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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: Services interface Part 3: SOAP/ATNA: Health & Fitness Service sender

Recommendation ITU-T H.830.3

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	
Personal health systems	H.810–H.819
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 system: Services interface Part 3: SOAP/ATNA: Health & Fitness Service sender

Summary

Recommendation ITU-T H.830.3 provides a test suite structure (TSS) and the test purposes (TP) for SOAP/ATNA messages through the Health & Fitness Service (HFS) sender in the Services 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.830.3 is a transposition of Continua Test Tool DG2016, Test Suite Structure & Test Purposes, Services Interface; Part 3: SOAP/ATNA. HFS Sender (Version 1.8, 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*
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1.0	ITU-T H.830.3	2015-01-13	16	11.1002/1000/12589
2.0	ITU-T H.830.3	2016-07-14	16	11.1002/1000/12923
3.0	ITU-T H.830.3	2017-04-13	16	11.1002/1000/13203

Keywords

Conformance testing, Continua Design Guidelines, e-health, ITU-T H.810, personal connected health devices, Services interface, SOAP/ATNA: Health & Fitness Service sender.

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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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Table of Contents

Page

Electronic attachment: 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.

Introduction

This Recommendation is a transposition of Continua Test Tool DG2016, Test Suite Structure & Test Purposes, Services Interface; Part 3: SOAP/ATNA. HFS Sender (Version 1.8, 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
1.3	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 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.
1.4	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 [b-ITU-T H.810 (2013)]/[b-CDG 2013] do not affect the test procedures specified in this document.
1.5	2014-04-24	TM Lite & Doc Enhancements (Test Tool v4.0 Maintenance Release 1). It uses "TSS&TP_DG2013_ WAN_PART_3_(SEN GEN)_v1.5.doc" as a baseline and adds new features included in Documentation Enhancements: • "Other PICS" row has been added
1.6	2015-07-01	Initial release for Test Tool DG2015: • Test suite structure modified • Applicability and Other PICS modified due to the inclusion of hData OU
1.7	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.
1.8	2017-03-14	Editorial: added insulin pump and continuous glucose monitor specializations to the TSS list in clause 6.

Recommendation ITU-T H.830.3

Conformance of ITU-T H.810 personal health system: Services interface Part 3: SOAP/ATNA: Health & Fitness Service sender

1 Scope

The scope of this Recommendation[1] is to provide a test suite structure (TSS) and the test purposes (TP) for the Services interface based on the requirements defined in the Continua Design Guidelines (CDG) [ITU-T H.810 (2016)]. The objective of this test specification is to provide a high probability of interoperability at this interface.

The TSS and TP for the Services interface have been divided into the parts specified below. This Recommendation covers Part 3.

– Part 1: Web services interoperability Health & Fitness Service sender
– Part 2: Web services interoperability Health & Fitness Service receiver
– **Part 3: SOAP/ATNA. Health & Fitness Service sender**
– Part 4: SOAP/ATNA. Health & Fitness Service receiver
– Part 5: PCD-01 HL7 Messages. Health & Fitness Service sender
– Part 6: PCD-01 HL7 Messages. Health & Fitness Service receiver
– Part 7: Consent Management. Health & Fitness Service sender
– Part 8: Consent Management. Health & Fitness Service receiver
– Part 9: hData Observation Upload. Health & Fitness Service sender
– Part 10: hData Observation Upload. Health & Fitness Service receiver
– Part 11: Questionnaires. Health & Fitness Service sender
– Part 12: Questionnaires. Health & Fitness Service 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 (2016)] Recommendation ITU-T H.810 (2016), *Interoperability design guidelines for personal health systems.*

[ITU-T H.812] Recommendation ITU-T H.812 (2016), *Interoperability design guidelines for personal health systems: Services interface: Common certified capability class.*

[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

[ITU-T H.812.1] Recommendation ITU-T H.812.1 (2016), *Interoperability design guidelines for personal health systems: Services interface: Observation upload certified capability class.*

[ITU-T H.812.2] Recommendation ITU-T H.812.2 (2016), *Interoperability design guidelines for personal health systems: Services interface: Questionnaires certified capability class.*

[ITU-T H.812.3] Recommendation ITU-T H.812.3 (2016), *Interoperability design guidelines for personal health systems: Services interface: Capability exchange certified capability class.*

[ITU-T H.812.4] Recommendation ITU-T H.812.4 (2016), *Interoperability design guidelines for personal health systems: Services interface: Authenticated persistent session certified capability class.*

[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

[IHE ITI TF-2] IHE ITI TF 2 (2010), *IHE IT Infrastructure Technical Framework, Volume 2 (ITI TF-2)*, Revision 7.0. 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_Rev7-0_Vol2a_FT_2010-08-10.pdf
http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_Rev7-0_Vol2b_FT_2010-08-10.pdf
http://www.ihe.net/Technical_Framework/upload/IHE_ITI_TF_Rev7-0_Vol2x_FT_2010-08-10.pdf

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:

ATNA Audit Trail and Node Authentication

ATS Abstract Test Suite

DUT Device Under Test

CDG Continua Design Guidelines

CGM Continuous Glucose Monitor

GUI Graphical User Interface

HFS Health & Fitness Service

HFSS Health & Fitness Service Sender

HFSR	Health & Fitness Service Receiver
HL7	Health Level 7
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
INR	International Normalized Ratio
IP	Insulin Pump
IUT	Implementation Under Test
NFC	Near Field Communication
MDS	Medical Device System
PCD	Patient Care Device
PCT	Protocol Conformance Testing
PHD	Personal Health Device
PHDC	Personal Healthcare Device Class
PHG	Personal Health Gateway
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation extra Information for Testing
SABTE	Sleep Apnoea Breathing Therapy Equipment
SCR	Static Conformance Review
SDP	Service Discovery Protocol
SOAP	Simple Object Access Protocol
TCRL	Test Case Reference List
TCWG	Test and Certification Working Group
TLS	Transport Level Security
TP	Test Purpose
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 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

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

CDG release	Transposed as	Version	Description	Designation
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 Services interface have been divided into the main subgroups specified below. Annex A describes the TPs for subgroups 1.2 and 1.3 (shown in bold):

– Group 1: HFS sender (HFSS)
  - 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: Simple object access protocol (SOAP)**
    - **Subgroup 1.2.1: SOAP headers (HEAD)**
  - **Group 1.3: Audit trail and node authentication (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)
    - Subgroup 1.4.15: International normalized ratio (INR)
    - Subgroup 1.4.16: Sleep apnoea breathing therapy equipment (SABTE)
    - Subgroup 1.4.17: Insulin pump (IP)
    - Subgroup 1.4.18: Continuous glucose monitor (CGM)
  - Group 1.5: Consent Management (CM)
    - Subgroup 1.5.1: HFS XDR transaction (TRANS)

    - Subgroup 1.5.2: HFS metadata validation (META)
    - Subgroup 1.5.3: HFS consent directive validation (CDV)
  - Group 1.6: hData Observation Upload (HDATA)
    - Subgroup 1.6.1: General (GEN)
  - Group 1.7: Questionnaires (QUE)
    - Subgroup 1.7.1: General (GEN)
    - Subgroup 1.7.2: CDA validation (CDA)
- Group 2: HFS receiver (HFSR)
  - 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)
    - Subgroup 2.4.15: International normalized ratio (INR)
    - Subgroup 2.4.16: Sleep apnoea breathing therapy equipment (SABTE)
    - Subgroup 2.4.17: Insulin pump (IP)
    - Subgroup 2.4.18: Continuous glucose monitor (CGM)
  - Group 2.5: Consent Management (CM)
    - Subgroup 2.5.1: HFS XDR transaction (TRANS)
    - Subgroup 2.5.2: HFS service validation (SER)
  - Group 2.6: hData Observation Upload (HDATA)

- Subgroup 2.6.1: General (GEN)
- Subgroup 2.6.2: hData record format (HRF)

- Group 2.7: Questionnaires (QUE)
  - Subgroup 2.7.1: General (GEN)
  - Subgroup 2.7.2: CDA validation (CDA)
  - Subgroup 2.7.3: hData record format (HRF)

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>/<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.
    – HFS: Health & Fitness Services Interface
  - <DUT>: This is the device under test.
    – SEN: HFS sender
    – REC: HFS 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 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 were 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.).

– **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 Subgroup 1.2.1: SOAP headers (HEAD)

TP Id		TP/HFS/SEN/SOAP/HEAD/BV-001		
TP label		Requirements for Transactions which do not use HL7 V3 Messages		
Coverage	**Spec**	[IHE ITI TF-2], Volume 2x, Appendix V		
	Testable items	IHE-WSA101; M	IHE-WSA102; M	
Test purpose		Check that: All <wsa:Action> elements shall have the mustUnderstand attribute set (mustUnderstand='1') [AND] The <wsa:ReplyTo> element of the initiating message shall be present and shall have the mustUnderstand attribute set (mustUnderstand='1').		
Applicability		C_SEN_000 AND C_SEN_GEN_003		
Other PICS				
Initial condition		The simulated HFS receiver has published a WebService that allows a TLS v1.0 connection and supports SAML 2.0 as an authentication token only and the HFS sender under test is ready to send a SOAP message.		
Test procedure		1. The HFS sender under test sends a SOAP message to the HFS 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/HFS/SEN/ATNA/GEN/BV-006		
TP label		Reliable Syslog ATNA Actor behaviour		
Coverage	**Spec**	[IHE ITI TF-2]		
	Testable items	Audit_MT-1; M		
Test purpose		Check that: If Audit Record repository is not available, the HFS actor shall store the Audit Record in a local buffer until the Audit Record Repository is available again		
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_001		
Other PICS		C_SEN_GEN_003, C_SEN_GEN_004		
Initial condition		The simulated HFS 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 HFS sender under test is shutdown.		

Test procedure	1. The HFS 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 HFS 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 HFS sender under test.
Pass/Fail criteria	• At least 2 audit record messages must be received by the simulated audit repository, one for the HFS 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 corresponding ATNA record. In this way, when the HFS 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/HFS/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	[ITU-T H.812]		
	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
Test purpose		Check that: When SUT starts the application then audit log start message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_001		
Other PICS		C_SEN_GEN_003, C_SEN_GEN_004		
Initial condition		The simulated HFS 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/HFS/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	[ITU-T H.812]		
	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
Test purpose		Check that: When SUT starts the application then audit log start message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_002		
Other PICS		C_SEN_GEN_003, C_SEN_GEN_004		
Initial condition		The simulated HFS receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with BSD syslog transport is running. The HFS sender under test is shutdown.		
Test procedure		1. The HFS 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/HFS/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	[ITU-T H.812]		
	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
Test purpose		Check that: When SUT sends a PCD-01 ORU message, then an audit log PHI-export message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_001		
Other PICS		C_SEN_GEN_003, C_SEN_GEN_004		
Initial condition		The simulated HFS receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with reliable syslog transport is running. The HFS sender under test has a PCD-01 message ready to be sent.		
Test procedure		1. The HFS sender application under test sends a PCD-01 message to the simulated HFS receiver and the corresponding audit record message to the audit repository. 2. The simulated HFS 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/HFS/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	[ITU-T H.812]		
	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
Test purpose		Check that: When SUT sends a PCD-01 ORU message, then an audit log PHI-export message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_SEN_000 AND C_ C_SEN_GEN_001 AND SEN_ATNA_002		
Other PICS		C_SEN_GEN_003, C_SEN_GEN_004		
Initial condition		The simulated HFS receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with BSD syslog transport is running. The HFS sender under test has a PCD-01 message ready to be sent.		
Test procedure		1. The HFS sender application under test sends a PCD-01 message to the simulated HFS receiver and the corresponding audit record message to the audit repository. 2. The simulated HFS 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/HFS/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	[ITU-T H.812]		
	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
Test purpose		Check that: When SUT stops the application then audit log stop message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_001		
Other PICS		C_SEN_GEN_003, C_SEN_GEN_004		
Initial condition		The simulated HFS receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with reliable syslog transport is running. The HFS sender under test is running.		
Test procedure		1. The HFS 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/HFS/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	[ITU-T H.812]		
	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
Test purpose		Check that: When SUT stops the application then audit log stop message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_002		
Other PICS		C_SEN_GEN_003, C_SEN_GEN_004		
Initial condition		The simulated HFS receiver has a WebService enabled for PCD-01 message reception and a simulated audit repository with BSD syslog transport is running. The HFS sender under test is running.		
Test procedure		1. The HFS 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/HFS/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
Test purpose		Check that: When SUT sends a Consent Document, then an audit log PHI-export message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_001 AND C_SEN_GEN_002 AND C_SEN_GEN_003		
Other PICS				
Initial condition		The simulated HFS 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 HFS sender under test has a consent document ready to be sent.		
Test procedure		1. The HFS 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/HFS/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
Test purpose		Check that: When SUT sends a Consent Document, then an audit log PHI-export message is received from the SUT and it is conformant to the ATNA specifications		
Applicability		C_SEN_000 AND C_SEN_GEN_001 AND C_SEN_ATNA_002 AND C_SEN_GEN_002 AND C_SEN_GEN_003		
Other PICS				
Initial condition		The simulated HFS 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 HFS sender under test has a consent document ready to be sent.		
Test procedure		1. The HFS 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">
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```

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