International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

H.830.3

(01/2015)

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 devices: WAN interface Part 3: SOAP/ATNA: Sender

Recommendation ITU-T H.830.3

ITU-T

International Telecommunication Union

ITU-T H-SERIES RECOMMENDATIONS

AUDIOVISUAL AND MULTIMEDIA SYSTEMS

CHARACTERISTICS OF VISUAL TELEPHONE SYSTEMS	H.100–H.199
INFRASTRUCTURE OF AUDIOVISUAL SERVICES	
General	H.200–H.219
Transmission multiplexing and synchronization	H.220–H.229
Systems aspects	H.230–H.239
Communication procedures	H.240–H.259
Coding of moving video	H.260–H.279
Related systems aspects	H.280–H.299
Systems and terminal equipment for audiovisual services	H.300–H.349
Directory services architecture for audiovisual and multimedia services	H.350–H.359
Quality of service architecture for audiovisual and multimedia services	H.360–H.369
Telepresence	H.420–H.429
Supplementary services for multimedia	H.450–H.499
MOBILITY AND COLLABORATION PROCEDURES	
Overview of Mobility and Collaboration, definitions, protocols and procedures	H.500–H.509
Mobility for H-Series multimedia systems and services	H.510–H.519
Mobile multimedia collaboration applications and services	H.520–H.529
Security for mobile multimedia systems and services	H.530–H.539
Security for mobile multimedia collaboration applications and services	H.540–H.549
Mobility interworking procedures	H.550–H.559
Mobile multimedia collaboration inter-working procedures	H.560–H.569
BROADBAND, TRIPLE-PLAY AND ADVANCED MULTIMEDIA SERVICES	
Broadband multimedia services over VDSL	H.610–H.619
Advanced multimedia services and applications	H.620–H.629
Ubiquitous sensor network applications and Internet of Things	H.640–H.649
IPTV MULTIMEDIA SERVICES AND APPLICATIONS FOR IPTV	
General aspects	H.700–H.719
IPTV terminal devices	H.720–H.729
IPTV middleware	H.730–H.739
IPTV application event handling	H.740–H.749
IPTV metadata	H.750–H.759
IPTV multimedia application frameworks	H.760–H.769
IPTV service discovery up to consumption	H.770–H.779
Digital Signage	H.780–H.789
E-HEALTH MULTIMEDIA SERVICES AND APPLICATIONS	
Interoperability compliance testing of personal health systems (HRN, PAN, LAN, TAN and WAN)	**H.820–H.859**
Multimedia e-health data exchange services	H.860–H.869

For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T H.830.3

Conformance of ITU-T H.810 personal health devices: WAN interface Part 3: SOAP/ATNA: Sender

Summary

Recommendation ITU-T H.830.3 is a transposition of Continua Health Alliance Test Tool DG2013, Test Suite Structure & Test Purposes, WAN Interface; Part 3: SOAP/ATNA. Sender (Version 1.5, 2014-01-24), that was developed by the Continua 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.

This Recommendation was initially approved as ITU-T H.833 (01/2015) and later renumbered, without further modifications, as ITU-T H.830.3 (01/2015) for consistency with the numbering of new WAN interface conformance testing specifications.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T H.833	2015-01-13	16	11.1002/1000/12251
1.0	ITU-T H.830.3	2015-01-13	16	11.1002/1000/12589

* 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

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

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.

INTELLECTUAL PROPERTY RIGHTS

ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

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/.

Table of Contents

Electronic attachment: Protocol implementation conformance statements (PICS) and the protocol implementation extra information for testing (PIXIT) required for the implementation of Annex A.

Introduction

This Recommendation is a transposition of Continua Health Alliance Test Tool DG2013, Test Suite Structure & Test Purposes, WAN Interface; Part 3: SOAP/ATNA. Sender (Version 1.5, 2014-01-24), that was developed by the Continua Health Alliance. A number of versions of this specification existed before transposition and these can be found in the table below.

Version	Date	Revision history
1.3	2012-10-05	Initial release for Test Tool DG2011. It uses "TSS&TP_1.5_WAN_PART_3_(SEN GEN)_v1.2.doc" as a baseline and adds new features included in [b-CDG 2011].
1.4	2013-05-24	Initial Release for Test Tool DG2012. It uses "TSS&TP_DG2011_WAN_PART_3_(SEN GEN)_v1.3.doc" as a baseline and it fixes a typo error in ATNA Reliable Syslog Test Cases. It does not include technical changes in the test procedures because new features included in [b-CDG 2012] do not affect the test procedures specified in this document.
1.5	2014-01-24	Initial release for Test Tool DG2013. It is the same version as "TSS&TP_DG2012_WAN_PART_3_(SEN GEN)_v1.4.doc" because new features included in CDG 2013 [ITU-T H.810] do not affect the test procedures specified in this document.

Recommendation ITU-T H.830.3

Conformance of ITU-T H.810 personal health devices: WAN interface Part 3: SOAP/ATNA: Sender

1 Scope

The scope of this Recommendation[1] is to provide a test suite structure and the test purposes (TSS & TP) for the WAN interface based on the requirements defined in Continua specifications. The objective of this test specification is to provide a high probability of air interface interoperability between different devices.

The TSS & TP for the WAN interface document have been divided into the set of eight parts specified below. This Recommendation covers Part 3.

– **Part 1:** Web Services Interoperability [ITU-T H.810] Sender
– **Part 2:** Web Services Interoperability [ITU-T H.810] Receiver
– **Part 3:** SOAP/ATNA. Sender
– **Part 4:** SOAP/ATNA. Receiver
– **Part 5:** PCD-01 HL7 Messages. Sender
– **Part 6:** PCD-01 HL7 Messages. Receiver
– **Part 7:** Consent Management. Sender
– **Part 8:** Consent Management. Receiver

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] Recommendation ITU-T H.810 (2013), *Interoperability design guidelines for personal health systems.*

[IEEE 11073-20601A] IEEE 11073-20601A-2010, *IEEE Health informatics – Personal health device communication – Part 20601: Application profile – Optimized Exchange Protocol Amendment 1*.
<http://standards.ieee.org/findstds/standard/11073-20601a-2010.html>

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

[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>

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

[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>

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 agent [IEEE 11073-20601A]: A node that collects and transmits personal health data to an associated manager.

3.1.2 manager [IEEE 11073-20601A]: A node receiving data from one or more agent systems. Some examples of managers include a cellular phone, health appliance, set top box, or a computer system.

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

ATNA Audit Trail and Node Authentication

ATS Abstract Test Suite

CDG Continua Design Guidelines

DUT Device Under Test

GUI Graphical User Interface

INR International Normalized Ratio

IUT Implementation Under Test

MDS Medical Device System

NFC Near Field Communication

PCD Patient Care Device

PCT Protocol Conformance Testing

PHD Personal Healthcare Device

PHDC Personal Healthcare Device Class

PHM Personal Health Manager

PICS Protocol Implementation Conformance Statement

PIXIT Protocol Implementation extra Information for Testing

SDP Service Discovery Protocol

SOAP Simple Object Access Protocol

TCRL Test Case Reference List

TCWG Test and Certification Working Group

TP Test Purposes

TSS Test Suite Structure

USB Universal Serial Bus

WAN Wide Area Network

WDM Windows Driver Model

WS Web Service

WSDL Web Service Description Language

XML extensible Markup Language

5 Conventions

The key words "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "MAY", "MAY NOT" in this document 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. Furthermore, the 2013 edition of the Continua design guidelines, which is published as [ITU-T H.810], is designated by "CDG 2013" as an extension of the designations indicated in the bibliography.

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

CDG name	Transposed as	Version	Description	Designation
2013 plus errata	[ITU-T H.810]	4.1	CDG 2013 plus errata noting all ratified bugs.	–
2013	–	4.0	Release 2013 of CDG including maintenance updates of the CDG 2012 and additional guidelines that cover new functionalities.	Endorphin
2012 plus errata	–	3.1	CDG 2012 plus errata noting all ratified bugs [b-CDG 2012].	–
2012	–	3.0	Release 2012 of the CDG including maintenance updates of 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 CDG including maintenance updates of CDG 2010 and additional guidelines that cover new functionalities [b-CDG 2011].	Adrenaline

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

CDG name	Transposed as	Version	Description	Designation
2010 plus errata	–	1.6	CDG 2010 integrated with identified errata	–
2010	–	1.5	Release 2010 of the CDG with maintenance updates of 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 WAN interface have been divided into the main subgroups specified below. Annex A describes the TPs for groups 1.2 and 1.3 (shown in bold).

– Group 1: Sender (SEN)
  - Group 1.1: Web services interoperability (WSI)
    - Subgroup 1.1.1: Basic profile (BP)
    - Subgroup 1.1.2: Basic security profile (BSP)
    - Subgroup 1.1.3: Reliable messaging (RM)
  - **Group 1.2: SOAP (SOAP)**
    - **Subgroup 1.2.1: SOAP headers (HEAD)**
  - **Group 1.3: Audit (ATNA)**
    - **Subgroup 1.3.1: General (GEN)**
    - **Subgroup 1.3.2: PCD-01 (PCD-01)**
    - **Subgroup 1.3.3: Consent management (CM)**
  - Group 1.4: PCD-01 HL7 messages (PCD-01-DATA)
    - Subgroup 1.4.1: General (GEN)
    - Subgroup 1.4.2: Design guidelines (DG)
    - Subgroup 1.4.3: Pulse oximeter (PO)
    - Subgroup 1.4.4: Blood pressure monitor (BPM)
    - Subgroup 1.4.5: Thermometer (TH)
    - Subgroup 1.4.6: Weighing scales (WEG)
    - Subgroup 1.4.7: Glucose meter (GL)
    - Subgroup 1.4.8: Cardiovascular fitness and activity monitor (CV)
    - Subgroup 1.4.9: Strength fitness equipment (ST)
    - Subgroup 1.4.10: Independent living activity hub (HUB)
    - Subgroup 1.4.11: Adherence monitor (AM)
    - Subgroup 1.4.12: Peak expiratory flow monitor (PF)
    - Subgroup 1.4.13: Body composition analyser (BCA)
    - Subgroup 1.4.14: Basic electrocardiograph (ECG)
  - Group 1.5: Consent management (CM)

        - Subgroup 1.5.1: WAN XDR transaction (TRANS)
        - Subgroup 1.5.2: WAN metadata validation (META)
        - Subgroup 1.5.3: WAN consent directive validation (CDV)
- Group 2: Receiver (REC)
    - Group 2.1: Web service interoperability (WSI)
        - Subgroup 2.1.1: Basic profile (BP)
        - Subgroup 2.1.2: Basic security profile (BSP)
        - Subgroup 2.1.3: Reliable messaging (RM)
    - Group 2.2: SOAP (SOAP)
        - Subgroup 2.2.1: SOAP headers (HEAD)
    - Group 2.3: Audit (ATNA)
        - Subgroup 2.3.1: General (GEN)
        - Subgroup 2.3.2: PCD-01 (PCD-01)
        - Subgroup 2.3.3: Consent management (CM)
    - Group 2.4: PCD-01 HL7 messages (PCD-01-DATA)
        - Subgroup 2.4.1: General (GEN)
        - Subgroup 2.4.2: Design guidelines (DG)
        - Subgroup 2.4.3: Pulse oximeter (PO)
        - Subgroup 2.4.4: Blood pressure monitor (BPM)
        - Subgroup 2.4.5: Thermometer (TH)
        - Subgroup 2.4.6: Weighing scales (WEG)
        - Subgroup 2.4.7: Glucose meter (GL)
        - Subgroup 2.4.8: Cardiovascular fitness and activity monitor (CV)
        - Subgroup 2.4.9: Strength fitness equipment (ST)
        - Subgroup 2.4.10: Independent living activity hub (HUB)
        - Subgroup 2.4.11: Adherence monitor (AM)
        - Subgroup 2.4.12: Peak expiratory flow monitor (PF)
        - Subgroup 2.4.13: Body composition analyser (BCA)
        - Subgroup 2.4.14: Basic electrocardiograph (ECG)
    - Group 2.5: Consent management (CM)
        - Subgroup 2.5.1: WAN XDR transaction (TRANS)
        - Subgroup 2.5.2: WAN service validation (SER)

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 (TP) are defined according to the following rules:

- **TP Id**: This is a unique identifier (TP/<TT>/<DUT>/<GR>/<SGR>/<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.
    - WAN: Wide area network
  - <DUT>: This is the device under test.
    - SEN: WAN observation sender
    - REC: WAN observation receiver
  - <GR>: This identifies a group of test cases.
  - <SGR>: This identifies a subgroup 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).
- **TP label**: This is the title of the TP.
- **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 are included.
  - Testable item: This contains 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. When a TP contains an "ALL" in this field it means that it applies to the device under test within that scope of the test (specialization, transport used, etc.).
- **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 Subgroup 1.2.1: SOAP headers (HEAD)

TP Id		TP/WAN/SEN/SOAP/HEAD/BV-001		
TP label		Requirements for Transactions which don't use HL7 V3 Messages		
Coverage	**Spec**	[IHE ITI-TF-2], Volume 2x, Appendix V		
	Testable items	IHE-WSA101; M	IHE-WSA102; M	
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService that allows a TLS v1.0 connection and supports SAML 2.0 as an authentication token only and the sender under test is ready to send a SOAP message.		
Test procedure		1. The sender under test sends a SOAP message to the receiver using addressing header blocks. 2. Check that: ❑ All <wsa:Action> elements have the mustUnderstand attribute set (mustUnderstand='1' ir 'true). ❑ The <wsa:ReplyTo> element of the initiating message shall be present and shall have the mustUnderstand attribute set (mustUnderstand='1').		
Pass/Fail criteria		All elements are as specified in step 2.		
Notes				

A.3 Subgroup 1.3.1: ATNA general (GEN)

TP Id		TP/WAN/SEN/ATNA/GEN/BV-006		
TP label		Reliable Syslog ATNA Actor behavior		
Coverage	**Spec**	[IHE ITI-TF-2]		
	Testable items	Audit_MT-1; M		
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_001		
Initial condition		The simulated WAN receiver has a WebService enabled for PCD-01 message reception; if needed, another WebService is enabled for consent document reception; the simulated audit repository with reliable syslog transport is intentionally disabled; and the WAN sender under test is shutdown.		
Test procedure		1. The WAN sender application under test is started and it sends the corresponding audit record message to the audit repository. Since the simulated audit repository receiver is disabled, the message will not be delivered. 2. Wait for one minute. 3. The test tool starts the simulated audit repository. 4. Force the WAN sender under test to send a SOAP message (PCD-01 message, consent document or both). 5. The test tool receives the SOAP messages and the audit record messages sent by WAN sender under test.		
Pass/Fail criteria		• At least 2 audit record messages must be received by the simulated audit repository, one for the WAN sender start action (step 1) and another for the SOAP message sent in step 4. • There is at least one audit record with attribute "code" of the element EventID set to "110106" (PHI-export) and the EventDateTime attribute of the EventIdentification element is set to the expedition time of the SOAP message sent in step 4. • There is one audit record with attribute "code" of the element EventID set to "110120" (start action) and the EventDateTime attribute of the EventIdentification element is set to at least one minute before the expedition time of the SOAP message sent in step 4.		
Notes		In step 4 the way to force the WAN Sender to send the pendant audit record that was not delivered in step 1, depends on the vendor implementation. A typical strategy could be to send another WAN message and its correspoinding ATNA record. In this way, when the WAN sender under test sends the ATNA record PHI-export then it would send the pendant audit record along with the newer one.		

A.4 Subgroup 1.3.2: ATNA PCD-01 (PCD-01)

TP Id		TP/WAN/SEN/ATNA/PCD-01/BV-000		
TP label		PCD-01 – Reliable Syslog ATNA Actor Start		
Coverage	**Spec**	[IHE ITI-TF-2]		
	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-1; M	Audit_RF-1; M
		Rel_Syslog-1; M	Rel_Syslog-2; M	
	Spec	[b-CDG 2012]		
	Testable items	SecGuidelines 3; O		
	Spec	[IETF RFC 3881]		
	Testable items	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
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_001		
Initial condition		The simulated WAN receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with reliable syslog transport is running. The WAN sender under test is shutdown.		
Test procedure		1. The WAN sender application under test is started and it sends the corresponding audit record message to the audit repository. 2. 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 reliable syslog's cooked profile [IETF RFC 3195]		
Pass/Fail criteria		• The ATNA XML log file conforms to the [IETF RFC 3881] schema included in Annex B. • In the audit record, the attribute "code" of the element EventID is set to "110120" and the attribute "displayName" of the EventTypeCode element is set to "Communicate PCD Data". • The received audit message conforms to the reliable syslog's cooked profile [IETF RFC 3195].		
Notes				

TP Id		TP/WAN/SEN/ATNA/PCD-01/BV-001		
TP label		PCD-01 – BSD Syslog ATNA Actor Start		
Coverage	**Spec**	[IHE ITI-TF-2]		
	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-1; M	Audit_RF-1; M
		BSD_Syslog-1; O	BSD_Syslog-2; M	BSD_Syslog-3; M
		BSD_Syslog-4; M	BSD_Syslog-5; R	BSD_Syslog-6; O
	Spec	[b-CDG 2011]		
	Testable items	SecGuidelines 3; O		
	Spec	[IETF RFC 3881]		
	Testable items	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
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_002		
Initial condition		The simulated WAN receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with BSD syslog transport is running. The WAN sender under test is shutdown.		
Test procedure		1. The WAN sender application under test is started and it sends the corresponding audit record message to the audit repository. 2. The audit repository receives the audit record message and verifies that it conforms to BSD syslog [b-IETF RFC 3164].		
Pass/Fail criteria		• The ATNA XML log file conforms to the [IETF RFC 3881] schema included in Annex B. • In the audit record, the attribute "code" of the element EventID is set to "110120" and the attribute "displayName" of the EventTypeCode element is set to "Communicate PCD Data". • The received audit message conforms to BSD syslog [b-IETF RFC 3164].		
Notes				

TP Id		TP/WAN/SEN/ATNA/PCD-01/BV-002		
TP label		PCD-01 – Reliable Syslog ATNA Actor PHI-export		
Coverage	**Spec**	[IHE ITI-TF-2]		
	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
		Rel_Syslog-1; M	Rel_Syslog-2; M	
	Spec	[b-CDG 2011]		
	Testable items	SecGuidelines 3; O		
	Spec	[IETF RFC 3881]		
	Testable items	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
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_001		
Initial condition		The simulated WAN receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with reliable syslog transport is running. The WAN sender under test has a PCD-01 message ready to be sent.		
Test procedure		1. The WAN sender application under test sends a PCD-01 message to the simulated WAN receiver and the corresponding audit record message to the audit repository. 2. The simulated WAN receiver receives the PCD-01 message. 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 b. It conforms to the reliable syslog's cooked profile [IETF RFC 3195]		
Pass/Fail criteria		• The ATNA XML log file conforms to the [IETF RFC 3881] schema included in Annex B. • In the audit record, the attribute "code" of the element EventID is set to "110106" and the attribute "displayName" of the EventTypeCode element is set to "Communicate PCD Data". • In the audit record, the value of the attribute EventDateTime of the element EventIdentification is inside a one minute interval of the Date and Time indicated in the MSH-7 field of the received PCD-01 message. • The received audit message conforms to the reliable syslog's cooked profile [IETF RFC 3195].		
Notes				

TP Id		TP/WAN/SEN/ATNA/PCD-01/BV-003		
TP label		PCD-01 – BSD Syslog ATNA Actor PHI-export		
Coverage	**Spec**	[IHE ITI-TF-2]		
	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
		BSD_Syslog-1; O	BSD_Syslog-2; M	BSD_Syslog-3; M
		BSD_Syslog-4; M	BSD_Syslog-5; R	BSD_Syslog-6; O
	Spec	[b-CDG 2011]		
	Testable items	SecGuidelines 3; O		
	Spec	[IETF RFC 3881]		
	Testable items	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
Applicability		C_SEN_000 AND C_ C_SEN_GEN_001 AND SEN_ATNA_002		
Initial condition		The simulated WAN receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with BSD syslog transport is running. The WAN sender under test has a PCD-01 message ready to be sent.		
Test procedure		1. The WAN sender application under test sends a PCD-01 message to the simulated WAN receiver and the corresponding audit record message to the audit repository. 2. The simulated WAN receiver receives the PCD-01 message. 3. The audit repository receives the audit record message and verifies that it conforms to BSD syslog [b-IETF RFC 3164].		
Pass/Fail criteria		• The ATNA XML log file conforms to the [IETF RFC 3881] schema included in Annex B. • In the audit record, the attribute "code" of the element EventID is set to "110106" and the attribute "displayName" of the EventTypeCode element is set to "Communicate PCD Data". • In the audit record, the value of the attribute EventDateTime of the element EventIdentification is inside a one minute interval of the Date and Time indicated in the MSH-7 field of the received PCD-01 message. • The received audit message conforms to the BSD syslog [b-IETF RFC 3164].		
Notes				

TP Id		TP/WAN/SEN/ATNA/PCD-01/BV-004		
TP label		PCD-01 – Reliable Syslog ATNA Actor Stop		
Coverage	**Spec**	[IHE ITI-TF-2]		
	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-1; M	Audit_RF-1; M
		Rel_Syslog-1; M	Rel_Syslog-2; M	
	Spec	[b-CDG 2011]		
	Testable items	SecGuidelines 3; O		
	Spec	[IETF RFC 3881]		
	Testable items	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
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_001		
Initial condition		The simulated WAN receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with reliable syslog transport is running. The WAN sender under test is running.		
Test procedure		1. The WAN sender application under test shuts down the application and sends the corresponding audit record message to the audit repository. 2. 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 the reliable syslog's cooked profile [IETF RFC 3195]		
Pass/Fail criteria		• The ATNA XML log file conforms to the [IETF RFC 3881] schema included in Annex B. • In the audit record, the attribute "code" of the element EventID is set to "110121" and the attribute "displayName" of the EventTypeCode element is set to "Communicate PCD Data". • The received audit message conforms to the reliable syslog's cooked profile [IETF RFC 3195].		
Notes				

TP Id		TP/WAN/SEN/ATNA/PCD-01/BV-005		
TP label		PCD-01 – BSD Syslog ATNA Actor Stop		
Coverage	**Spec**	[IHE ITI-TF-2]		
	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-1; M	Audit_RF-1; M
		BSD_Syslog-1; O	BSD_Syslog-2; M	BSD_Syslog-3; M
		BSD_Syslog-4; M	BSD_Syslog-5; R	BSD_Syslog-6; O
	Spec	[b-CDG 2011]		
	Testable items	SecGuidelines 3; O		
	Spec	[IETF RFC 3881]		
	Testable items	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
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_002		
Initial condition		The simulated WAN receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with BSD syslog transport is running. The WAN sender under test is running.		
Test procedure		1. The WAN sender application under test shuts down the application and sends the corresponding audit record message to the audit repository. 2. Audit repository receives the Audit Record Message and verifies that it conforms to BSD syslog [b-RFC 3164].		
Pass/Fail criteria		• The ATNA XML log file conforms to the [IETF RFC 3881] schema included in Annex B. • In the audit record, the attribute "code" of the element EventID is set to "110121" and the attribute "displayName" of the EventTypeCode element is set to "Communicate PCD Data". • The received audit message conforms to BSD Syslog [b-IETF RFC 3164].		
Notes				

A.5 Subgroup 1.3.3: ATNA consent management (CM)

TP Id		TP/WAN/SEN/ATNA/CM/BV-000		
TP label		CM – Reliable Syslog ATNA Actor PHI-Export		
Coverage	**Spec**	[IHE ITI-TF-2], Volume 2a		
	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
		Rel_Syslog-1; M	Rel_Syslog-2; M	
	Spec	[IHE ITI-TF-2], Volume 2b		
	Testable items	ProvideAudit1; O		
	Spec	[IETF RFC 3881]		
	Testable items	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
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_001 AND C_SEN_GEN_002		
Initial condition		The simulated WAN receiver has a WebService enabled for PCD-01 message and consent document reception and a simulated audit repository with reliable syslog transport is running. The WAN sender under test has a consent document ready to be sent.		
Test procedure		1. The WAN sender application under test sends a consent document and the corresponding audit record message to the audit repository. 2. 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 the reliable syslog's cooked profile [IETF RFC 3195] 3. The audit record includes the following elements: a. EventIdentification element that contains: ❑ the "EventActionCode" attribute set to "R" ❑ the EventID sub-element with attributes "code" set to "110106" and "displayName" set to "Export" ❑ the EventTypeCode sub-element with attributes "code" set to "ITI-41", "displayName" set to "Provide and Register Document Set-b" and "codeSystemName" set to "IHE Transactions" b. An ActiveParticipant element that contains:		

	❑ the "UserIsRequestor" attribute set to "true" ❑ the "NetworkAccessPointTypeCode" attribute set to "1" or "2" ❑ the "AlternativeUserID" attribute is present ❑ the RoleIDCode sub-element with attributes "code" set to "110153" and "displayName" set to "Source" c. An ActiveParticipant element that contains: ❑ the "UserIsRequestor" attribute set to "false" ❑ the "NetworkAccessPointTypeCode" attribute set to "1" or "2" ❑ the RoleIDCode sub-element with attributes "code" set to "110152" and "displayName" set to "Destination" d. A ParticipantObjectIdentification element that contains: ❑ the "ParticipantObjectID" attribute is present and not empty ❑ the "ParticipantObjectTypeCode" attribute set to "1" ❑ the "ParticipantObjectTypeCodeRole" attribute set to "1" ❑ the ParticipantObjectIDTypeCode sub-element with attributes "code" set to "2", "displayName" set to "Patient Number" and "codeSystemName" set to "RFC-3881" e. A ParticipantObjectIdentification element that contains: ❑ the "ParticipantObjectID" attribute is present and not empty ❑ the "ParticipantObjectTypeCode" attribute set to "2" ❑ the "ParticipantObjectTypeCodeRole" attribute set to "20" ❑ the ParticipantObjectIDTypeCode sub-element with attributes "code" set to "urn:uuid:a54d6aa5-d40d-43f9-88c5-b4633d873bdd", "displayName" set to "submission set classificationNode" and "codeSystemName" set to "IHE XDS Metadata"
Pass/Fail criteria	• The ATNA XML log file conforms to the [IETF RFC 3881] schema included in Annex B. • The audit record content is according to values described in step 4. • The received audit message conforms to the reliable syslog's cooked profile [IETF RFC 3195].
Notes	

TP Id		TP/WAN/SEN/ATNA/CM/BV-001		
TP label		CM – BSD Syslog ATNA Actor PHI-Export		
Coverage	**Spec**	[IHE ITI-TF-2], Volume 2a		
	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
		BSD_Syslog-1; O	BSD_Syslog-2; M	BSD_Syslog-3; M
		BSD_Syslog-4; M	BSD_Syslog-5; R	BSD_Syslog-6; O
	Spec	[IHE ITI-TF-2], Volume 2b		
	Testable items	ProvideAudit1; O		
	Spec	[IETF RFC 3881]		
	Testable items	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
Applicability		C_SEN_000 AND C_SEN_GEN_001 and C_SEN_ATNA_002 AND C_SEN_GEN_002		
Initial condition		The simulated WAN receiver has a WebService enabled for PCD-01 message and consent document reception and a simulated audit repository with BSD syslog transport is running. The WAN sender under test has a consent document ready to be sent.		
Test procedure		1. The WAN sender application under test sends a consent document and the corresponding audit record message to the audit repository. 2. The audit repository receives the audit record message and verifies that it conforms to BSD syslog [b-IETF RFC 3164]. 3. The audit record includes the following elements: a. the EventIdentification element that contains: ❑ the "EventActionCode" attribute set to "R" ❑ the EventID sub-element with attributes "code" set to "110106" and "displayName" set to "Export" ❑ the EventTypeCode sub-element with attributes "code" set to "ITI-41", "displayName" set to "Provide and Register Document Set-b" and "codeSystemName" set to "IHE Transactions" b. An ActiveParticipant element that contains: ❑ the "UserIsRequestor" attribute set to "true" ❑ the "NetworkAccessPointTypeCode" attribute set to "1" or "2"		

	❑ the "AlternativeUserID" attribute is present ❑ the RoleIDCode sub-element with attributes "code" set to "110153" and "displayName" set to "Source" c. An ActiveParticipant element that contains: ❑ the "UserIsRequestor" attribute set to "false" ❑ the "NetworkAccessPointTypeCode" attribute set to "1" or "2" ❑ the RoleIDCode sub-element with attributes "code" set to "110152" and "displayName" set to "Destination" d. A ParticipantObjectIdentification element that contains: ❑ the "ParticipantObjectID" attribute is present and not empty ❑ the "ParticipantObjectTypeCode" attribute set to "1" ❑ the "ParticipantObjectTypeCodeRole" attribute set to "1" ❑ the ParticipantObjectIDTypeCode sub-element with attributes "code" set to "2", "displayName" set to "Patient Number" and "codeSystemName" set to "RFC-3881" e. A ParticipantObjectIdentification element that contains: ❑ the "ParticipantObjectID" attribute is present and not empty ❑ the "ParticipantObjectTypeCode" attribute set to "2" ❑ the "ParticipantObjectTypeCodeRole" attribute set to "20" ❑ the ParticipantObjectIDTypeCode sub-element with attributes "code" set to "urn:uuid:a54d6aa5-d40d-43f9-88c5-b4633d873bdd", "displayName" set to "submission set classificationNode" and "codeSystemName" set to "IHE XDS Metadata"
Pass/Fail criteria	• The ATNA XML log file conforms to the [IETF RFC 3881] schema included in Annex B. • The audit record content is according to values described in step 4. • The received audit message conforms to the BSD syslog [b-IETF RFC 3164].
Notes	

Annex B

Schema for IETF RFC 3881 verification

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

```
<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">
               <xs:simpleType>
                    <xs:restriction base="xs:unsignedByte">
                         <xs:enumeration value="1">
                              <xs:annotation>
```

```
                                        <xs:appinfo>
                                             Machine Name, including DNS name
                                        </xs:appinfo>
                                   </xs:annotation>
                              </xs:enumeration>
                              <xs:enumeration value="2">
                                   <xs:annotation>
                                        <xs:appinfo>IP Address</xs:appinfo>
                                   </xs:annotation>
                              </xs:enumeration>
                              <xs:enumeration value="3">
                                   <xs:annotation>
                                        <xs:appinfo>Telephone Number</xs:appinfo>
                                   </xs:annotation>
                              </xs:enumeration>
                         </xs:restriction>
                    </xs:simpleType>
               </xs:attribute>
          </xs:complexType>
          <xs:complexType name="ParticipantObjectIdentificationType">
               <xs:sequence>
                    <xs:element name="ParticipantObjectIDTypeCode"
type="CodedValueType" />
                    <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>
               <xs:attribute name="ParticipantObjectID" type="xs:string"
use="required" />
               <xs:attribute name="ParticipantObjectTypeCode" use="optional">
                    <xs:simpleType>
                         <xs:restriction base="xs:unsignedByte">
                              <xs:enumeration value="1">
                                   <xs:annotation>
                                        <xs:appinfo>Person</xs:appinfo>
                                   </xs:annotation>
                              </xs:enumeration>
                              <xs:enumeration value="2">
                                   <xs:annotation>
                                        <xs:appinfo>System object</xs:appinfo>
                                   </xs:annotation>
                              </xs:enumeration>
                              <xs:enumeration value="3">
                                   <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">
          <xs:annotation>
               <xs:appinfo>Patient</xs:appinfo>
          </xs:annotation>
     </xs:enumeration>
     <xs:enumeration value="2">
          <xs:annotation>
               <xs:appinfo>Location</xs:appinfo>
          </xs:annotation>
     </xs:enumeration>
     <xs:enumeration value="3">
          <xs:annotation>
               <xs:appinfo>Report</xs:appinfo>
          </xs:annotation>
     </xs:enumeration>
     <xs:enumeration value="4">
          <xs:annotation>
               <xs:appinfo>Resource</xs:appinfo>
          </xs:annotation>
     </xs:enumeration>
     <xs:enumeration value="5">
          <xs:annotation>
               <xs:appinfo>Master file</xs:appinfo>
          </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>
               <xs:appinfo>List</xs:appinfo>
          </xs:annotation>
     </xs:enumeration>
     <xs:enumeration value="8">
          <xs:annotation>
               <xs:appinfo>Doctor</xs:appinfo>
          </xs:annotation>
     </xs:enumeration>
     <xs:enumeration value="9">
          <xs:annotation>
               <xs:appinfo>Subscriber</xs:appinfo>
          </xs:annotation>
     </xs:enumeration>
     <xs:enumeration value="10">
          <xs:annotation>
               <xs:appinfo>Guarantor</xs:appinfo>
          </xs:annotation>
     </xs:enumeration>
     <xs:enumeration value="11">
          <xs:annotation>
               <xs:appinfo>
                    Security User Entity
               </xs:appinfo>
          </xs:annotation>
     </xs:enumeration>
     <xs:enumeration value="12">
          <xs:annotation>
               <xs:appinfo>Security User Group</xs:appinfo>
          </xs:annotation>
     </xs:enumeration>
     <xs:enumeration value="13">
```

```
                    <xs:annotation>
                         <xs:appinfo>Security Resource</xs:appinfo>
                    </xs:annotation>
               </xs:enumeration>
               <xs:enumeration value="14">
                    <xs:annotation>
                         <xs:appinfo>
                              Security Granualarity Definition
                         </xs:appinfo>
                    </xs:annotation>
               </xs:enumeration>
               <xs:enumeration value="15">
                    <xs:annotation>
                         <xs:appinfo>Provider</xs:appinfo>
                    </xs:annotation>
               </xs:enumeration>
               <xs:enumeration value="16">
                    <xs:annotation>
                         <xs:appinfo>Report Destination</xs:appinfo>
                    </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>
```

Bibliography

[b-CDG 1.0] Continua Health Alliance, Continua Design Guidelines v1.0. (2008), *Continua Design Guidelines*.

[b-CDG 2010] Continua Health Alliance, Continua Design Guidelines (2010), *Continua Design Guidelines*.

[b-CDG 2011] Continua Health Alliance, Continua Design Guidelines (2011) *"Adrenaline", Continua Design Guidelines*.

[b-CDG 2012] Continua Health Alliance CDG, Continua Design Guidelines (2012) *"Catalyst", Continua Design Guidelines.*

[b-ETSI SR 001 262] ETSI SR 001 262 v1.8.1 (2003), *ETSI drafting rules.*

[b-IETF RFC 3164] IETF RFC 3164 (2001), *The BSD Syslog Protocol*.

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	General tariff principles
Series E	Overall network operation, telephone service, service operation and human factors
Series F	Non-telephone telecommunication services
Series G	Transmission systems and media, digital systems and networks
Series H	**Audiovisual and multimedia systems**
Series I	Integrated services digital network
Series J	Cable networks and transmission of television, sound programme and other multimedia signals
Series K	Protection against interference
Series L	Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant
Series M	Telecommunication management, including TMN and network maintenance
Series N	Maintenance: international sound programme and television transmission circuits
Series O	Specifications of measuring equipment
Series P	Terminals and subjective and objective assessment methods
Series Q	Switching and signalling
Series R	Telegraph transmission
Series S	Telegraph services terminal equipment
Series T	Terminals for telematic services
Series U	Telegraph switching
Series V	Data communication over the telephone network
Series X	Data networks, open system communications and security
Series Y	Global information infrastructure, Internet protocol aspects and next-generation networks
Series Z	Languages and general software aspects for telecommunication systems

Printed in Switzerland
Geneva, 2015