATNA message to be sent by the XDS.b repository. Once it has been decided to use v8, this test case will be updated to reflect the additional constraints of the IHE.		

TP Id		TP/HIS/SEN/ATNA/CM/BV-001		
TP label		HIS Registry Query Transaction – ATNA		
Coverage	**Spec**	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	RegSecCons_01		
Test purpose		Check that: When SUT receives a Retrieve Document Set Transaction, then an audit log message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				
Initial condition		The SUT is ready to send a PIX message using SOAP 1.2 to the simulated PIXManager service or DocumentRegistry service launched in the test tool.		
Test procedure		1. The test tool sends a SOAP 1.2 message containing a PIX query to the XDS.b repository of the HIS sender under test. 2. The HIS sender under test sends the corresponding audit record message to the audit repository. 3. The audit repository receives the audit record message and verifies that: a. TLS is used and the encryption suite is TLS_RSA_WITH_AES_128_CBC_SHA. 4. It conforms to a reliable syslog´s COOKED profile ([IETF RFC 3195]).		
Pass/Fail criteria		• The ATNA XML log file conforms to the RFC 3881 schema included in clause B.5. • In the audit record, the EventDateTime attribute of the EventIdentification element is set at least one minute before the expedition time of the SOAP message sent in step 1. • The received audit message conforms to a reliable syslog´s COOKED profile ([IETF RFC 3195]).		
Notes		The current (v6) version used of the IHE ITI documents ([IHE ITI-TF-1] and [IHE ITI-TF-2]) does not define the exact ATNA message to be sent by the XDS.b Repository. Once it has been decided to use v8, this test case will be updated to reflect the additional constraints of the IHE.		

TP Id		TP/HIS/SEN/ATNA/GEN/BV-000	
TP label		HIS ATNA validation (ATNA) Audit Record Behaviour	
Coverage	**Spec**	[IHE ITI-TF-1]	
	Testable items	Audit_MT-1; M	
Test purpose		Check that: If Audit Record repository is not available, the IHE actor shall store the Audit Record in a local buffer until the Audit Record Repository is available again	
Applicability		C_HRN_SEN_000	
Other PICS		C_SEN_HRN_001, C_SEN_HRN_002	
Initial condition		The SUT is ready to send an email containing an XDR or XDM report to the test tool.	
Test procedure		If C_SEN_HRN_001 then:	

	1. The test tool initiates the server applications and the web service which will receive the HIS message from the HIS direct sender under test during a specific time. 2. The audit repository server is intentionally not initiated. 3. The simulated HIS receiver (test tool) sends a public certificate to the HIS direct sender under test which has to accept it. 4. The HIS direct sender under test sends an XDR message to the test tool. 5. The test tool receives the XDR message but it does not receive the ATNA message because its ATNA receiver was intentionally disabled above. 6. Wait for one minute. 7. The test tool initiates the audit repository receiver that will receive the audit record message. 8. Force the HIS sender to resend the waiting audit record message. 9. The test tool captures the audit record message. If C_SEN_HRN_002 then: 1. The test tool initiates the SMTP client that will receive the XDM message from the HIS sender under test during a specific time. 2. The audit repository server is not intentionally initiated. 3. The HIS receiver of the test tool sends a public certificate to the HIS direct sender under test and it has to accept it. 4. The HIS indirect sender under test sends an XDM message to the test tool. 5. The test tool receives the XDM message but it does not receive the ATNA message because its ATNA receiver is disabled. 6. Wait for one minute. 7. The test tool initiates the audit repository receiver that will receive the audit record message. 8. Force the HIS sender to send the waiting audit record message. 9. The test tool captures the audit record message.
Pass/Fail criteria	• The received audit record message EventDateTime attribute of the EventIdentification element in the ATNA XML log has to be set to the expedition time of the first HIS message. • In case there are more than two audit record messages received in step 8, one of them shall comply with the previous stored point.
Notes	In step 7, the way to force the HIS sender to send the waiting audit record depends on the exact sender implementation; a typical strategy could be to send another PHM report and then send the old audit record along with the newer one.

A.11 Group 1.9: HIS document digital signature validation (DSG)

TP Id		TP/HIS/SEN/DSG/BV-000	
TP label		HIS Document Digital Signature validation (DSG) Syntax and Semantics	
Coverage	**Spec**	[ITU-T H.813]	
	Testable items	Non_Repud_1	Non_Repud_2
	Spec	[IHE ITI-TF-1]	
	Testable items	DSGContent_1	DSGContent_2
		DSGContent_3	DSGContent_4

		DSGContent_5	DSGContent_6
		DSGContent_7	DSGContent_8
		DSGContent_9	DSGContent_10
		DSGContent_11	DSGContent_12
		DSGContent_13	DSGContent_14
		DSGContent_15	DSGContent_16
		DSGContent_17	DSGContent_18
		DSGContent_19	DSGContent_20
		DSGEntryAttribute_1	DSGEntryAttribute_2
		DSGEntryAttribute_3	DSGEntryAttribute_4
		DSGEntryAttribute_5	DSGEntryAttribute_6
		DSGEntryAttribute_7	DSGEntryAttribute_8
		DSGEntryAttribute_9	DSGEntryAttribute_10
		DSGEntryAttribute_11	DSGEntryAttribute_12
		DSGEntryAttribute_13	DSGEntryAttribute_14
		DSGEntryAttribute_15	DSGEntryAttribute_16
		DSGEntryAttribute_17	DSGEntryAttribute_18
		DSGEntryAttribute_19	DSGEntryAttribute_20
		DSGEntryAttribute_21	DSGEntryAttribute_22
		DSGEntryAttribute_23	DSGEntryAttribute_24
		DSGEntryAttribute_24	Signature_1
		Signature_2	Signature_3
		Signature_4	Signature_5
		Signature_6	Signature_7
		Signature_8	
Test purpose		Check that: Digital Signature document is based on the conformance with the IHE profile and Continua Constraints	
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_006	
Other PICS			
Initial condition		The SUT is ready to send an XDS.b submission set by XDR to the test tool.	
Test procedure		1. The test tool initiates the server applications and the web service which will receive the HIS message from the HIS direct sender under test during a specific time. 2. The simulated HIS receiver (test tool) sends a public certificate to the HIS direct sender under test which has to accept it.	

	3. The test tool initiates the audit repository receiver. 4. The HIS direct sender under test sends an XDR message to the test tool. 5. The test tool captures the audit record message. 6. The test tool extracts the PHM record and the digital signature document from the XDS.b. 7. The digital signature document is checked for compliance with the XAdES specification through the schemas in Annex B. (Due to the fact that XAdES is an extension of XmlDsig, its schema is also used.) 8. The digital signature document is checked for IHE constraints using Schematron. 9. The test tool checks that the digital signature document is the signature of the accompanying PHM report.
Pass/Fail criteria	• Syntax of the signature document conforms with the XML advanced electronic signatures specification. • IHE restrictions are met by the received signature document specified in clause B.4.4. • The digital signature document found in the XDS message is the signature of the PHM report of the same XDS message.
Notes	

A.12 Group 1.10: HIS patient identification validation (PIX)

TP Id		TP/HIS/SEN/PIX/BV-000		
TP label		HIS Patient Identity Feed – Add Patient Record		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	PIMG-1; M	PIMG-2; O	
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3)		
	Testable items	PatientRecord-3; M	PatientRecord-6; M	PatientRecord-7; M
		PatientRecord-8; M	PatientRecord-9; M	PatientRecord-10; O
		PatientRecord-11; O	PatientRecord-12; M	PatientRecord-13; M
		PatientRecord-14; M	PatientRecord-15; M	PatientRecord-16; M
		PatientRecord-17; M	PatientRecord-18; M	PatientRecord-19; M
		PatientRecord-20; M	PatientRecord-21; M	PatientRecord-22; O
		PatientRecord-23; O	PatientRecord-24; M	PatientRecord-25; M
		PatientRecord-26; M	PatientRecord-27; O	PatientRecord-28; O
		PatientRecord-29; O	PatientRecord-30; O	PatientRecord-31; O
		PatientRecord-32; O	PatientRecord-33; O	PatientRecord-34; O
		PatientRecord-35; O	PatientRecord-36; O	PatientRecord-37; O
		PatientRecord-38; O	PatientRecord-39; O	PatientRecord-40; C
		PatientRecord-41; C	PatientRecord-42; O	PatientRecord-43; C
		PatientRecord-44; C	PatientRecord-45; C	PatientRecord-46; O

		PatientRecord-47; C	PatientRecord-48; C	PatientRecord-49; C
		PatientRecord-50; C	PatientRecord-51; C	PatientRecord-52; C
		PatientRecord-53; C	PatientRecord-54; O	PatientRecord-55; C
		PatientRecord-56; C	PatientRecord-57; C	PatientRecord-58; O
		PatientRecord-59; C	PatientRecord-60; C	PatientRecord-61; M
		PatientRecord-62; M	PatientRecord-63; M	PatientRecord-64; M
		PatientRecord-66; M	PatientRecord-67; M	PatientRecord-4; M
		PatientRecord-65; M		
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3), Appendix E		
	Testable items	IIDataType-1; M	IIDataType-2; C	IIDataType-3; C
		IIDataType-17; M	IIDataType-18; M	IIDataType-19; O
		IIDataType-20; O	IIDataType-21; M	
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3), Appendix O		
	Testable items	PayloadIM-1; M	PayloadIM-2; M	PayloadIM-3; M
		PayloadIM-4; M	PayloadIM-5; O	PayloadIM-6; M
		PayloadIM-7; M	PayloadIM-8; M	PayloadIM-9; M
		PayloadIM-10; O	PayloadIM-11; M	PayloadIM-12; M
		PayloadIM-13; M	PayloadIM-14; M	PayloadIM-15; M
		PayloadIM-16; M	PayloadIM-17; M	PayloadIM-18; M
		PayloadIM-19; O	PayloadIM-20; O	PayloadIM-21; O
		PayloadIM-22; O	PayloadIM-23; O	PayloadIM-24; C
		PayloadIM-25; O	PayloadIM-26; C	PayloadIM-27; C
		PayloadIM-28; C	PayloadIM-29; C	PayloadIM-30; C
		PayloadIM-31; M	EventIM-1; M	EventIM-2; M
		EventIM-3; M	EventIM-4; M	EventIM-5; M
		EventIM-6; M	EventIM-7; O	EventIM-8; M
		EventIM-9; M	EventIM-10; M	EventIM-11; M
		EventIM-12; M	EventIM-13; M	EventIM-14; M
		EventIM-15; M	EventIM-16; M	EventIM-17; M
		EventIM-18; C	EventIM-19; M	EventIM-20; O
		EventIM-21; O	EventIM-22; C	EventIM-23; C
		EventIM-24; C	EventIM-25; C	EventIM-26; C

		EventIM-27; C	EventIM-28; C	EventIM-29; C
		EventIM-30; C	EventIM-31; M	EventIM-32; M
		EventIM-33; M	EventIM-34; O	EventIM-35; O
		EventIM-36; C	EventIM-37; C	EventIM-38; C
		EventIM-39; C	EventIM-40; C	EventIM-41; C
		EventIM-42; O	EventIM-43; C	EventIM-44; C
Test purpose		Check that: Continua HIS senders shall implement the Patient Identity Source actor of IHE ITI-44: Patient Identity Feed HL7 V3 in order to submit new patient identifiers to the HIS receiver or third party exchanges [AND] Continua HIS senders may implement the Patient Identity Source actor of IHE ITI-44: Patient Identity Feed HL7 V3 in order to submit new device registration to the HIS receiver or third party exchanges [AND] Message Payload and Control Act and Transmission Wrappers are based on the conformance with the IHE profile.		
Applicability		C_HRN_SEN_000 AND (C_HRN_SEN_008 OR C_HRN_SEN_009)		
Other PICS				
Initial condition		The SUT is ready to send a PIX message using SOAP 1.2 to the simulated PIXManager service or DocumentRegistry service launched in the test tool.		
Test procedure		1. The HIS sender under test sends a SOAP 1.2 message containing a patient registry record added to the simulated receiver running in the test tool. 2. The test tool receives the SOAP message and checks that: a. the version of the SOAP is 1.2, that is the namespace of the envelope is http://www.w3.org/2003/05/soap-envelope. b. The action of the transaction is "urn:hl7-org:v3:PRPA_IN201301UV02". c. The SOAP body has only one child that is a PRPA_IN201301UV02 element with the namespace "urn:hl7-org:v3". 3. The test tool checks the control act and transmission wrappers and the message payload as follows: a. The following optional class attributes are omitted: ❑ Message.profileId ❑ Message.responseCode ❑ Message.attachmentText ❑ Sender.telecom ❑ Receiver.telecom ❑ Device.desc ❑ Device.existenceTime. b. The following optional classes are omitted: ❑ AttentionLine ❑ RespondTo ❑ LocatedEntity		

- ❑ scopedRole(Organization).

c. id element of type II is required, that is @root and @extension attributes are present in this id element. @assigningAuthorityName attribute is not present and @Displayable attribute can be present.

d. creationTime element of type TS is required, that is @value with a valid time value is present.

e. If versionCode element is present, its value must be "V3PR1".

f. The value of interactionId/@extension attribute is set to "PRPA_IN201301UV02".

g. sequenceNumber element of type INT can be present.

h. The value of processingModeCode/@code attribute is set to "T".

i. The acceptAckCode/@code attribute is set to "AL".

j. Sender element is present and inside it:

- ❑ @typeCode attribute is present and its value is set to "SND".
- ❑ A device element is present and inside it:
  - @classCode attribute is present and its value is set to "DEV"
  - @determinerCode attribute is present and its value is set to "INSTANCE".
  - At least one Device/id element is present, Device/id/@root is an ISO OID and Device/id/@extension does not have a value, Device/id/@assigningAuthorityName is not present and Device/id/@Displayable attribute can be present.
  - Device/name element can be present
  - telecom element can be present
  - manufacturerModelName element can be present
  - softwareName element can be present.

k. There is only one receiver element and inside it:

- ❑ @typeCode attribute is present and its value is set to "RCV".
- ❑ A device element is present and inside it:
  - @classCode attribute is present and its value is set to "DEV"
  - @determinerCode attribute is present and its value is set to "INSTANCE".
  - At least one Device/id element is present, Device/id/@root is an ISO OID and Device/id/@extension does not have a value, Device/id/@assigningAuthorityName is not present and Device/id/@Displayable attribute can be present.
  - Device/name element can be present
  - telecom element can be present
  - manufacturerModelName element can be present
  - softwareName element can be present.

l. If Agent element is present:

- ❑ @classCode attribute is present and its value is set to "AGNT".

m. If Organization element is present:

- ❑ @classCode attribute is present and its value is set to "ORG".
- ❑ @determinerCode attribute is present and its value is set to "INSTANCE".
- ❑ At least one Organization/id element is present.
- ❑ Organization/name element can be present.
- ❑ Organization/telecom element can be present.

n. ControlActProcess element is present and inside this element:

- ❑ The following optional class attributes are omitted:

	- ControlActProcess.text - ControlActProcess.priorityCode - ControlActProcess.reasonCode. ❑ @classCode attribute is present and its value is set to "CACT". ❑ @moodCode attribute is present and its value is one of the following: - "INT" – intent - "RQO" – request - "EVN" – event, ocurrence - "PRP" – proposal - "RMD" – recommendation - "APT" – appointment - "ARQ" – appointment request - "PRMS" – promise. ❑ id element can be present. ❑ code element shall be set to "PRPA_TE201301UV02". ❑ effectiveTime element can be present. ❑ languageCode element can be present. ❑ Participation elements are not present. ❑ The reasonOf act relationship is not present. ❑ The following act relationships to the RegistrationEvent are not present: - inFullfilmentOf - definition - subject2. ❑ subject element is present and: - @typeCode attribute is present and its value is set to "SUBJ" - @contextConductionInd attribute is present and its value is set to "false". ❑ RegistrationEvent element is present and: - @classCode attribute is present and its value is set to "REG" - @moodCode attribute is present and its value is set to "EVN" - id element can be present - statusCode/@code attribute is set to "active" - effectiveTime element can be present, but if it is present, author/Time element must be valued with the same time expression - subject1/typeCode attribute is present and its value is set to "SBJ" - RegisteredRole element can be present - author element can be present, but if it is present: i. @typeCode attribute is present and its value is set to "AUT" ii. @contextControlCode attribute can be present and if it is present, its value is set to "AP" iii. AssignedEntity element can be present and if it is present, it should be a person, it may be a device or organization and it shall not be a non-person living object iv. time element can be present, but if it is valued, the RegistrationEvent/effectiveTime element must be valued with the same time expression v. modeCode element can be present.

- Custodian element is present and:
  - i. @typeCode attribute is present and its value is set to "CST"
  - ii. @contextControlCode attribute can be present and if it is present, its value is set to "CST"
  - iii. assignedEntity element is either an organization or a device.
- ReplacementOf element is not present.

o. A patient element is present as a child of subject1 element and in this element:

- ❑ @classCode attribute is present and its value is set to "PAT".
- ❑ At least one id element is present.
- ❑ statusCode element is present and its value is set to "active".
- ❑ confidentialityCode element can be present.
- ❑ veryImportantPersonCode can be present.
- ❑ The provider organization element is present, and:
  - the provider organization needs to be identified by an id attribute, and at least one of address, telecommunications address, or contact person should be present
  - id element has only a root, expressed as an ISO OID.
  - The following roles are omitted:
    - asPatientOfOtherProvider
    - birthPlace
    - guarantor
    - guardian
    - contactParty
    - asMember
    - careGiver
    - asStudent
  - The following participations are omitted:
    - subjectOf (administrativeObservation)
    - coveredPartyOf (coverage).
- ❑ patientPerson element is present and:
  - @classCode attribute is present and its value is set to "PSN"
  - @determinerCode attribute is present and its value is set to "INSTANCE"
  - One or more name elements are present
  - More than one telecom elements can be present
  - administrativeGenderCode element can be present
  - birthTime element can be present
  - deceasedInd element can be present
  - deceasedTime element can be present
  - multipleBirthInd element can be present
  - multipleBirthOrderNumber element can be present
  - addr elements can be present
  - maritalStatusCode element can be present
  - religiousAffiliationCode element can be present
  - raceCode element can be present

	- ethnicGroupCode element can be present - One or more asOtherIDs elements can be present, but if it is present: i. @classCode attribute is present and its value is set to the corresponding role ii. at least one id element is present and OtherIDs/id/@root is identical to scopingOrganization/id/@root iii. scopingOrganization element is present and scopingOrganization/id/@extension does not have any value - PersonalRelationship element can be present and if it is present: i. @classCode attribute is present and its value is set to "PRS" ii. id element can be present iii. code element is present - Citizen element can be present and if it is present: i. @classCode attribute is present and its value is set to "CIT" ii. One or more id element can be present iii. Nation element is present and • @classCode attribute is present and its value is set to "NAT" • @determinerCode attribute is present and its value is set to "INSTANCE" • code element is present • name element can be present - Employee element can be present and if it is present: i. @classCode attribute is present and its value is set to "EMP" ii. statusCode element can be present iii. occupationCode element can be present. - LanguageCommunication can be present and if it is present: i. languageCode element is present ii. preferenceInd element can be present.
Pass/Fail criteria	• The relationship holder of the personal relationship is restricted to being a person (using CMET COCT_MT030207UV). • When the patient role is scoped by a provider organization, only patient IDs assigned by the provider organization are allowed in the patient class, the root element of the patient IDs shall match the root element of the provider organization ID, and the provider organization ID shall have no extension element. • When any other role associated with the Person class of the patient is scoped by an organization, the root element of the role IDs shall match the root element of the scoping organization ID, and the scoping organization ID shall have no extension element. • All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/PIX/BV-001		
TP label		HIS Patient Identity Feed – Revise Patient Record		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	PIMG-1; M	PIMG-2; O	

	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3)		
	Testable items	PatientRecord-3 ; M	PatientRecord-6; M	PatientRecord-7; M
		PatientRecord-8; M	PatientRecord-9; M	PatientRecord-10; O
		PatientRecord-11; O	PatientRecord-12; M	PatientRecord-13; M
		PatientRecord-14; M	PatientRecord-15; M	PatientRecord-16; M
		PatientRecord-17; M	PatientRecord-18; M	PatientRecord-19; M
		PatientRecord-20; M	PatientRecord-21; M	PatientRecord-22; O
		PatientRecord-23; O	PatientRecord-24; M	PatientRecord-25; M
		PatientRecord-26; M	PatientRecord-27; O	PatientRecord-28; O
		PatientRecord-29; O	PatientRecord-30; O	PatientRecord-31; O
		PatientRecord-32; O	PatientRecord-33; O	PatientRecord-34; O
		PatientRecord-35; O	PatientRecord-36; O	PatientRecord-37; O
		PatientRecord-38; O	PatientRecord-39; O	PatientRecord-40; C
		PatientRecord-41; C	PatientRecord-42; O	PatientRecord-43; C
		PatientRecord-44; C	PatientRecord-45; C	PatientRecord-46; O
		PatientRecord-47; C	PatientRecord-48; C	PatientRecord-49; C
		PatientRecord-50; C	PatientRecord-51; C	PatientRecord-52; C
		PatientRecord-53; C	PatientRecord-54; O	PatientRecord-55; C
		PatientRecord-56; C	PatientRecord-57; C	PatientRecord-58; O
		PatientRecord-59; C	PatientRecord-60; C	PatientRecord-61; M
		PatientRecord-62; M	PatientRecord-63; M	PatientRecord-64; M
		PatientRecord-66; M	PatientRecord-67; M	PatientRecord-4; M
		PIM-9; M	PatientRecord-65; M	
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3), Appendix E		
	Testable items	IIDataType-1; M	IIDataType-2; C	IIDataType-3; C
		IIDataType-17; M	IIDataType-18; M	IIDataType-19; O
		IIDataType-20; O	IIDataType-21; M	
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3), Appendix O		
	Testable items	PayloadIM-1; M	PayloadIM-2; M	PayloadIM-3; M
		PayloadIM-4; M	PayloadIM-5; O	PayloadIM-6; M
		PayloadIM-7; M	PayloadIM-8; M	PayloadIM-9; M
		PayloadIM-10; O	PayloadIM-11; M	PayloadIM-12; M

		PayloadIM-13; M	PayloadIM-14; M	PayloadIM-15; M
		PayloadIM-16; M	PayloadIM-17; M	PayloadIM-18; M
		PayloadIM-19; O	PayloadIM-20; O	PayloadIM-21; O
		PayloadIM-22; O	PayloadIM-23; O	PayloadIM-24; C
		PayloadIM-25; O	PayloadIM-26; C	PayloadIM-27; C
		PayloadIM-28; C	PayloadIM-29; C	PayloadIM-30; C
		PayloadIM-31; M	EventIM-1; M	EventIM-2; M
		EventIM-3; M	EventIM-4; M	EventIM-5; M
		EventIM-6; M	EventIM-7; O	EventIM-8; M
		EventIM-9; M	EventIM-10; M	EventIM-11; M
		EventIM-12; M	EventIM-13; M	EventIM-14; M
		EventIM-15; M	EventIM-16; M	EventIM-17; M
		EventIM-18; C	EventIM-19; M	EventIM-20; O
		EventIM-21; O	EventIM-22; C	EventIM-23; C
		EventIM-24; C	EventIM-25; C	EventIM-26; C
		EventIM-27; C	EventIM-28; C	EventIM-29; C
		EventIM-30; C	EventIM-31; M	EventIM-32; M
		EventIM-33; M	EventIM-34; O	EventIM-35; O
		EventIM-36; C	EventIM-37; C	EventIM-38; C
		EventIM-39; C	EventIM-40; C	EventIM-41; C
		EventIM-42; O	EventIM-43; C	EventIM-44; C
Test purpose		Check that: Continua HIS senders shall implement the Patient Identity Source actor of IHE ITI-44: Patient Identity Feed HL7 V3 in order to submit new patient identifiers to the HIS receiver or third party exchanges [AND] Continua HIS senders may implement the Patient Identity Source actor of IHE ITI-44: Patient Identity Feed HL7 V3 in order to submit new device registration to the HIS receiver or third party exchanges [AND] Message Payload and Control Act and Transmission Wrappers are based on the conformance with the IHE profile.		
Applicability		C_HRN_SEN_000 AND (C_HRN_SEN_008 OR C_HRN_SEN_009)		
Other PICS				
Initial condition		The SUT is ready to send a PIX message using SOAP 1.2 to the simulated PIXManager service or DocumentRegistry service launched in the test tool.		
Test procedure		1. The HIS sender under test sends a SOAP 1.2 message containing a "Patient Registry		

	Record Revised" to the simulated receiver running in the test tool. 2. The test tool receives the SOAP message and checks that: a. the version of the SOAP is 1.2, that is the namespace of the envelope is http://www.w3.org/2003/05/soap-envelope. b. The action of the transaction is "urn:hl7-org:v3:PRPA_IN201302UV02". c. The SOAP body has only one child that is a PRPA_IN201302UV02 element with the namespace "urn:hl7-org:v3". 3. The test tool checks the control act and transmission wrappers and the message payload as follows: a. The following optional class attributes are omitted: ❑ Message.profileId ❑ Message.responseCode ❑ Message.attachmentText ❑ Sender.telecom ❑ Receiver.telecom ❑ Device.desc ❑ Device.existenceTime. b. The following optional classes are omitted: ❑ AttentionLine ❑ RespondTo ❑ LocatedEntity ❑ scopedRole(Organization). c. id element of type II is required, that is @root and @extension attributes are present in this id element. @assigningAuthorityName attribute is not present and @Displayable attribute can be present. d. creationTime element of type TS is required, that is @value with a valid time value is present. e. If versionCode element is present, its value must be "V3PR1". f. The value of interactionId/@extension attribute is set to "PRPA_IN201302UV02". g. sequenceNumber element of type INT can be present. h. The value of processingModeCode/@code attribute is set to "T". i. The acceptAckCode/@code attribute is set to "AL". j. Sender element is present and inside it: ❑ @typeCode attribute is present and its value is set to "SND". ❑ A device element is present and inside it: - @classCode attribute is present and its value is set to "DEV" - @determinerCode attribute is present and its value is set to "INSTANCE". - At least one Device/id element is present, Device/id/@root is an ISO OID and Device/id/@extension does not have a value, Device/id/@assigningAuthorityName is not present and Device/id/@Displayable attribute can be present - Device/name element can be present - telecom element can be present - manufacturerModelName element can be present - softwareName element can be present. k. There is only one receiver element and inside it:

	❑ @typeCode attribute is present and its value is set to "RCV". ❑ A device element is present and inside it: - @classCode attribute is present and its value is set to "DEV" - @determinerCode attribute is present and its value is set to "INSTANCE" - At least one Device/id element is present, Device/id/@root is an ISO OID and Device/id/@extension does not have a value, Device/id/@assigningAuthorityName is not present and Device/id/@Displayable attribute can be present - Device/name element can be present - telecom element can be present - manufacturerModelName element can be present - softwareName element can be present. l. If Agent element is present: ❑ @classCode attribute is present and its value is set to "AGNT". m. If Organization element is present: ❑ @classCode attribute is present and its value is set to "ORG" ❑ @determinerCode attribute is present and its value is set to "INSTANCE" ❑ At least one Organization/id element is present ❑ Organization/name element can be present ❑ Organization/telecom element can be present. n. ControlActProcess element is present and inside this element: ❑ The following optional class attributes are omitted: - ControlActProcess.text - ControlActProcess.priorityCode - ControlActProcess.reasonCode. ❑ @classCode attribute is present and its value is set to "CACT". ❑ @moodCode attribute is present and its value is one of the following: - "INT" – intent - "RQO" – request - "EVN" – event, ocurrence - "PRP" – proposal - "RMD" – recommendation - "APT" – appointment - "ARQ" – appointment request - "PRMS" – promise. ❑ id element can be present. ❑ code element shall be set to "PRPA_TE201302UV02". ❑ effectiveTime element can be present. ❑ languageCode element can be present. ❑ Participation elements are not present. ❑ The reasonOf act relationship is not present. ❑ The following act relationships to the RegistrationEvent are not present: - inFullfilmentOf - definition - subject2.

- ❑ subject element is present and:
  - @typeCode attribute is present and its value is set to "SUBJ"
  - @contextConductionInd attribute is present and its value is set to "false".
- ❑ RegistrationEvent element is present and:
  - @classCode attribute is present and its value is set to "REG"
  - @moodCode attribute is present and its value is set to "EVN"
  - id element can be present
  - statusCode/@code attribute is set to "active"
  - effectiveTime element can be present, but if it is present, author/Time element must be valued with the same time expression
  - subject1/typeCode attribute is present and its value is set to "SBJ"
  - RegisteredRole element can be present
  - author element can be present, but if it is present:
    i. @typeCode attribute is present and its value is set to "AUT".
    ii. @contextControlCode attribute can be present and if it is present, its value is set to "AP".
    iii. AssignedEntity element can be present and if it is present, it should be a person, it may be a device or organization and it shall not be a non-person living object.
    iv. time element can be present, but if it is valued, the RegistrationEvent/effectiveTime element must be valued with the same time expression.
    v. modeCode element can be present.
  - Custodian element is present and:
    i. @typeCode attribute is present and its value is set to "CST".
    ii. @contextControlCode attribute can be present and if it is present, its value is set to "CST".
    iii. assignedEntity element is either an organization or a device.
  - ReplacementOf element is not present.

o. A patient element is present as a child of subject1 element and in this element:
- ❑ @classCode attribute is present and its value is set to "PAT".
- ❑ At least one id element is present.
- ❑ statusCode element is present and its value is set to "active".
- ❑ confidentialityCode element can be present.
- ❑ veryImportantPersonCode can be present.
- ❑ The provider organization element is present, and:
  - the provider organization needs to be identified by an id attribute, and at least one of address, telecommunications address, or contact person should be present
  - id element has only a root, expressed as an ISO OID.
  - The following roles are omitted:
    - asPatientOfOtherProvider
    - birthPlace
    - guarantor
    - guardian
    - contactParty
    - asMember

	• careGiver • asStudent. - The following participations are omitted: • subjectOf (administrativeObservation) • coveredPartyOf (coverage). ❑ patientPerson element is present and: - @classCode attribute is present and its value is set to "PSN" - @determinerCode attribute is present and its value is set to "INSTANCE" - One or more name elements are present - More than one telecom elements can be present - administrativeGenderCode element can be present - birthTime element can be present - deceasedInd element can be present - deceasedTime element can be present - multipleBirthInd element can be present - multipleBirthOrderNumber element can be present - addr elements can be present - maritalStatusCode element can be present - religiousAffiliationCode element can be present - raceCode element can be present - ethnicGroupCode element can be present - One or more asOtherIDs elements can be present, but if it is present: i. @classCode attribute is present and its value is set to the corresponding role. ii. At least one id element is present and OtherIDs/id/@root is identical to scopingOrganization/id/@root. iii. scopingOrganization element is present and scopingOrganization/id/@extension does not have any value. - PersonalRelationship element can be present and if it is present: i. @classCode attribute is present and its value is set to "PRS" ii. id element can be present iii. code element is present. - Citizen element can be present and if it is present: i. @classCode attribute is present and its value is set to "CIT" ii. One or more id element can be present iii. Nation element is present and • @classCode attribute is present and its value is set to "NAT" • @determinerCode attribute is present and its value is set to "INSTANCE" • code element is present • name element can be present. - Employee element can be present and if it is present: i. @classCode attribute is present and its value is set to "EMP" ii. statusCode element can be present iii. occupationCode element can be present.

	- LanguageCommunication can be present and if it is present: i. languageCode element is present ii. preferenceInd element can be present.
Pass/Fail criteria	• The relationship holder of the personal relationship is restricted to being a person (using CMET COCT_MT030207UV). • When the patient role is scoped by a provider organization, only patient IDs assigned by the provider organization are allowed in the patient class, the root element of the patient IDs shall match the root element of the provider organization ID, and the provider organization ID shall have no extension element. • When any other role associated with the person class of the patient is scoped by an organization, the root element of the role IDs shall match the root element of the scoping organization ID, and the scoping organization ID shall have no extension element. • All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/PIX/BV-002		
TP label		HIS Patient Identity Management – Patient Registry Duplicates Resolved		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	PIMG-1; M	PIMG-2; O	
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3)		
	Testable items	PIM-2; M	PIM-4; M	PIM-5; M
		PIM-6; M	PIM-7; M	PIM-8; M
		PIM-10; M	PIM-11; M	PIM-12; M
		PIM-13; M	PIM-14; M	PIM-15; M
		PIM-16; M	PIM-17; M	PIM-18; M
		PIM-19; M	PIM-20; M	PIM-22; M
		PIM-23; M	PIM-24; M	PIM-25; M
		PIM-26; M	PIM-3; M	PIM-21; M
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3), Appendix E		
	Testable items	IIDataType-1; M	IIDataType-2; C	IIDataType-3; C
		IIDataType-17; M	IIDataType-18; M	IIDataType-19; O
		IIDataType-20; O	IIDataType-21; M	
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3), Appendix O		
	Testable items	PayloadIM-1; M	PayloadIM-2; M	PayloadIM-3; M
		PayloadIM-4; M	PayloadIM-5; O	PayloadIM-6; M
		PayloadIM-7; M	PayloadIM-8; M	PayloadIM-9; M

		PayloadIM-10; O	PayloadIM-11; M	PayloadIM-12; M
		PayloadIM-13; M	PayloadIM-14; M	PayloadIM-15; M
		PayloadIM-16; M	PayloadIM-17; M	PayloadIM-18; M
		PayloadIM-19; O	PayloadIM-20; O	PayloadIM-21; O
		PayloadIM-22; O	PayloadIM-23; O	PayloadIM-24; C
		PayloadIM-25; O	PayloadIM-26; C	PayloadIM-27; C
		PayloadIM-28; C	PayloadIM-29; C	PayloadIM-30; C
		PayloadIM-31; M	EventIM-1; M	EventIM-2; M
		EventIM-3; M	EventIM-4; M	EventIM-5; M
		EventIM-6; M	EventIM-7; O	EventIM-8; M
		EventIM-9; M	EventIM-10; M	EventIM-11; M
		EventIM-12; M	EventIM-13; M	EventIM-14; M
		EventIM-15; M	EventIM-16; M	EventIM-17; M
		EventIM-18; C	EventIM-19; M	EventIM-20; O
		EventIM-21; O	EventIM-22; C	EventIM-23; C
		EventIM-24; C	EventIM-25; C	EventIM-26; C
		EventIM-27; C	EventIM-28; C	EventIM-29; C
		EventIM-30; C	EventIM-31; M	EventIM-32; M
		EventIM-33; M	EventIM-34; O	EventIM-35; O
		EventIM-36; C	EventIM-37; C	EventIM-38; C
		EventIM-39; C	EventIM-40; C	EventIM-41; C
		EventIM-42; O	EventIM-43; C	EventIM-44; C
Test purpose		Check that: Continua HIS senders shall implement the Patient Identity Source actor of IHE ITI-44: Patient Identity Feed HL7 V3 in order to submit new patient identifiers to the HIS receiver or third party exchanges [AND] Continua HIS senders may implement the Patient Identity Source actor of IHE ITI-44: Patient Identity Feed HL7 V3 in order to submit new device registration to the HIS receiver or third party exchanges [AND] Message Payload and Control Act and Transmission Wrappers are based on the conformance with the IHE profile.		
Applicability		C_HRN_SEN_000 AND (C_HRN_SEN_008 OR C_HRN_SEN_009)		
Other PICS				
Initial condition		The SUT is ready to send a PIX message using SOAP 1.2 to the simulated PIXManager service or DocumentRegistry service launched in the test tool.		

Test procedure	1. The HIS sender under test sends a SOAP 1.2 message containing a "Patient Registry Duplicates Resolved" to the simulated receiver running in the test tool. 2. The test tool receives the SOAP message and checks that: a. the version of the SOAP is 1.2, that is the namespace of the envelope is http://www.w3.org/2003/05/soap-envelope. b. The action of the transaction is "urn:hl7-org:v3:PRPA_IN201304UV02". c. The SOAP body has only one child that is a PRPA_IN201304UV02 element which namespace is "urn:hl7-org:v3". 3. The test tool checks the control act and transmission wrappers and the message payload as follows: a. The following optional class attributes are omitted: ❑ Message.profileId ❑ Message.responseCode ❑ Message.attachmentText ❑ Sender.telecom ❑ Receiver.telecom ❑ Device.desc ❑ Device.existenceTime. b. The following optional classes are omitted: ❑ AttentionLine ❑ RespondTo ❑ LocatedEntity ❑ scopedRole(Organization). c. id element of type II is required, that is @root and @extension attributes are present in this id element. @assigningAuthorityName attribute is not present and @Displayable attribute can be present. d. creationTime element of type TS is required, that is @value with a valid time value is present. e. If versionCode element is present, its value must be "V3PR1". f. The value of interactionId/@extension attribute is set to "PRPA_IN201304UV02". g. sequenceNumber element of type INT can be present. h. The value of processingModeCode/@code attribute is set to "T". i. The acceptAckCode/@code attribute is set to "AL". j. Sender element is present and inside it: ❑ @typeCode attribute is present and its value is set to "SND". ❑ A device element is present and inside it: - @classCode attribute is present and its value is set to "DEV" - @determinerCode attribute is present and its value is set to "INSTANCE". - At least one Device/id element is present, Device/id/@root is an ISO OID and Device/id/@extension does not have a value, Device/id/@assigningAuthorityName is not present and Device/id/@Displayable attribute can be present - Device/name element can be present - telecom element can be present - manufacturerModelName element can be present - softwareName element can be present.

k. There is only one receiver element and inside it:
   - ❑ @typeCode attribute is present and its value is set to "RCV".
   - ❑ A device element is present and inside it:
     - @classCode attribute is present and its value is set to "DEV"
     - @determinerCode attribute is present and its value is set to "INSTANCE".
     - At least one Device/id element is present, Device/id/@root is an ISO OID and Device/id/@extension does not have a value, Device/id/@assigningAuthorityName is not present and Device/id/@Displayable attribute can be present
     - Device/name element can be present
     - telecom element can be present
     - manufacturerModelName element can be present
     - softwareName element can be present.

l. If Agent element is present:
   - ❑ @classCode attribute is present and its value is set to "AGNT"

m. If Organization element is present:
   - ❑ @classCode attribute is present and its value is set to "ORG"
   - ❑ @determinerCode attribute is present and its value is set to "INSTANCE"
   - ❑ At least one Organization/id element is present
   - ❑ Organization/name element can be present
   - ❑ Organization/telecom element can be present.

n. ControlActProcess element is present and inside this element:
   - ❑ The following optional class attributes are omitted:
     - ControlActProcess.text
     - ControlActProcess.priorityCode
     - ControlActProcess.reasonCode.
   - ❑ @classCode attribute is present and its value is set to "CACT"
   - ❑ @moodCode attribute is present and its value is one of the following:
     - "INT" – intent
     - "RQO" – request
     - "EVN" – event, ocurrence
     - "PRP" – proposal
     - "RMD" – recommendation
     - "APT" – appointment
     - "ARQ" – appointment request
     - "PRMS" – promise.
   - ❑ id element can be present.
   - ❑ code element shall be set to "PRPA_TE201304UV02".
   - ❑ effectiveTime element can be present.
   - ❑ languageCode element can be present.
   - ❑ Participation elements are not present.
   - ❑ The reasonOf act relationship is not present.
   - ❑ The following act relationships to the RegistrationEvent are not present:
     - inFullfilmentOf
     - definition

- subject2

❑ subject element is present and:

- @typeCode attribute is present and its value is set to "SUBJ"
- @contextConductionInd attribute is present and its value is set to "false".

❑ RegistrationEvent element is present and:

- @classCode attribute is present and its value is set to "REG"
- @moodCode attribute is present and its value is set to "EVN"
- id element can be present
- statusCode/@code attribute is set to "active"
- effectiveTime element can be present, but if it is present, author/Time element must be valued with the same time expression
- subject1/typeCode attribute is present and its value is set to "SBJ"
- RegisteredRole element can be present
- author element can be present, but if it is present:
  i. @typeCode attribute is present and its value is set to "AUT".
  ii. @contextControlCode attribute can be present and if it is present, its value is set to "AP".
  iii. AssignedEntity element can be present and if it is present, it should be a person, it may be a device or organization and it shall not be a non-person living object.
  iv. time element can be present, but if it is valued, the RegistrationEvent/effectiveTime element must be valued with the same time expression.
  v. modeCode element can be present.
- Custodian element is present and:
  i. @typeCode attribute is present and its value is set to "CST".
  ii. @contextControlCode attribute can be present and if it is present, its value is set to "CST".
  iii. assignedEntity element is either an organization or a device.
- ReplacementOf element is present and:
  i. @typeCode attribute is present and its value is set to "RPLC".
  ii. PriorRegistration element is present and:
    - @classCode attribute is present and its value is set to "REG"
    - @moodCode attribute is present and its value is set to "EVN"
    - id element can be present
    - statusCode element is present and its value is set to "obsolete"
    - PriorRegisteredRole element is present and its element id is present.

o. A patient element is present as a child of subject1 element and in this element:

❑ @classCode attribute is present and its value is set to "PAT".

❑ At least one id element is present.

❑ statusCode element is present and its value is set to "active".

❑ All other optional elements are not present.

❑ The provider organization element can be present, and:

- the provider organization needs to be identified by an id attribute, and at least one of address, telecommunications address, or contact person should be present

	- id element has only a root, expressed as an ISO OID, and it matches the root of the Patient/id element. ❑ patientPerson element is present and: - @classCode attribute is present and its value is set to "PSN" - @determinerCode attribute is present and its value is set to "INSTANCE" - one or more name elements are present - all other optional elements are not present.
Pass/Fail criteria	• The relationship holder of the personal relationship is restricted to being a person (using CMET COCT_MT030207UV). • When the patient role is scoped by a provider organization, only patient IDs assigned by the provider organization are allowed in the patient class, the root element of the patient IDs shall match the root element of the provider organization ID, and the provider organization ID shall have no extension element. • When any other role associated with the person class of the patient is scoped by an organization, the root element of the role IDs shall match the root element of the scoping organization ID, and the scoping organization ID shall have no extension element. • All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/PIX/BV-003		
TP label		HIS PIXV3 Query – Patient Registry Get Identifiers Query		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	PIMG-3; O		
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3)		
	Testable items	GetID-1; M	GetID-5; M	GetID-6; M
		GetID-8; M	GetID-9; M	GetID-10; M
		GetID-11; M	GetID-12; M	GetID-13; M
		GetID-14; M	GetID-15; M	GetID-16; M
		GetID-17; M	GetID-18; M	GetID-19; M
		GetID-20; M	GetID-22; M	GetID-23; M
		GetID-24; M	GetID-25; M	GetID-26; M
		GetID-28; M	GetID-2; M	GetID-27; M
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3), Appendix E		
	Testable items	IIDataType-1; M	IIDataType-2; C	IIDataType-3; C
		IIDataType-17; M	IIDataType-18; M	IIDataType-19; O
		IIDataType-20; O	IIDataType-21; M	
	Spec	[IHE ITF PIX PDQ], Patient Identifier Cross-Reference HL7 V3 (PIXV3), Appendix O		
	Testable	PayloadIM-1; M	PayloadIM-2; M	PayloadIM-3; M

	items	PayloadIM-4; M	PayloadIM-5; O	PayloadIM-6; M
		PayloadIM-7; M	PayloadIM-8; M	PayloadIM-9; M
		PayloadIM-10; O	PayloadIM-11; M	PayloadIM-12; M
		PayloadIM-13; M	PayloadIM-14; M	PayloadIM-15; M
		PayloadIM-16; M	PayloadIM-17; M	PayloadIM-18; M
		PayloadIM-19; O	PayloadIM-20; O	PayloadIM-21; O
		PayloadIM-22; O	PayloadIM-23; O	PayloadIM-24; C
		PayloadIM-25; O	PayloadIM-26; C	PayloadIM-27; C
		PayloadIM-28; C	PayloadIM-29; C	PayloadIM-30; C
		PayloadIM-31; M	QueryReqIM-1; M	QueryReqIM-2; M
		QueryReqIM-3; M	QueryReqIM-4; M	QueryReqIM-5; O
		QueryReqIM-6; M	QueryReqIM-7; M	QueryReqIM-8; M
		QueryReqIM-9; M	QueryReqIM-10; O	QueryReqIM-11; C
		QueryReqIM-12; C	QueryReqIM-13; C	QueryReqIM-14; C
		QueryReqIM-15; M		
Test purpose		Check that: Continua HIS senders and receivers may implement the Patient Identfier Cross-reference Consumer actor of IHE ITI-45: PIXV3 Query transaction in order to map between their local identifiers and the identifiers used for exchange [AND] Message Payload and Control Act and Transmission Wrappers are based on the conformance with the IHE profile.		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_011		
Other PICS				
Initial condition		The SUT is ready to send a PIX message using SOAP 1.2 to the simulated PIXManager service launched in the test tool.		
Test procedure		1. The HIS sender under test sends a SOAP 1.2 message containing a "Patient Registry Get Identifiers" query to the simulated receiver running in the test tool. 2. The test tool receives the SOAP message and checks that: a. the version of the SOAP is 1.2, that is the namespace of the envelope is http://www.w3.org/2003/05/soap-envelope. b. The action of the transaction is "urn:hl7-org:v3:PRPA_IN201309UV02". c. The SOAP body has only one child that is a PRPA_IN201309UV02 element with the namespace "urn:hl7-org:v3". 3. The test tool checks the control act and transmission wrappers and the message payload as follows: a. The following optional class attributes are omitted: ❑ Message.profileId ❑ Message.responseCode		

	❑ Message.attachmentText ❑ Sender.telecom ❑ Receiver.telecom ❑ Device.desc ❑ Device.existenceTime. b. The following optional classes are omitted: ❑ AttentionLine ❑ RespondTo ❑ LocatedEntity ❑ scopedRole(Organization). c. id element of type II is required, that is @root and @extension attributes are present in this id element. @assigningAuthorityName attribute is not present and @Displayable attribute can be present. d. creationTime element of type TS is required, that is @value with a valid time value is present. e. If versionCode element is present, its value must be "V3PR1". f. The value of interactionId/@extension attribute is set to "PRPA_IN201304UV02". g. sequenceNumber element of type INT can be present. h. The value of processingModeCode/@code attribute is set to "T". i. The acceptAckCode/@code attribute is set to "AL". j. Sender element is present and inside it: ❑ @typeCode attribute is present and its value is set to "SND". ❑ A device element is present and inside it: - @classCode attribute is present and its value is set to "DEV" - @determinerCode attribute is present and its value is set to "INSTANCE". - At least one Device/id element is present, Device/id/@root is an ISO OID and Device/id/@extension does not have a value, Device/id/@assigningAuthorityName is not present and Device/id/@Displayable attribute can be present - Device/name element can be present - telecom element can be present - manufacturerModelName element can be present - softwareName element can be present. k. There is only one receiver element and inside it: ❑ @typeCode attribute is present and its value is set to "RCV". ❑ A device element is present and inside it: - @classCode attribute is present and its value is set to "DEV" - @determinerCode attribute is present and its value is set to "INSTANCE". - At least one Device/id element is present, Device/id/@root is an ISO OID and Device/id/@extension does not have a value, Device/id/@assigningAuthorityName is not present and Device/id/@Displayable attribute can be present - Device/name element can be present - telecom element can be present - manufacturerModelName element can be present - softwareName element can be present. l. If Agent element is present:

	❑ @classCode attribute is present and its value is set to "AGNT". m. If Organization element is present: ❑ @classCode attribute is present and its value is set to "ORG". ❑ @determinerCode attribute is present and its value is set to "INSTANCE". ❑ At least one Organization/id element is present. ❑ Organization/name element can be present. ❑ Organization/telecom element can be present. n. ControlActProcess element is present and inside this element: ❑ The following optional class attributes are omitted: - ControlActProcess.text - ControlActProcess.priorityCode - ControlActProcess.reasonCode. ❑ The following participations related to the ControlActProcess are not present: - overseer - dataEnterer - informationRecipient. ❑ @classCode attribute is present and its value is set to "CACT". ❑ @moodCode attribute is present and its value is set to "RQO". ❑ id element can be present. ❑ code element shall be set to "PRPA_TE201309UV02". ❑ effectiveTime element can be present. ❑ languageCode element can be present. ❑ authorOrPerformer element is present and: - @typeCode attribute is present and its value is set to "AUT" - @contextConductionInd attribute can be present and if it is present, its value is set to "AP" - time element can be present - modeCode element can be present. ❑ QueryByParamenter element is present and: - queryId element is present - statusCode element is present and its attribute @code is set to "new" - responsePriorityCode element is present and its attribute @code is set to "I" - the optional attributes responseElementGroupId, modifyCode and executionAndDeliveryTime are not present. - A parameterList element is present and: i. DataSource element can be present, but if it is present: • a value element is present, the value/@root attribute is a valid ISO OID and the value/@extension attribute is not present • a semanticsText element is present and its value is set to "DataSource.id" • DataSource parameter provides the assigning authority identifier for a specific domain using the DataSource/value attribute • DataSource/value/@extension attribute is not provided, and the DataSource/value/@root attribute contains a valid ISO

	OID • the value of Patient.id.root attribute matches the DataSource/value/@root attribute representing the corresponding assigning authority. ii. Exactly one patientIdentifier element is present and: 1. Exactly one PatientIdentifier/value element is present and it is a valid ISO OID and the value/@extension attribute is valued. 2. Exactly one semanticsText element is present and its value is set to "Patient.id".
Pass/Fail criteria	• When the patient role is scoped by a provider organization, only patient IDs assigned by the provider organization are allowed in the patient class, the root element of the patient IDs shall match the root element of the provider organization ID, and the provider organization ID shall have no extension element. • When any other role associated with the person class of the patient is scoped by an organization, the root element of the role IDs shall match the root element of the scoping organization ID, and the scoping organization ID shall have no extension element. • All steps are as specified within the test procedure above.
Notes	

A.13 Group 1.11: HIS consent management (CM)

TP Id		TP/HIS/SEN/CM/BV-000		
TP label		Metadata Syntactic Validation		
Coverage	**Spec**	[IHE ITI-TF-2]		
	Testable items	ProvideScope1; M	ProvideProtocol9; M	
	Spec	[ITU-T H.813], HIS Interface requirements for Consent Management		
	Testable items	ConsentSenderXDR3; M	ConsentSenderXDR5; M	XDSDEMD-1; O
		XDSDEMD-2; M	XDSDEMD-3; M	XDSDEMD-4; M
		XDSDEMD-5; M	XDSDEMD-6; M	XDSDEMD-7: M
		XDSDEMD-8; O	XDSDEMD-9; O	XDSDEMD-10; M
		XDSDEMD-11; M	XDSDEMD-12; M	XDSDEMD-13; M
		XDSDEMD-14; M	XDSDEMD-15; O	XDSDEMD-16; M
		XDSDEMD-17; O	XDSDEMD-18; M	XDSDEMD-19; M
		XDSDEMD-20; M	XDSDEMD-21; M	XDSDEMD-22; M
		XDSDEMD-23; M	XDSDEMD-24; M	XDSDEMD-25; O
		XDSDEMD-26; O	XDSDEMD-27; O	XDSDEMD-28; M
		XDSDEMD-29; M	XDSDEMD-30; M	XDSDEMD-31; M
		XDSDEMD-32; M	XDSDEMD-33; M	XDSDEMD-34; M
		XDSDEMD-35; M	XDSDEMD-35; M	XDSDEMD-37; M
		XDSDEMD-38; M	XDSDEMD-39; M	XDSDEMD-40; O

		XDSDEMD-41; M	XDSDEMD-42; M	XDSDEMD-43; M
Test purpose		Check that: A Provide and Register Document Set-b transaction shall carry: - Metadata describing zero or more documents - Within metadata, one XDSDocumentEntry object per document - XDS Submission Set definition along with the linkage to new documents and references to existing documents - Zero or more XDS Folder definitions along with the linkage to new or existing documents - Zero or more documents [AND] The <ihe:ProvideAndRegisterDocumentSetRequest/> element is defined as: - One <lcm:SubmitObjectsRequest/> element that contains the submission set metadata - Zero or more <ihe:Document/> elements that contain the base64encoded data for the documents being submitted to the Document Repository. The <ihe:Document/> also includes the document id attribute (ihe:Document/@id) of type xsd:anyURI to match the document ExtrinsicObject id in the metadata and providing the necessary linkage [AND] The consent document transmitted by the Consent Enabled HIS sender shall contain the same Patient Identifier as the HIS measurement message(s).		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_007		
Other PICS				
Initial condition		The SUT is ready to send an XDS.b submission set by XDR to the test tool. This submission set contains one patient consent document.		
Test procedure		1. The HIS sender under test sends a "Provide and Register document Set-b Request" message to the test tool. 2. Check there is only one <ProvideAndRegisterDocumentSetRequest/> element and that it contains: a. only one <lcm:SubmitObjectsRequest/> element that contains: o an XDSDocumentEntry (ExtrinsicObject) element for each document; o an XDS submission set definition along with the linkage to new documents and references to existing documents (RegistryPackage element); o zero or more XDS folder definitions along with the linkage to new or existing documents; o zero or more <ihe:Document/> elements.		
Pass/Fail criteria		• All steps are as specified within the test procedure above. • The received XDS.b message conforms to the XSD template that describes the XML format structure; this implies that all mandatory elements shall be present, that recommended elements should be present and that optional elements may be present.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-001		
TP label		Consent Directive Validation		
Coverage	**Spec**	[ITU-T H.813], HIS Interface requirements for Consent Management		
	Testable	ConsentSenderXDR1; M	ConsentSenderXDR2; M	

	items			
	Spec	[HL7 CDA IG]		
	Testable items	CONF-CD-1; M	CONF-CD-2; M	CONF-CD-2.2; M
		CONF-CD-3; M	CONF-CD-4; O	CONF-CD-4.2; O
		CONF-CD-4.3; O	CONF-CD-4.4; O	CONF-CD-5; O
		CONF-CD-6; O	CONF-CD-7; O	CONF-CD-8; O
		CONF-CD-9; O	CONF-CD-10; M	CONF-CD-11; M
		CONF-CD-12; O	CONF-CD-12.2; O	CONF-CD-13; M
		CONF-CD-14; M	CONF-CD-15; M	CONF-CD-16; M
		CONF-CD-17; M	CONF-CD-18; M	CONF-CD-19; R
		CONF-CD-20; R	CONF-CD-21; O	CONF-CD-22; R
		CONF-CD-23; R	CONF-CD-24; O	CONF-CD-25; M
		CONF-CD-26; M	CONF-CD-27; M	CONF-CD-28; O
		CONF-CD-29; R	CONF-CD-30; R	CONF-CD-31; O
		CONF-CD-32; O	CONF-CD-33; O	CONF-CD-34; M
		CONF-CD-35; O	CONF-CD-36; R	CONF-CD-37; O
		CONF-CD-38; R	CONF-CD-39; O	CONF-CD-41; C
		CONF-CD-42; O		
Test purpose		Check that: A document conforming to the CDA R2 General Header template shall include the ClinicalDocument/templateId “2.16.840.1.113883.10.20.3” [AND] ClinicalDocument/templateId element shall be present with the value “2.16.840.1.113883.3.445.1” [AND] Each Privacy Consent Directive must specify a healthcare client whose IIHI is affected by the privacy consent directive. [AND] ClinicalDocument/author element shall be present and specify a templateId if “2.16.840.1.113883.3.445.2” [AND] ClinicialDocument/author/functionCode/ may be present to specify function/relationship of the author to the client who is the record target. This element may be used to specify the client’s relationship to the Substitute Decision Maker – if one is involved in the creation of the privacy consent directive [AND] Information Recipient is used to specify the recipients of the Privacy Consent Directive. In the case of consultations and referrals, the Privacy Consent Directive recipient may be the same person/entity as the intended recipient of the client IIHI that is disclosed as a result of the persimission granted using the Privacy Consent Directive. [AND]		

	The legalAuthenticator is as defined in CDA. For a Privacy Consent Document this element may be either the client or their Substitute Decision Maker. If necessary, the Signatures section may provide the signature associated with the consenter's signature. [AND] In some cases, a Privacy Consent Document may identify and record the signature of a person who witnessed the consenter's signature. This may occur if the authenticator/consenter makes a mark instead of a signature. [AND] ClinicalDocument/documentationOf/serviceEvent/ element with a templateId of "2.16.840.1.113883.3.445.3" may be present [AND] ClinicalDocument/documentationOf/serviceEvent/id element may be present [AND] ClinicalDocument/documentationOf/serviceEvent/effectiveTime element may be present [AND] ClinicalDocument/documentationOf/serviceEvent/effectiveTime/low/@value element may be present. It may be different than the value of the ClinicalDocument/documentationOf/serviceEvent/effectiveTime/@value and represents the first time the Privacy Consent Directive takes effect [AND] ClinicalDocument/documentationOf/serviceEvent/effectiveTime/high/@value element may be present to specify the date/time when the Privacy Consent Directives expires [AND] ClinicalDocument/documentationOf/serviceEvent/code/@code attribute shall be present and indicates the OID of the externally identified and defined privacy policy corresponding to the "Privacy Policy Acknowledgement Document" [AND] ClinicalDocument/documentationOf/serviceEvent/code/@codeSystem attribute shall be present and indicates the assigning authority of the externally identified and defined privacy policy corresponding to the "Privacy Policy Acknowledgement Document" [AND] ClinicalDocument/documentationOf/serviceEvent/code/@codeSystemName attribute may be present and be a descriptive text of the privacy policy being acknowledged. [AND] A Privacy Consent Directive may replace a previous (revoked) or expired Privacy Consent Directive. [AND] A Privacy Consent Directive shall have a structuredBody element [AND] A Privacy Consent Directive shall contain a Privacy Consent Directive Details section [AND] This section shall include the templateId for the Privacy Consent Directive section with the value "2.16.840.1.113883.3.445.17" and a title of "Privacy Consent Directive Details". [AND] This section shall include an entry element with templateId of "2.16.840.1.113883.3.445.4" and a typeCode of "COMP" to organize the structure of a Privacy Consent Directive entry. [AND] This entry element shall include an act element with templateId of "2.16.840.1.113883.3.445.5" and a moodCode of "DEF" to specify the execution of a Privacy Consent Directive. [AND]

	The act element shall include a code element to specify the purpose of use for which the privacy consent is applicable [AND] This section should include one or more entry/act/informant/[@typeCode='CST'] elements with a templateId of "2.16.840.1.113883.3.445.6" to represent the custodian of the referenced IIHI. This may be different than the custodian of the Privacy Consent Directive document identified in the header. Note, if the informant is different from the custodian of the IIHI, then the informant is re-disclosing, which typically is not allowed. [AND] This section should include one or more entry/act/participant/[@typeCode='IRCP'] elements with a templateId of "2.16.840.1.113883.3.445.7" to represent the provider organization or person intended to use, access, collect information as allowed or prevented by the action specified in this privacy consent directive. [AND] The participant element may include participantRole/codeSystem specification of "2.16.840.1.113883.11.19682" corresponding to the receiving provider's role [DYNAMIC]. [AND] The participantRole element should include playingEntity element corresponding to the organization or provider intended to receive the information specified in this Privacy Consent Directive document. [AND] This section should include one or more entry/act/participant/ elements to represent the provider organization or person intended to use, access, collect information, as allowed or prevented by the action specified in this privacy consent directive. [AND] This section may include an entry/act/entryRelationship with a templateId of "2.16.840.1.113883.3.445.8" to represent the action allowed and problem associated with the information allowed by the Privacy Consent Directive. [AND] This entryRelationship shall include an act element with default classCode="ACT" and moodCode="DEF". [AND] This act element should include a @negationId attribute with a default value of "false" indicating that the action specified is enabled, and a value of "true" if the action is not allowed by the Privacy Consent Directive. When the negationInd attribute is not transmitted, the receiver must assume the default (specified action is enabled). [AND] The act element shall include a code element with default of codeSystem="2.16.840.1.113883.5.4" to specify the Privacy Consent Directive operation or action [DYNAMIC]. [AND] This section may include an entry/act/entryRelationship/ with a templateId of "2.16.840.1.113883.3.445.9" to represent the entire set of protected information (IIHI) including specific attributes of that information (e.g., category type, related diagnosis, sensitivity/confidentiality). [AND] The observation element should include one or more organizer/component/observation[@moodCode='DEF']/ elements with a templateId of "2.16.840.1.113883.3.445.10" to specify each information type (IIHI) included in the authorization contained in the Privacy Consent Directive document. [AND] The observation element should include a code element to specify the code corresponding to the information type (IIHI) included in the authorization contained in the Privacy Consent Directive document.

	[AND] The observation element may include a precondition[@typeCode=”PRCN”]/ element with a templateId of “2.16.840.1.113883.3.445.11” to specify the diagnosis or problem associated with the information. [AND] The observation element may include a precondition[@typeCode=”PRCN”]/ element with a templateId of “2.16.840.1.113883.3.445.12” to specify the sensitivity of the protected information (IIHI) specified in Privacy Consent Directive. [AND] This section may include an entry/act/entryRelationship with a templateId of “2.16.840.1.113883.3.445.13” to represent references to Privacy Policies on which the Privacy Consent Directive is based along with the information recipient Obligation. [AND] The component element shall include an act/code element to specify the Privacy Policy or regulation that is basis for requesting the authorizations specified in the Privacy Consent Directive. [AND] The component element may include a precondition element with a templateId of “2.16.840.1.113883.3.445.14” and an element of @typeCode=”PRCN” to specify any additional obligations imposed on the recipient of the IIHI referenced in the Privacy Consent Directive. [AND] The component element should include a criterion[classCode=”OBS”]/code element to specify the coded obligations imposed on the recipient of the IIHI referenced in the Privacy Consent Directive. [AND] This section may include an entry/act/entryRelationship with a templateId of “2.16.840.1.113883.3.445.15” to include a scanned image of the paper-based Privacy Consent Directive. [AND] The entryRelationship element should include an observationMedia[@classCode=”OBS”] element to embed a scanned document representation of the Privacy Consent Directive including required signatures. [AND] This section may include an entry/act/entryRelationship with a templateId of “2.16.840.1.113883.3.445.16” to represent an alternative representation of the Privacy Consent Directive (e.g.,ODRL, XrML, XACML). [AND] If included, this section shall include the templateId for the Signatures section “2.16.840.1.113883.3.445.18” and a title of “Signatures”. [AND] This section may include the entry/observationMedia for each signature (e.g.,legalAuthenticator, authenticator) or a scanned version of the entire privacy consent directive form including the signatures.
Applicability	C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_007
Other PICS	
Initial condition	The SUT is ready to send an XDS.b submission set by XDR to the test tool. This submission set contains one patient consent document.
Test procedure	1. The HIS sender under test sends a "Provide and Register document Set-b Request" message containing a CDA referenced in its body. 2. Check the following elements of the clinical document sent by the HIS sender under

	test: a. A templateId = "2.16.840.1.113883.10.20.3". b. Another templateId = "2.16.840.1.113883.3.445.1". c. recordTarget element is present. d. author element: o /templateId = "2.16.840.1.113883.3.445.2" o /functionCode may be present. e. intendedRecipient element: the "Privacy Consent Directive" recipient may be the same person/entity as the intended recipient. f. legalAuthenticator element may be either the client or their "Substitute Decision Maker" and if necessary, the signatures section may provide the signature associated with the consenter's signature. g. authenticator element may be present. h. documentationOf/serviceEvent/ element with a templateId of "2.16.840.1.113883.3.445.3" may be present and within this element: o id element may be present o effectiveTime element may be present o effectiveTime/low/@value element may be present o effectiveTime/high/@value element may be present o code/@code attribute is present o code/@codeSystem attribute is present o code/@codeSystemName attribute may be present. i. relatedDocument element may be present. j. component/structuredBody element is present and within this element: o component/section with templateId = "2.16.840.1.113883.3.445.17" is present o component/section/title = Privacy Consent Directive Details o component/section/entry is present o component/section/entry/templateId = "2.16.840.1.113883.3.445.4" o component/section/entry/@typeCode = "COMP" o component/section/entry/act/templateId = "2.16.840.1.113883.3.445.5" o component/section/entry/act/@moodcode ="DEF" o component/section/entry/act/code is present o component/section/entry/act/informant/@typeCode = 'CST' o one or more component/section/entry/act/participant should be present. o one or more component/section/entry/act/participant/@typeCode = 'IRCP' and component/section/entry/act/participant/templateId = "2.16.840.1.113883.3.445.7" should be present. o component/section/entry/act/participant/participantRole/code/@codeSystem = "2.16.840.1.113883.11.19682" may be present. o component/section/entry/act/participant/participantRole should include a playingEntity element. o component/section/entry/act/entryRelationship may be present with a templateId = "2.16.840.1.113883.3.445.8" and if it is present: - /act element is present with classCode = "ACT" and moodCode = "DEF" - /act/@negationId with a value of "false" or "true" should be present - /act/code/@codeSystem = "2.16.840.1.113883.5.4" is present. o component/section/entry/act/entryRelationship may be present with a templateId = "2.16.840.1.113883.3.445.9" and if it is present:

	- it should include one or more /organizer/component/observation/@moodCode = 'DEF' with a templateId = "2.16.840.1.113883.3.445.10" - /organizer/component/observation should include a code element - /organizer/component/observation may include a precondition/@typeCode = "PRCN" element with a templateId = "2.16.840.1.113883.3.445.11" - /organizer/component/observation may include a precondition/@typeCode = "PRCN" element with a templateId = "2.16.840.1.113883.3.445.12". o component/section/entry/act/entryRelationship may be present with a templateId = "2.16.840.1.113883.3.445.13" and if it is present: - /act/code is present - /act/precondition may be present with templateId = "2.16.840.1.113883.3.445.14" and @typeCode = "PRCN" - /act/precondition/criterion/[@classCode = "OBS"]/code should be present. o component/section/entry/act/entryRelationship may be present with a templateId = "2.16.840.1.113883.3.445.15" and if it is present: - /observationMedia/@classCode = "OBS" should be present o component/section/entry/act/entryRelationship may be present with a templateId = "2.16.840.1.113883.3.445.16" o component/section with templateId = "2.16.840.1.113883.3.445.18" and a title of "Signatures" may be present, and if present this section may include the entry/observationMedia for each signature.
Pass/Fail criteria	All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/CM/BV-002		
TP label		HIS Repository Retrieve Document Set Transaction – Protocol Requirements		
Coverage	**Spec**	[IHE ITI-TF-2], Volume 2b, Transactions Part B		
	Testable items	ProtocolReq_2; M	ProtocolReq_4; M	
	Spec	[IHE ITI-TF-2], Volume 2x, Appendix V		
	Testable items	IHE-WSA101; M		
Test purpose		Check that: Continua HIS senders implement SOAP 1.2 for Retrieve Document Set transaction [AND] Continua HIS senders implement MTOM with XOP Encoding for Retrieve Document Set transaction		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				
Initial condition		The SUT (document repository) is ready to receive a "Retrieve Document Set Request" from the test tool (simulated document consumer).		
Test procedure		1. The test tool sends a "Retrieve Document Set Request" to the HIS sender under test. 2. The HIS sender under test processes the request and sends a "Retrieve Document Set		

	Response" to the test tool. 3. The test tool checks that: a. the message received use SOAP 1.2. b. The message received use MTOM with XOP encoding. c. All <wsa:Action> elements shall have the mustUnderstand attribute set (mustUnderstand='1').
Pass/Fail criteria	• The "Retrieve Document Set Response" shall use SOAP 1.2. • The "Retrieve Document Set Response" shall use MTOM with XOP encoding. • All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/CM/BV-003		
TP label		HIS Repository Retrieve Document Set Transaction – Consent Document Retrieval successfully		
Coverage	**Spec**	[ITU-T H.813], HIS Interface requirements for Consent Management		
	Testable items	ConsentSenderXDSb-1; M	ConsentSenderXDSb-3; M	ConsentSenderXDSb-5; M
		ConsentSenderXDSb-6; M		
	Spec	[IHE ITI-TF-2], Volume 2b, Transactions Part B		
	Testable items	DocSetRequestActions_1; M	DocSetResponseSemantics_1; M	DocSetResponseSemantics_2; M
		DocSetResponseSemantics_3; M	DocSetResponseSemantics_4; M	DocSetResponseSemantics_5; M
		DocSetResponseSemantics_6; M	DocSetResponseSemantics_7; M	DocSetResponseActions_1; M
		DocSetResponseActions_2; M	ProtocolReq_9; M	ProtocolReq_10; M
		ProtocolReq_11; M	ProtocolReq_12; M	ProtocolReq_14; M
		ProtocolReq_15; M	ProtocolReq_16; M	
	Spec	[HL7 CDA IG]		
	Testable items	CONF-CD-1; M	CONF-CD-2; M	CONF-CD-2.2; M
		CONF-CD-3; M	CONF-CD-4; O	CONF-CD-4.2; O
		CONF-CD-4.3; O	CONF-CD-4.4; O	CONF-CD-5; O
		CONF-CD-6; O	CONF-CD-7; O	CONF-CD-8; O
		CONF-CD-9; O	CONF-CD-10; M	CONF-CD-11; M
		CONF-CD-12; O	CONF-CD-12.2; O	CONF-CD-13; M
		CONF-CD-14; M	CONF-CD-15; M	CONF-CD-16; M
		CONF-CD-17; M	CONF-CD-18; M	CONF-CD-19; R
		CONF-CD-20; R	CONF-CD-21; O	CONF-CD-22; R

		CONF-CD-23; R	CONF-CD-24; O	CONF-CD-25; M
		CONF-CD-26; M	CONF-CD-27; M	CONF-CD-28; O
		CONF-CD-29; R	CONF-CD-30; R	CONF-CD-31; O
		CONF-CD-32; O	CONF-CD-33; O	CONF-CD-34; M
		CONF-CD-35; O	CONF-CD-36; R	CONF-CD-37; O
		CONF-CD-38; R	CONF-CD-39; O	CONF-CD-41; C
		CONF-CD-42; O		
Test purpose		Check that: Continua HIS sender returns with the consent document requested by the Test Tool [AND] Continua HIS sender response conforms with IHE specifications		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				
Initial condition		The SUT (document repository) is ready to receive a "Retrieve Document Set Request" from the test tool (simulated document consumer). [AND] The SUT (document repository) stores at least one consent document in its repository.		
Test procedure		1. The test tool sends a well-formed "Retrieve Document Set Request" to the HIS sender under test requesting a consent document stored in the SUT repository. 2. The HIS sender under test processes the request and sends a "Retrieve Document Set Response" to the test tool. 3. The test tool checks that: a. If the request includes a homeCommunityId, the response shall include a homeCommunityId and its value shall be equal to the request homeCommunityId value. b. The element repositoryUniqueId shall be present in the response and its value shall be equal to the value of the request repositoryUniqueId element. c. The element documentUniqueId shall be present in the response and its value shall be equal to the value of the request documentUniqueId element. d. The response includes a document in base64binary encoded format. e. The mimeType element of the retrieved document shall exist in the response. f. The /ClinicalDocument/id@root of the consent document retrieved shall be equal to the documentUniqueId of the request. g. The <ihe:RetrieveDocumentResponse/> element shall include a /ihe:RetrieveDocumentSetResponse/rs:RegistryResponse element. h. The <ihe:RetrieveDocumentResponse/> element may include an optional sequence of <ihe:DocumentResponse/> elements. i. If a homeCommunityId is present in the request for the document, the RetrieveDocumentResponse element for the document shall include an <ihe:HomeCommunityId/> and its value shall be equal to the value of the homeCommunityId element of the request for the document. j. Each <ihe:DocumentResponse/> element shall include an <ihe:RepositoryUniqueId/> and its value shall be equal to the value of the /RetrieveDocumentSetRequest/DocumentRequest /RepositoryUniqueId of the request for the document. k. Each <ihe:DocumentResponse/> element shall include an <ihe:DocumentUniqueId/>and its value shall be equal to the value of the		

	/RetrieveDocumentSetRequest/DocumentRequest /DocumentUniqueId of the request for the document. l. Each <ihe:DocumentResponse/> element shall include an <ihe:Document/> containing the retrieved document in base64binary encoded format. m. Each <ihe:DocumentResponse/> element shall include an <ihe:mimeType/>containing the MIME type of the retrieved document. n. The /RetrieveDocumentSetResponse/rs:RegistryResponse/@status attributes provide the overall status of the request which shall contain the value: urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Success. o. For each document requested in a /RetrieveDocumentSetRequest/DocumentRequest element, if a warning is reported when retrieving the document, then a /RetrieveDocumentSetResponse/rs:RegistryResponse/rs:RegistryErrorList/ rs:RegistryError element shall be returned with: i. @severity is urn:oasis:names:tc:ebxml-regrep:ErrorSeverityType:Warning ii. @errorCode is specified iii. @codeContext contains the warning message iv. @location contains the DocumentUniqueId of the document requested. p. For each document requested in a /RetrieveDocumentSetRequest/DocumentRequest element, if a warning is reported when retrieving the document, then the document shall be returned in an instance of /RetrieveDocumentSetResponse/DocumentResponse/Document as base64binary encoded data. q. For each document requested in a /RetrieveDocumentSetRequest/DocumentRequest element, if the document is successfully retrieved (without warning) then no /RetrieveDocumentSetResponse/rs:RegistryResponse/rs:RegistryErrorList/ rs:RegistryError element shall be present and a /RetrieveDocumentSetResponse/DocumentResponse/Document element shall be returned containing the document as base64binary encoded data. r. The /RetrieveDocumentSetResponse/rs:RegistryResponse /rs:ResponseSlotList element is not present. s. The /RetrieveDocumentSetResponse/rs:RegistryResponse /@requestId attribute is not present.
Pass/Fail criteria	• The "Retrieve Document Set Response" with the consent document requested in base64binary encoded format shall be returned in response. • All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/CM/BV-004		
TP label		HIS Repository Retrieve Document Set Transaction – Consent Document Retrieval failure		
Coverage	**Spec**	[IHE ITI-TF-2], Volume 2b, Transactions Part B		
	Testable items	DocSetRequestActions_1; M	DocSetRequestActions_2; M	DocSetResponseSemantics_8; M
		ProtocolReq_11; M	ProtocolReq_13; M	
Test purpose		Check that: The SUT (Document Repository) returns a failure to the request made by the Test Tool [AND] The SUT (Document Repository) failure response conforms with IHE specifications		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		

Other PICS	
Initial condition	The SUT (document repository) is ready to receive a "Retrieve Document Set Request" from the test tool (simulated document consumer). [AND] The SUT (document repository) responds with a failure when requested for a specific documentUniqueId (PIXIT I_HRN_SEN_008) (because it is not present in the repository, for example).
Test procedure	1. The test tool sends a "Retrieve Document Set Request" to the HIS sender under test requesting a consent document with documentUniqueId equal to PIXIT I_HRN_SEN_008. 2. The HIS sender under test processes the request and sends a "Retrieve Document Set Response" to the test tool. 3. The test tool checks that: a. the response contains error codes. b. The /RetrieveDocumentSetResponse/rs:RegistryResponse/@status attributes provide the overall status of the request which shall contain the value: urn:oasis:names:tc:ebxml-regrep:ResponseStatusType:Failure c. For each document requested in a /RetrieveDocumentSetRequest/DocumentRequest element, if an error is reported when retrieving a document, then a /RetrieveDocumentSetResponse/rs:RegistryResponse/rs:RegistryErrorList/ rs:RegistryError element shall be returned with: i. @severity is urn:oasis:names:tc:ebxml-regrep:ErrorSeverityType:Error ii. @errorCode is specified iii. @codeContext contains the error message iv. @location contains the DocumentUniqueId of the document requested. d. No RetrieveDocumentSetResponse/DocumentResponse element shall be returned.
Pass/Fail criteria	• A failed "Retrieve Document Set Response" shall be returned. • No document shall be returned in the "Retrieve Document Set Response". • All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/CM/BV-005		
TP label		HIS Repository Retrieve Document Set Transaction – WSDL Requirements		
Coverage	**Spec**	[IHE ITI-TF-2], Volume 2b, Transactions Part B		
	Testable items	ProtocolReq_1; M	ProtocolReq_7; M	
	Spec	[IHE ITI-TF-2], Volume 2x, Appendix V		
	Testable items	Namespaces; M	IHE-WSP201; R	IHE-WSP205; M
		IHE-WSP207; M	IHE-WSP208; M	IHE-WSP211; M
Test purpose		Check that: Retrieve Document Set transaction of the WSDL definition of the SUT (Document Repository) imports (xsd:import) the following types: in the /definitions/types section: namespace="urn:ihe:iti:xds-b:2007", schema="IHEXDS.xsd" [AND] In the Retrieve Document Set transaction of the WSDL definition of the SUT (Document		

Repository) the /definitions/message/part/@element attribute of the Retrieve Document Set Request message shall be defined as “ihe:RetrieveDocumentSetRequest”

[AND]

In the Retrieve Document Set transaction of the WSDL definition of the SUT (Document Repository the /definitions/message/part/@element attribute of the Retrieve Document Set Response message shall be defined as “ihe:RetrieveDocumentSetResponse”

[AND]

In the Retrieve Document Set transaction of the WSDL definition of the SUT (Document Repository the /definitions/portType/operation/input/@wsaw:Action attribute for the Retrieve Document Set Request message shall be defined as “urn:ihe:iti:2007:RetrieveDocumentSet”

[AND]

In the Retrieve Document Set transaction of the WSDL definition of the SUT (Document Repository the /definitions/portType/operation/output/@wsaw:Action attribute for the Retrieve Document Set Response message shall be defined as “urn:ihe:iti:2007:RetrieveDocumentSetResponse”

[AND]

In the Retrieve Document Set transaction of the WSDL definition of the SUT (Document Repository the /definitions/binding/operation/soap12:operation/@soapAction attribute shall be defined as “urn:ihe:iti:2007:RetrieveDocumentSet”

[AND]

The WSDL definition of the SUT (Document Repository) uses the following namespaces:

Prefix	Namespace	Specification
wsdl (or default)	http://schemas.xmlsoap.org/wsdl/	WSDL 1.1 binding for SOAP 1.1 WSDL 1.1 binding for SOAP 1.2
wsoap12	http://schemas.xmlsoap.org/wsdl/soap12/	WSDL 1.1 binding for SOAP 1.2
wsa	http://www.w3.org/2005/08/addressing	WSA 1.0 - Core
wsaw	http://www.w3.org/2006/05/addressing/wsdl	WSA 1.0 - WSDL binding*
soap12	http://www.w3.org/2003/05/soap-envelope	SOAP 1.2
xsd	http://www.w3.org/2001/XMLSchema	XML Schema
xsi	http://www.w3.org/2001/XMLSchema-instance	XML Schema

[AND]

The WSDL definition of the SUT (Document Repository) should use the following naming convention for WSDL artifacts:

message request -> {Transaction Name}_Message

message response -> {Transaction Name}_Response_Message

portType -> {NAME}_PortType

Operation -> {NAME}_{Transaction Name}[_OperationID]

SOAP 1.x binding -> {NAME}_Binding_Soap1x

SOAP 1.x port -> {NAME}_Port_Soap1x

[AND]

The WSDL definition of the SUT (Document Repository) shall define two WSDL messages for each request-response transaction

[AND]

The WSDL definition of the SUT (Document Repository) shall include an attribute wsaw:Action for each input and output message defined in the WSDL portType operation

<table>
<tr><td></td><td>[AND]
All operations defined in the WSDL definition of the SUT (Document Repository) shall use wsdl:operation/wsdl:input/@wasw:Action = "urn:ihe:{Domain}:{Year}:{Transaction name}" and wsdl:operation/wsdl:output/@wsaw:Action = "urn:ihe:{Domain}:{Year}:{Transaction name}Response"
[AND]
In the WSDL definition of the SUT (Document Repository), for each operation defined in the WSDL portType a wsoap:operation/@soapAction attribute shall be provided. The value of wsoap:operation/@soapAction shall be consistent with the name for the corresponding WSDL operation defined in the WSDL portType</td></tr>
<tr><td>Applicability</td><td>C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012</td></tr>
<tr><td>Other PICS</td><td></td></tr>
<tr><td>Initial condition</td><td>The test tools retrieves the WSDL definition of the SUT (document repository).</td></tr>
<tr><td>Test procedure</td><td>1. The test tool checks:
a. The "Retrieve Document Set" transaction of the WSDL definition of the SUT (Document repository) imports (xsd:import) the following types: in the /definitions/types section: namespace="urn:ihe:iti:xds-b:2007", schema="IHEXDS.xsd".
b. In the "Retrieve Document Set" transaction of the WSDL definition of the SUT (document repository), the /definitions/message/part/@element attribute of the "Retrieve Document Set Request" message shall be defined as "ihe:RetrieveDocumentSetRequest".
c. In the "Retrieve Document Set" transaction of the WSDL definition of the SUT (document repository), the /definitions/message/part/@element attribute of the "Retrieve Document Set Response" message shall be defined as "ihe:RetrieveDocumentSetResponse".
d. In the "Retrieve Document Set" transaction of the WSDL definition of the SUT (document repository), the /definitions/portType/operation/input/@wsaw:Action attribute for the "Retrieve Document Set Request" message shall be defined as "urn:ihe:iti:2007:RetrieveDocumentSet".
e. In the "Retrieve Document Set" transaction of the WSDL definition of the SUT (document repository), the /definitions/portType/operation/output/@wsaw:Action attribute for the "Retrieve Document Set Response" message shall be defined as "urn:ihe:iti:2007:RetrieveDocumentSetResponse".
f. In the "Retrieve Document Set" transaction of the WSDL definition of the SUT (document repository), the /definitions/binding/operation/soap12:operation/@soapAction attribute shall be defined as "urn:ihe:iti:2007:RetrieveDocumentSet".
g. The WSDL definition of the SUT (document repository) uses the following namespaces:
<table>
<tr><th>Prefix</th><th>Namespace</th><th>Specification</th></tr>
<tr><td>wsdl (or default)</td><td>http://schemas.xmlsoap.org/wsdl/</td><td>WSDL 1.1 binding for SOAP 1.1
WSDL 1.1 binding for SOAP 1.2</td></tr>
<tr><td>wsoap12</td><td>http://schemas.xmlsoap.org/wsdl/soap12/</td><td>WSDL 1.1 binding for SOAP 1.2</td></tr>
<tr><td>wsa</td><td>http://www.w3.org/2005/08/addressing</td><td>WSA 1.0 – Core</td></tr>
<tr><td>wsaw</td><td>http://www.w3.org/2006/05/addressing/wsdl</td><td>WSA 1.0 – WSDL binding*</td></tr>
<tr><td>soap12</td><td>http://www.w3.org/2003/05/soap-envelope</td><td>SOAP 1.2</td></tr>
</table></td></tr>
</table>

	<table><tr><td>xsd</td><td>http://www.w3.org/2001/XMLSchema</td><td>XML Schema</td></tr><tr><td>xsi</td><td>http://www.w3.org/2001/XMLSchema-instance</td><td>XML Schema</td></tr></table> h. The WSDL definition of the SUT (document repository) should use the following naming convention for WSDL artefacts: i. message request -> {Transaction Name}_Message ii. message response -> {Transaction Name}_Response_Message iii. portType -> {NAME}_PortType iv. Operation -> {NAME}_{Transaction Name}[_OperationID] v. SOAP 1.x binding -> {NAME}_Binding_Soap1x vi. SOAP 1.x port -> {NAME}_Port_Soap1x i. The WSDL definition of the SUT (document repository) shall define two WSDL messages for each request-response transaction. j. The WSDL definition of the SUT (document repository) shall include an attribute wsaw:Action for each input and output message defined in the WSDL portType operation. k. All operations defined in the WSDL definition of the SUT (document repository) shall use wsdl:operation/wsdl:input/@wasw:Action = "urn:ihe:{Domain}:{Year}:{Transaction name}" and wsdl:operation/wsdl:output/@wsaw:Action = "urn:ihe:{Domain}:{Year}:{Transaction name}Response" l. In the WSDL definition of the SUT (document repository), for each operation defined in the WSDL portType a wsoap:operation/@soapAction attribute shall be provided. The value of wsoap:operation/@soapAction shall be consistent with the name of the corresponding WSDL operation defined in the WSDL portType.
Pass/Fail criteria	• All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/CM/BV-006		
TP label		HIS Repository Retrieve Document Set Transaction – XUA SAML Assertion of type Holder Of Key		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-8; M		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	Assertion-4; O	ExpActions-1; M	
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012 AND C_HRN_SEN_014		
Other PICS				
Initial condition		The SUT is ready to receive a "Retrieve Document Set" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion of type "Holder of Key" to the HIS sender under test.		

	2. The HIS sender under test responds to the "Retrieve Document Set" correctly.
Pass/Fail criteria	• All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/CM/BV-007		
TP label		HIS Repository Retrieve Document Set Transaction – XUA with mandatory information only		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-8; M		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	Assertion-3; M	ExpActions-1; M	
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				
Initial condition		The SUT is ready to receive a "Retrieve Document Set" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion of type "Holder of Key" to the HIS sender under test. 2. The HIS sender under test responds to the "Retrieve Document Set" correctly.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-008		
TP label		HIS Repository Retrieve Document Set Transaction – XUA with mandatory and optional information		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-8; M		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	Assertion-3; M	Assertion-9 ; O	ExpActions-1; M
		ExpActions-6; O		
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				

Initial condition	The SUT is ready to receive a "Retrieve Document Set" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.
Test procedure	1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion of type "Holder of Key" to the HIS sender under test. 2. The HIS sender under test responds to the "Retrieve Document Set" correctly.
Pass/Fail criteria	• All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/CM/BV-009		
TP label		HIS Repository Retrieve Document Set Transaction – XUA++ with optional parameter 'subject role'		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-9; O		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	Assertion-3; M	ExpActions-1; M	
	Spec	[IHE TFS XUA++]		
	Testable items	ATNA++2; C	ATNA++3; O	
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012 AND C_HRN_SEN_013		
Other PICS				
Initial condition		The SUT is ready to receive a "Retrieve Document Set" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion of type "Holder of Key" to the HIS sender under test. 2. The HIS sender under test responds to the "Retrieve Document Set" correctly.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-010		
TP label		HIS Repository Retrieve Document Set Transaction – XUA++ with optional parameter 'auth consent'		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-9; O		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		

	Testable items	Assertion-3; M	ExpActions-1; M	
	Spec	[IHE TFS XUA++]		
	Testable items	ATNA++5; C	ATNA++6; O	ATNA++7; O
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012 AND C_HRN_SEN_013		
Other PICS				
Initial condition		The SUT is ready to receive a "Retrieve Document Set" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion of type "Holder of Key" to the HIS sender under test. 2. The HIS sender under test responds to the "Retrieve Document Set" correctly.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-011		
TP label		HIS Repository Retrieve Document Set Transaction – XUA++ with optional parameter 'purpose of use'		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-9; O		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	Assertion-3; M	ExpActions-1; M	
	Spec	[IHE TFS XUA++]		
	Testable items	ATNA++11; O		
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012 AND C_HRN_SEN_013		
Other PICS				
Initial condition		The SUT is ready to receive a "Retrieve Document Set" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion of type "Holder of Key" to the HIS sender under test. 2. The HIS sender under test responds to the "Retrieve Document Set" correctly.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		

Notes	

TP Id		TP/HIS/SEN/CM/BV-012		
TP label		HIS Registry Stored Query. SOAP requirements		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentSenderXDSb-4; M	ConsentSenderXDSb-7; M	ConsentSenderXDSb-10; M
	Spec	[IHE ITI-TF-2], Volume 2a, Transactions Part A, Sections 3.1 to 3.28		
	Testable items	RefStd_01; M		
Test purpose		Check that: Continua HIS senders implement SOAP 1.2 for Retrieve Document Set transaction.		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				
Initial condition		The SUT is ready to receive an AdhocQuery request using SOAP 1.2 from the test tool.		
Test procedure		1. The test tool sends a SOAP 1.2 message containing a correctly formatted FindDocuments AdhocQueryRequest using the PatientId provided in the PIXIT with the $XDSDocumentEntryPatienID and the $XDSDocumentEntryStatus element. 2. The SUT receives the message and answers with an AdhocQueryResponse with the metadata of the required documents. 3. The test tool receives the message and checks that: a. the version of the SOAP is 1.2, that is the namespace of the envelope is http://www.w3.org/2003/05/soap-envelope. b. The action of the transaction is "urn:ihe:iti:2007:RegistryStoredQueryResponse". c. The SOAP body has only one child that is an AdhocQueryResponse element whose namespace is "urn:oasis:names:tc:ebxml-reg-rep:xsd:query:3.0".		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-013		
TP label		HIS Registry Stored Query. FindDocuments Query valid behaviour. Required Elements		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentSenderXDS_4; M	ConsentSenderXDS_7; M	ConsentSenderXDS_10; M
	Spec	[IHE ITI-TF-2], Volume 2a, Transactions Part A, Sections 3.1 to 3.28		
	Testable items	RefStd_01; M	StatusValues_02; M	FindDoc_01; M
		FindDoc_02; O	FindDoc_03; O	FindDoc_04; O
		FindDoc_05; O	FindDoc_06; O	FindDoc_07; O

		FindDoc_08; O	FindDoc_09; O	FindDoc_10; O
		FindDoc_11; O	FindDoc_12; O	FindDoc_13; O
		FindDoc_14; O	FindDoc_15; M	CodingSMValues_01; M
		Exp_Actions_01; M	Exp_Actions_02; M	Exp_Actions_03; M
		Exp_Actions_04; M	Exp_Actions_05; M	Exp_Actions_06; M
		WebServTrasnport_02; M	StatusValues_01; M	Ebr&Ebs_01; M
		CodingScheme_01; M		
Test purpose		Check that: HIS sender correctly answers a FindDocuments AdhocQueryRequest which petitions for an existing document.		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				
Initial condition		The SUT is ready to receive an AdhocQuery request using SOAP 1.2 from the test tool.		
Test procedure		1. The test tool sends a SOAP 1.2 message containing a correctly formatted FindDocuments AdhocQueryRequest with the following parameters: a. $XDSDocumentEntryPatienID set to I_HRN_SEN_001 b. $XDSDocumentEntryStatus set to: 'urn:oasis:names:tc:ebxml-regrep:StatusType:Approved'. 2. The SUT receives the message and answers with an AdhocQueryResponse with the metadata of the required documents. 3. The test tool receives the message and checks the structure with a parser and the provided schemas. Additionally, the following are checked: a. The "value" element of the ExternalIdentifier with id=" urn:uuid:db9f4438-ffff-435f-9d34-d76190728637" matches the PatientId of the AdhocQueryRequest. b. The ExtrinsicObject @status attribute is set to "urn:oasis:names:tc:ebxml-regrep:StatusType:Approved".		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-014		
TP label		HIS Registry Stored Query. FindDocuments Query valid partial success behaviour.		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentSenderXDS_4; M	ConsentSenderXDS_7; M	ConsentSenderXDS_10; M
	Spec	[IHE ITI-TF-2], Volume 2a, Transactions Part A, Sections 3.1 to 3.28		
	Testable items	RefStd_01; M	StatusValues_03; M	CodingSMValues_01; M
		Exp_Actions_01; M	Exp_Actions_02; M	Exp_Actions_03; M
		Exp_Actions_04; M	Exp_Actions_05; M	Exp_Actions_06; M
		WebServTrasnport_02; M	StatusValues_01; M	Ebr&Ebs_01; M

		CodingScheme_01; M		
Test purpose		Check that: HIS sender correctly answers a FindDocuments AdhocQueryRequest which petitions for a non-existing document.		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				
Initial condition		The SUT is ready to receive an AdhocQuery request using SOAP 1.2 from the test tool.		
Test procedure		1. The test tool sends a SOAP 1.2 message containing a correctly formatted FindDocuments AdhocQueryRequest with the $XDSDocumentEntryPatienID and the $XDSDocumentEntryStatus elements: a. $XDSDocumentEntryPatienID set to I_HRN_SEN_008 b. $XDSDocumentEntryStatus set to: 'urn:oasis:names:tc:ebxml-regrep:StatusType:Approved'. 2. The SUT receives the message and answers with an AdhocQueryResponse with the metadata of the required documents. 3. The test tool receives the message and checks the structure with a parser and the provided schemas. Additionally, the following are checked: a. The "value" element of the ExternalIdentifier with id=" urn:uuid:db9f4438-ffff-435f-9d34-d76190728637" matches the PatientId of the AdhocQueryRequest. b. The ExtrinsicObject @status attribute is set to "urn:oasis:names:tc:ebxml-regrep:StatusType:Approved".		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-015		
TP label		HIS Registry Stored Query. FindDocuments Query invalid behaviour		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentSenderXDS_4; M	ConsentSenderXDS_7; M	ConsentSenderXDS_10; M
	Spec	[IHE ITI-TF-2], Volume 2a, Transactions Part A, Sections 3.1 to 3.28		
	Testable items	RefStd_01; M	StatusValues_04; M	CodingSMValues_01; M
		Exp_Actions_01; M	Exp_Actions_02 ; M	Exp_Actions_03 ; M
		Exp_Actions_04 ; M	Exp_Actions_05 ; M	Exp_Actions_06 ; M
		WebServTrasnport_02; M	StatusValues_01; M	Ebr&Ebs_01; M
		CodingScheme_01; M		
Test purpose		Check that: HIS sender correctly answers a malformed FindDocuments AdhocQueryRequest.		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				

Initial condition	The SUT is ready to receive an AdhocQuery request using SOAP 1.2 from the test tool.
Test Procedure	1. Test Tool sends a SOAP 1.2 message containing a correctly formatted FindDocuments AdhocQueryRequest using the PatientId provided in the PIXIT with the $XDSDocumentEntryPatienID and the $XDSDocumentEntryStatus elements 2. SUT receives the message and answers with an AdhocQueryResponse with the metadata of the required documents 3. Test Tool receives the message and checks the structure with a parser and the provided schemas. Additionally the following elements´value is checked: a. The "value" element of the ExternalIdentifier with id="urn:uuid:db9f4438-ffff-435f-9d34-d76190728637" matches the PatientId of the AdhocQueryRequest The ExtrinsicObject @status attribute is set to “urn:oasis:names:tc:ebxml-regrep:StatusType:Approved”
Pass/Fail criteria	• All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/CM/BV-016		
TP label		HIS Registry Stored Query. WSDL Requirements		
Coverage	**Spec**	[IHE ITI-TF-2], Volume 2b, Transactions Part B		
	Testable items	WebServTrasnport_01; M	WebServTrasnport_02; M	WebServTrasnport_03; M
		WebServTrasnport_04; M	WebServTrasnport_05; M	WebServTrasnport_07; M
		WebServTrasnport_09; M	WebServTrasnport_10; R	
	Spec	[IHE ITI-TF-2], Volume 2x, Appendix V		
	Testable items	Namespaces; M	IHE-WSP201; R	IHE-WSP205; M
		IHE-WSP207; M	IHE-WSP208; M	IHE-WSP211; M
Test purpose		Check that: Registry Stored Query transaction of the WSDL definition of the SUT (Document Registry) imports (xsd:import) the following types: in the /definitions/types section: namespace="urn:ihe:iti:xds-b:2007", schema="query.xsd" [AND] In the Registry Stored Query transaction of the WSDL definition of the SUT (Document Registry) the /definitions/message/part/@element attribute of the Registry Stored Query message shall be defined as “ihe:RegistryStoredQuery” [AND] In the Registry Stored Query transaction of the WSDL definition of the SUT (Document Registry the /definitions/message/part/@element attribute of the Registry Stored Query Response message shall be defined as “ihe: RegistryStoredQueryResponse” [AND] In the Registry Stored Query transaction of the WSDL definition of the SUT (Document Registry the /definitions/portType/operation/input/@wsaw:Action attribute for the Registry Stored Query Request message shall be defined as “urn:ihe:iti:2007:RegistryStoredQuery” [AND] In the Registry Stored Query transaction of the WSDL definition of the SUT (Document Registry the /definitions/portType/operation/output/@wsaw:Action attribute for the Registry Stored Query Response message shall be defined as “urn:ihe:iti:2007:RegistryStoredQueryResponse”		

[AND]

In the Registry Stored Query transaction of the WSDL definition of the SUT (Document Registry the /definitions/binding/operation/soap12:operation/@soapAction attribute shall be defined as “urn:ihe:iti:2007:RegistryStoredQuery”

[AND]

The WSDL definition of the SUT (Document Registry) uses the following namespaces:

Prefix	Namespace	Specification
wsdl (or default)	http://schemas.xmlsoap.org/wsdl/	WSDL 1.1 binding for SOAP 1.1 WSDL 1.1 binding for SOAP 1.2
wsoap12	http://schemas.xmlsoap.org/wsdl/soap12/	WSDL 1.1 binding for SOAP 1.2
wsa	http://www.w3.org/2005/08/addressing	WSA 1.0 - Core
wsaw	http://www.w3.org/2006/05/addressing/wsdl	WSA 1.0 - WSDL binding*
soap12	http://www.w3.org/2003/05/soap-envelope	SOAP 1.2
xsd	http://www.w3.org/2001/XMLSchema	XML Schema
xsi	http://www.w3.org/2001/XMLSchema-instance	XML Schema

[AND]

The WSDL definition of the SUT (Document Registry) should use the following naming convention for WSDL artifacts:

- message request -> {Transaction Name}_Message
- message response -> {Transaction Name}_Response_Message
- portType -> {NAME}_PortType
- Operation -> {NAME}_{Transaction Name}[_OperationID]
- SOAP 1.x binding -> {NAME}_Binding_Soap1x
- SOAP 1.x port -> {NAME}_Port_Soap1x

[AND]

The WSDL definition of the SUT (Document Registry) shall define two WSDL messages for each request-response transaction

[AND]

The WSDL definition of the SUT (Document Registry) shall include an attribute wsaw:Action for each input and output message defined in the WSDL portType operation

[AND]

All operations defined in the WSDL definition of the SUT (Document Registry) shall use wsdl:operation/wsdl:input/@wasw:Action = "urn:ihe:{Domain}:{Year}:{Transaction name}" and wsdl:operation/wsdl:output/@wsaw:Action = "urn:ihe:{Domain}:{Year}:{Transaction name}Response"

[AND]

In the WSDL definition of the SUT (Document Registry), for each operation defined in the WSDL portType a wsoap:operation/@soapAction attribute shall be provided. The value of wsoap:operation/@soapAction shall be consistent with the name for the corresponding WSDL operation defined in the WSDL portType

Applicability	C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012

<table>
<tr><td>Other PICS</td><td></td></tr>
<tr><td>Initial condition</td><td>The test tool retrieves the WSDL definition of the SUT (document registry).</td></tr>
<tr><td>Test procedure</td><td>
1. The test tool checks:

a. The "Registry Stored Query" transaction of the WSDL definition of the SUT (document registry) imports (xsd:import) the following types: in the /definitions/types section: namespace="urn:ihe:iti:xds-b:2007", schema="IHEXDS.xsd".
b. In the "Registry Stored Query" transaction of the WSDL definition of the SUT (document registry), the /definitions/message/part/@element attribute of the "Registry Stored Query Request" message shall be defined as "ihe:RegistryStoredQueryRequest".
c. In the "Registry Stored Query" transaction of the WSDL definition of the SUT (document registry), the /definitions/message/part/@element attribute of the "Registry Stored Query Response" message shall be defined as "ihe:RegistryStoredQueryResponse".
d. In the "Registry Stored Query" transaction of the WSDL definition of the SUT (document registry), the /definitions/portType/operation/input/@wsaw:Action attribute for the "Registry Stored Query Request" message shall be defined as "urn:ihe:iti:2007:RegistryStoredQuery".
e. In the "Registry Stored Query" transaction of the WSDL definition of the SUT (document registry), the /definitions/portType/operation/output/@wsaw:Action attribute for the "Registry Stored Query Response" message shall be defined as "urn:ihe:iti:2007:RegistryStoredQueryResponse".
f. In the "Registry Stored Query" transaction of the WSDL definition of the SUT (document registry), the /definitions/binding/operation/soap12:operation/@soapAction attribute shall be defined as "urn:ihe:iti:2007:RegistryStoredQuery".
g. The WSDL definition of the SUT (document registry) uses the following namespaces:

<table>
<tr><th>Prefix</th><th>Namespace</th><th>Specification</th></tr>
<tr><td>wsdl
(or default)</td><td>http://schemas.xmlsoap.org/wsdl/</td><td>WSDL 1.1 binding for SOAP 1.1
WSDL 1.1 binding for SOAP 1.2</td></tr>
<tr><td>wsoap12</td><td>http://schemas.xmlsoap.org/wsdl/soap12/</td><td>WSDL 1.1 binding for SOAP 1.2</td></tr>
<tr><td>wsa</td><td>http://www.w3.org/2005/08/addressing</td><td>WSA 1.0 – Core</td></tr>
<tr><td>wsaw</td><td>http://www.w3.org/2006/05/addressing/wsdl</td><td>WSA 1.0 – WSDL binding*</td></tr>
<tr><td>soap12</td><td>http://www.w3.org/2003/05/soap-envelope</td><td>SOAP 1.2</td></tr>
<tr><td>xsd</td><td>http://www.w3.org/2001/XMLSchema</td><td>XML Schema</td></tr>
<tr><td>xsi</td><td>http://www.w3.org/2001/XMLSchema-instance</td><td>XML Schema</td></tr>
</table>

h. The WSDL definition of the SUT (document registry) should use the following naming convention for WSDL artefacts:

i. message request -> {Transaction Name}_Message
ii. message response -> {Transaction Name}_Response_Message
iii. portType -> {NAME}_PortType
iv. Operation -> {NAME}_{Transaction Name}[_OperationID]
v. SOAP 1.x binding -> {NAME}_Binding_Soap1x
vi. SOAP 1.x port -> {NAME}_Port_Soap1x

i. The WSDL definition of the SUT (document registry) shall define two WSDL messages for each request-response transaction.

</td></tr>
</table>

	j. The WSDL definition of the SUT (document registry) shall include an attribute wsaw:Action for each input and output message defined in the WSDL portType operation. k. All operations defined in the WSDL definition of the SUT (document registry) shall use wsdl:operation/wsdl:input/@wasw:Action = "urn:ihe:{Domain}:{Year}:{Transaction name}" and wsdl:operation/wsdl:output/@wsaw:Action = "urn:ihe:{Domain}:{Year}:{Transaction name}Response". l. In the WSDL definition of the SUT (document registry), for each operation defined in the WSDL portType a wsoap:operation/@soapAction attribute shall be provided. The value of wsoap:operation/@soapAction shall be consistent with the name of the corresponding WSDL operation defined in the WSDL portType.
Pass/Fail criteria	• All steps are as specified within the test procedure above.
Notes	

TP Id		TP/HIS/SEN/CM/BV-017		
TP label		HIS Registry Stored Query – XUA SAML Assertion of type Holder Of Key		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-8; M		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	Assertion-4; O	ExpActions-1; M	
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012 AND C_HRN_SEN_014		
Other PICS				
Initial condition		The SUT is ready to receive a "Registry Stored Query" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion of type "Holder of Key" to the HIS sender under test. 2. The HIS sender under test responds to the "Registry Stored Query" correctly.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-018		
TP label		HIS Registry Stored Query – XUA with mandatory information only		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-8; M		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		

	Testable items	Assertion-3; M	ExpActions-1; M	
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				
Initial condition		The SUT is ready to receive a "Registry Stored Query" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion of type "Bearer" with mandatory information only to the HIS sender under test. 2. The HIS sender under test responds to the "Registry Stored Query" correctly.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-019		
TP label		HIS Registry Stored Query – XUA with mandatory and optional information		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-8; M		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	Assertion-3; M	Assertion-9 ; O	ExpActions-1; M
		ExpActions-6; O		
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012		
Other PICS				
Initial condition		The SUT is ready to receive a "Registry Stored Query" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion of type "Bearer" with mandatory and optional information to the HIS sender under test. 2. The HIS sender under test responds to the "Registry Stored Query" correctly.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id	TP/HIS/SEN/CM/BV-020
TP label	HIS Registry Stored Query – XUA++ with optional parameter 'subject role'

Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-9; O		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	Assertion-3; M	ExpActions-1; M	
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012 AND C_HRN_SEN_013		
Other PICS				
Initial condition		The SUT is ready to receive a "Registry Stored Query" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion with optional parameter "subject role" to the HIS sender under test. 2. The HIS sender under test responds to the "Registry Stored Query" correctly.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-021		
TP label		HIS Registry Stored Query – XUA++ with optional parameter 'authz consent'		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-9; O		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	Assertion-3; M	ExpActions-1; M	
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012 AND C_HRN_SEN_013		
Other PICS				
Initial condition		The SUT is ready to receive a "Registry Stored Query" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion with optional parameter "authz consent" to the HIS sender under test. 2. The HIS sender under test responds to the "Registry Stored Query" correctly.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-022		
TP label		HIS Registry Stored Query – XUA++ with optional parameter 'purpose of use'		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentXDSb-9; O		
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	Assertion-3; M	ExpActions-1; M	
Test purpose		Check that: HIS sender does not report any error when it receives a correct SAML 2.0 Assertion		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012 AND C_HRN_SEN_013		
Other PICS				
Initial condition		The SUT is ready to receive a "Registry Stored Query" message using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an SAML 2.0 assertion with optional parameter 'purpose of use' to the HIS sender under test. 2. The HIS sender under test responds to the "Registry Stored Query" correctly.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

TP Id		TP/HIS/SEN/CM/BV-023		
TP label		HIS Registry and Repository information mapping		
Coverage	**Spec**	[ITU-T H.813]		
	Testable items	ConsentSenderXDR3; M	ConsentSenderXDR5; M	XDSDEMD-1; O
		XDSDEMD-2; M	XDSDEMD-3; M	XDSDEMD-4; M
		XDSDEMD-5; M	XDSDEMD-6; M	XDSDEMD-7: M
		XDSDEMD-8; O	XDSDEMD-9; O	XDSDEMD-10; M
		XDSDEMD-11; M	XDSDEMD-12; M	XDSDEMD-13; M
		XDSDEMD-14; M	XDSDEMD-15; O	XDSDEMD-16; M
		XDSDEMD-17; O	XDSDEMD-18; M	XDSDEMD-19; M
		XDSDEMD-20; M	XDSDEMD-21; M	XDSDEMD-22; M
		XDSDEMD-23; M	XDSDEMD-24; M	XDSDEMD-25; O
		XDSDEMD-26; O	XDSDEMD-27; O	XDSDEMD-28; M
		XDSDEMD-29; M	XDSDEMD-30; M	XDSDEMD-31; M
		XDSDEMD-32; M	XDSDEMD-33; M	XDSDEMD-34; M

		XDSDEMD-35; M	XDSDEMD-35; M	XDSDEMD-37; M
		XDSDEMD-38; M	XDSDEMD-39; M	XDSDEMD-40; O
		XDSDEMD-41; M	XDSDEMD-42; M	XDSDEMD-43; M
	Spec	[IHE ITI-TF-2], Volume 2b, Section 3.40		
	Testable items	ProvideScope1; M	ProvideProtocol9; M	
Test purpose		Check that: HIS sender correctly implements Registry and Repository actors		
Applicability		C_HRN_SEN_000 AND C_HRN_SEN_001 AND C_HRN_SEN_012 AND C_HRN_SEN_013		
Other PICS				
Initial condition		The SUT is ready to receive a "Registry Stored Query" message using SOAP 1.2 and a "Retrieve Document Set" using SOAP 1.2 from the simulated HIS receiver launched by the test tool.		
Test procedure		1. The simulated HIS receiver sends a SOAP 1.2 message containing an AdhocQueryRequest to the registry. 2. The HIS sender under test responds to the "Registry Stored Query" correctly. 3. The simulated HIS receiver sends a SOAP 1.2 message containing a 2Retrieve Document Set" to the registry. 4. The HIS sender under test responds to the "Retrieve Document Set". 5. The test tool checks that: a. the consent directive document UniqueId maps onto Registry Query Response XDSDocumentEntry.UniqueId.		
Pass/Fail criteria		• All steps are as specified within the test procedure above.		
Notes				

Annex B

Testable item mapping, validation and XML schemas

(This annex forms an integral part of this Recommendation.)

B.1 Testable item mapping validation between PHMR and metadata

The following mapping tables describe the specific test tool message interchange for each of the test purposes noted in Annex A. As the interchange of messages is quite simple (reception of the PHM report from the HIS sender and return of an ACK response), it is important to break out the PHM report content and its mapping with the metadata headers to ensure that each of them has been verified.

B.1.1 For TP/HIS/SEN/XSV/BV-000

Table B-1-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XSV/BV-000

TI	Validation type	Constraint	Qualifier
XDSDEMD-18; M	Mapping	There are no PHM report elements; however, if an element appears, the structure of the metadata elements is checked: xPath of METADATA element: @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/rim:Slot[@name='hash']"	MANDATORY: FAIL if constraint is not satisfied
XDSDEMD-33; M	Mapping	There are no PHM report elements, however, if an element appears, the structure of the metadata elements is checked: xPath of METADATA element: @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/rim:Slot[@name='size']"	MANDATORY: FAIL if constraint is not satisfied
XDSDEMD-7; M	Mapping	There are no PHM report elements, however, if an element appears, the structure of the metadata elements is checked:	MANDATORY: FAIL if constraint is not satisfied

Table B-1-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XSV/BV-000

TI	Validation type	Constraint	Qualifier
		xPath of METADATA element @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/rim:Classification[@classificationScheme='urn:uuid:41a5887f-8865-4c09-adf7-e362475b143a']"	
XDSDEMD-16; M	Mapping	There are no PHM report elements, however, if an element appears, the structure of the metadata elements is checked: xPath of METADATA element @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/rim:Classification[@classificationScheme='urn:uuid:a09d5840-386c-46f2-b5ad-9c3699a4309d']"	MANDATORY: FAIL if constraint is not satisfied
XDSDEMD-19; M	Mapping	There are no PHM report elements, however, if an element appears, the structure of the metadata elements is checked: xPath of METADATA element @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/rim:Classification[@classificationScheme='urn:uuid:f33fb8ac-18af-42cc-ae0e-ed0b0bdb91e1']"	MANDATORY: FAIL if constraint is not satisfied
XDSDEMD-29; M	Mapping	The following PHM report elements (if present) shall be equal to metadata elements: xPath of METADATA element @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/rim:Classification[@classificationScheme='urn:uuid:cccf5598-8b07-4b77-a05e-ae952c785ead']"	MANDATORY: FAIL if constraint is not satisfied
XDSDEMD-24; M	Mapping	There are no PHM report elements, however, if an element appears, the structure of the metadata elements is checked: xPath of METADATA element @"//*[local-	MANDATORY: FAIL if constraint is not satisfied

Table B-1-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XSV/BV-000

TI	Validation type	Constraint	Qualifier
		name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/@mimeType"	
XDSSSDMD-13; M	Mapping	There are no PHM report elements, however, if an element appears, the structure of the metadata elements is checked: xPath of METADATA element @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/@id" @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:RegistryPackage/rim:Slot[@name='submissionTime']"	MANDATORY: FAIL if constraint is not satisfied
XDSSSDMD-8; M	Mapping	There are no PHM report elements, however, if an element appears, the structure of the metadata elements is checked: xPath of METADATA element @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:RegistryPackage/rim:Classification[@classificationScheme='urn:uuid:aa543740-bdda-424e-8c96-df4873be8500']"	MANDATORY: FAIL if constraint is not satisfied
XDSSSDMD-12; M	Mapping	There are no PHM report elements, however, if an element appears, the structure of the metadata elements is checked: xPath of METADATA element @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:RegistryPackage/rim:ExternalIdentifier[@identificationScheme='urn:uuid:554ac39e-e3fe-47fe-b233-965d2a147832']/@value"	MANDATORY: FAIL if constraint is not satisfied
XDSDEMD-18; M	Mapping	There are no PHM report elements, however, if an element appears, the structure of the metadata elements is checked: xPath of METADATA element @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/rim:Slot[@name='hash']"	MANDATORY: FAIL if constraint is not satisfied

B.1.2 For TP/HIS/SEN/XMSV/BV-000

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>MGDC_XDR-6; R</td><td>C# code</td><td>The CDG HIS Sender application should not include information that is not present within the PHM report.</td><td>RECOMMENDED: WARNING message if constraint is not satisfied</td></tr>
<tr><td>MGDC_XDR-7; M</td><td>Mapping</td><td>This testable item is implicitly tested in the rest of the testable items.</td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>PHMAG-1; M</td><td>C# code</td><td>CDG HIS Senders shall communicate all attachments referenced or contained in the PHM report document.</td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>PHMAG-2; M</td><td>C# code</td><td>CDG HIS Senders shall communicate all attachments specified in the PHM report in the same message.</td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-1; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:
<table><tr><th>xPath of METADATA element</th></tr><tr><td>/@status</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-2; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><th>xPath of PHM report element</th><th>xPath of METADATA element</th></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:representedOrganization/v3:name/text()</td><td>/rim:Classification/rim:Slot[@name='authorInstitution']/rim:ValueList/rim:Value/text()</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:assignedPerson/v3:name</td><td>/rim:Classification/rim:Slot[@name='authorPerson']/rim:ValueList/rim:Value/text()</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:participationFunction/text()</td><td>/rim:Classification/rim:Slot[@name='authorRole']/rim:ValueList/rim:Value/text()</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:code/text()</td><td>/rim:Classification/rim:Slot[@name='authorSpecialty']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>XDSDEMD-3; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:<table><tr><th>xPath of PHM report element</th><th>xPath of METADATA element</th></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:representedOrganization/v3:name/text()</td><td>/rim:Classification/rim:Slot[@name='authorInstitution']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-4; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:<table><tr><th>xPath of PHM report element</th><th>xPath of METADATA element</th></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:assignedPerson/v3:name</td><td>/rim:Classification/rim:Slot[@name='authorPerson']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-5; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:<table><tr><th>xPath of PHM report element</th><th>xPath of METADATA element</th></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:participationFunction/v3:code/text()</td><td>rim:Classification/rim:Slot[@name='authorRole']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-6; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:<table><tr><th>xPath of PHM report element</th><th>xPath of METADATA element</th></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:participationFunction/text()</td><td>/rim:Classification/rim:Slot[@name='authorSpecialty']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>XDSDEMD-8; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Classification[@classificationScheme='urn:uuid:41a5887f-8865-4c09-adf7-e362475b143a']/rim:Name/rim:LocalizedString/@value</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-9; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Description/rim:LocalizedString/@value</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-10; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:

<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:confidentialityCode/@code</td><td>/rim:Classification[@classificationScheme='urn:uuid:f4f85eac-e6cb-4883-b524-f2705394840f']/@nodeRepresentation</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-11; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:

<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:confidentialityCode/@code</td><td>/rim:Classification[@classificationScheme='urn:uuid:f4f85eac-e6cb-4883-b524-f2705394840f']/rim:Name/rim:LocalizedString/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>XDSDEMD-12; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:

<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:effectiveTime/@value</td><td>/rim:Slot[@name='creationTime']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-14; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:

<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:documentationOf/v3:serviceEvent/@classCode</td><td>/rim:Classification[@classificationScheme='urn:uuid:2c6b8cb7-8b2a-4051-b291-b1ae6a575ef4']/@nodeRepresentation</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-15; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Classification[@classificationScheme='urn:uuid:2c6b8cb7-8b2a-4051-b291-b1ae6a575ef4']/rim:Name/rim:LocalizedString/@value</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-16; M</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Classification[@classificationScheme='urn:uuid:a09d5840-386c-46f2-b5ad-9c3699a4309d']</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>XDSDEMD-17; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked

<table><tr><th>xPath of METADATA element</th></tr><tr><td>/rim:Classification[@classificationScheme='urn:uuid:a09d5840-386c-46f2-b5ad-9c3699a4309d']/rim:Name/rim:LocalizedString/@value</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-20; M</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:

<table><tr><th>xPath of METADATA element</th></tr><tr><td>/rim:Classification[@classificationScheme='urn:uuid:f33fb8ac-18af-42cc-ae0e-ed0b0bdb91e1']/rim:Name/rim:LocalizedString/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-21; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:

<table><tr><th>xPath of PHM report element</th><th>xPath of METADATA element</th></tr><tr><td>/v3:ClinicalDocument/v3:intendedRecipient</td><td>/rim:Slot[@name='intendedRecipient']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-22; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:

<table><tr><th>xPath of PHM report element</th><th>xPath of METADATA element</th></tr><tr><td>/v3:ClinicalDocument/v3:languageCode/@code</td><td>/rim:Slot[@name='languageCode']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>XDSDEMD-23; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:legalAuthenticator/v3:assignedEntity/v3:assignedPerson/v3:name</td><td>/rim:Slot[@name='legalAuthenticator']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-24; M</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:
<table><tr><td>xPath of METADATA element</td></tr><tr><td>/@mimeType</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-25; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:
<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Association[@targetObject='urn:uuid:a6e06ca8-0c75-4064-9e5c-88b9045a96f6']</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-26; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:
<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Association[@targetObject='urn:uuid:a6e06ca8-0c75-4064-9e5c-88b9045a96f6']/@sourceObject</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-27; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:
<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:ObjectRef[@id='urn:uuid:a6e06ca8-0c75-4064-9e5c-88b9045a96f6']</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
</table>

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>XDSDEMD-28; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:recordTarget/v3:patientRole/v3:id</td><td>/rim:ExternalIdentifier[@identificationScheme='urn:uuid:58a6f841-87b3-4a3e-92fd-a8ffeff98427']/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-31; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:documentationOf/v3:serviceEvent/v3:effectiveTime/v3:low/@value</td><td>/rim:Slot[@name='serviceStartTime']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-32; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:documentationOf/v3:serviceEvent/v3:effectiveTime/v3:high/@value</td><td>/rim:Slot[@name='serviceStopTime']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-34; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:recordTarget/v3:patientRole/v3:id</td><td>/rim:Slot[@name='sourcePatientId']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-35; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:recordTarget/v3:patientRole</td><td>/rim:Slot[@name='sourcePatientInfo']/rim:ValueList</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>XDSDEMD-36; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:title/text()</td><td>/rim:Name/rim:LocalizedString/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-37; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:code/@code</td><td>/rim:Classification[@classificationScheme='urn:uuid:f0306f51-975f-434e-a61c-c59651d33983']/@nodeRepresentation</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-38; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:code/@displayName</td><td>/rim:Classification[@classificationScheme='urn:uuid:f0306f51-975f-434e-a61c-c59651d33983']/rim:Name/rim:LocalizedString/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-39; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:id</td><td>/rim:ExternalIdentifier[@identificationScheme='urn:uuid:2e82c1f6-a085-4c72-9da3-8640a32e42ab']/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSDEMD-40; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:
<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Slot[@name='URI']</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
</table>

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>XDSSSDMD-1; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/@status</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
<tr><td>XDSSSMD-2; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:

<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:representedOrganization/v3:name/text()</td><td>/rim:Classification/rim:Slot[@name='authorInstitution']/rim:ValueList/rim:Value/text()</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:assignedPerson/v3:name</td><td>/rim:Classification/rim:Slot[@name='authorPerson']/rim:ValueList/rim:Value/text()</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:participationFunction/text()</td><td>/rim:Classification/rim:Slot[@name='authorRole']/rim:ValueList/rim:Value/text()</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:code/text()</td><td>/rim:Classification/rim:Slot[@name='authorSpecialty']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSSSMD-3; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:

<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:representedOrganization/v3:name/text()</td><td>/rim:Classification/rim:Slot[@name='authorInstitution']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSSSMD-4; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:

<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:assignedPerson/v3:name</td><td>/rim:Classification/rim:Slot[@name='authorPerson']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>XDSSSMD-5; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:participationFunction/v3:code/text</td><td>/rim:Classification/rim:Slot[@name='authorRole']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSSSMD-6; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:author/v3:assignedAuthor/v3:participationFunction/v3:code/text()</td><td>rim:Classification/rim:Slot[@name='authorRole']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSSSMD-7; O</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:
<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Description/rim:LocalizedString/@value</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
<tr><td>XDSSSMD-9; O</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr></table></td><td>OPTIONAL: INFO message if constraint is not satisfied</td></tr>
<tr><td>XDSSSMD-10; M</td><td>Mapping</td><td>There are no PHM report elements, if the element appears the structure of the metadata elements is checked:
<table><tr><td>xPath of METADATA element</td></tr><tr><td>/@id</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-1-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/XMSV/BV-000

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>XDSSSMD-11; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:recordTarget/v3:patientRole/v3:id</td><td>/rim:ExternalIdentifier[@identificationScheme='urn:uuid:6b5aea1a-874d-4603-a4bc-96a0a7b38446']/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSSSMD-14; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:title/text()</td><td>/rim:Name/rim:LocalizedString/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>XDSSSMD-15; M</td><td>Mapping</td><td>The following PHM report elements (if present) shall be equal to metadata elements:
<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>/v3:ClinicalDocument/v3:id</td><td>/rim:ExternalIdentifier[@identificationScheme='urn:uuid:96fdda7c-d067-4183-912e-bf5ee74998a8']/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

B.2 Testable item syntactic validation by XSD (XML schema language) file

B.2.1 For TP/HIS/SEN/CCDA/BV-000

Table B-2-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-1; M	Syntactic validation by XSD file	<xs:schema targetNamespace="urn:hl7-org:v3" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns="urn:hl7-org:v3" xmlns:mif="urn:hl7-org:v3/mif" elementFormDefault="qualified"> <xs:include schemaLocation="CONTINUA_POCD_MT000040.xsd"/> <xs:element name="ClinicalDocument" type="POCD_MT000040.ClinicalDocument"/> </xs:schema>	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-15; M	Syntactic validation by XSD file	<xs:complexType name="POCD_MT000040.ClinicalDocument"> <xs:sequence>	MANDATORY: FAIL if constraint is not satisfied

Table B-2-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
		<xs:element name="title" type="ST" />	
CONF-PHMR-17; M	Syntactic validation by XSD file	<xs:complexType name="POCD_MT000040.ClinicalDocument"> <xs:sequence> <xs:element name="languageCodetitle" type="CS" />	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-23; M	Syntactic validation by XSD file	ClinicalDocument/copyTime is not present in the XSD schema, if present there will be a FAIL	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-24; M	Syntactic validation by XSD file	<xs:complexType name="POCD_MT000040.RecordTarget"> <xs:sequence> <xs:element name="patientRole" type="POCD_MT000040.PatientRole" />	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-29; M	Syntactic validation by XSD file	<xs:complexType name="POCD_MT000040.Author"> <xs:sequence> <xs:element name="time" type="TS" />	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-30; M	Syntactic validation by XSD file	<xs:complexType name="POCD_MT000040.AssignedAuthor"> <xs:sequence> <xs:element name="id" type="II" maxOccurs="unbounded"/>	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-31; M	Syntactic validation by XSD file	<xs:complexType name="POCD_MT000040.AssignedAuthor"> <xs:choice> <xs:element name="assignedPerson" type="POCD_MT000040.Person" maxOccurs="unbounded"/> <xs:element name="assignedAuthoringDevice" type="POCD_MT000040.AuthoringDevice" maxOccurs="unbounded" /> </xs:choice>	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-42; M	Syntactic validation by XSD file	<xs:complexType name="POCD_MT000040.ServiceEvent"> <xs:sequence> <xs:element name="effectiveTime" type="IVL_TS" />	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-43; M	Syntactic validation by XSD file	<xs:complexType name="POCD_MT000040.StructuredBody">	MANDATORY: FAIL if constraint is not satisfied

B.3 Testable item syntactic validation against XML reference document file

B.3.1 For TP/HIS/SEN/CCDA/BV-000

Table B-3-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
G1_Snom_1	Syntactic validation by XML file	<Code MDC="MDC_CONC_GLU_CAPILLARY_PLASMA" conceptID="434911002" descriptionID="2774413018" fullyID="2774414012"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_2	Syntactic validation by XML file	<Code MDC="MDC_CONC_GLU_VENOUS_PLASMA" conceptID="434911002" descriptionID="2774413018" fullyID="2774414012"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_3	Syntactic validation by XML file	<Code MDC="MDC_CONC_GLU_ARTERIAL_PLASMA" conceptID="434911002" descriptionID="2774413018" fullyID="2774414012"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_4	Syntactic validation by XML file	<Code MDC="MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD" conceptID="434912009" descriptionID="2774415013" fullyID="2774416014"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_5	Syntactic validation by XML file	<Code MDC="MDC_CONC_GLU_VENOUS_WHOLEBLOOD" conceptID="434912009" descriptionID="2774415013" fullyID="2774416014"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_6	Syntactic validation by XML file	<Code MDC="MDC_CONC_GLU_ARTERIAL_WHOLEBLOOD" conceptID="434912009" descriptionID="2774415013" fullyID="2774416014"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_7	Syntactic validation by XML file	<Code MDC="MDC_CONC_GLU_CONTROL" conceptID="434913004" descriptionID="2774417017" fullyID="2774418010"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_8	Syntactic validation by XML file	<Code MDC="MDC_CONC_GLU_ISF" conceptID="434910001" descriptionID="2774412011" fullyID="2774411016"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_9	Syntactic validation by XML file	<Code MDC="MDC_CONC_HBA1C" conceptID="365845005" descriptionID="489331011" fullyID="772274010"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_10	Syntactic validation by XML file	<Code MDC="MDC_MASS_BODY_ACTUAL" conceptID="27113001" descriptionID="45352010" fullyID="757644016"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_11	Syntactic validation by XML file	<Code MDC="MDC_LEN_BODY_ACTUAL" conceptID="50373000" descriptionID="495662010" fullyID="788154012"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_12	Syntactic validation by XML file	<Code MDC="MDC_RATIO_MASS_BODY_LEN_SQ" conceptID="60621009" descriptionID="100716012" fullyID="799594012"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_13	Syntactic validation by XML file	<Code MDC="MDC_PRESS_BLD_NONINV_SYS" conceptID="271649006" descriptionID="106507015" fullyID="664067013"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_14	Syntactic validation by XML file	<Code MDC="MDC_PRESS_BLD_NONINV_DIA" conceptID="271650006" descriptionID="406508013" fullyID="664068015"/>	MANDATORY: FAIL if constraint is not satisfied

Table B-3-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
G1_Snom_15	Syntactic validation by XML file	<Code MDC="MDC_PRESS_BLD_NONINV_MEAN" conceptID="6797001" descriptionID="500884018" fullyID="807753012"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_16	Syntactic validation by XML file	<Code MDC="MDC_PULS_RATE_NON_INV" conceptID="78564009" descriptionID="130365016" fullyID="819518016"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_17	Syntactic validation by XML file	<Code MDC="MDC_TEMP_BODY" conceptID="386725007" descriptionID="1480858013" fullyID="1460904011"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_18	Syntactic validation by XML file	<Code MDC="MDC_TEMP_FINGER" conceptID="433588001" descriptionID="2771281010" fullyID="2760794019"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_19	Syntactic validation by XML file	<Code MDC="MDC_TEMP_EAR" conceptID="415974002" descriptionID="2534421019" fullyID="2530951014"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_20	Syntactic validation by XML file	<Code MDC="MDC_TEMP_TOE" conceptID="433776001" descriptionID="2768039016" fullyID="2745011013"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_21	Syntactic validation by XML file	<Code MDC="MDC_TEMP_GIT" conceptID="431598003" descriptionID="2769062014" fullyID="2747764015"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_22	Syntactic validation by XML file	<Code MDC="MDC_TEMP_AXILLA" conceptID="415882003" descriptionID="2534419012" fullyID="2530949010"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_23	Syntactic validation by XML file	<Code MDC="MDC_TEMP_ORAL" conceptID="415945006" descriptionID="2534418016" fullyID="253094019"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_24	Syntactic validation by XML file	<Code MDC="MDC_TEMP_RECT" conceptID="307047009" descriptionID="450211011" fullyID="703520017"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_25	Syntactic validation by XML file	<Code MDC="MDC_TEMP_TYMP" conceptID="415974002" descriptionID="2534421019" fullyID="2530951014"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_26	Syntactic validation by XML file	<Code MDC="MDC_PULS_OXIM_SAT_O2" conceptID="431314004" descriptionID="2772010012" fullyID="2735642016"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_27	Syntactic validation by XML file	<Code MDC="MDC_PULS_OXIM_PULS_RATE" conceptID="78564009" descriptionID="130365016" fullyID="819518016"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_28	Syntactic validation by XML file	<Code MDC="MDC_PULS_OXIM_PERF_REL" conceptID="431591009" descriptionID="2769937011" fullyID="2736894010"/> <Code MDC="MDC_SAT_O2_QUAL" conceptID="431591009" descriptionID="2769937011" fullyID="2736894010"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_29	Syntactic validation by XML file	<Code MDC="MDC_PULS_OXIM_PLETH" conceptID="250864000" descriptionID="373962018" fullyID="641309010"/>	MANDATORY: FAIL if constraint is not satisfied

Table B-3-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
G1_Snom_30	Syntactic validation by XML file	<Code MDC="MDC_FLOW_AWAY_EXP_FORCED_PEAK" conceptID="251940009" descriptionID="375280019" fullyID="642506016"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_31	Syntactic validation by XML file	<Code MDC="MDC_FLOW_AWAY_EXP_FORCED_PEAK_PB" conceptID="251936000" descriptionID="375276012" fullyID="642501014"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_32	Syntactic validation by XML file	<Code MDC="MDC_VOL_AWAY_EXP_FORCED_1S" conceptID="59328004" descriptionID="498401010" fullyID="798158012"/>	MANDATORY: FAIL if constraint is not satisfied
G1_Snom_33	Syntactic validation by XML file	<Code MDC="MDC_VOL_AWAY_EXP_FORCED_EXP_6S" conceptID="165041004" descriptionID="256687019" fullyID="546438012"/>	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_1	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_2	Syntactic validation by XML file	<Code MDC="MDC_CONT_GLU_SAMPLELOCATION_FINGER" conceptID="125685002" descriptionID="473565013" fullyID="729542015"/>	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_3	Syntactic validation by XML file	<Code MDC="MDC_CONT_GLU_ SAMPLELOCATION_EARLOBE" conceptID="113327001" descriptionID="383219015" fullyID="648683014"/>	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_4	Syntactic validation by XML file	<Code MDC="MDC_CONT_GLU_MEAL_PREPRANDIAL" conceptID="307165006" descriptionID="450357011" fullyID="703654021"/>	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_5	Syntactic validation by XML file	<Code MDC="MDC_CONT_GLU_MEAL_POSTPRANDIAL" conceptID="225758001" descriptionID="339227016" fullyID="613042015"/>	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_6	Syntactic validation by XML file	<Code MDC="MDC_CONT_GLU_MEAL_FASTING" conceptID="16985007" descriptionID="478017015" fullyID="744117012"/>	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_7	Syntactic validation by XML file	<Code MDC="MDC_CONT_GLU_MEAL_CASUAL" conceptID="255226008" descriptionID="380387010" fullyID="646234012"/>	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_8	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_9	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_10	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_11	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_12	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied

Table B-3-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
G2_Snom_13	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_14	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_15	Syntactic validation by XML file	<Code MDC="MDC_MODALITY_FAST" conceptID="433204000" descriptionID="2768695014" fullyID="2743645015"/>	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_16	Syntactic validation by XML file	<Code MDC="MDC_MODALITY_SLOW" conceptID="433204000" descriptionID="2768695014" fullyID="2743645015"/>	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_17	Syntactic validation by XML file	<Code MDC="MDC_MODALITY_SPOT" conceptID="431314004" descriptionID="2772010012" fullyID="2735642016"/>	MANDATORY: FAIL if constraint is not satisfied
G2_Snom_18	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_19	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_20	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_21	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_22	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line..	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_23	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_24	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_25	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_26	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_27	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_28	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied

Table B-3-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
G3_Snom_29	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_30	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_31	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_32	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_33	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_34	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_35	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_36	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_37	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_38	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G3_Snom_39	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_1	Syntactic validation by XML file	<code unit="%" ref="MDC_DIM_PERCENT"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_2	Syntactic validation by XML file	<code unit="{beat}/min" ref="MDC_DIM_BEAT_PER_MIN"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_3	Syntactic validation by XML file	<code unit="mm[Hg]" ref="MDC_DIM_MMHG"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_4	Syntactic validation by XML file	<code unit="kPa" ref="MDC_KILO_PASCAL"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_5	Syntactic validation by XML file	There is no conversion in the table for this TI. If a conversion shows up, the test tool will produce a FAIL with a text indicating the faulty line.	MANDATORY: FAIL if constraint is not satisfied

Table B-3-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
G4_Snom_6	Syntactic validation by XML file	<code unit="Cel" ref="MDC_DIM_DEGC"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_7	Syntactic validation by XML file	<code unit="[degF]" ref="MDC_DIM_FAHR"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_8	Syntactic validation by XML file	<code unit="kg" ref="MDC_DIM_KILO_G"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_9	Syntactic validation by XML file	<code unit="[lb_av]" ref="MDC_DIM_LB"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_10	Syntactic validation by XML file	<code unit="cm" ref="MDC_DIM_CENTI_M"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_11	Syntactic validation by XML file	<code unit="[in_i]" ref="MDC_DIM_INCH"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_12	Syntactic validation by XML file	<code unit="kg/m2" ref="MDC_DIM_KG_PER_M_SQ"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_13	Syntactic validation by XML file	<code unit="mmol/L" ref="MDC_DIM_MILLI_MOLE_PER_L"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_14	Syntactic validation by XML file	<code unit="[Cal]" ref="MDC_DIM_KCAL"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_15	Syntactic validation by XML file	<code unit="mg/dL" ref="MDC_DIM_MILLI_G_PER_DL"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_16	Syntactic validation by XML file	<code unit="1" ref="MDC_DIM_DIMLESS"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_17	Syntactic validation by XML file	<code unit="mL" ref="MDC_DIM_MILLI_L"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_18	Syntactic validation by XML file	<code unit="mg" ref="MDC_DIM_MILLI_G"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_19	Syntactic validation by XML file	<code unit="[iU]" ref="MDC_DIM_INTL_UNIT"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_20	Syntactic validation by XML file	<code unit="[iU]/h" ref="MDC_DIM_INTL_UNIT_PER_HR"/>	MANDATORY: FAIL if constraint is not satisfied
G4_Snom_21	Syntactic validation by XML file	<code unit="L/min" ref="MDC_DIM_INTL_UNIT_PER_HR"/>	MANDATORY: FAIL if constraint is not satisfied

Table B-3-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
G4_Snom_22	Syntactic validation by XML file	<code unit="L" ref="MDC_DIM_L"/>	MANDATORY: FAIL if constraint is not satisfied

B.4 Testable item syntactic and/or semantic validation by Schematron 1.5

B.4.1 For TP/HIS/SEN/CCDA/BV-000

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-2	Schematron validation	Context: ClinicalDocument Test: templateId/@root='2.16.840.1.113883.10.20.9'	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-2	Schematron validation	Context: ClinicalDocument Test: not(templateId/@root='2.16.840.1.113883.10.20.3')	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-2	Schematron validation	Context: ClinicalDocument Test: templateId/@root='2.16.840.1.113883.10.20.3'	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-3	Schematron validation	Context: ClinicalDocument Test: not (code/@code='53576-5')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-13	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '-')] Test: not (string-length(@root) = 36)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-13	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '-')] Test: not (translate(substring(@root, 1, 8),'ABCDEFabcdef0123456789',") = ")	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-13	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '-')] Test: not (translate(substring(@root, 10, 4),'ABCDEFabcdef0123456789',") = ")	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-13	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '-')] Test: not (translate(substring(@root, 15, 4),'ABCDEFabcdef0123456789',") = ")	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-13	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '-')] Test: not (translate(substring(@root, 20, 4),'ABCDEFabcdef0123456789',") = ")	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-13	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '-')] Test: not (translate(substring(@root, 25, 12),'ABCDEFabcdef0123456789',") = ")	MANDATORY: FAIL if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-14	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '.')] Test: not (translate(substring(@root, 1, 1) , '012', '') = '')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-14	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '.')] Test: not (translate(@root, '0123456789.', '') = '')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-12	Schematron validation	Context: id[not(contains(@root,".") or contains(@root,"-") or @nullFlavor)] Test: not (false())	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-13	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '-')] Test: not (substring(@root, 9, 1) = '-')	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-13	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '-')] Test: not (substring(@root, 14, 1) = '-')	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-13	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '-')] Test: not (substring(@root, 19, 1) = '-')	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-13	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '-')] Test: not (substring(@root, 24, 1) = '-')	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-14	Schematron validation	Context: / ClinicalDocument/ id[contains(@root, '.')] Test: not (not(contains(@root,'..')))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-21	Schematron validation	Context: ClinicalDocument Test: not ((not (setId) and not (versionNumber)) or ((setId) and (versionNumber)))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-22	Schematron validation	Context: ClinicalDocument/ setId Test: not (@root != ../ id/@root or @extension != ../ id/@extension)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-37	Schematron validation	Context: ClinicalDocument/ informationRecipient Test: not (intendedRecipient/ informationRecipient or intendedRecipient/ receivedOrganization)	MANDATORY: FAIL if constraint is not satisfied - PHMR-37-optional
CONF-PHMR-37	Schematron validation	context: ClinicalDocument Test: informationRecipient	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-37	Schematron validation	Context: ClinicalDocument Test: not (informationRecipient)	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-38	Schematron validation	Context: legalAuthenticator/ assignedEntity Test: not (assignedPerson or representedOrganization)	MANDATORY: FAIL if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-39	Schematron validation	Context: authenticator Test: not (assignedEntity/ assignedPerson)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-39	Schematron validation	context: ClinicalDocument Test: (authenticator)	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-39	Schematron validation	Context: ClinicalDocument Test: not ((authenticator))	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-41	Schematron validation	Context: serviceEvent Test: not ((@classCode='MPROT') or not(@classCode))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-8	Schematron validation	Context: ClinicalDocument/ effectiveTime or ClinicalDocument/ author/ time or ClinicalDocument/ dataEnterer/ time or ClinicalDocument/ legalAuthenticator/ time or ClinicalDocument/ authenticator/ time or ClinicalDocument/ encompassingEncounter/ effectiveTime Test: not ((string-length(@value)>=8))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-8	Schematron validation	Context: ClinicalDocument/ effectiveTime or ClinicalDocument/ author/ time or ClinicalDocument/ dataEnterer/ time or ClinicalDocument/ legalAuthenticator/ time or ClinicalDocument/ authenticator/ time or ClinicalDocument/ encompassingEncounter/ effectiveTime Test: not (contains(translate(@value,"+-","ZZ"),"Z"))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-8	Schematron validation	Context: ClinicalDocument/ effectiveTime or author/ time or ClinicalDocument/ dataEnterer/ time or ClinicalDocument/ legalAuthenticator/ time or ClinicalDocument/ authenticator/ time or encompassingEncounter/ effectiveTime Test: not ((string-length(@value)>=14))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-9	Schematron validation	Context: asOrganizationPartOf/ effectiveTime or asMaintainedEntity/ effectiveTime or relatedEntity/ effectiveTime or serviceEvent/ effectiveTime/ low or serviceEvent/ effectiveTime/ high or ClinicalDocument/ participant/ time or serviceEvent/ performer/ time or encounterParticipant/ time Test: not ((string-length(@value)>=4))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-9	Schematron validation	Context: asOrganizationPartOf/ effectiveTime or asMaintainedEntity/ effectiveTime or relatedEntity/ effectiveTime or serviceEvent/ effectiveTime/ low or serviceEvent/ effectiveTime/ high or ClinicalDocument/ participant/ time or serviceEvent/ performer/ time or encounterParticipant/ time Test: not ((string-length(@value)>=8))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-9	Schematron validation	Context: asOrganizationPartOf/ effectiveTime or asMaintainedEntity/ effectiveTime or relatedEntity/ effectiveTime or serviceEvent/ effectiveTime/ low or serviceEvent/ effectiveTime/ high or ClinicalDocument/ participant/ time or serviceEvent/ performer/ time or encounterParticipant/ time Test: not (contains(translate(@value,"+-","ZZ"),"Z"))	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-9	Schematron validation	context: asOrganizationPartOf/ effectiveTime or asMaintainedEntity/ effectiveTime or relatedEntity/ effectiveTime or serviceEvent/ effectiveTime/ low or serviceEvent/ effectiveTime/ high or ClinicalDocument/ participant/ time or serviceEvent/ performer/ time or encounterParticipant/ time Test: contains(translate(@value,"+-","ZZ"),"Z")	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-5	Schematron validation	Context: patientRole or assignedAuthor or associatedEntity Test: not (addr and telecom)	RECOMMENDED: WARNING message if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-6	Schematron validation	Context: ClinicalDocument/ guardian or ClinicalDocument/ dataEnterer/ assignedEntity or ClinicalDocument/ relatedEntity or ClinicalDocument/ intendedRecipient or ClinicalDocument/ relatedSubject or ClinicalDocument/ participantRole Test: not (addr and telecom)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-28	Schematron validation	context: recordTarget/ patientRole Test: providerOrganization	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-28	Schematron validation	Context: recordTarget/ patientRole Test: not (providerOrganization)	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-32	Schematron validation	Context: ClinicalDocument Test: not (author/ assignedAuthor/ assignedPerson)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-10	Schematron validation	Context: telecom Test: not ((@nullFlavor) or (@value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-10	Schematron validation	Context: telecom Test: not ((substring(@value,1,4) = "tel:" and string-length(concat(translate(substring(@value,5,1),"+0123456789()-.",""), translate(substring(@value,6),"0123456789()-.",""))) = 0) or (@nullFlavor))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-10	Schematron validation	Context: telecom Test: not (not(substring(@value,1,4) = "tel:") or string-length(concat(translate(substring(@value,5,1),"+()-.",""), translate(substring(@value,6),"()-.",""))) > 0)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-18	Schematron validation	Context: ClinicalDocument/ languageCode Test: not ((string-length(@code)=2) or (string-length(@code)=5 and substring(@code,3,1) = '-'))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-18	Schematron validation	Context: ClinicalDocument/ languageCode Test: not (substring(@code,1,2) = document("voc.xml")/systems/system[@codeSystemName="ISO639-1"]/code/@value)	MANDATORY: FAIL if constraint is not satisfied:
CONF-PHMR-18	Schematron validation	Context: ClinicalDocument/ languageCode Test: not (substring(@code,1,2) = document("voc.xml")/systems/system[@codeSystemName="ISO639-1"]/code/@value	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-19	Schematron validation	Context: ClinicalDocument/ languageCode Test: not (string-length(@code) = 2 or substring(@code,4,2) = document("voc.xml")/systems/system[@codeSystemName="ISO3166-1"]/code/@value)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-20	Schematron validation	Context: ClinicalDocument/ languageCode Test: string-length(@code) = 2 or substring(@code,4,2) = document("voc.xml")/systems/system[@codeSystemName="ISO3166-1"]/code/@value	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-25	Schematron validation	Context: patient/birthTime Test: (string-length(@value)>=4) or (@nullFlavor)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-25	Schematron validation	Context: patient/birthTime Test: (string-length(@value)>=8) or (@nullFlavor)	RECOMMENDED: WARNING message if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-25	Schematron validation	Context: patient/birthTime Test: contains(translate(@value,"+-","ZZ"),"Z")	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-25	Schematron validation	Context: patient/birthTime Test: contains(translate(@value,"+-","ZZ"),"Z")	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-2	Schematron validation	Context: ClinicalDocument Test: not (templateId/@root='2.16.840.1.113883.10.20.9')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-25	Schematron validation	Context: patient/ birthTime Test: not ((string-length(@value)>=4) or (@nullFlavor))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-25	Schematron validation	Context: patient/ birthTime Test: not ((string-length(@value)>=8) or (@nullFlavor))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-25	Schematron validation	Context: patient/ administrativeGenderCode Test: not ((@code='M' or @code='F'or @code='UN') and @codeSystem='2.16.840.1.113883.5.1')	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-25	Schematron validation	Context: patient/ birthTime Test: not (contains(translate(@value,"+-","ZZ"),"Z"))	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-25	Schematron validation	context: patient/ birthTime Test: contains(translate(@value,"+-","ZZ"),"Z")	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-33	Schematron validation	Context: dataEnterer Test: not (assignedEntity/ assignedPerson)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-33	Schematron validation	context: dataEnterer Test: time	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-33	Schematron validation	Context: dataEnterer Test: not (time)	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-35	Schematron validation	Context: informant Test: not ((assignedEntity/ assignedPerson) or (relatedEntity/ relatedPerson))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-35	Schematron validation	context: ClinicalDocument Test: informant	INFO: CONF-PHMR-35: The informant element MAY be present. The informant element IS present. Line:
CONF-PHMR-35	Schematron validation	Context: ClinicalDocument Test: not (informant)	INFO: CONF-PHMR-35: The informant element MAY be present. The informant element

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
			IS NOT present. Line: CONF-PHMR-133
CONF-PHMR-133	Schematron validation	Context: *[section] Test: not (not(text/ reference) or (text/ reference and entry// text/ reference))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-133	Schematron validation	context: *[section/ text] Test: // content/@ID	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-133	Schematron validation	Context: *[section/ text] Test: not (// content/@ID)	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-133	Schematron validation	Context: *[observation/ value/@xsi:type="IVL_PQ"]/ value[@xsi:type="IVL_PQ"] Test: not (low)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-133	Schematron validation	Context: *[observation/ value/@xsi:type="IVL_PQ"]/ value[@xsi:type="IVL_PQ"] Test: not (high)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-134	Schematron validation	Context: *[value/@xsi:type="PPD_PQ"]/ value[@xsi:type="PPD_PQ"] Test: not (@value)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-134	Schematron validation	Context: *[value/@xsi:type="PPD_PQ"]/ value[@xsi:type="PPD_PQ"] Test: not (standardDeviation)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-134	Schematron validation	Context: *[value/@xsi:type="PPD_PQ"]/ value[@xsi:type="PPD_PQ"] Test: not (standardDeviation/@value)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-69	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.4"] Test: not (self:: organizer[@classCode='CLUSTER'][@moodCode='EVN'])	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-71	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.4"] Test: not (participant[@typeCode='SBJ'] and participant// templateId[@root='2.16.840.1.113883.10.20.9.9'])	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-72	Schematron validation	context: *[templateId/@root="2.16.840.1.113883.10.20.9.4"] Test: component// templateId[@root='2.16.840.1.113883.10.20.9.10']	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-73	Schematron validation	context: *[templateId/@root="2.16.840.1.113883.10.20.9.4"] Test: component// templateId[@root='2.16.840.1.113883.10.20.9.5']	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-74	Schematron validation	context: *[templateId/@root="2.16.840.1.113883.10.20.9.4"] Test: component// templateId[@root='2.16.840.1.113883.10.20.9.6']	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-75	Schematron validation	context: *[templateId/@root="2.16.840.1.113883.10.20.9.4"] Test: component// templateId[@root='2.16.840.1.113883.10.20.9.3']	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-72	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.4"] Test: not (component// templateId[@root='2.16.840.1.113883.10.20.9.10'])	OPTIONAL: INFO message if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-73	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.4"] Test: not (component// templateId[@root='2.16.840.1.113883.10.20.9.5'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-74	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.4"] Test: not (component// templateId[@root='2.16.840.1.113883.10.20.9.6'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-75	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.4"] Test: not (component// templateId[@root='2.16.840.1.113883.10.20.9.3'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-90	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.5"] Test: not (self:: observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-90	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.5"] Test: not (@moodCode='DEF')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-90	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.5"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-92	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.5"] Test: not (code)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-92	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.5"] Test: not (code/@code='MDC_ATTR_NU_RANGE_MSMT' or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-92	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.5"] Test: not (code/@codeSystem='2.16.840.1.113883.6.24' or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-93	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.5"] Test: not (value)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-93	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.5"] Test: not ((value/@xsi:type='IVL_PQ') or (value/@xsi:type='ST')or not(value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-94	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.6"] Test: not (self:: observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-94	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.6"] Test: not (@moodCode='DEF')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-94	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.6"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-96	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.6"] Test: not (code)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-96	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.6"] Test: not (code/@code='17441009'or not(code))	MANDATORY: FAIL if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-96	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.6"] Test: not (code/@codeSystem='2.16.840.1.113883.6.96' or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-97	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.6"] Test: not (value)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-97	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.6"] Test: not ((value/@xsi:type='PQ') or (value/@xsi:type='ST')or not(value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-97	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.6"] Test: not ((string(value[@xsi:type="PQ"]/@unit)= document("UCUM.xml")/Codes/code/@unit) or not(value) or (value/@xsi:type="ST"))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-98	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.3"] Test: not (self:: observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-98	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.3"] Test: not (@moodCode='DEF')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-98	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.3"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-98	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.3"] Test: not (code)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-101	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.3"] Test: not (code/@code='MDC_ATTR_NU_ACCUR_MSMT' or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-100	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.3"] Test: not (code/@codeSystem='2.16.840.1.113883.6.24' or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-101	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.3"] Test: not (value)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-101	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.3"] Test: not ((value/@xsi:type='PQ') or (value/@xsi:type='ST') or not(value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-102	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.8"] Test: not (self:: observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-102	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.8"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-102	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.8"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-105	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.8"] Test: not (code)	MANDATORY: FAIL if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-105	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.8"] Test: not ((code/@codeSystem='2.16.840.1.113883.6.96') or (code/@codeSystem='2.16.840.1.113883.6.24')or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-106	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.8"] Test: not (value)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-106	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.8"] Test: not ((value[@xsi:type='PQ']) or not(value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-107	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.8"] Test: not (participant)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-104	Schematron validation	context: *[templateId/@root="2.16.840.1.113883.10.20.9.8"] Test: (id and count(statusCode)=1 and count(code)=1 and count(value)=1 and not(referenceRange/ observationRange/ code) and value[@xsi:type='PQ'] and count(effectiveTime)<2 and templateId/@root='2.16.840.1.113883.10.20.1.31')	OPTIONAL: INFO message if constraint is not satisfied
CONF-449	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (self:: participantRole)	MANDATORY: FAIL if constraint is not satisfied
CONF-450	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (@classCode='MANU')	MANDATORY: FAIL if constraint is not satisfied
CONF-78	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (id)	MANDATORY: FAIL if constraint is not satisfied
CONF-78	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (id/@root='1.2.840.10004.1.1.1.0.0.1.0.0.1.2680'or not(id))	MANDATORY: FAIL if constraint is not satisfied
CONF-80	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not ((playingDevice/ code/@codeSystem='2.16.840.1.113883.6.24') or (playingDevice/ code/@codeSystem='2.16.840.1.113883.6.96'))	MANDATORY: FAIL if constraint is not satisfied
CONF-80	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (not(playingDevice/ code/@codeSystem='2.16.840.1.113883.6.96') or (playingDevice/ code/@codeSystem='2.16.840.1.113883.6.96' and playingDevice/ code/ translation))	MANDATORY: FAIL if constraint is not satisfied
CONF-81	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not ((playingDevice/ manufacturerModelName))	MANDATORY: FAIL if constraint is not satisfied
CONF-81	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (not(playingDevice/ manufacturerModelName) or contains(playingDevice/ manufacturerModelName,'Model'))	MANDATORY: FAIL if constraint is not satisfied
CONF-81	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (not(playingDevice/ manufacturerModelName) or contains(playingDevice/ manufacturerModelName,'Serial number'))	MANDATORY: FAIL if constraint is not satisfied
CONF-81	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (not(playingDevice/ manufacturerModelName) or contains(playingDevice/ manufacturerModelName,'Part number'))	MANDATORY: FAIL if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-81	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (not(playingDevice/ manufacturerModelName) or contains(playingDevice/ manufacturerModelName,'Hardware revision'))	MANDATORY: FAIL if constraint is not satisfied
CONF-81	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (not(playingDevice/ manufacturerModelName) or contains(playingDevice/ manufacturerModelName,'Software revision'))	MANDATORY: FAIL if constraint is not satisfied
CONF-81	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (not(playingDevice/ manufacturerModelName) or contains(playingDevice/ manufacturerModelName,'Protocol revision'))	MANDATORY: FAIL if constraint is not satisfied
CONF-81	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (not(playingDevice/ manufacturerModelName) or contains(playingDevice/ manufacturerModelName,'Unspecified'))	MANDATORY: FAIL if constraint is not satisfied
CONF-82	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (scopingEntity/ desc)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-451	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not ((id and scopingEntity) or not(id))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-879	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (code/@nullFlavor='OTH')	OPTIONAL: INFO message if constraint is not satisfied
CONF-79	Schematron validation	context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: code/@nullFlavor='OTH'	OPTIONAL: INFO message if constraint is not satisfied
CONF-79	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: not (code/ originalText)	OPTIONAL: INFO message if constraint is not satisfied
CONF-79	Schematron validation	context: *[templateId/@root="2.16.840.1.113883.10.20.9.9"] Test: code/ originalText	OPTIONAL: INFO message if constraint is not satisfied
CONF-68	Schematron validation	Context: structuredBody// effectiveTime Test: not (contains(translate(@value,"+-","ZZ"),"Z") or (contains(translate(low/@value,"+-","ZZ"),"Z") and contains(translate(high/@value,"+-","ZZ"),"Z")))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-68	Schematron validation	Context: structuredBody// effectiveTime Test: not ((string-length(@value)>=10) or((string-length(low/@value)>=10) and (string-length(high/@value)>=10)))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-66	Schematron validation	Context: observation Test: not ((entryRelationship/ act and value) or not(value))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-66	Schematron validation	context: observation Test: (entryRelationship/ act and value)	RECOMMENDED: WARNING message if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-49	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (templateId[@root='2.16.840.1.113883.10.20.9.1'])	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-50	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (// templateId[@root='2.16.840.1.113883.10.20.9.4'])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-45	Schematron validation	Context: section Test: not (code)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-46	Schematron validation	Context: section Test: not (text or // section)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-47	Schematron validation	Context: structuredBody Test: not (component// section/ templateId[@root='2.16.840.1.113883.10.20.1.7'])	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-48	Schematron validation	Context: structuredBody Test: not (component// section/ templateId[@root='2.16.840.1.113883.10.20.1.16'] or component// section/ templateId[@root='2.16.840.1.113883.10.20.1.14'])	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-61	Schematron validation	context: structuredBody Test: component// section/ templateId[@root='2.16.840.1.113883.10.20.1.13']	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-62	Schematron validation	context: structuredBody Test: component// section/ templateId[@root='2.16.840.1.113883.10.20.1.8']	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-63	Schematron validation	context: structuredBody Test: component// section/ templateId[@root='2.16.840.1.113883.10.20.1.5']	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-48	Schematron validation	context: structuredBody Test: component// section/ templateId[@root='2.16.840.1.113883.10.20.1.16'] and component// section/ templateId[@root='2.16.840.1.113883.10.20.1.14']	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-61	Schematron validation	Context: structuredBody Test: not (component// section/ templateId[@root='2.16.840.1.113883.10.20.1.13'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-62	Schematron validation	Context: structuredBody Test: not (component// section/ templateId[@root='2.16.840.1.113883.10.20.1.8'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-63	Schematron validation	Context: structuredBody Test: not (component// section/ templateId[@root='2.16.840.1.113883.10.20.1.5'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-48	Schematron validation	Context: structuredBody Test: not (component// section/ templateId[@root='2.16.840.1.113883.10.20.1.16'] and component// section/ templateId[@root='2.16.840.1.113883.10.20.1.14'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-57	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not (templateId[@root='2.16.840.1.113883.10.20.9.14'])	MANDATORY: FAIL if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-58	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not (entry// templateId[@root='2.16.840.1.113883.10.20.9.8'])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-59	Schematron validation	context: *[templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: entry// templateId[@root='2.16.840.1.113883.10.20.9.12']	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-59	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not (entry// templateId[@root='2.16.840.1.113883.10.20.9.12'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-52	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not (templateId[@root='2.16.840.1.113883.10.20.9.2'])	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-49	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (templateId[@root='2.16.840.1.113883.10.20.9.1'])	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-54	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not (entry// templateId[@root='2.16.840.1.113883.10.20.9.8'])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-55	Schematron validation	context: *[templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: entry// templateId[@root='2.16.840.1.113883.10.20.9.12']	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-55	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not (entry// templateId[@root='2.16.840.1.113883.10.20.9.12'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-84	Schematron validation	Context: *[participant/@typeCode="SBJ" and not(participant/ participantRole/ templateId/@root="2.16.840.1.113883.10.20.9.9")]/ participant/ participantRole Test: not (count(*)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-85	Schematron validation	Context: *[participant/@typeCode="SBJ" and not(participant/ participantRole/ templateId/@root="2.16.840.1.113883.10.20.9.9")]/ participant/ participantRole Test: not (count(*)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-86	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.10"] Test: not (self:: observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-86	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.10"] Test: not (@moodCode='DEF')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-86	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.10"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-88	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.10"] Test: not (code)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-88	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.10"] Test: not (code/@code='MDC_ATTR_TIME_PD_SAMP' or not(code))	MANDATORY: FAIL if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-88	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.10"] Test: not (code/@codeSystem='2.16.840.1.113883.6.24' or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-89	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.10"] Test: not (value)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-89	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.10"] Test: not (value/@xsi:type='PQ' or not(value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-89	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.10"] Test: not (value/@unit='ms' or not(value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-108	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (self:: observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-108	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-108	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (@classCode='OBSSER')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-110	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (code)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-110	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not ((code/@codeSystem='2.16.840.1.113883.6.96')or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-111	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (effectiveTime)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-111	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (descendant:: effectiveTime/ high)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-111	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (descendant:: effectiveTime/ low)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-113	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not ((entryRelationship/ observationMedia and entryRelationship/ observationMedia/ value/ reference) or not(entryRelationship/ observationMedia))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-115	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (count(entryRelationship[@typeCode='COMP']// templateId[@root='2.16.840.1.113883.10.20.9.13'])=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-116	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (entryRelationship[@typeCode='COMP']// templateId[@root='2.16.840.1.113883.10.20.9.11'])	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-112	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (participant)	RECOMMENDED: WARNING message if

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
			constraint is not satisfied
CONF-PHMR-113	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (entryRelationship/ observationMedia)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-114	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.12"] Test: not (entryRelationship[@typeCode='COMP']/ observation[@classCode='OBSCOR'][@moodCode='EVN'])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-PHMR-117	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.13"] Test: not (self:: observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-117	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.13"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-117	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.13"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-119	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.13"] Test: not (code)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-119	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.13"] Test: not (code/@code ='TIME_ABSOLUTE' or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-119	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.13"] Test: not (code/@codeSystem ='2.16.840.1.113883.5.4'or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-120	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.13"] Test: not (value)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-120	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.13"] Test: not (value/@xsi:type='GLIST_TS' or not(value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-120	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.13"] Test: not (value/ head or not(value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-120	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.13"] Test: not (value/ increment or not(value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-121	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: not (self:: observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-121	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied

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TI	Validation type	Constraint	Qualifier
CONF-PHMR-121	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-123	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: not (code)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-123	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: not (code/@codeSystem='2.16.840.1.113883.6.96' or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-124	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: not ((value and value/@xsi:type='SLIST_PQ') or not(value))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-124	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: not ((value/ origin and value) or (not(value)))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-124	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: not ((value/ scale and value) or (not(value)))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-124	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: not ((value/ digits and value) or (not(value)))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-124	Schematron validation	context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: value	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-124	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.11"] Test: not (value)	OPTIONAL: INFO message if constraint is not satisfied
CONF-PHMR-125	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.7"] Test: not (self:: observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-125	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.7"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-125	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.7"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-127	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.7"] Test: not (code)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-127	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.7"] Test: not (code/@codeSystem='2.16.840.1.113883.6.24' or not(code))	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-128	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.7"] Test: not (value)	MANDATORY: FAIL if constraint is not satisfied
CONF-PHMR-128	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.7"] Test: not ((value/@xsi:type='CS') or (value/@xsi:type='ST')or not(value))	MANDATORY: FAIL if constraint is not satisfied

Table B-4-1 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCDA/BV-000

TI	Validation type	Constraint	Qualifier
CONF-PHMR-129	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.9.7"] Test: not (participant/@typeCode='SBJ')	RECOMMENDED: WARNING message if constraint is not satisfied
GenfDF-3	Schematron validation	Context: ClinicalDocument Test: not (informationRecipient)	MANDATORY: FAIL if constraint is not satisfied
GenDF-4	Schematron validation	Context: ClinicalDocument Test: not (custodian)	MANDATORY: FAIL if constraint is not satisfied
GenDF-5	Schematron validation	Context: ClinicalDocument/author/assignedAuthor Test: not (representedOrganization)	MANDATORY: FAIL if constraint is not satisfied
GenDF-7	Schematron validation	Context: ClinicalDocument/author/assignedAuthor Test: not (assignedAuthoringDevice)	RECOMMENDED: WARNING message if constraint is not satisfied

B.4.2 For TP/HIS/SEN/CCCD/BV-000

Table B-4-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCCD/BV-000

TI	Validation type	Constraint	Qualifier
CONF-123	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"] Test: not (self::cda:section)	MANDATORY: FAIL if constraint is not satisfied
CONF-123	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"] Test: not (cda:text)	MANDATORY: FAIL if constraint is not satisfied
CONF-124	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"] Test: not (cda:code[@code='47420-5'][@codeSystem='2.16.840.1.113883.6.1']or not(cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF-126	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"] Test: not (cda:title)	MANDATORY: FAIL if constraint is not satisfied
CONF-136	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (count(//cda:templateId[@root="2.16.840.1.113883.10.20.1.44"])=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-128	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-128	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.5.31"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-137	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.5.31"] Test: not (count(//cda:templateId[@root='2.16.840.1.113883.10.20.1.44'])=1)	MANDATORY: FAIL if constraint is not satisfied

Table B-4-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCCD/BV-000

TI	Validation type	Constraint	Qualifier
CONF-123	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"] Test: not (descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] | descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-127	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"] Test: not (contains(translate(cda:title,'QWERTYUIOPASDFGHJKLZXCVBNM','qwertyuiopasdfghjklzxcvbnm'),'functional status') or not(cda:title))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-133	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.5.31"] Test: not ((cda:value[@type="CE" or @type="CE"] and cda:observation/cda:value/@codeSystem= cda:observation/cda:code/@codeSystem) or not(cda:observation/cda:value[@type="CE" or @type="CE"]))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-134	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: cda:value/cda:translation	OPTIONAL: INFO message if constraint is not satisfied
CONF-134	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (cda:value/cda:translation)	OPTIONAL: INFO message if constraint is not satisfied
CONF-129	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: cda:code[@codeSystem="2.16.840.1.113883.1.11.20.6"]	OPTIONAL: INFO message if constraint is not satisfied
CONF-135	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: cda:code[@codeSystem="2.16.840.1.113883.6.254"]	OPTIONAL: INFO message if constraint is not satisfied
CONF-129	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (cda:code[@codeSystem="2.16.840.1.113883.1.11.20.6"])	OPTIONAL: INFO message if constraint is not satisfied
CONF-135	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (cda:code[@codeSystem="2.16.840.1.113883.6.254"])	OPTIONAL: INFO message if constraint is not satisfied
CONF-129	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: cda:code[@codeSystem="2.16.840.1.113883.1.11.20.6"]	OPTIONAL: INFO message if constraint is not satisfied
CONF-135	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: cda:code[@codeSystem="2.16.840.1.113883.6.254"]	OPTIONAL: INFO message if constraint is not satisfied
CONF-134	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: cda:value[@type="CE" or @type="CD"]	OPTIONAL: INFO message if constraint is not satisfied
CONF-129	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (cda:code[@codeSystem="2.16.840.1.113883.1.11.20.6"])	OPTIONAL: INFO message if constraint is not satisfied
CONF-135	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (cda:code[@codeSystem="2.16.840.1.113883.6.254"])	OPTIONAL: INFO message if constraint is not satisfied
CONF-134	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.5"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (cda:value[@type="CE" or @type="CD"])	OPTIONAL: INFO message if constraint is not satisfied
CONF-371	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (self::cda:section)	MANDATORY: FAIL if constraint is not satisfied
CONF-371	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (cda:text)	MANDATORY: FAIL if constraint is not satisfied

Table B-4-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCCD/BV-000

TI	Validation type	Constraint	Qualifier
CONF-372	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (cda:code)	MANDATORY: FAIL if constraint is not satisfied
CONF-373	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (cda:code[@code='46264-8'][@codeSystem='2.16.840.1.113883.6.1'] or not(cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF-374	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (cda:title)	MANDATORY: FAIL if constraint is not satisfied
CONF-371	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-375	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (contains(translate(cda:title,'QWERTYUIOPASDFGHJKLZXCVBNM','qwertyuiopasdfghjklzxcvbnm'),'equipment'))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-371	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"]	OPTIONAL: INFO message if constraint is not satisfied
CONF-371	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.7"] Test: not (descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"])	OPTIONAL: INFO message if constraint is not satisfied
CONF-15	Schematron validation	Context: cda:structuredBody Test: not (count(cda:component/cda:section/cda:templateId[@root='2.16.840.1.113883.10.20.1.13'])< 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-15	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.13"] Test: not (self::cda:section)	MANDATORY: FAIL if constraint is not satisfied
CONF-15	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.13"] Test: not (cda:text)	MANDATORY: FAIL if constraint is not satisfied
CONF-16	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.13"] Test: not (cda:code[@code='48764-5'][@codeSystem='2.16.840.1.113883.6.1'] or not(cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF-18	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.13"] Test: not (cda:title)	MANDATORY: FAIL if constraint is not satisfied
CONF-15	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.13"] Test: not (descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.30"])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-19	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.13"] Test: not (contains(translate(cda:title,'QWERTYUIOPASDFGHJKLZXCVBNM','qwertyuiopasdfghjklzxcvbnm'),'purpose')or not(cda:title))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-15	Schematron validation	context: cda:structuredBody Test: cda:component/cda:section/cda:templateId[@root='2.16.840.1.113883.10.20.1.13']	OPTIONAL: INFO message if constraint is not satisfied
CONF-15	Schematron validation	Context: cda:structuredBody Test: not (cda:component/cda:section/cda:templateId[@root='2.16.840.1.113883.10.20.1.13'])	OPTIONAL: INFO message if constraint is not satisfied

Table B-4-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCCD/BV-000

TI	Validation type	Constraint	Qualifier
CONF-388	Schematron validation	Context: cda:structuredBody Test: not (count(cda:component/cda:section/cda:templateId[@root='2.16.840.1.113883.10.20.1.14'])< 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-388	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not (self::cda:section)	MANDATORY: FAIL if constraint is not satisfied
CONF-388	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not (cda:text)	MANDATORY: FAIL if constraint is not satisfied
CONF-389	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not (cda:code)	MANDATORY: FAIL if constraint is not satisfied
CONF-390	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not (cda:code[@code='30954-2'][@codeSystem='2.16.840.1.113883.6.1'] or not(cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF-391	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not (cda:title)	MANDATORY: FAIL if constraint is not satisfied
CONF-388	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not ((descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] and descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"]/descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"]) or not(descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"]))	MANDATORY: FAIL if constraint is not satisfied
CONF-388	Schematron validation	Context: cda:structuredBody Test: not (cda:component/cda:section/cda:templateId[@root='2.16.840.1.113883.10.20.1.14'])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-388	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not (descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-392	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.14"] Test: not (contains(translate(cda:title,'QWERTYUIOPASDFGHJKLZXCVBNM','qwertyuiopasdfghjklzxcvbnm'),'results')or not (cda:title))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-381	Schematron validation	Context: cda:structuredBody Test: not (count(cda:component/cda:section/cda:templateId[@root='2.16.840.1.113883.10.20.1.16'])< 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-381	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not (self::cda:section)	MANDATORY: FAIL if constraint is not satisfied
CONF-381	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not (cda:text)	MANDATORY: FAIL if constraint is not satisfied
CONF-382	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not (cda:code)	MANDATORY: FAIL if constraint is not satisfied
CONF-383	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not (cda:code[@code='8716-3'][@codeSystem='2.16.840.1.113883.6.1'] or not(cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF-384	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not (cda:title)	MANDATORY: FAIL if constraint is not satisfied

Table B-4-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCCD/BV-000

TI	Validation type	Constraint	Qualifier
CONF-381	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not ((descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] and descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"]/descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"]) or not(descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"]))	MANDATORY: FAIL if constraint is not satisfied
CONF-381	Schematron validation	Context: cda:structuredBody Test: not (cda:component/cda:section/cda:templateId[@root='2.16.840.1.113883.10.20.1.16'])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-381	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not (descendant::*[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-385	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.16"] Test: not (contains(translate(cda:title,'QWERTYUIOPASDFGHJKLZXCVBNM','qwertyuiopasdfghjklzxcvbnm'),'vital signs')or not (cda:title))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-304	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (self::cda:substanceAdministration)	MANDATORY: FAIL if constraint is not satisfied
CONF-305	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (@moodCode='EVN' or @moodeCode='INT')	MANDATORY: FAIL if constraint is not satisfied
CONF-306	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (cda:id)	MANDATORY: FAIL if constraint is not satisfied
CONF-312	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:maxDoseQuantity) < 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-313	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:performer) < 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-338	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.46'])< 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-350	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.47'])< 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-354	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:consumable)=1 and cda:consumable//cda:templateId[@root='2.16.840.1.113883.10.20.1.53'])	MANDATORY: FAIL if constraint is not satisfied
CONF-329	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not ((cda:entryRelationship[@typeCode]='RSON' and cda:entryRelationship[@typeCode='RSON']//cda:templateId[@root='2.16.840.1.113883.10.20.1.28']) or (cda:entryRelationship[@typeCode='RSON'] and cda:entryRelationship[@typeCode='RSON']//cda:templateId[@root='2.16.840.1.113883.10.20.1.27'])or not(cda:entryRelationship[@typeCode='RSON']))	MANDATORY: FAIL if constraint is not satisfied
CONF-348	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.54"] Test: not (count(cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.55'])< 2)	MANDATORY: FAIL if constraint is not satisfied

Table B-4-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCCD/BV-000

TI	Validation type	Constraint	Qualifier
CONF-349	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.54"] Test: not (ancestor::*[cda:entryRelationship/@typeCode='CAUS'])	MANDATORY: FAIL if constraint is not satisfied
CONF-339	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.46"] Test: not (ancestor::*[cda:entryRelationship/@typeCode='SUBJ'])	MANDATORY: FAIL if constraint is not satisfied
CONF-307	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:statusCode)=1)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-308	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (cda:effectiveTime)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-309	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:routeCode)=1)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-310	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (cda:routeCode[@codeSystem='2.16.840.1.113883.5.112'])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-311	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:doseQuantity)=1 or count(cda:rateQuantity)=1)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-350	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: count(cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.47'])=1	OPTIONAL: INFO message if constraint is not satisfied
CONF-312	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: count(cda:maxDoseQuantity) =1	OPTIONAL: INFO message if constraint is not satisfied
CONF-313	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: count(cda:performer) =1	OPTIONAL: INFO message if constraint is not satisfied
CONF-350	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.47'])=1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-312	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:maxDoseQuantity) =1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-313	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:performer) =1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-327	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: cda:precondition/cda:Criterion	OPTIONAL: INFO message if constraint is not satisfied
CONF-328	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: cda:entryRelationship[@typeCode='RSON']	OPTIONAL: INFO message if constraint is not satisfied
CONF-327	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (cda:precondition/cda:Criterion)	OPTIONAL: INFO message if constraint is not satisfied

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TI	Validation type	Constraint	Qualifier
CONF-328	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (cda:entryRelationship[@typeCode='RSON'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-330	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: //cda:templateId[@root='2.16.840.1.113883.10.20.1.49']	OPTIONAL: INFO message if constraint is not satisfied
CONF-330	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (//cda:templateId[@root='2.16.840.1.113883.10.20.1.49'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-348	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: //cda:templateId[@root='2.16.840.1.113883.10.20.1.54']	OPTIONAL: INFO message if constraint is not satisfied
CONF-348	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (//cda:templateId[@root='2.16.840.1.113883.10.20.1.54'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-348	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: count(cda:entryRelationship/cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.46'])=1	OPTIONAL: INFO message if constraint is not satisfied
CONF-338	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (count(cda:entryRelationship/cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.46'])=1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-368	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: //cda:templateId[@root='2.16.840.1.113883.10.20.1.52']	OPTIONAL: INFO message if constraint is not satisfied
CONF-368	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (//cda:templateId[@root='2.16.840.1.113883.10.20.1.52'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-314	Schematron validation	context: cda:ClinicalDocument Test: cda:authorization/cda:consent	OPTIONAL: INFO message if constraint is not satisfied
CONF-314	Schematron validation	Context: cda:ClinicalDocument Test: not (cda:authorization/cda:consent)	OPTIONAL: INFO message if constraint is not satisfied
CONF-145	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] Test: not (self::cda:act[@classCode='ACT'][@moodCode='EVN'])	MANDATORY: FAIL if constraint is not satisfied
CONF-148	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] Test: not (cda:id)	MANDATORY: FAIL if constraint is not satisfied
CONF-149	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] Test: not (cda:code/@nullFlavor='NA' or not(cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF-150	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] Test: not (count(cda:effectiveTime) < 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-151	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] Test: not (cda:entryRelationship)	MANDATORY: FAIL if constraint is not satisfied
CONF-153	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] Test: not (cda:entryRelationship[@typeCode='SUBJ']/cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.28'] or cda:entryRelationship[@typeCode='SUBJ']/cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.18'])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-150	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] Test: count(cda:effectiveTime) =1	OPTIONAL: INFO message if constraint is not satisfied

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TI	Validation type	Constraint	Qualifier
CONF-152	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] Test: cda:entryRelationship/cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.28']	OPTIONAL: INFO message if constraint is not satisfied
CONF-150	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] Test: not (count(cda:effectiveTime) =1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-152	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.27"] Test: not (cda:entryRelationship/cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.28'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-154	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (self::cda:observation[@moodCode='EVN'])	MANDATORY: FAIL if constraint is not satisfied
CONF-156	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-157	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (cda:statusCode/@code='completed' or not(cda:statusCode))	MANDATORY: FAIL if constraint is not satisfied
CONF-162	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (count(//cda:templateId[@root='2.16.840.1.113883.10.20.1.50']) < 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-165	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (count(//cda:templateId[@root='2.16.840.1.113883.10.20.1.51']) < 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-158	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (count(cda:effectiveTime)=1)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-162	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: count(//cda:templateId[@root='2.16.840.1.113883.10.20.1.50']) =1	OPTIONAL: INFO message if constraint is not satisfied
CONF-165	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: count(//cda:templateId[@root='2.16.840.1.113883.10.20.1.51']) =1	OPTIONAL: INFO message if constraint is not satisfied
CONF-159	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: cda:code[@codeSystem='2.16.840.1.113883.1.11.20.14']	OPTIONAL: INFO message if constraint is not satisfied
CONF-160	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: cda:entryRelationship[@typeCode='SUBJ']//cda:templateId[@root='2.16.840.1.113883.10.20.1.38']	OPTIONAL: INFO message if constraint is not satisfied
CONF-162	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (count(//cda:templateId[@root='2.16.840.1.113883.10.20.1.50']) =1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-165	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (count(//cda:templateId[@root='2.16.840.1.113883.10.20.1.51']) =1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-159	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (cda:code[@codeSystem='2.16.840.1.113883.1.11.20.14'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-160	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.28"] Test: not (cda:entryRelationship[@typeCode='SUBJ']//cda:templateId[@root='2.16.840.1.113883.10.20.1.38'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-20	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.30"] Test: not (self::cda:act)	MANDATORY: FAIL if constraint is not satisfied

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TI	Validation type	Constraint	Qualifier
CONF-21	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.30"] Test: not (self::cda:act[@classCode='ACT'])	MANDATORY: FAIL if constraint is not satisfied
CONF-22	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.30"] Test: not (self::cda:act[@moodCode='EVN'])	MANDATORY: FAIL if constraint is not satisfied
CONF-26	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.30"] Test: not (count(cda:statusCode) = 1)	MANDATORY: FAIL if constraint is not satisfied
CONF-24	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.30"] Test: not (cda:statusCode[@code='completed']or not(cda:statusCode))	MANDATORY: FAIL if constraint is not satisfied
CONF-25	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.30"] Test: not (cda:code[@code='23745001'][@codeSystem='2.16.840.1.113883.6.96'] or not(cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF-26	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.30"] Test: not (count(cda:entryRelationship[@typeCode='RSON'])=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-27	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.30"] Test: not (cda:entryRelationship[@typeCode='RSON']/cda:act or cda:entryRelationship[@typeCode='RSON']/cda:encounter or cda:entryRelationship[@typeCode='RSON']/cda:observation or cda:entryRelationship[@typeCode='RSON']/cda:procedure or cda:entryRelationship[@typeCode='RSON']/cda:substanceAdministration or cda:entryRelationship[@typeCode='RSON']/cda:supply or not(cda:entryRelationship[@typeCode='RSON']))	MANDATORY: FAIL if constraint is not satisfied
CONF- 407	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (self::cda:observation)	MANDATORY: FAIL if constraint is not satisfied
CONF- 408	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF- 409	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (cda:id)	MANDATORY: FAIL if constraint is not satisfied
CONF- 410	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 412	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 416	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (count(cda:value)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 420	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (not(cda:referenceRange/cda:observationRange/cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF- 414	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not ((not(cda:code/cda:methodCode) and count(cda:methodCode)<2) or cda:code)	MANDATORY: FAIL if constraint is not satisfied
CONF- 415	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (not(cda:code/cda:methodCode) or not(cda:methodCode) or (cda:methodCode and cda:code/cda:methodCode and cda:methodCode!=cda:code/cda:methodCode))	MANDATORY: FAIL if constraint is not satisfied

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TI	Validation type	Constraint	Qualifier
CONF- 413	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (cda:code[@codeSystem='2.16.840.1.113883.6.1' or @codeSystem='2.16.840.1.113883.6.96'] or not(cda:code))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF- 411	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (count(cda:effectiveTime)=1)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF- 418	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (count(cda:interpretationCode)=1)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF- 419	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (cda:referenceRange)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF- 413	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: cda:code[@codeSystem='2.16.840.1.113883.6.12']	OPTIONAL: INFO message if constraint is not satisfied
CONF- 414	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: (not(cda:code/cda:methodCode) and count(cda:methodCode)=1)	OPTIONAL: INFO message if constraint is not satisfied
CONF- 413	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not (cda:code[@codeSystem='2.16.840.1.113883.6.12'])	OPTIONAL: INFO message if constraint is not satisfied
CONF- 414	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.31"] Test: not ((not(cda:code/cda:methodCode) and count(cda:methodCode)=1))	OPTIONAL: INFO message if constraint is not satisfied
CONF- 393	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (self::cda:organizer)	MANDATORY: FAIL if constraint is not satisfied
CONF- 394	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF- 395	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (cda:id)	MANDATORY: FAIL if constraint is not satisfied
CONF- 396	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 397	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 402	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (cda:component)	MANDATORY: FAIL if constraint is not satisfied
CONF- 405	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (cda:component/cda:observation[cda:templateId/@root='2.16.840.1.113883.10.20.1.31'])	MANDATORY: FAIL if constraint is not satisfied
CONF- 400	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (not(cda:code/cda:specimen) or not(cda:specimen) or (cda:specimen and cda:code/cda:specimen and cda:specimen!=cda:code/cda:specimen))	MANDATORY: FAIL if constraint is not satisfied

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TI	Validation type	Constraint	Qualifier
CONF-398	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (cda:code[@codeSystem='2.16.840.1.113883.6.1' or @codeSystem='2.16.840.1.113883.6.96'])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-399	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not ((not(cda:code/cda:specimen) and cda:specimen) or cda:code/cda:specimen)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-403	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: cda:component//cda:entryRelationship/cda:procedure	OPTIONAL: INFO message if constraint is not satisfied
CONF-398	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: cda:code[@codeSystem='2.16.840.1.113883.6.12' or @codeSystem='2.16.840.1.113883.1.11.20.16']	OPTIONAL: INFO message if constraint is not satisfied
CONF-403	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (cda:component//cda:entryRelationship/cda:procedure)	OPTIONAL: INFO message if constraint is not satisfied
CONF-398	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.32"] Test: not (cda:code[@codeSystem='2.16.840.1.113883.6.12' or @codeSystem='2.16.840.1.113883.1.11.20.16'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-316	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (self::cda:supply)	MANDATORY: FAIL if constraint is not satisfied
CONF-317	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (@moodCode='EVN' or @moodCode='INT')	MANDATORY: FAIL if constraint is not satisfied
CONF-318	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (cda:id)	MANDATORY: FAIL if constraint is not satisfied
CONF-321	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:repeatNumber) < 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-322	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:quantity) < 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-325	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:participant[@typeCode='LOC']) < 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-351	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:entryRelationship/cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.47'])< 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-355	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:product)< 2 or (cda:product and cda:product//cda:templateId[@root='2.16.840.1.113883.10.20.1.53']))	MANDATORY: FAIL if constraint is not satisfied
CONF-337	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.43"] Test: not (ancestor::*[cda:entryRelationship/@typeCode='SUBJ'])	MANDATORY: FAIL if constraint is not satisfied
CONF-319	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:statusCode)=1)	RECOMMENDED: WARNING message if constraint is not satisfied

Table B-4-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCCD/BV-000

TI	Validation type	Constraint	Qualifier
CONF-320	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:effectiveTime)=1)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-321	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: count(cda:repeatNumber)=1	OPTIONAL: INFO message if constraint is not satisfied
CONF-322	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: count(cda:quantity) =1	OPTIONAL: INFO message if constraint is not satisfied
CONF-323	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: cda:supply/cda:author	OPTIONAL: INFO message if constraint is not satisfied
CONF-324	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: cda:supply/cda:performer	OPTIONAL: INFO message if constraint is not satisfied
CONF-325	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: count(cda:participant[@typeCode='LOC']) =1	OPTIONAL: INFO message if constraint is not satisfied
CONF-334	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: //cda:templateId[@root='2.16.840.1.113883.10.20.1.43']	OPTIONAL: INFO message if constraint is not satisfied
CONF-351	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: count(cda:entryRelationship/cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.47'])=1	OPTIONAL: INFO message if constraint is not satisfied
CONF-355	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: cda:product//cda:templateId[@root='2.16.840.1.113883.10.20.1.53']	OPTIONAL: INFO message if constraint is not satisfied
CONF-321	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:repeatNumber)=1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-322	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:quantity) =1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-323	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (cda:supply/cda:author)	OPTIONAL: INFO message if constraint is not satisfied
CONF-324	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (cda:supply/cda:performer)	OPTIONAL: INFO message if constraint is not satisfied
CONF-325	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:participant[@typeCode='LOC']) =1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-334	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (//cda:templateId[@root='2.16.840.1.113883.10.20.1.43'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-351	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (count(cda:entryRelationship/cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.47'])=1)	OPTIONAL: INFO message if constraint is not satisfied
CONF-355	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"] Test: not (cda:product//cda:templateId[@root='2.16.840.1.113883.10.20.1.53'])	OPTIONAL: INFO message if constraint is not satisfied
CONF-369	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.52"] Test: *	OPTIONAL: INFO message if constraint is not satisfied

Table B-4-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCCD/BV-000

TI	Validation type	Constraint	Qualifier
CONF-369	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.34"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.52"] Test: not (*)	OPTIONAL: INFO message if constraint is not satisfied
CONF-393	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (self::cda:organizer)	MANDATORY: FAIL if constraint is not satisfied
CONF-394	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF-395	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (cda:id)	MANDATORY: FAIL if constraint is not satisfied
CONF-396	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-397	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-402	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (cda:component)	MANDATORY: FAIL if constraint is not satisfied
CONF-400	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (not(cda:code/cda:specimen) or not(cda:specimen) or (cda:specimen and cda:code/cda:specimen and cda:specimen!=cda:code/cda:specimen))	MANDATORY: FAIL if constraint is not satisfied
CONF-405	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (cda:component/cda:observation[cda:templateId/@root='2.16.840.1.113883.10.20.1.31'])	MANDATORY: FAIL if constraint is not satisfied
CONF-398	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (cda:code[@codeSystem='2.16.840.1.113883.6.1' or @codeSystem='2.16.840.1.113883.6.96'] or not(cda:code))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-399	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not ((not(cda:code/cda:specimen) and cda:specimen) or cda:code/cda:specimen)	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-403	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: cda:component//cda:entryRelationship/cda:procedure	OPTIONAL: INFO message if constraint is not satisfied
CONF-398	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: cda:code[@codeSystem='2.16.840.1.113883.6.12' or @codeSystem='2.16.840.1.113883.1.11.20.16']	OPTIONAL: INFO message if constraint is not satisfied
CONF-403	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (cda:component//cda:entryRelationship/cda:procedure)	OPTIONAL: INFO message if constraint is not satisfied
CONF-398	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.35"] Test: not (cda:code[@codeSystem='2.16.840.1.113883.6.12' or @codeSystem='2.16.840.1.113883.1.11.20.16'])	OPTIONAL: INFO message if constraint is not satisfied
CONF- 335	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.43"] Test: not (self::cda:act)	MANDATORY: FAIL if constraint is not satisfied
CONF- 336	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.43"] Test: not (@moodCode='INT')	MANDATORY: FAIL if constraint is not satisfied

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TI	Validation type	Constraint	Qualifier
CONF- 340	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.46"] Test: not (self::cda:observation)	MANDATORY: FAIL if constraint is not satisfied
CONF- 341	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.46"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF- 342	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.46"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF- 343	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.46"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 344	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.46"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 345	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.46"] Test: not (cda:code[@code='30973-2'][@codeSystem='2.16.840.1.113883.6.1']or not(cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF- 346	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.46"] Test: not (count(cda:value)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 347	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.46"] Test: not (cda:value[@xsi:type='INT']or not(cda:value))	MANDATORY: FAIL if constraint is not satisfied
CONF-352	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.47"] Test: not (self::cda:observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-352	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.47"] Test: not (//parent::*[cda:entryRelationship/@typeCode='REFR'])	MANDATORY: FAIL if constraint is not satisfied
CONF-352	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.47"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-352	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.47"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF-352	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.47"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-352	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.47"] Test: not (cda:code[@code='33999-4'][@codeSystem='2.16.840.1.113883.6.1']or not(cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF-352	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.47"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-352	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.47"] Test: not (cda:statusCode[@code='completed']or not(cda:statusCode))	MANDATORY: FAIL if constraint is not satisfied
CONF-352	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.47"] Test: not (count(cda:value[@xsi:type='CE'])=1 or not (cda:value))	MANDATORY: FAIL if constraint is not satisfied
CONF-331	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.49"] Test: not (self::cda:act)	MANDATORY: FAIL if constraint is not satisfied

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TI	Validation type	Constraint	Qualifier
CONF-332	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.49"] Test: not (@moodCode='INT')	MANDATORY: FAIL if constraint is not satisfied
CONF-333	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.49"] Test: not (ancestor::*[cda:entryRelationship/@typeCode='SUBJ'])	MANDATORY: FAIL if constraint is not satisfied
CONF-163	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.50"] Test: not (self::cda:observation)	MANDATORY: FAIL if constraint is not satisfied
CONF- 163	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.50"] Test: not (parent::*[cda:entryRelationship/@typeCode='REFR'])	MANDATORY: FAIL if constraint is not satisfied
CONF- 163	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.50"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF- 163	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.50"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF- 163	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.50"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 163	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.50"] Test: not (cda:code[@code='33999-4'][@codeSystem='2.16.840.1.113883.6.1'])	MANDATORY: FAIL if constraint is not satisfied
CONF- 163	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.50"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 163	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.50"] Test: not (cda:statusCode[@code='completed'])	MANDATORY: FAIL if constraint is not satisfied
CONF- 163	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.50"] Test: not (count(cda:value[@type='CE'])=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 164	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.50"] Test: not (cda:value/@codeSystem='2.16.840.1.113883.1.11.20.13')	MANDATORY: FAIL if constraint is not satisfied
CONF- 166	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.51"] Test: not (self::cda:observation)	MANDATORY: FAIL if constraint is not satisfied
CONF- 166	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.51"] Test: not (parent::*[cda:entryRelationship/@typeCode='REFR'])	MANDATORY: FAIL if constraint is not satisfied
CONF- 166	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.51"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF- 166	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.51"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF- 166	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.51"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 166	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.51"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied

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TI	Validation type	Constraint	Qualifier
CONF- 166	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.51"] Test: not (cda:statusCode/@code='completed')	MANDATORY: FAIL if constraint is not satisfied
CONF- 166	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.51"] Test: not (count(cda:value[@type='CE'])=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 166	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.51"] Test: not (cda:code/@code='11323-3' and cda:code/@codeSystem='2.16.840.1.113883.6.1')	MANDATORY: FAIL if constraint is not satisfied
CONF- 167	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.51"] Test: not (cda:value/@codeSystem='2.16.840.1.113883.1.11.20.12')	MANDATORY: FAIL if constraint is not satisfied
CONF- 356	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (self::cda:manufacturedProduct)	MANDATORY: FAIL if constraint is not satisfied
CONF- 357	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (count(cda:manufacturedMaterial)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 358	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (count(cda:manufacturedMaterial/cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 363	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (count(cda:manufacturedMaterial/cda:code/cda:originalText)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 364	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (count(cda:manufacturedMaterial/cda:name)< 2)	MANDATORY: FAIL if constraint is not satisfied
CONF- 365	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (count(cda:manufacturerOrganization)< 2)	MANDATORY: FAIL if constraint is not satisfied
CONF- 359	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (cda:manufacturedMaterial/cda:code[@codeSystem='2.16.840.1.113883.6.88'] or cda:manufacturedMaterial/cda:code[@codeSystem='2.16.840.1.113883.6.59'])	RECOMMENDED: WARNING message if constraint is not satisfied
CONF- 367	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not ((cda:id and cda:manufacturerOrganization) or not(cda:id))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF- 364	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: count(cda:manufacturedMaterial/cda:name)=1	OPTIONAL: INFO message if constraint is not satisfied
CONF- 365	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: count(cda:manufacturerOrganization)=1	OPTIONAL: INFO message if constraint is not satisfied
CONF- 366	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: cda:id	OPTIONAL: INFO message if constraint is not satisfied
CONF- 359	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: cda:manufacturedMaterial/cda:code[@codeSystem='2.16.840.1.113883.1.11.20.8']	OPTIONAL: INFO message if constraint is not satisfied
CONF- 364	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (count(cda:manufacturedMaterial/cda:name)=1)	OPTIONAL: INFO message if constraint is not satisfied

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TI	Validation type	Constraint	Qualifier
CONF- 365	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (count(cda:manufacturerOrganization)=1)	OPTIONAL: INFO message if constraint is not satisfied
CONF- 366	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (cda:id)	OPTIONAL: INFO message if constraint is not satisfied
CONF- 359	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.53"] Test: not (cda:manufacturedMaterial/cda:code[@codeSystem='2.16.840.1.113883.1.11.20.8'])	OPTIONAL: INFO message if constraint is not satisfied
CONF- 138	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.44"] Test: not (self::cda:observation)	MANDATORY: FAIL if constraint is not satisfied
CONF- 138	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.44"] Test: not (ancestor::*[cda:entryRelationship/@typeCode='REFR'])	MANDATORY: FAIL if constraint is not satisfied
CONF- 138	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.44"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF- 138	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.44"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF- 138	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.44"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 138	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.44"] Test: not (cda:code[@code='33999-4'][@codeSystem='2.16.840.1.113883.6.1'])	MANDATORY: FAIL if constraint is not satisfied
CONF- 138	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.44"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 138	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.44"] Test: not (cda:statusCode[@code='completed'])	MANDATORY: FAIL if constraint is not satisfied
CONF- 138	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.44"] Test: not (count(cda:value[@xsi:type='CE'])=1)	MANDATORY: FAIL if constraint is not satisfied
CONF- 138	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.44"] Test: not (cda:value/@codeSystem='2.16.840.1.113883.1.11.20.5')	MANDATORY: FAIL if constraint is not satisfied
CONF-449	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.52"] Test: not (self::cda:participantRole)	MANDATORY: FAIL if constraint is not satisfied
CONF-450	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.52"] Test: not (@classCode='MANU')	MANDATORY: FAIL if constraint is not satisfied
CONF-451	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.52"] Test: not ((cda:id and cda:scopingEntity) or not(cda:id))	RECOMMENDED: WARNING message if constraint is not satisfied
CONF-448	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.29"] Test: not ((self::cda:act | self::cda:observation | self::cda:procedure) and cda:participant[@typeCode='DEV']/cda:templateId[@root='2.16.840.1.113883.10.20.1.52'])	OPTIONAL: INFO message if constraint is not satisfied

Table B-4-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCCD/BV-000

TI	Validation type	Constraint	Qualifier
CONF-448	Schematron validation	context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.29"] Test: (self::cda:act | self::cda:observation | self::cda:procedure) and cda:participant[@typeCode='DEV']/cda:templateId[@root='2.16.840.1.113883.10.20.1.52']	OPTIONAL: INFO message if constraint is not satisfied
CONF-282	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.54"] Test: not (self::cda:observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-283	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.54"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-284	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.54"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF-285	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.54"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-286	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.54"] Test: not (cda:statusCode/@code='completed' or not(cda:statusCode))	MANDATORY: FAIL if constraint is not satisfied
CONF-287	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (self::cda:observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-289	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied
CONF-290	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF-291	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-292	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (cda:statusCode[@code='completed'] or not(cda:statusCode))	MANDATORY: FAIL if constraint is not satisfied
CONF-293	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (count(cda:code)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-294	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (cda:code[@code='SEV'][@codeSystem='2.16.840.1.113883.5.4'] or not(cda:code))	MANDATORY: FAIL if constraint is not satisfied
CONF-295	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (count(cda:value)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-348	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.54"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (count(cda:observation/cda:templateId[@root='2.16.840.1.113883.10.20.1.55'])< 2)	MANDATORY: FAIL if constraint is not satisfied
CONF-288	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.54"]//*[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (ancestor::*[cda:entryRelationship/@typeCode='SUBJ'])	MANDATORY: FAIL if constraint is not satisfied
CONF-225	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.38 "] Test: not (self::cda:observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-226	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.38 "] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied

Table B-4-2 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/CCCD/BV-000

TI	Validation type	Constraint	Qualifier
CONF-227	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.38 "] Test: not (@moodCode='EVN')	MANDATORY: FAIL if constraint is not satisfied
CONF-228	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.38 "] Test: not (cda:code[@code='397659008'][@codeSystem='2.16.840.1.113883.6.96'])	MANDATORY: FAIL if constraint is not satisfied
CONF-229	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.38 "] Test: not (count(cda:statusCode)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-230	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.38 "] Test: not (cda:statusCode[@code='completed'] or not(cda:statusCode))	MANDATORY: FAIL if constraint is not satisfied
CONF-231	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.38 "] Test: not (count(cda:value)=1)	MANDATORY: FAIL if constraint is not satisfied
CONF-287	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (self::cda:observation)	MANDATORY: FAIL if constraint is not satisfied
CONF-289	Schematron validation	Context: *[cda:templateId/@root="2.16.840.1.113883.10.20.1.55"] Test: not (@classCode='OBS')	MANDATORY: FAIL if constraint is not satisfied

B.4.3 For TP/HIS/SEN/AM/BV-000

Table B-4-3 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/AM/BV-000

TI	Validation type	Constraint	Qualifier
GenMDG-1	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not (routeCode[@codeSystem='2.16.840.1.113883.5.112'])	MANDATORY: FAIL if constraint is not satisfied
GenMDG-2	Schematron validation	Context: structureBody Test: not ((templateId/ @root="2.16.840.1.113883.10.20.1.8") and (templateId/ @root="2.16.840.1.113883.10.20.1.16") and not(templateId/ @root="2.16.840.1.113883.10.20.1.14"))	MANDATORY: FAIL if constraint is not satisfied
GenMDG-3	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.8"] Test: not (substanceAdministrattion)	MANDATORY: FAIL if constraint is not satisfied
GenMDG-4	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.8"] Test: not (substanceAdministration[@moodCode='EVN'])	MANDATORY: FAIL if constraint is not satisfied
GenMDG-5	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.8"] Test: not (substanceAdministration/ consumable)	MANDATORY: FAIL if constraint is not satisfied

Table B-4-3 – Testable item mapping validation between PHMR and metadata for TP/HIS/SEN/AM/BV-000

TI	Validation type	Constraint	Qualifier
GenMDG-6	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.8"] Test: not (substanceAdministration/ code)	MANDATORY: FAIL if constraint is not satisfied
GenMDG-7	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.8"] Test: not ((entryRelationship/ observation/ code[@type]) and (entryRelationship/ observation/ value[@value]))	OPTIONAL: INFO message if constraint is not satisfied
GenMDG-7	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.8"] Test: not (participant[@typeCode='SBJ'])	MANDATORY: FAIL if constraint is not satisfied
MMG-1	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not ((substanceAdministration/ effectiveTime))	MANDATORY: FAIL if constraint is not satisfied
MMG-1	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not ((substanceAdministration/ doseQuantity))	MANDATORY: FAIL if constraint is not satisfied
MMG-1	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not ((substanceAdministration/ consumable))	MANDATORY: FAIL if constraint is not satisfied
MMG-1	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not ((substanceAdministration/ routeCode))	MANDATORY: FAIL if constraint is not satisfied
MMG-2	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not ((substanceAdministration[@routeCode='2.16.840.1.113883.5.112']))	MANDATORY: FAIL if constraint is not satisfied
MMG-3	Schematron validation	Context: substanceAdministration Test: not ((substanceAdministration[@classCode='SBADM']))	MANDATORY: FAIL if constraint is not satisfied
MMG-3	Schematron validation	Context: substanceAdministration Test: not ((substanceAdministration[@moodCode='INT']))	MANDATORY: FAIL if constraint is not satisfied
MMG-5	Schematron validation	Context: *[templateId/@root="2.16.840.1.113883.10.20.1.24"] Test: not ((observation[@code='2.16.840.1.113883.6.1' or '2.16.840.1.113883.6.96' or '2.16.840.1.113883.6.254']))	MANDATORY: FAIL if constraint is not satisfied

B.4.4 For TP/SEN/HIS/DSG/BV-000

Table B-4-4 – Testable item mapping validation between PHMR and metadata for TP/SEN/HIS/DSG/BV-000

TI	Validation type	Constraint	Qualifier
DSG_Content_3	Schematron validation	Context: ds:Canonicalization Test: not (@Algorithm='http://www.w3.org/TR/2001/REC-xml-c14n-20010315#WithComments')	MANDATORY: FAIL if constraint is not satisfied

Table B-4-4 – Testable item mapping validation between PHMR and metadata for TP/SEN/HIS/DSG/BV-000

TI	Validation type	Constraint	Qualifier
DSG_Content_4	Schematron validation	Context: ds:SignatureMethod Test: not (@Algorithm= http://www.w3.org/2001/04/xmlenc#sha256)	MANDATORY: FAIL if constraint is not satisfied
DSG_Content_5	Schematron validation	Context: ds:DigestMethod Test: not (http://www.w3.org/2001/04/xmlenc#sha256)	MANDATORY: FAIL if constraint is not satisfied
DSG_Content_6	Schematron validation	Context: ds:SignedInfo/ds:Reference Test: not (@URI='#IHEManifest'))	MANDATORY: FAIL if constraint is not satisfied
DSG_Content_7	Schematron validation	Context: ds:SignedInfo/ds:Reference Test: not (@Type='http://www.w3.org/2000/09/xmldsig#Manifest')	MANDATORY: FAIL if constraint is not satisfied
DSG_Content_8	Schematron validation	Context: ds:Signature Test: not (ds:KeyInfo/ds:X509Data/ds:X509Certificate)	MANDATORY: FAIL if constraint is not satisfied
DSG_Content_9	Schematron validation	Context: ds:KeyInfo/ds:X509Data Test: not (ds:X509Certificate!='')	MANDATORY: FAIL if constraint is not satisfied
DSG_Content_10	Schematron validation	Context: ds:Object Test: not (xad:QualifyingProperties)	MANDATORY: FAIL if constraint is not satisfied
DSGContent_11	Schematron validation	Context: xad:SignedSignatureProperties Test: not (xad:SigningTime)	MANDATORY: FAIL if constraint is not satisfied
DSGContent_12	Schematron validation	Context: xad:QualifyingProperties Test: not (xad:SigningCertificate)	MANDATORY: FAIL if constraint is not satisfied
DSGContent_13	Schematron validation	Context: xad:SignedSignatureProperties Test: not (xad:SignaturePolicyIdentifier)	MANDATORY: FAIL if constraint is not satisfied
DSGContent_14	Schematron validation	Context: ds:Object Test: not (ds:SignatureProperties)	MANDATORY: FAIL if constraint is not satisfied
DSGContent_15	Schematron validation	Context: ds:SignatureProperties Test: not (xad:SignatureProperty)	MANDATORY: FAIL if constraint is not satisfied
DSGContent_16	Schematron validation	Context: ds:SignatureProperty Test: not (@Id='purposeOfSignature')	MANDATORY: FAIL if constraint is not satisfied
DSGContent_17	Schematron validation	Context: ds:Object Test: not (ds:Manifest)	MANDATORY: FAIL if constraint is not satisfied
DSGContent_18	Schematron validation	Context: ds:Manifest Test: not (@Id='IHEManifest')	MANDATORY: FAIL if constraint is not satisfied
DSGContent_19	Schematron validation	Context: ds:Manifest/dsReference Test: not (@URI)	MANDATORY: FAIL if constraint is not satisfied

Table B-4-4 – Testable item mapping validation between PHMR and metadata for TP/SEN/HIS/DSG/BV-000

TI	Validation type	Constraint	Qualifier
DSGContent_20	Schematron validation	Context: ds:Manifest/ds:Reference/ds:Transforms/ds:Transform Test: not (@Algorithm='http://www.w3.org/TR/2001/REC-xml-c14n-20010315#WithComments')	MANDATORY: FAIL if constraint is not satisfied

B.5 Schema for RFC 3881 verification

NOTE – This schema is based on the one found in clause 6 of [IETF RFC 3881].

```
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
     elementFormDefault="qualified" attributeFormDefault="unqualified">
     <xs:element name="AuditMessage">
          <xs:complexType>
               <xs:sequence>
                    <xs:element name="EventIdentification"
                         type="EventIdentificationType" />
                    <xs:element name="ActiveParticipant"
                         maxOccurs="unbounded">
                         <xs:complexType>
                              <xs:complexContent>
                                   <xs:extension base="ActiveParticipantType" />
                              </xs:complexContent>
                         </xs:complexType>
                    </xs:element>
                    <xs:element name="AuditSourceIdentification"
                         type="AuditSourceIdentificationType"
maxOccurs="unbounded" />
                    <xs:element name="ParticipantObjectIdentification"
                         type="ParticipantObjectIdentificationType" minOccurs="0"
                         maxOccurs="unbounded" />
               </xs:sequence>
          </xs:complexType>
     </xs:element>
     <xs:complexType name="EventIdentificationType">
          <xs:sequence>
               <xs:element name="EventID" type="CodedValueType" />
               <xs:element name="EventTypeCode" type="CodedValueType"
                    minOccurs="0" maxOccurs="unbounded" />
          </xs:sequence>
          <xs:attribute name="EventActionCode" use="optional">
               <xs:simpleType>
                    <xs:restriction base="xs:string">
                         <xs:enumeration value="C">
                              <xs:annotation>
                                   <xs:appinfo>Create</xs:appinfo>
                              </xs:annotation>
                         </xs:enumeration>
                         <xs:enumeration value="R">
                              <xs:annotation>
                                   <xs:appinfo>Read</xs:appinfo>
                              </xs:annotation>
                         </xs:enumeration>
                         <xs:enumeration value="U">
                              <xs:annotation>
                                   <xs:appinfo>Update</xs:appinfo>
                              </xs:annotation>
                         </xs:enumeration>
                         <xs:enumeration value="D">
                              <xs:annotation>
                                   <xs:appinfo>Delete</xs:appinfo>
                              </xs:annotation>
                         </xs:enumeration>
                         <xs:enumeration value="E">
                              <xs:annotation>
                                   <xs:documentation>Execute</xs:documentation>
                              </xs:annotation>
                         </xs:enumeration>
                    </xs:restriction>
```

```
            </xs:simpleType>
        </xs:attribute>
        <xs:attribute name="EventDateTime" type="xs:dateTime"
            use="required" />
        <xs:attribute name="EventOutcomeIndicator" use="required">
            <xs:simpleType>
                <xs:restriction base="xs:integer">
                    <xs:enumeration value="0">
                        <xs:annotation>
                            <xs:appinfo>Success</xs:appinfo>
                        </xs:annotation>
                    </xs:enumeration>
                    <xs:enumeration value="4">
                        <xs:annotation>
                            <xs:appinfo>Minor failure</xs:appinfo>
                        </xs:annotation>
                    </xs:enumeration>
                    <xs:enumeration value="8">
                        <xs:annotation>
                            <xs:appinfo>Serious failure</xs:appinfo>
                        </xs:annotation>
                    </xs:enumeration>
                    <xs:enumeration value="12">
                        <xs:annotation>
                            <xs:appinfo>
                                Major failure; action made unavailable
                            </xs:appinfo>
                        </xs:annotation>
                    </xs:enumeration>
                </xs:restriction>
            </xs:simpleType>
        </xs:attribute>
    </xs:complexType>
    <xs:complexType name="AuditSourceIdentificationType">
        <xs:sequence>
            <xs:element name="AuditSourceTypeCode" type="CodedValueType"
                minOccurs="0" maxOccurs="unbounded" />
        </xs:sequence>
        <xs:attribute name="AuditEnterpriseSiteID" type="xs:string"
            use="optional" />
        <xs:attribute name="AuditSourceID" type="xs:string"
            use="required" />
    </xs:complexType>
    <xs:complexType name="ActiveParticipantType">
        <xs:sequence minOccurs="0">
            <xs:element name="RoleIDCode" type="CodedValueType"
                minOccurs="0" maxOccurs="unbounded" />
        </xs:sequence>
        <xs:attribute name="UserID" type="xs:string" use="required" />
        <xs:attribute name="AlternativeUserID" type="xs:string"
            use="optional" />
        <xs:attribute name="UserName" type="xs:string" use="optional" />
        <xs:attribute name="UserIsRequestor" type="xs:boolean"
            use="optional" default="true" />
        <xs:attribute name="NetworkAccessPointID" type="xs:string"
            use="optional" />
        <xs:attribute name="NetworkAccessPointTypeCode"
            use="optional">
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                                Machine Name, including DNS name
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                    </xs:enumeration>
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                              <xs:appinfo>IP Address</xs:appinfo>
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                    </xs:enumeration>
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                         <xs:annotation>
                              <xs:appinfo>Telephone Number</xs:appinfo>
                         </xs:annotation>
                    </xs:enumeration>
               </xs:restriction>
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     </xs:attribute>
</xs:complexType>
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     <xs:sequence>
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          <xs:choice minOccurs="0">
               <xs:element name="ParticipantObjectName"
                    type="xs:string" minOccurs="0" />
               <xs:element name="ParticipantObjectQuery"
                    type="xs:base64Binary" minOccurs="0" />
          </xs:choice>
          <xs:element name="ParticipantObjectDetail"
               type="TypeValuePairType"  minOccurs="0"  maxOccurs="unbounded"
/>
     </xs:sequence>
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          use="required" />
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                    </xs:enumeration>
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                         </xs:annotation>
                    </xs:enumeration>
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                         <xs:annotation>
                              <xs:appinfo>Organization</xs:appinfo>
                         </xs:annotation>
                    </xs:enumeration>
                    <xs:enumeration value="4">
                         <xs:annotation>
                              <xs:appinfo>Other</xs:appinfo>
                         </xs:annotation>
                    </xs:enumeration>
               </xs:restriction>
          </xs:simpleType>
     </xs:attribute>
     <xs:attribute name="ParticipantObjectTypeCodeRole"
          use="optional">
          <xs:simpleType>
               <xs:restriction base="xs:unsignedByte">
                    <xs:enumeration value="1">
```

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</xs:enumeration>
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     <xs:annotation>
          <xs:appinfo>Report</xs:appinfo>
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     <xs:annotation>
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     </xs:annotation>
</xs:enumeration>
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     <xs:annotation>
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     </xs:annotation>
</xs:enumeration>
<xs:enumeration value="6">
     <xs:annotation>
          <xs:appinfo>User</xs:appinfo>
     </xs:annotation>
</xs:enumeration>
<xs:enumeration value="7">
     <xs:annotation>
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     </xs:annotation>
</xs:enumeration>
<xs:enumeration value="8">
     <xs:annotation>
          <xs:appinfo>Doctor</xs:appinfo>
     </xs:annotation>
</xs:enumeration>
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          <xs:appinfo>Subscriber</xs:appinfo>
     </xs:annotation>
</xs:enumeration>
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     <xs:annotation>
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          </xs:appinfo>
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                        </xs:appinfo>
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                    </xs:annotation>
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                    </xs:annotation>
                </xs:enumeration>
                <xs:enumeration value="17">
                    <xs:annotation>
                        <xs:appinfo>Report Library</xs:appinfo>
                    </xs:annotation>
                </xs:enumeration>
                <xs:enumeration value="18">
                    <xs:annotation>
                        <xs:appinfo>Schedule</xs:appinfo>
                    </xs:annotation>
                </xs:enumeration>
                <xs:enumeration value="19">
                    <xs:annotation>
                        <xs:appinfo>Customer</xs:appinfo>
                    </xs:annotation>
                </xs:enumeration>
                <xs:enumeration value="20">
                    <xs:annotation>
                        <xs:appinfo>Job</xs:appinfo>
                    </xs:annotation>
                </xs:enumeration>
                <xs:enumeration value="21">
                    <xs:annotation>
                        <xs:appinfo>Job Stream</xs:appinfo>
                    </xs:annotation>
                </xs:enumeration>
                <xs:enumeration value="22">
                    <xs:annotation>
                        <xs:appinfo>Table</xs:appinfo>
                    </xs:annotation>
                </xs:enumeration>
                <xs:enumeration value="23">
                    <xs:annotation>
                        <xs:appinfo>Routing Criteria</xs:appinfo>
                    </xs:annotation>
                </xs:enumeration>
                <xs:enumeration value="24">
                    <xs:annotation>
                        <xs:appinfo>Query</xs:appinfo>
                    </xs:annotation>
                </xs:enumeration>
            </xs:restriction>
        </xs:simpleType>
    </xs:attribute>
    <xs:attribute name="ParticipantObjectDataLifeCycle"
        use="optional">
```

```
<xs:simpleType>
     <xs:restriction base="xs:unsignedByte">
          <xs:enumeration value="1">
               <xs:annotation>
                    <xs:appinfo>
                         Origination / Creation
                    </xs:appinfo>
               </xs:annotation>
          </xs:enumeration>
          <xs:enumeration value="2">
               <xs:annotation>
                    <xs:appinfo>
                         Import / Copy from original
                    </xs:appinfo>
               </xs:annotation>
          </xs:enumeration>
          <xs:enumeration value="3">
               <xs:annotation>
                    <xs:appinfo>Amendment</xs:appinfo>
               </xs:annotation>
          </xs:enumeration>
          <xs:enumeration value="4">
               <xs:annotation>
                    <xs:appinfo>Verification</xs:appinfo>
               </xs:annotation>
          </xs:enumeration>
          <xs:enumeration value="5">
               <xs:annotation>
                    <xs:appinfo>Translation</xs:appinfo>
               </xs:annotation>
          </xs:enumeration>
          <xs:enumeration value="6">
               <xs:annotation>
                    <xs:appinfo>Access / Use</xs:appinfo>
               </xs:annotation>
          </xs:enumeration>
          <xs:enumeration value="7">
               <xs:annotation>
                    <xs:appinfo>De-identification</xs:appinfo>
               </xs:annotation>
          </xs:enumeration>
          <xs:enumeration value="8">
               <xs:annotation>
                    <xs:appinfo>
                         Aggregation, summarization, derivation
                    </xs:appinfo>
               </xs:annotation>
          </xs:enumeration>
          <xs:enumeration value="9">
               <xs:annotation>
                    <xs:appinfo>Report</xs:appinfo>
               </xs:annotation>
          </xs:enumeration>
          <xs:enumeration value="10">
               <xs:annotation>
                    <xs:appinfo>
                         Export / Copy to target
                    </xs:appinfo>
               </xs:annotation>
          </xs:enumeration>
          <xs:enumeration value="11">
               <xs:annotation>
                    <xs:appinfo>Disclosure</xs:appinfo>
               </xs:annotation>
```

```
                    </xs:enumeration>
                    <xs:enumeration value="12">
                         <xs:annotation>
                              <xs:appinfo>
                                   Receipt of disclosure
                              </xs:appinfo>
                         </xs:annotation>
                    </xs:enumeration>
                    <xs:enumeration value="13">
                         <xs:annotation>
                              <xs:appinfo>Archiving</xs:appinfo>
                         </xs:annotation>
                    </xs:enumeration>
                    <xs:enumeration value="14">
                         <xs:annotation>
                              <xs:appinfo>Logical deletion</xs:appinfo>
                         </xs:annotation>
                    </xs:enumeration>
                    <xs:enumeration value="15">
                         <xs:annotation>
                              <xs:appinfo>
                                   Permanent erasure / Physical destruction
                              </xs:appinfo>
                         </xs:annotation>
                    </xs:enumeration>
               </xs:restriction>
          </xs:simpleType>
     </xs:attribute>
     <xs:attribute name="ParticipantObjectSensitivity"
          type="xs:string" use="optional" />
</xs:complexType>
<xs:complexType name="CodedValueType">
     <xs:attribute name="code" type="xs:string" use="required" />
     <xs:attributeGroup ref="CodeSystem" />
     <xs:attribute name="displayName" type="xs:string"
          use="optional" />
     <xs:attribute name="originalText" type="xs:string"
          use="optional" />
</xs:complexType>
<xs:complexType name="TypeValuePairType">
     <xs:attribute name="type" type="xs:string" use="required" />
     <xs:attribute name="value" type="xs:base64Binary"
          use="required" />
</xs:complexType>
<xs:attributeGroup name="CodeSystem">
     <xs:attribute name="codeSystem" type="OID" use="optional" />
     <xs:attribute name="codeSystemName" type="xs:string"
          use="optional" />
</xs:attributeGroup>
<xs:simpleType name="OID">
     <xs:restriction base="xs:string">
          <xs:whiteSpace value="collapse" />
     </xs:restriction>
</xs:simpleType>
</xs:schema>
```

B.6 Schema for XML advanced electronic signatures (XAdES)

```
<?xml version="1.0" encoding="UTF-8"?>
<xsd:schema targetNamespace="http://uri.etsi.org/01903/v1.1.1#"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns="http://uri.etsi.org/01903/v1.1.1#"
xmlns:ds="http://www.w3.org/2000/09/xmldsig#" elementFormDefault="qualified">
```

```
<xsd:import                          namespace="http://www.w3.org/2000/09/xmldsig#"
schemaLocation="xmldsig-core-schema.xsd"/>
<!--   Start   auxiliary   types   definitions:   AnyType,   ObjectIdentifierType,
EncapsulatedPKIDataType and TimestampType-->

<!-- Start AnyType -->

<xsd:element    name="Any"    type="AnyType"/><xsd:complexType    name="AnyType"
mixed="true">
  <xsd:sequence>
    <xsd:any namespace="##any"/>
  </xsd:sequence>
  <xsd:anyAttribute namespace="##any"/>
</xsd:complexType>

<!-- End AnyType -->

<!-- Start ObjectIdentifierType-->

<xsd:element name="ObjectIdentifier" type="ObjectIdentifierType"/>
<xsd:complexType name="ObjectIdentifierType">
  <xsd:sequence>
    <xsd:element name="Identifier" type="IdentifierType"/>
    <xsd:element name="Description" type="xsd:string" minOccurs="0"/>
    <xsd:element                                    name="DocumentationReferences"
type="DocumentationReferencesType" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="IdentifierType">
  <xsd:simpleContent>
    <xsd:extension base="xsd:anyURI">
      <xsd:attribute name="Qualifier" type="QualifierType" use="optional"/>
    </xsd:extension>
  </xsd:simpleContent>
</xsd:complexType>
<xsd:simpleType name="QualifierType">
  <xsd:restriction base="xsd:string">
    <xsd:enumeration value="OIDAsURI"/>
    <xsd:enumeration value="OIDAsURN"/>
  </xsd:restriction>
</xsd:simpleType>
<xsd:complexType name="DocumentationReferencesType">
  <xsd:sequence maxOccurs="unbounded">
    <xsd:element name="DocumentationReference" type="xsd:anyURI"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End ObjectIdentifierType-->

<!-- Start EncapsulatedPKIDataType-->

<xsd:element name="EncapsulatedPKIData" type="EncapsulatedPKIDataType"/>
<xsd:complexType name="EncapsulatedPKIDataType">
  <xsd:simpleContent>
    <xsd:extension base="xsd:base64Binary">
      <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
    </xsd:extension>
  </xsd:simpleContent>
</xsd:complexType>

<!-- End EncapsulatedPKIDataType -->

<!-- Start TimeStampType -->
```

```
<xsd:element name="TimeStamp" type="TimeStampType"/>
<xsd:complexType name="TimeStampType">
  <xsd:sequence>
    <xsd:element           name="HashDataInfo"           type="HashDataInfoType"
maxOccurs="unbounded"/>
    <xsd:choice>
      <xsd:element name="EncapsulatedTimeStamp" type="EncapsulatedPKIDataType"/>
      <xsd:element name="XMLTimeStamp" type="AnyType"/>
    </xsd:choice>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="HashDataInfoType">
  <xsd:sequence>
    <xsd:element name="Transforms" type="ds:TransformsType" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="uri" type="xsd:anyURI" use="required"/>
</xsd:complexType>

<!-- End TimeStampType -->

<!-- End auxiliary types definitions-->

<!-- Start container types -->

<!-- Start QualifyingProperties -->

<xsd:element name="QualifyingProperties" type="QualifyingPropertiesType"/>
<xsd:complexType name="QualifyingPropertiesType">
  <xsd:sequence>
    <xsd:element       name="SignedProperties"       type="SignedPropertiesType"
minOccurs="0"/>
    <xsd:element     name="UnsignedProperties"     type="UnsignedPropertiesType"
minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="Target" type="xsd:anyURI" use="required"/>
  <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
</xsd:complexType>

<!-- End QualifyingProperties -->

<!-- Start SignedProperties-->

<xsd:element name="SignedProperties" type="SignedPropertiesType"/>
<xsd:complexType name="SignedPropertiesType">
  <xsd:sequence>
    <xsd:element                                  name="SignedSignatureProperties"
type="SignedSignaturePropertiesType"/>
    <xsd:element                                name="SignedDataObjectProperties"
type="SignedDataObjectPropertiesType" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
</xsd:complexType>

<!-- End SignedProperties-->

<!-- Start UnsignedProperties-->

<xsd:element name="UnsignedProperties" type="UnsignedPropertiesType" />
<xsd:complexType name="UnsignedPropertiesType">
  <xsd:sequence>
    <xsd:element                                name="UnsignedSignatureProperties"
type="UnsignedSignaturePropertiesType" minOccurs="0"/>
```

```
    <xsd:element                                  name="UnsignedDataObjectProperties"
type="UnsignedDataObjectPropertiesType" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
</xsd:complexType>

<!-- End UnsignedProperties-->

<!-- Start SignedSignatureProperties-->

<xsd:element                                      name="SignedSignatureProperties"
type="SignedSignaturePropertiesType" />
<xsd:complexType name="SignedSignaturePropertiesType">
  <xsd:sequence>
    <xsd:element name="SigningTime" type="xsd:dateTime"/>
    <xsd:element name="SigningCertificate" type="CertIDListType"/>
    <xsd:element                                  name="SignaturePolicyIdentifier"
type="SignaturePolicyIdentifierType"/>
    <xsd:element                                   name="SignatureProductionPlace"
type="SignatureProductionPlaceType" minOccurs="0"/>
    <xsd:element name="SignerRole" type="SignerRoleType" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End SignedSignatureProperties-->

<!-- Start SignedDataObjectProperties-->

<xsd:element                                    name="SignedDataObjectProperties"
type="SignedDataObjectPropertiesType"/>
<xsd:complexType name="SignedDataObjectPropertiesType">
  <xsd:sequence>
    <xsd:element       name="DataObjectFormat"       type="DataObjectFormatType"
minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element                                   name="CommitmentTypeIndication"
type="CommitmentTypeIndicationType" minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element       name="AllDataObjectsTimeStamp"       type="TimeStampType"
minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element    name="IndividualDataObjectsTimeStamp"    type="TimeStampType"
minOccurs="0" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End SignedDataObjectProperties-->

<!-- Start UnsignedSignatureProperties-->

<xsd:element                                  name="UnsignedSignatureProperties"
type="UnsignedSignaturePropertiesType"/>
<xsd:complexType name="UnsignedSignaturePropertiesType">
  <xsd:sequence>
    <xsd:element       name="CounterSignature"       type="CounterSignatureType"
minOccurs="0" maxOccurs="unbounded"/>
    <xsd:element  name="SignatureTimeStamp"  type="TimeStampType"  minOccurs="0"
maxOccurs="unbounded"/>
    <xsd:element                                    name="CompleteCertificateRefs"
type="CompleteCertificateRefsType" minOccurs="0"/>
    <xsd:element name="CompleteRevocationRefs" type="CompleteRevocationRefsType"
minOccurs="0"/>
    <xsd:choice>
      <xsd:element name="SigAndRefsTimeStamp" type="TimeStampType" minOccurs="0"
maxOccurs="unbounded"/>
      <xsd:element  name="RefsOnlyTimeStamp"  type="TimeStampType"  minOccurs="0"
maxOccurs="unbounded"/>
```

```
    </xsd:choice>
    <xsd:element      name="CertificateValues"      type="CertificateValuesType"
minOccurs="0"/>
    <xsd:element       name="RevocationValues"       type="RevocationValuesType"
minOccurs="0"/>
    <xsd:element   name="ArchiveTimeStamp"   type="TimeStampType"   minOccurs="0"
maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End UnsignedSignatureProperties-->

<!-- Start UnsignedDataObjectProperties-->

<xsd:element                                      name="UnsignedDataObjectProperties"
type="UnsignedDataObjectPropertiesType" />
<xsd:complexType name="UnsignedDataObjectPropertiesType">
  <xsd:sequence>
    <xsd:element  name="UnsignedDataObjectProperty"  type="AnyType"  minOccurs="0"
maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End UnsignedDataObjectProperties-->

<!-- Start QualifyingPropertiesReference-->

<xsd:element                                    name="QualifyingPropertiesReference"
type="QualifyingPropertiesReferenceType"/>
<xsd:complexType name="QualifyingPropertiesReferenceType">
  <xsd:sequence>
    <xsd:element name="Transforms" type="ds:TransformsType" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="URI" type="xsd:anyURI" use="required"/>
  <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
</xsd:complexType>

<!-- End QualifyingPropertiesReference-->

<!-- End container types -->

<!-- Start SigningTime element -->

<xsd:element name="SigningTime" type="xsd:dateTime"/>

<!-- End SigningTime element -->

<!-- Start SigningCertificate -->

<xsd:element name="SigningCertificate" type="CertIDListType"/>
<xsd:complexType name="CertIDListType">
  <xsd:sequence>
    <xsd:element name="Cert" type="CertIDType" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="CertIDType">
  <xsd:sequence>
    <xsd:element name="CertDigest" type="DigestAlgAndValueType"/>
    <xsd:element name="IssuerSerial" type="ds:X509IssuerSerialType"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="DigestAlgAndValueType">
  <xsd:sequence>
    <xsd:element name="DigestMethod" type="ds:DigestMethodType"/>
```

```
    <xsd:element name="DigestValue" type="ds:DigestValueType"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End SigningCertificate -->

<!-- Start SignaturePolicyIdentifier -->

<xsd:element                                    name="SignaturePolicyIdentifier"
type="SignaturePolicyIdentifierType"/>
<xsd:complexType name="SignaturePolicyIdentifierType">
  <xsd:choice>
    <xsd:element name="SignaturePolicyId" type="SignaturePolicyIdType"/>
    <xsd:element name="SignaturePolicyImplied"/>
  </xsd:choice>
</xsd:complexType>
<xsd:complexType name="SignaturePolicyIdType">
  <xsd:sequence>
    <xsd:element name="SigPolicyId" type="ObjectIdentifierType"/>
    <xsd:element ref="ds:Transforms" minOccurs="0"/>
    <xsd:element name="SigPolicyHash" type="DigestAlgAndValueType"/>
    <xsd:element  name="SigPolicyQualifiers"  type="SigPolicyQualifiersListType"
minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="SigPolicyQualifiersListType">
  <xsd:sequence>
    <xsd:element            name="SigPolicyQualifier"            type="AnyType"
maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:element name="SPURI" type="xsd:anyURI"/>
<xsd:element name="SPUserNotice" type="SPUserNoticeType"/>
<xsd:complexType name="SPUserNoticeType">
  <xsd:sequence>
    <xsd:element name="NoticeRef" type="NoticeReferenceType" minOccurs="0"/>
    <xsd:element name="ExplicitText" type="xsd:string" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="NoticeReferenceType">
  <xsd:sequence>
    <xsd:element name="Organization" type="xsd:string"/>
    <xsd:element name="NoticeNumbers" type="IntegerListType"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="IntegerListType">
  <xsd:sequence>
    <xsd:element       name="int"       type="xsd:integer"       minOccurs="0"
maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End SignaturePolicyIdentifier -->


<!-- Start CounterSignature -->

<xsd:element name="CounterSignature" type="CounterSignatureType"/>
<xsd:complexType name="CounterSignatureType">
  <xsd:sequence>
    <xsd:element ref="ds:Signature"/>
  </xsd:sequence>
</xsd:complexType>
```

```
<!-- End CounterSignature -->

<!-- Start DataObjectFormat -->

<xsd:element name="DataObjectFormat" type="DataObjectFormatType"/>
<xsd:complexType name="DataObjectFormatType">
  <xsd:sequence>
    <xsd:element name="Description" type="xsd:string" minOccurs="0"/>
    <xsd:element       name="ObjectIdentifier"       type="ObjectIdentifierType"
minOccurs="0"/>
    <xsd:element name="MimeType" type="xsd:string" minOccurs="0"/>
    <xsd:element name="Encoding" type="xsd:anyURI" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="ObjectReference" type="xsd:anyURI" use="required"/>
</xsd:complexType>

<!-- End DataObjectFormat -->

<!-- Start CommitmentTypeIndication -->

<xsd:element                                          name="CommitmentTypeIndication"
type="CommitmentTypeIndicationType"/>
<xsd:complexType name="CommitmentTypeIndicationType">
  <xsd:sequence>
    <xsd:element name="CommitmentTypeId" type="ObjectIdentifierType"/>
    <xsd:choice>
      <xsd:element   name="ObjectReference"   type="xsd:anyURI"   minOccurs="0"
maxOccurs="unbounded"/>
      <xsd:element name="AllSignedDataObjects"/>
    </xsd:choice>
    <xsd:element                                      name="CommitmentTypeQualifiers"
type="CommitmentTypeQualifiersListType" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="CommitmentTypeQualifiersListType">
  <xsd:sequence>
    <xsd:element  name="CommitmentTypeQualifier"  type="AnyType"  minOccurs="0"
maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End CommitmentTypeIndication -->

<!-- Start SignatureProductionPlace -->

<xsd:element                                          name="SignatureProductionPlace"
type="SignatureProductionPlaceType"/>
<xsd:complexType name="SignatureProductionPlaceType">
  <xsd:sequence>
    <xsd:element name="City" type="xsd:string" minOccurs="0"/>
    <xsd:element name="StateOrProvince" type="xsd:string" minOccurs="0"/>
    <xsd:element name="PostalCode" type="xsd:string" minOccurs="0"/>
    <xsd:element name="CountryName" type="xsd:string" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End SignatureProductionPlace -->

<!-- Start SignerRole -->

<xsd:element name="SignerRole" type="SignerRoleType"/>
<xsd:complexType name="SignerRoleType">
  <xsd:sequence>
    <xsd:element name="ClaimedRoles" type="ClaimedRolesListType"
```

```
      minOccurs="0"/>
    <xsd:element name="CertifiedRoles" type="CertifiedRolesListType"
      minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="ClaimedRolesListType">
  <xsd:sequence>
    <xsd:element name="ClaimedRole" type="AnyType" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="CertifiedRolesListType">
  <xsd:sequence>
    <xsd:element name="CertifiedRole" type="EncapsulatedPKIDataType"
      maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End SignerRole -->


<xsd:element name="AllDataObjectsTimeStamp" type="TimeStampType"/>

<xsd:element name="IndividualDataObjectsTimeStamp" type="TimeStampType"/>

<xsd:element name="SignatureTimeStamp" type="TimeStampType"/>

<!-- Start CompleteCertificateRefs -->

<xsd:element name="CompleteCertificateRefs" type="CompleteCertificateRefsType"/>

<xsd:complexType name="CompleteCertificateRefsType">
  <xsd:sequence>
    <xsd:element name="CertRefs" type="CertIDListType" />
  </xsd:sequence>
  <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
</xsd:complexType>

<!-- End CompleteCertificateRefs -->


<!-- Start CompleteRevocationRefs-->

<xsd:element name="CompleteRevocationRefs" type="CompleteRevocationRefsType"/>

<xsd:complexType name="CompleteRevocationRefsType">
  <xsd:sequence>
    <xsd:element name="CRLRefs" type="CRLRefsType" minOccurs="0"/>
    <xsd:element name="OCSPRefs" type="OCSPRefsType" minOccurs="0"/>
    <xsd:element name="OtherRefs" type="OtherCertStatusRefsType" minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
</xsd:complexType>

<xsd:complexType name="CRLRefsType">
  <xsd:sequence>
    <xsd:element name="CRLRef" type="CRLRefType" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="CRLRefType">
  <xsd:sequence>
    <xsd:element name="DigestAlgAndValue" type="DigestAlgAndValueType"/>
```

```
    <xsd:element name="CRLIdentifier" type="CRLIdentifierType" minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="CRLIdentifierType">
  <xsd:sequence>
    <xsd:element name="Issuer" type="xsd:string"/>
    <xsd:element name="IssueTime" type="xsd:dateTime" />
    <xsd:element name="Number" type="xsd:integer"  minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="URI" type="xsd:anyURI" use="optional"/>
</xsd:complexType>

<xsd:complexType name="OCSPRefsType">
  <xsd:sequence>
    <xsd:element name="OCSPRef" type="OCSPRefType" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="OCSPRefType">
  <xsd:sequence>
    <xsd:element name="OCSPIdentifier" type="OCSPIdentifierType"/>
    <xsd:element name="DigestAlgAndValue" type="DigestAlgAndValueType"
      minOccurs="0"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="OCSPIdentifierType">
  <xsd:sequence>
    <xsd:element name="ResponderID" type="xsd:string"/>
    <xsd:element name="ProducedAt" type="xsd:dateTime"/>
  </xsd:sequence>
  <xsd:attribute name="URI" type="xsd:anyURI" use="optional"/>
</xsd:complexType>

<xsd:complexType name="OtherCertStatusRefsType">
  <xsd:sequence>
    <xsd:element name="OtherRef" type="AnyType" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End CompleteRevocationRefs-->


<xsd:element name="SigAndRefsTimeStamp" type="TimeStampType"/>

<xsd:element name="RefsOnlyTimeStamp" type="TimeStampType"/>

<!-- Start CertificateValues -->

<xsd:element name="CertificateValues" type="CertificateValuesType"/>

<xsd:complexType name="CertificateValuesType">
<xsd:choice minOccurs="0" maxOccurs="unbounded">
<xsd:element name="EncapsulatedX509Certificate" type="EncapsulatedPKIDataType"/>
 <xsd:element name="OtherCertificate" type="AnyType"/>
    </xsd:choice>
    <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
</xsd:complexType>

<!-- End CertificateValues -->

<!-- Start RevocationValues-->
```

```
<xsd:element name="RevocationValues" type="RevocationValuesType"/>

<xsd:complexType name="RevocationValuesType">
  <xsd:sequence>
    <xsd:element name="CRLValues" type="CRLValuesType" minOccurs="0"/>
    <xsd:element name="OCSPValues" type="OCSPValuesType" minOccurs="0"/>
    <xsd:element       name="OtherValues"       type="OtherCertStatusValuesType"
minOccurs="0"/>
  </xsd:sequence>
  <xsd:attribute name="Id" type="xsd:ID" use="optional"/>
</xsd:complexType>

<xsd:complexType name="CRLValuesType">
  <xsd:sequence>
     <xsd:element name="EncapsulatedCRLValue" type="EncapsulatedPKIDataType"
       maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<xsd:complexType name="OCSPValuesType">
  <xsd:sequence>
      <xsd:element name="EncapsulatedOCSPValue"
        type="EncapsulatedPKIDataType" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>
<xsd:complexType name="OtherCertStatusValuesType">
  <xsd:sequence>
    <xsd:element name="OtherValue" type="AnyType" maxOccurs="unbounded"/>
  </xsd:sequence>
</xsd:complexType>

<!-- End RevocationValues-->

<xsd:element name="ArchiveTimeStamp" type="TimeStampType"/>

</xsd:schema>
```

B.7 Schema for XML-signature syntax and processing (Xmldsig)

```
<?xml version="1.0" encoding="utf-8"?>

<!-- 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 $

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    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#"
        version="0.1" elementFormDefault="qualified">
```

```
<!-- Basic Types Defined for Signatures -->

<simpleType name="CryptoBinary">
  <restriction base="base64Binary">
  </restriction>
</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"               minOccurs="0"
type="ds:HMACOutputLengthType"/>
      <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 processContents="lax" namespace="##other"/>
    <!-- (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"/>  <!--  add  a  grep
facet -->
  <attribute name="Encoding" type="anyURI" use="optional"/>
</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>
```

B.8 Testable item mapping validation between signature document and metadata

Table B-8 – Testable item mapping validation between signature document and metadata

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>DSG_Content_2</td><td>Mapping</td><td>The following DSG elements shall be equal to metadata elements:<table><tr><td>xPath of DSG element</td><td>xPath of METADATA element</td></tr><tr><td>/ds:Signature[@Id]</td><td>/rim:Classification/rim:Slot[@name='authorInstitution']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_1</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears, the structure of the metadata element is checked against the following Xpath query:<table><tr><td>xPath of METADATA element</td></tr><tr><td>//rim:Slot[@name="authorInstitution"]</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_2</td><td>Mapping</td><td>The following DSG elements shall be equal to metadata elements:<table><tr><td>xPath of DSG element</td><td>xPath of METADATA element</td></tr><tr><td>//xad:X509IssuerName/text()</td><td>/rim:Classification/rim:Slot[@name='authorPerson']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_3</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query :<table><tr><td>xPath of METADATA element</td></tr><tr><td>//rim:Slot[@name="authorRole"]</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_4</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:<table><tr><td>xPath of METADATA element</td></tr><tr><td>//rim:Slot[@name="authorSpeciality"]</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-8 – Testable item mapping validation between signature document and metadata

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>DSGEntryAttribute_5</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Classification[@classificationScheme='urn:uuid:2c6b8cb7-8b2a-4051-b291-b1ae6a575ef4']/@nodeRepresentation/text()=' urn:oid:1.3.6.1.4.1.19376.1.2.1.1.1'</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_6</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Classification[@classificationScheme=urn:uuid:f4f85eac-e6cb-4883-b524-f2705394840f']/@nodeRepresentation/text()='1.2.840.10065.1.12.1.5'</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_7</td><td>Mapping</td><td>The following DSG elements shall be equal to metadata elements:<table><tr><td>xPath of DSG element</td><td>xPath of METADATA element</td></tr><tr><td>//xad:SignedSignatureProperties/xad:SisgingTime/text()</td><td>/rim:Slot[@name='creationTime']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_8</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/@id</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_9</td><td>Mapping</td><td>The following DSG elements (if present) shall be equal to metadata elements:

<table><tr><td>xPath of PHM report element</td><td>xPath of METADATA element</td></tr><tr><td>//ds:SignatureProperty/Text()</td><td>/rim:Classification[@classificationScheme='urn:uuid:2c6b8cb7-8b2a-4051-b291-b1ae6a575ef4']/@nodeRepresentation</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-8 – Testable item mapping validation between signature document and metadata

TI	Validation type	Constraint	Qualifier
DSGEntryAttribute_11	Mapping	There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query: xPath of METADATA element /rim:Classification[@classificationScheme=urn:uuid:a09d5840-386c-46f2-b5ad-9c3699a4309d ']/@nodeRepresentation /text()=http://www.w3.org/2000/09/xmldsig#	MANDATORY: FAIL if constraint is not satisfied
DSGEntryAttribute_12	Mapping	There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query: xPath of METADATA element /rim:Slot/@name='hash'	MANDATORY: FAIL if constraint is not satisfied
DSGEntryAttribute_13	Mapping	There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query: xPath of METADATA element @"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/rim:Classification[@classificationScheme='urn:uuid:f33fb8ac-18af-42cc-ae0e-ed0b0bdb91e1']"	MANDATORY: FAIL if constraint is not satisfied
DSGEntryAttribute_14	Mapping	There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query: xPath of METADATA element /rim:Slot[@name='languageCode']/rim:ValueList/rim:Value/ text()='art'	MANDATORY: FAIL if constraint is not satisfied

Table B-8 – Testable item mapping validation between signature document and metadata

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>DSGEntryAttribute_15</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Slot[@name=l'egalAuthenticator']/rim:ValueList/rim:Value/text()='art'</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_16</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/@mimeType='text/xml'</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_17</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:

<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:ExternalIdentifier[@identificationScheme='urn:uuid:58a6f841-87b3-4a3e-92fd-a8ffeff98427']/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_18</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:

<table><tr><td>xPath of METADATA element</td></tr><tr><td>@"//*[local-name()='SubmitObjectsRequest']/rim:RegistryObjectList/rim:ExtrinsicObject/rim:Classification[@classificationScheme='urn:uuid:cccf5598-8b07-4b77-a05e-ae952c785ead']"</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_19</td><td>Mapping</td><td>The following DSG elements shall be equal to metadata elements
<table><tr><td>xPath of DSG element</td><td>xPath of METADATA element</td></tr><tr><td>//xad:SignedSignatureProperties/xad:SisgingTime/text()</td><td>/rim:Slot[@name='ServiceStartTime']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-8 – Testable item mapping validation between signature document and metadata

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>DSGEntryAttribute_20</td><td>Mapping</td><td>The following DSG elements shall be equal to metadata elements<table><tr><td>xPath of DSG element</td><td>xPath of METADATA element</td></tr><tr><td>//xad:SignedSignatureProperties/xad:SisgingTime/text()</td><td>/rim:Slot[@name='ServiceStopTime']/rim:ValueList/rim:Value/text()</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_21</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Slot[@name='sourcePatientId']</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_22</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Slot[@name='sourcePatientInfo']</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_23</td><td>Mapping</td><td>The following DSG Report elements (if present) shall be equal to metadata elements:<table><tr><td>xPath of DSG Report element</td><td>xPath of METADATA element</td></tr><tr><td>/ds:SignatureProperty/[@Id='purposeofSignature]/text()</td><td>/rim:Name/rim:LocalizedString/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
<tr><td>DSGEntryAttribute_24</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:<table><tr><td>xPath of METADATA element</td></tr><tr><td>/rim:Classification[@classificationScheme='urn:uuid:f0306f51-975f-434e-a61c-c59651d33983']/rim:Name/rim:Value/@value='E1762'</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

Table B-8 – Testable item mapping validation between signature document and metadata

<table>
<tr><th>TI</th><th>Validation type</th><th>Constraint</th><th>Qualifier</th></tr>
<tr><td>DSGEntryAttribute_25</td><td>Mapping</td><td>There are no DSG elements to be mapped in the metadata; however, if the element appears the structure of the metadata element is checked against the following Xpath query:

<table><tr><td>xPath of DSG Report element</td><td>xPath of METADATA element</td></tr><tr><td>/ds:SignatureProperty/[@Id='purposeofSignature]/text()</td><td>/rim:Name/rim:LocalizedString/@value</td></tr></table></td><td>MANDATORY: FAIL if constraint is not satisfied</td></tr>
</table>

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