

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

H.830.10

(04/2017)

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 10: hData
Observation Upload: Health & Fitness Service
receiver**

Recommendation ITU-T H.830.10

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.830.10

Conformance of ITU-T H.810 personal health system: Services interface Part 10: hData Observation Upload: Health & Fitness Service receiver

Summary

Recommendation ITU-T H.830.10 provides a test suite structure (TSS) and the test purposes (TP) for hData Observation Upload through the Health & Fitness Service (HFS) receiver 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.830.10 is a transposition of Continua Test Tool DG2016 Test Suite Structure & Test Purposes, Services Interface; Part 10: hData Observation Upload: HFS Receiver (Version 1.2, 2017-03-14).

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

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T H.830.10	2015-11-29	16	11.1002/1000/12675
2.0	ITU-T H.830.10	2016-07-14	16	11.1002/1000/12930
3.0	ITU-T H.830.10	2017-04-13	16	11.1002/1000/13205

Keywords

Conformance testing, Continua Design Guidelines, e-health, hData Observation Upload, Health & Fitness Service receiver, ITU-T H.810, personal connected health devices, Services interface.

* 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/>.

© ITU 2017

All rights reserved. No part of this publication may be reproduced, by any means whatsoever, without the prior written permission of ITU.

Table of Contents

	Page
1 Scope.....	1
2 References.....	1
3 Definitions	2
3.1 Terms defined elsewhere	2
3.2 Terms defined in this Recommendation	2
4 Abbreviations and acronyms	2
5 Conventions	3
6 Test suite structure (TSS)	5
7 Electronic attachment	7
Annex A Test purposes	8
A.1 TP definition conventions.....	8
A.2 Subgroup 2.6.1: General (GEN)	9
A.3 Subgroup 2.6.2: hData record format (HRF).....	10
Bibliography.....	12

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 10: hData Observation Upload: HFS Receiver (Version 1.2, 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
1.0	2015-07-01	Initial release for Test Tool DG2015 based on the requirements in [b-ITU-T H.810 (2015)]/[b-CDG 2015].
1.1	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.
1.2	2017-03-14	Editorial: added insulin pump and continuous glucose monitor specializations to the TSS list in clause 6.

Recommendation ITU-T H.830.10

Conformance of ITU-T H.810 personal health system: Services interface Part 10: hData Observation Upload: Health & Fitness Service receiver

1 Scope

The scope of this Recommendation¹ 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 10.

- 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), <i>Interoperability design guidelines for personal health systems</i> . |
| [ITU-T H.811] | Recommendation ITU-T H.811 (2016), <i>Interoperability design guidelines for personal health systems: Personal health devices interface</i> . |

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]	Recommendation ITU-T H.812 (2016), <i>Interoperability design guidelines for personal health systems: Services interface: Common certified capability class.</i>
[ITU-T H.812.1]	Recommendation ITU-T H.812.1 (2016), <i>Interoperability design guidelines for personal health systems: Services interface: Observation upload certified capability class.</i>
[ITU-T H.812.2]	Recommendation ITU-T H.812.2 (2016), <i>Interoperability design guidelines for personal health systems: Services interface: Questionnaires certified capability class.</i>
[ITU-T H.812.3]	Recommendation ITU-T H.812.3 (2016), <i>Interoperability design guidelines for personal health systems: Services interface: Capability exchange certified capability class.</i>
[ITU-T H.812.4]	Recommendation ITU-T H.812.4 (2016), <i>Interoperability design guidelines for personal health systems: Services interface: Authenticated persistent session certified capability class.</i>
[ITU-T H.813]	Recommendation ITU-T H.813 (2016), <i>Interoperability design guidelines for personal health systems: Healthcare information system interface.</i>
[HL7 V3 HRF]	Health Level Seven (2014), <i>HL7 Version 3 Specification: hData Record Format, Release 1.</i> http://www.hl7.org/documentcenter/private/standards/v3/V3 ITS HDATA RF R1 2014JUN.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:

AHD	Application Hosting Device
ATNA	Audit Trail and Node Authentication
CDA	Clinical Document Architecture
CDG	Continua Design Guidelines
CGM	Continuous Glucose Monitor
DUT	Device Under Test
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
MDS	Medical Device System
NFC	Near Field Communication
PCD	Patient Care Device
PCO	Point of Control and Observation
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
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
URI	Uniform Resource Identifier
WAN	Wide Area Network
WDM	Windows Driver Model
WS	Web Service
WSI	Web Services Interoperability
WSDL	Web Service Description Language
XDR	Cross-Enterprise Document Reliable Interchange
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	1.5

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

CDG release	Transposed as	Version	Description	Designation
			maintenance updates of the CDG Version 1 and additional guidelines that cover new functionalities [b-CDG 2010].	
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 2.6.1 and 2.6.2 (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 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 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 protocol implementation conformance statement (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 device under test (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 2.6.1: General (GEN)

TP Id		TP/HFS/REC/HDATA/GEN/BV-000		
TP label		hData Observation Upload. HFS Receiver		
Coverage	Spec	[ITU-T H.812]		
	Testable items	RESTSec 7;M	RESTSec 8;M	CommonReq 5;M
	Spec	[ITU-T H.812.1]		
	Testable items	hData 6;M	hData 9;M	hData 10;M
Test purpose		Check that: SUT accepts an hData observation upload using TLS 1.1 and using a provided OAuth v2.0 bearer token for authorization.		
Applicability		C_REC_000 AND C_REC_GEN_004		
Other PICS		C_REC_GEN_005		
Initial condition		Simulated HFS application using hData observation upload has a PCD-01 message ready to be sent to the SUT using TLS 1.1 and an OAuth 2.0 bearer token provided by the SUT.		
Test procedure		<ol style="list-style-type: none"> 1. Simulated HFS application requests a bearer OAuth 2.0 token using the URL provided by the SUT, the authorization grant type specified in PIXIT I_REC_OAUTH_001, and the required parameters specified in the test tool general parameters for the specific grant type, using a TLS 1.1 connection. 2. Simulated HFS application uses the provided bearer token to send a PCD-01 message to the URL provided by the SUT using TLS 1.1 connection. 3. Simulated HFS application also sends an HTTP DELETE request on the observation upload URL. 		
Pass/Fail criteria		<ul style="list-style-type: none"> • HFS application under test supports capability exchange as specified in [ITU-T H.812.3]. • HFS device providing the authorization server returns an authorization token of type "bearer" after validating the access token request. • HFS device providing the authorization server includes "refresh token" in the response to the access token request. • HFS application under test returns an <HTTP 201> response when the PCD-01 message is received. • HFS application returns an <HTTP 405> (Method not allowed) response to an HTTP DELETE request on the observation upload URL. 		
Notes				

A.3 Subgroup 2.6.2: hData record format (HRF)

TP Id		TP/HFS/REC/HDATA/HRF/BV-000		
TP label		hData Observation Upload. Root file elements		
Coverage	Spec	[ITU-T H.812]		
	Testable items	CommonReq 5;M		
	Spec	[ITU-T H.812.1]		
	Testable items	hData 6;M	hData 7;M	hData 8;M
	Spec	[HL7 V3 HRF]		
	Testable items	Root 9;M	Root 10;M	Root 11;M
		Root 12;M	Root 13;M	Root 14;M
		Root 15;M	Root 16;M	Root 18;M
		Root 19;M	Root 20;M	Root 22;M
Test purpose		Check that: SUT declares required and recommended observation upload capabilities in its root file according to hData Record Format.		
Applicability		C_REC_000 AND C_REC_GEN_004		
Other PICS		C_REC_GEN_005		
Initial condition		Simulated HFS application using hData observation upload is ready to check the SUT hData observation upload capabilities declared in its root file. SUT has previously provided a base URL.		
Test procedure		1. Simulated HFS application performs an HTTP GET of root.xml using TLS v.1.1. OAuth 2.0 token is not required. 2. Simulated HFS application obtains and checks required and recommended observation upload capabilities in root.xml file.		
Pass/Fail criteria		<ul style="list-style-type: none">HFS application under test supports capability exchange as specified in [ITU-T H.812.3].HFS application provides root.xml file.Root.xml shows the capability elements for observation upload applications supporting hData as shown: <pre><profile> <id>observation-upload-hData</id> <reference> http://handle.itu.int/11.1002/3000/hData/Upload/2016/01/H.812.1.pdf </reference> </profile> <section> <path>path/to/payload/post for hData</path> <profileId>observation-upload-hData</profileId> <resourceTypeId>observation</resourceTypeId> </section> <resourceType> <id>observation</id></pre>		

	<pre> <reference> http://www.ihe.net/uploadedFiles/Documents/PCD/IHE_PCD_TF_Vol2.pdf </reference> <representation> <mediaType>application/txt</mediaType> </representation> </resourceType> </pre> <ul style="list-style-type: none"> • Additionally, simulated HFS application checks that OAuth2 authentication server support capability (recommended) is as shown: <pre> <profile> <id>oAUTH</id> <reference> http://handle.itu.int/11.1002/3000/hData/Upload/2016/01/H.812.1.pdf </reference> </profile> <section> <path>path/to/post for oAUTH token</path> <profileId>oAUTH</profileId> </section> <resourceType> <id>oAUTH-Bearer</id> <reference> http://tools.ietf.org/html/rfc6750 </reference> <representation> <mediaType>application/json</mediaType> </representation> </resourceType> </pre>
Notes	

Bibliography

- [b-ITU-T H.810 (2013)] Recommendation ITU-T H.810 (2013), *Interoperability design guidelines for personal health systems*.
- [b-ITU-T H.810 (2015)] Recommendation ITU-T H.810 (2015), *Interoperability design guidelines for personal health systems*.
- [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 v1.5 (2010), *Continua Design Guidelines*.
- [b-CDG 2011] Continua Health Alliance, Continua Design Guidelines (2011), "Adrenaline", *Continua Design Guidelines*.
- [b-CDG 2012] Continua Health Alliance, Continua Design Guidelines (2012), "Catalyst", *Continua Design Guidelines*.
- [b-CDG 2013] Continua Health Alliance, Continua Design Guidelines (2013), "Endorphin", *Continua Design Guidelines*.
- [b-CDG 2015] Continua Health Alliance, Continua Design Guidelines (2015), "Genome", *Continua Design Guidelines*.
- [b-CDG 2016] Personal Connected Health Alliance, Continua Design Guidelines (2016), "Iris", *Continua Design Guidelines*.
- [b-ETSI SR 001 262] ETSI SR 001 262 v1.8.1 (2003), ETSI drafting rules.
<https://docbox.etsi.org/MTS/MTS/10-PromotionalMaterial/MBS-20111118/Referenced%20Documents/Drafting%20Rules.pdf>
- [b-HFSR PICS & PIXIT] Services HFS Receiver DG2016 PICS and PIXIT excel sheet v1.7
<http://handle.itu.int/11.1002/2000/12067>
- [b-HFSS PICS & PIXIT] Services HFS Sender DG2016 PICS and PIXIT excel sheet v1.7
<http://handle.itu.int/11.1002/2000/12067>

SERIES OF ITU-T RECOMMENDATIONS

Series A	Organization of the work of ITU-T
Series D	Tariff and accounting principles and international telecommunication/ICT economic and policy issues
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	Telephone transmission quality, telephone installations, local line networks
Series Q	Switching and signalling, and associated measurements and tests
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, next-generation networks, Internet of Things and smart cities
Series Z	Languages and general software aspects for telecommunication systems