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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 devices: PAN/LAN/TAN interface Part 4: Continua Design Guidelines: Manager

Recommendation ITU-T H.844

ITU International Telecommunication Union

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Recommendation ITU-T H.844

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 4: Continua Design Guidelines: Manager

Summary

Recommendation ITU-T H.844 is a transposition of Continua Test Tool DG2013, Test Suite Structure & Test Purposes, PAN-LAN-TAN Interface; Part 4: Continua Design Guidelines. Manager (Version 1.6, 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.

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T H.844	2015-01-13	16	11.1002/1000/12261
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Conformance testing, continua design guidelines, e-health, H.810, PAN/LAN/TAN interface, personal area network, personal connected health devices, touch area network.

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

FOREWORD

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

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

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

NOTE

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

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

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

Table of Contents

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 DG2013, Test Suite Structure & Test Purposes, PAN-LAN-TAN Interface; Part 4: Continua Design Guidelines: Manager (Version 1.6, 2014-01-24), that was developed by the Continua Health Alliance. Versions of this specification existed before transposition and these can be found in the table below.

Version	Date	Revision history
1.4	2012-10-05	Initial release for Test Tool DG2011. This uses "TSS&TP_1.5_PAN-LAN_PART_4_v1.3.doc" as a baseline and adds new features included in [b-CDG 2011] (PM-Store and Errata).
1.5	2013-05-24	Initial release for Test Tool DG2012. This uses "TSS&TP_1.5_PAN-LAN_PART_4_v1.4.doc" as a baseline and adds new features included in [b-CDG 2012]: • Updates test procedures to new requirements included in [b-CDG 2012] (e.g. SSP requirements) • Adds body composition analyser device specialization • Adds basic electrocardiograph device specialization
1.6	2014-01-24	Initial release for Test Tool DG2013. This uses "TSS&TP_DG2012_PAN-LAN_PART_4_v1.5.doc" as a baseline and adds new features included in [ITU-T H.810]: • Adds glucose meter BLE • Adds BLE SSP support • Adds NFC new transport • Adds INR device specialization

Recommendation ITU-T H.844

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 4: Continua Design Guidelines: Manager

1 Scope

The scope of this Recommendation[1] is to provide a test suite structure and the test purposes (TSS & TP) for the PAN/LAN/TAN interface based on the requirements defined in the Continua Design Guidelines (CDG) [ITU-T H.810]. The objective of this test specification is to provide a high probability of air interface interoperability between different devices.

The TSS and TP for the PAN/LAN/TAN interface document have been divided into ten parts. Each part is listed below:

– **Part 1**: Optimized exchange protocol [ISO/IEEE 11073-20601A] Agent
– **Part 2**: Optimized exchange protocol [ISO/IEEE 11073-20601A] Manager
– **Part 3**: Continua design guidelines. Agent
– **Part 4**: Continua design guidelines. Manager
– **Part 5**: Device specializations. Agent. This document is divided into 12 subparts:
  - **Part 5A**: Weighing scales
  - **Part 5B**: Glucose meter
  - **Part 5C**: Pulse oximeter
  - **Part 5D**: Blood pressure monitor
  - **Part 5E**: Thermometer
  - **Part 5F**: Cardiovascular fitness and activity monitor
  - **Part 5G**: Strength fitness equipment
  - **Part 5H**: Independent living activity hub
  - **Part 5I**: Adherence monitor
  - **Part 5J**: Insulin pump (Future development)
  - **Part 5K**: Peak flow
  - **Part 5L**: Body composition analyser
  - **Part 5M**: Basic electrocardiograph
  - **Part 5N**: International normalized ratio monitor
– **Part 6**: Device specializations. Manager
– **Part 7**: Continua design guidelines. Agent BLE
– **Part 8**: Continua design guidelines. Manager BLE
– **Part 9**: Personal health devices transcoding whitepaper. Agent
– **Part 10**: Personal health devices transcoding whitepaper. Manager

[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.

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.810 (2015)] Recommendation ITU-T H.810 (2015), *Interoperability design guidelines for personal health systems*.

[ISO/IEEE 11073-20601A] ISO/IEEE 11073-20601:2010, *Health informatics – Personal health device communication – Part 20601: Application profile – Optimized exchange protocol*, including ISO/IEEE 11073-20601:2010 Amd. 1:2015.
<http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=54331> with
<http://www.iso.org/iso/home/store/catalogue_tc/catalogue_detail.htm?csnumber=63972>

[ISO/IEEE 11073-104xx] ISO/IEEE 11073-104xx (in force), *Health informatics – Personal health device communication – Device specialization*.
NOTE – This is shorthand used to refer to the collection of device specialization standards that utilize [ISO/IEEE 11073-20601A], where xx can be any number from 01 to 99, inclusive.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

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

3.1.2 manager [ISO/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:

ATS Abstract Test Suite

DUT Device Under Test

CDG Continua Design Guidelines

GUI Graphical User Interface

INR International Normalized Ratio

IUT Implementation Under Test

MDS Medical Device System

NFC Near Field Communication

PAN Personal Area Network

PCT Protocol Conformance Testing

PCHA Personal Connected Health Alliance

PCO Point of Control and Observation

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

SABTE Sleep Apnoea Breathing Therapy Equipment

SDP Service Discovery Protocol

SOAP Simple Object Access Protocol

TCRL Test Case Reference List

TCWG Test and Certification Working Group

TP Test Purpose

TSS Test Suite Structure

USB Universal Serial Bus

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 [ITU-T H.810 (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	[ITU-T H.810 (2015)]	5.1	Release 2015 plus errata noting all ratified bugs [ITU-T H.810 (2015)].	–
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	[ITU-T H.810 (2013)]	4.1	Release 2013 plus errata noting all ratified bugs [b-ITU-T H.810 (2013)].	–
2013	–	4.0	Release 2013 of the CDG including maintenance updates of the CDG 2012 and additional guidelines that cover new functionalities.	Endorphin
2012 plus errata	–	3.1	Release 2012 plus errata noting all ratified bugs [b-CDG 2012].	–
2012	–	3.0	Release 2012 of the CDG including maintenance updates of the CDG 2011 and additional guidelines that cover new functionalities.	Catalyst
2011 plus errata	–	2.1	CDG 2011 integrated with identified errata.	–
2011	–	2.0	Release 2011 of the CDG including maintenance updates of the CDG 2010 and additional guidelines that cover new functionalities [b-CDG 2011].	Adrenaline
2010 plus errata	–	1.6	CDG 2010 integrated with identified errata	–
2010	–	1.5	Release 2010 of the CDG with maintenance updates of the CDG Version 1 and additional guidelines that cover new functionalities [b-CDG 2010].	1.5
1.0	–	1.0	First released version of the CDG [b-CDG 1.0].	–

6 Test suite structure (TSS)

The test purposes (TPs) for the PAN/LAN/TAN interface have been divided into the main subgroups specified below. Annex A describes the TPs for subgroups 2.1.1, 2.1.2, 2.1.3, 2.1.4, 2.1.5, 2.1.6 and 2.1.8 (shown in bold).

– Group 1: Agent (AG)
  - Group 1.1: Transport (TR)
    - Subgroup 1.1.1: Design guidelines: Common (DGC)
    - Subgroup 1.1.2: USB design guidelines (UDG)

- Subgroup 1.1.3: Bluetooth design guidelines (BDG)
- Subgroup 1.1.4: Pulse oximeter design guidelines (PODG)
- Subgroup 1.1.5: Cardiovascular design guidelines (CVDG)
- Subgroup 1.1.6: Activity hub design guidelines (HUBDG)
- Subgroup 1.1.7: ZigBee design guidelines (ZDG)
- Subgroup 1.1.8: Glucose meter design guidelines (GLDG)
- Subgroup 1.1.9: Bluetooth low energy design guidelines (BLEDG)
- Subgroup 1.1.10: Basic electrocardiograph design guidelines (ECGDG)
- Subgroup 1.1.11: NFC design guidelines (NDG)

• Group 1.2: 20601: Optimized exchange protocol (OXP)
- Subgroup 1.2.1: PHD domain information model (DIM)
- Subgroup 1.2.2: PHD service model (SER)
- Subgroup 1.2.3: PHD communication model (COM)

• Group 1.3: Devices class specializations (CLASS)
- Subgroup 1.3.1: Weighing scales (WEG)
- Subgroup 1.3.2: Glucose meter (GL)
- Subgroup 1.3.3: Pulse oximeter (PO)
- Subgroup 1.3.4: Blood pressure monitor (BPM)
- Subgroup 1.3.5: Thermometer (TH)
- Subgroup 1.3.6: Cardiovascular (CV)
- Subgroup 1.3.7: Strength (ST)
- Subgroup 1.3.8: Activity hub (HUB)
- Subgroup 1.3.9: Adherence monitor (AM)
- Subgroup 1.3.10: Insulin pump (IP) (Future development)
- Subgroup 1.3.11: Peak flow (PF)
- Subgroup 1.3.12: Body composition analyzer (BCA)
- Subgroup 1.3.13: Basic electrocardiograph (ECG)
- Subgroup 1.3.14: International normalized ratio (INR)
- Subgroup 1.3.15: Sleep apnoea breathing therapy equipment (SABTE)

• Group 1.4: Personal health device transcoding whitepaper (PHDTW)
- Subgroup 1.4.1: Whitepaper general requirements (GEN)
- Subgroup 1.4.2: Whitepaper thermometer requirements (TH)
- Subgroup 1.4.3: Whitepaper blood pressure requirements (BPM)
- Subgroup 1.4.4: Whitepaper heart rate requirements (HR)
- Subgroup 1.4.5: Whitepaper glucose meter requirements (GL)
- Subgroup 1.4.6: Whitepaper weight scale requirements (WS)

– Group 2: Manager (MAN)

• Group 2.1: Transport (TR)

    - **Subgroup 2.1.1: Design guidelines: Common (DGC)**
    - **Subgroup 2.1.2: USB design guidelines (UDG)**
    - **Subgroup 2.1.3: Bluetooth design guidelines (BDG)**
    - **Subgroup 2.1.4: Cardiovascular design guidelines (CVDG)**
    - **Subgroup 2.1.5: Activity hub design guidelines (HUBDG)**
    - **Subgroup 2.1.6: ZigBee design guidelines (ZDG)**
    - Subgroup 2.1.7: Bluetooth low energy design guidelines (BLEDG)
    - **Subgroup 2.1.8: NFC design guidelines (NDG)**
- Group 2.2: 20601: Optimized exchange protocol (OXP)
    - Subgroup 2.2.1: General (GEN)
    - Subgroup 2.2.2: PHD domain information model (DIM)
    - Subgroup 2.2.3: PHD service model (SER)
    - Subgroup 2.2.4: PHD communication model (COM)
- Group 2.3: Devices class specializations (CLASS)
    - Subgroup 2.3.1: Weighing scales (WEG)
    - Subgroup 2.3.2: Glucose meter (GL)
    - Subgroup 2.3.3: Pulse oximeter (PO)
    - Subgroup 2.3.4: Blood pressure monitor (BPM)
    - Subgroup 2.3.5: Thermometer (TH)
    - Subgroup 2.3.6: Cardiovascular (CV)
    - Subgroup 2.3.7: Strength (ST)
    - Subgroup 2.3.8: Activity hub (HUB)
    - Subgroup 2.3.9: Adherence monitor (AM)
    - Subgroup 2.3.10: Insulin pump (IP) (Future development)
    - Subgroup 2.3.11: Peak flow (PF)
    - Subgroup 2.3.12: Body composition analyzer (BCA)
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    - Subgroup 2.4.5: Whitepaper glucose meter requirements (GL)
    - Subgroup 2.4.6: Whitepaper weight scale requirements (WS)

7 Electronic attachment

The protocol implementation conformance statements (PICS) and the protocol implementation extra information for testing (PIXIT) required for the implementation of this Annex 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:
    - PAN: Personal area network (Bluetooth or USB)
    - LAN: Local area network (ZigBee)
    - PAN-LAN: Personal area network (Bluetooth or USB) – Local area network (ZigBee)
    - LP-PAN: Low power personal area network (Bluetooth low energy)
    - TAN: Touch area network (NFC)
    - PAN-LAN-TAN: Personal area network (Bluetooth or USB) – Local area network (ZigBee) – Touch area network (NFC)
  - <DUT>: This is the device under test:
    - AG: PAN/LAN Agent
    - MAN: PAN/LAN Manager
  - <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 TP's title.
- **Coverage**: This contains the specification reference and clause to be checked by the TP.
  - Spec: This indicates the earliest version of the specification from which the testable items to be checked by the TP were included.
  - Testable item: This contains 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 2.1.1 – Design guidelines: Common (DGC)

TP Id		TP/PLT/MAN/TR/DGC/BV-002_B		
TP label		Unsupported_Device:_Unsupported Class		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Unsupport 1;M	Unsupport 7;M	Unsupport 9;R
Test purpose		Check that: If a Continua service component does not support at least one Continua certified device class supported by the client component and the client component only accepts Continua certified devices, then the Continua PAN/ Sensor-LAN client components shall request to release association with a Continua service component using a result field no-more-configurations [AND] Continua PAN/ Sensor-LAN client components shall notify the user of failure of the connection and corresponding reason, if it has released or rejected the association according to requirement 11073_Unsupported_Device_Rejection [AND] Continua PAN/ Sensor-LAN client components with appropriate UI capabilities should use the following text string to notify the user of the connection failure in accordance with guideline 11073_Unsupported_Device_UserNotification_Client: “Thank you for choosing Continua certified personal health products. The device you are connecting either has not been Continua certified or the data is not intended for use in this solution. Please see your user manual for more details.”		
Applicability		(C_MAN_OXP_000) AND (NOT(C_MAN_OXP_047)) AND ((NOT(C_MAN_OXP_052)) OR (NOT(C_MAN_OXP_054)) OR (NOT(C_MAN_OXP_055)) OR (NOT(C_MAN_OXP_056)) OR (NOT(C_MAN_OXP_057)) OR (NOT(C_MAN_OXP_058)) OR (NOT(C_MAN_OXP_059)) OR (NOT(C_MAN_OXP_060)) OR (NOT(C_MAN_OXP_061)) OR (NOT(C_MAN_OXP_062)) OR (NOT(C_MAN_OXP_051)) OR (NOT(C_MAN_OXP_066)) OR (NOT((C_MAN_OXP_064) OR (C_MAN_OXP_065)))) AND (C_MAN_DGC_004)		
Other PICS				
Initial condition		The client under test is in the unassociated state. The simulated service RegCertDataList and SystemTypeSpecList do not contain any Continua device class.		
Test procedure		1. The simulated service sends an AARQ to the client under test. 2. The client responds with an AARE. 3. The client sends a GET MDS service request. 4. The simulated service responds with the MDS object.		
Pass/Fail criteria		• After step 4 a Release Request must be sent. • The reason for the Release Request must be "no-more-configurations". • The client must show an Association Failure message as shown in the documentation, it is recommended to be "Thank you for choosing Continua certified personal health products. The device you are connecting either has not been Continua certified or the data is not intended for use in this solution. Please see your user manual for more details."		
Notes		This TP assumes that a GET MDS service is performed by the client to retrieve the data from the supported device classes. See bug http://continua.plugfests.com/show_bug.cgi?id=67		

TP Id		TP/PLT/MAN/TR/DGC/BV-004		
TP label		Simultaneous Scanners		
Coverage	**Spec**	[ITU-T H.810]		
	Testable items	Communication 13;M		
Test purpose		Check that: Continua PAN client components shall not simultaneously turn on multiple scanners that embed the same measurement object provided by a single service component		
Applicability		(C_MAN_OXP_000) AND (C_MAN_OXP_001 OR C_MAN_OXP_006)		
Other PICS				
Initial condition		The client under test is in the operating state. The agent has in its configurations two scanner objects that refer to the same metric object.		
Test procedure		1. Make the simulated manager start the transfer of one of the scanner objects. 2. Then force the manager under test to start the transfer of the other scanner object.		
Pass/Fail criteria		Check that both scanners are not simultaneously turned on by the simulated manager: ▪ If after step 2, the manager sends a Set Operational State disabling the first scanner and then it sends a Set Operational State to enable the second scanner, the verdict is pass. ▪ If after step 2, the manager does not send any message, the verdict is pass. ▪ If after step 2, the manager sends a Set Operational State enabling the second scanner, the verdict is fail.		
Notes				

TP Id		TP/PLT/MAN/TR/DGC/BV-005		
TP label		PM-Store Date-and-Time adjustment		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Communication 16; M		
Test purpose		Check that: Continua PAN client components that receive a Date-and-Time update from a Continua PAN service component in the middle of a PM-Segment transfer shall use the service component's time reference at time the first segment entry is transmitted as the reference for the full segment regardless of any time changes that occur while the segment continues to be transferred		
Applicability		(C_MAN_OXP_000) AND (C_MAN_OXP_003)		
Other PICS				
Initial condition		The client under test is in the operating state. The agent has in its configuration a PM-Store object.		
Test procedure		1. Make the manager under test perform a Trig-Segment-Data-Xfer. 2. The simulated agent responds to the message with a "TrigSegmDataXferRsp". 3. The simulated agent sends a Confirmed event report: a. Data APDU ❑ Type = Remote Operation Invoke | Confirmed Event ReportAction ❑ HANDLE = PM-Store obj-handle ❑ Action = 0x0D 0x21 (MDC_NOTI_SEGMENT_DATA) ❑ SegmentDataEvent.SegmDataEventDescr = SEQUENCE: ▪ segm-instance		

	▪ segmt-evt-entry-index ▪ segmt-evt-entry-count ▪ segmt-evt-status = Bit 0 must be set 4. The manager under test sends a response to the previous message. 5. The simulated agent sends a confirmed variable format event report to update the Date-and-Time attribute on the MDS. 6. The manager under test sends the confirmation response for the previous message. 7. The simulated agent sends a Confirmed event report: a. Data APDU ❑ Type = Remote Operation Invoke | Confirmed Event ReportAction ❑ HANDLE = PM-Store obj-handle ❑ Action = 0x0D 0x21 (MDC_NOTI_SEGMENT_DATA) ❑ SegmentDataEvent.SegmDataEventDescr = SEQUENCE: ▪ segm-instance ▪ segmt-evt-entry-index ▪ segmt-evt-entry-count ▪ segmt-evt-status = Bit 0 is set to 0 and bit 1 set to 1 (this segment contains the last segment entry). 8. The manager under test sends a response to the previous message.
Pass/Fail criteria	• Check that the manager sends the response in steps 6 and 7. • Ask the operator to check if the manager under test uses the agent's time reference at the time the first segment entry is transmitted as the reference for the full segment.
Notes	

A.3 Subgroup 2.1.2 – USB design guidelines (UDG)

TP Id		TP/PAN/MAN/TR/UDG/BI-000		
TP label		PAN_USB_PHDC_20601_10101_Client		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Data_mess 5;M		
Test purpose		Check that: Continua PAN wired USB client components shall not pre-filter and reject a service component based on the wDevSpecializations field(s) value(s)		
Applicability		(C_MAN_OXP_000) AND (C_MAN_OXP_038) AND ((NOT(C_MAN_OXP_052)) OR (NOT(C_MAN_OXP_054)) (NOT(C_MAN_OXP_055)) OR (NOT(C_MAN_OXP_056)) OR (NOT(C_MAN_OXP_057)) OR (NOT(C_MAN_OXP_058)) OR (NOT(C_MAN_OXP_059)) OR (NOT(C_MAN_OXP_060)) OR (NOT(C_MAN_OXP_061)) OR (NOT(C_MAN_OXP_062)) OR (NOT(C_MAN_OXP_051)) OR (NOT((C_MAN_OXP_064) OR (C_MAN_OXP_065))))		
Other PICS				
Initial condition		The client under test is in the disconnected state.		
Test procedure		1. Connect the USB connector of the simulated agent to the manager. 2. The simulated agent implements a device specialization that the manager does not support. The simulated agent sends a PHDC Class Function Descriptor where the wDevSpecializations field includes the ISO/IEEE Std 11073-20601 version 1.0 MDC_DEV_SPEC_PROFILE_* value for a device specialization that is not supported by the manager. 3. The enumeration process finishes successfully. 4. The simulated agent sends an Association Request message.		

	5. The manager under test shall reply with a 20601 APDU.
Pass/Fail criteria	In step 3, the enumeration process shall finish successfully although the simulated agent implements a device specialization that the manager under test does not support, because the rejection shall occur in the higher layers. In step 5, the manager under test sends a 20601 APDU.
Notes	

TP Id		TP/PAN/MAN/TR/UDG/BV-002		
TP label		Quality of Service		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	QoS 1;C	QoS 2;C	
Test purpose		Check that: Continua PAN wired USB service and client components that implement the Continua best.medium QoS bin shall utilize the USB PHDC best.medium QoS bin to do this. [AND] Continua PAN wired USB service and client components that implement the Continua good.medium QoS bin shall utilize the USB PHDC good.medium QoS bin to do this		
Applicability		(C_MAN_OXP_038) AND (C_MAN_OXP_000) AND (C_HOST_PHDC_003)		
Other PICS		C_MAN_OXP_001, C_MAN_OXP_006		
Initial condition		The client under test is in the disconnected state.		
Test procedure		1. Plug-in the host under test and the simulated device, the enumeration process shall then start automatically. The simulated device will inform the host under test that it supports the Meta-Data Message Preamble Feature setting bit0 of the bmCapability field of the PHDC Class Function Descriptor to 1. Furthermore the bmLatencyReliability field of the QoS Descriptor of the OUT BULK endpoint is set to 0Ah; this means that good.medium and best.medium QoS can be sent across that endpoint. 2. Upon reception and confirmation of descriptors, if the host under test recognizes the PHDC device class, it shall send a SET_CONFIGURATION request to the simulated device as a last step of the enumeration process. 3. Perform the action on the host that enables the Meta-Data Message Preamble feature. 4. The simulated device issues an "Association Request" without a preceding Meta-Data Message Preamble to the host under test. 5. The host under test will send a SET_FEATURE(META-DATA) message in order to enable the Meta-Data Message Preamble. 6. The host under test will send a Meta-Data Message Preamble that precedes the Association Response, because this feature has been enabled. The bmLatencyReliability field shall be set to 08h, indicating best.medium QoS in the next "bNumTransfers" messages. Furthermore, the bNumTransfers field is captured. 7. Then the host under test will send an "Association Response" (accepted or accepted-unknown-config). 8. The simulated device issues a "bNumTransfers-1" confirmed event report if the host under test has sent an Association Response (accepted), or a configuration and "bNumTransfers –2" confirmed event report if the host has sent an Association Response (accepted-unknown-config). 9. If during this process the host under test has not sent a Get MDS message, it will be required. 10. The host under test will send a new Meta-Data Message Preamble that precedes the Get MDS message. The bmLatencyReliability field shall be set to 08h, indicating best.medium QoS in the next "bNumTransfers" messages. Furthermore, the bNumTransfers field is captured. 11. The simulated device issues a "bNumTransfers -1" confirmed event report. 12. A Set Time message is required for the host under test.		

	13. The host under test will send a new Meta-Data Message Preamble that precedes the Set Time message. The bmLatencyReliability field shall be set to 08h, indicating best.medium QoS in the next "bNumTransfers" messages. Furthermore, the bNumTransfers field is captured. 14. The simulated device issues a "bNumTransfers -1" confirmed event report. 15. If the host under test has not sent a Set Scanner message yet, this will be required. 16. The host under test will send a new Meta-Data Message Preamble that precedes the Set Scanner message. The bmLatencyReliability field shall be set to 08h, indicating best.medium QoS in the next "bNumTransfers" messages.
Pass/Fail criteria	In steps 6, 10, 13 and 16, the bmLatencyReliability field of the Meta-Data Message Preamble is set to 08h.
Notes	

TP Id		TP/PAN/MAN/TR/UDG/BV-004_A		
TP label		Wired_PAN_USB_1_1		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	data_rate 1;M	data_rate 3; M	
Test purpose		Check that: Continua PAN wired USB client components shall not use low speed [AND] Continua PAN wired USB components shall implement at least USB 1.1 or any superior version compatible with USB 1.1		
Applicability		C_MAN_OXP_038 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The client under test is in the disconnected state.		
Test procedure		1. Connect the USB connector of the simulated agent to the manager under test. The simulated agent has set the bcdUSB field to 0110h. 2. Send an "Association Request" from the simulated agent to the manager. 3. The manager responds with a valid response ("Association Response", "Association Abort"). 4. Disconnect the manager and the simulated agent.		
Pass/Fail criteria		In step 3, the manager under test sends a valid response to the simulated agent.		
Notes				

TP Id		TP/PAN/MAN/TR/UDG/BV-004_B		
TP label		Wired_PAN_USB_2_0		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	data_rate 2;R		
Test purpose		Continua PAN wired USB components should implement USB 2.0		
Applicability		C_MAN_OXP_038 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The client under test is in the disconnected state.		

Test procedure	1. Connect the USB connector of the simulated agent to the manager under test. The simulated agent has set the bcdUSB field to 0200h. 2. Send an "Association Request" from the simulated agent to the manager. 3. The manager responds with a valid response ("Association Response", "Association Abort"). 4. Disconnect the manager and the simulated agent.
Pass/Fail criteria	In steps 2 and 3, if the manager supports USB 2.0, then it will post a read request to get the agent´s Association Request. Since this is a recommended behaviour, issue a warning if the manager does not do this.
Notes	

A.4 Subgroup 2.1.3 – Bluetooth design guidelines (BDG)

TP Id		TP/PAN/MAN/TR/BDG/BV-000		
TP label		Wireless_PAN_BT_Discovery_and_Pairing		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Discovery_Pairing 1;M	Discovery_Pairing 5;M	Discovery_Pairing 6;M
		Discovery_Pairing 10;R		
Test purpose		Check that: Manager should not be discoverable unless put in that mode [AND] The Manager shall initiate discovery (a Bluetooth “inquiry”) [AND] The Manager shall have a documented way (decided by the vendor) to initiate a search for service components that are “discoverable” [AND] Once a Manager has discovered an Agent, it shall support pairing with compatible Agents.		
Applicability		C_MAN_OXP_039 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The manager under test and the simulated agent are in the disconnected state and they have not been paired before.		
Test procedure		1. Reset the manager under test to the default configuration and turn it on. 2. The simulated agent starts a discovery process. 3. Once that discovery process is completed, verify that the manager under test has not been discovered by the test tool. 4. Set the test tool simulated agent in discoverable mode. 5. Follow the steps listed in the product documentation to ask the manager to initiate a search for discoverable service components. 6. The manager under test initiates a search for discoverable service components. 7. Once the simulated agent has been discovered, make the manager under test pair with it as stated in the documentation.		
Pass/Fail criteria		In step 3, the manager is not discovered by the agent. If it is discovered by the test tool, the test tool gives a Warning message. In step 7, the manager under test is paired with the simulated agent.		
Notes				

TP Id		TP/PAN/MAN/TR/BDG/BV-002		
TP label		Wireless_PAN_BT_Pairing_Data_Client		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Discovery_Pairing 15; M	Discovery_Pairing 16; R	
Test purpose		Check that: Manager shall store the pairing data from at least the most recently paired device in such a way that the data will be retained through normal power interruptions, including battery replacement [AND] Manager should store pairing data for at least the number of devices for which they are intended to simultaneously support		
Applicability		C_MAN_OXP_039 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The manager under test and the simulated agent are in the disconnected state and they have not been paired before.		
Test procedure		1. Reset the manager under test to default configuration and turn it on. 2. Set the simulated agent in discoverable and pairable mode. 3. The manager initiates a discovery process, it finds the simulated agent. It establishes a pairing with it and starts a Bluetooth connection. 4. Turn-off the manager under test and remove the batteries or unplug the power supply. 5. Turn-on the manager under test again. 6. Set the simulated agent in discoverable and pairable mode. 7. The manager under test initiates a discovery process, it finds the simulated agent and starts a Bluetooth connection with it.		
Pass/Fail criteria		In step 7, the pairing process shall not be dispatched again because both devices have stored the pairing data from a previous pairing process.		
Notes				

TP Id		TP/PAN/MAN/TR/BDG/BV-003		
TP label		Wireless_PAN_BT_Pairing_Creation_Alert_Client		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Notify 1;M		
Test purpose		Check that: Manager shall inform the user when a new pairing relationship is created		
Applicability		C_MAN_OXP_039 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The manager under test and the simulated agent are in the disconnected state and they have not been paired before.		
Test procedure		1. Set the simulated agent in discoverable and pairable mode. 2. The manager under test initiates discovery process as stated in the product documentation. 3. Once the simulated agent has been discovered, make the manager under test pair with it as stated in the documentation. 4. Check the information shown by the manager under test about the pairing.		
Pass/Fail criteria		The manager under test must inform the user when a new pairing relationship is created as stated in the documentation.		
Notes				

TP Id		TP/PAN/MAN/TR/BDG/BV-004		
TP label		Wireless_PAN_BT_Security_Failure_Client		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Notify 3;M	Notify 5;M	
Test purpose		Check that: When a pairing fails, Manager shall inform the user whether the failure was because no Agent was found (discovery failed), no data types are supported in common by both Agent and Manager (incompatible device), or the pairing failed (pairing failure) [AND] When any authentication/security failure is encountered by the Manager, it shall notify the user		
Applicability		(C_MAN_OXP_000) AND (C_MAN_OXP_039) AND ((NOT(C_MAN_OXP_052)) OR (NOT(C_MAN_OXP_054)) OR (NOT(C_MAN_OXP_055)) OR (NOT(C_MAN_OXP_056)) OR (NOT(C_MAN_OXP_057)) OR (NOT(C_MAN_OXP_058)) OR (NOT(C_MAN_OXP_059)) OR (NOT(C_MAN_OXP_060)) OR (NOT(C_MAN_OXP_061)) OR (NOT(C_MAN_OXP_062)) OR (NOT(C_MAN_OXP_051)) OR (NOT((C_MAN_OXP_064) OR (C_MAN_OXP_065))))		
Other PICS				
Initial condition		The manager under test and the simulated agent are in the disconnected state and they have not been paired before.		
Test procedure		1. Disable the simulated agent (it is not discoverable). 2. The manager under test initiates discovery as stated in the product documentation. 3. The simulated agent is not discovered because it has not been initialized yet. Check the manager under test for error messages. 4. Configure the simulated agent with a device specialization not supported by the manager under test. 5. Set the simulated agent in discoverable mode. 6. The manager under test starts a discovery and pairing process with the simulated agent. 7. Check the manager under test for error messages. 8. Restart the simulated agent. 9. Restart the manager under test. 10. Configure simulated agent with a device specialization supported by the manager under test. 11. Disable the pairable mode in the simulated agent. 12. The manager under test starts a discovery and pairing process with the simulated agent. 13. Check the manager under test for error messages. 14. Compare the three error messages.		
Pass/Fail criteria		• In step 3, the manager under test shall inform the user that the pairing process cannot be completed (the simulated agent has not been found). • In step 7, the manager under test shall inform the user that pairing process cannot be completed (the simulated agent implements an unsupported specialization). • In step 13, the manager under test shall inform the user that the pairing process cannot be completed (the simulated agent is not in pairable mode). • In step 14, the three error messages shall be different.		
Notes				

TP Id		TP/PAN/MAN/TR/BDG/BV-006		
TP label		Wireless_PAN_BT_QoS		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	QoS 1;C	QoS 2;C	
Test purpose		Check that: Manager that implement the Continua best.medium QoS bin shall utilize the HDP reliable data channel type to do this [AND] Manager that implement the Continua good.medium QoS bin shall utilize the HDP streaming data channel type to do this		
Applicability		C_MAN_OXP_039 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The manager under test is in the disconnected state.		
Test procedure		NOTE – This test case must be executed manually. Bluetooth sniffer is needed to perform the verification required in this test case. 1. Put the simulated agent in discoverable mode. 2. Follow the steps listed in the product documentation to ask the manager to initiate a search for discoverable service components. 3. The manager under test initiates a search for discoverable service components as stated in the product documentation. 4. Once the simulated agent has been discovered, the simulated agent issues an "Association Request" to the manager under test. 5. The manager under test issues an "Association response" on the HDP reliable data channel. 6. The manager under test sends a Set Time message on the HDP reliable data channel. 7. The simulated agent issues a Set Time response. 8. The simulated agent issues a confirmed event report. 9. The manager under test sends a confirmation on the HDP reliable data channel. 10. If the manager under test supports scanners, the manager issues a confirmed set (scanner) on the HDP reliable data channel and the simulated agent sends a set (scanner) response. 11. The simulated agent issues an "Association Release Request". 12. The manager under test sends an "Association Release Response" on the HDP reliable data channel.		
Pass/Fail criteria		The manager under test issues all responses on the best.medium QoS bin as defined by the steps above.		
Notes		In step 6, if the manager under test does not perform the Set-Time automatically, a pop-up will appear asking for the operator to force the manager to issue a Set-Time.		

TP Id		TP/PAN/MAN/TR/BDG/BV-007		
TP label		Support for legacy Bluetooth 2.0 PIN entry pairing		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Discovery_Pairing 18;M		
Test purpose		Check that: Manager shall support legacy (BT 2.0) Pin Entry pairing		
Applicability		C_MAN_OXP_039 AND C_MAN_OXP_000		

Other PICS	
Initial condition	The manager under test and the simulated agent support the same device specialization, they are in the disconnected state and they have not been paired before.
Test procedure	1. The test tool simulated agent is configured without Secure Simple Pairing support, it supports legacy PIN pairing only. The simulated agent PIN is as specified in PIXIT I_MAN_BDG_003. 2. Set the test tool simulated agent in discoverable and pairable mode. 3. The manager under test initiates discovery process as stated in the product documentation. 4. Once the simulated agent has been discovered, make the manager under test pair with it as stated in the documentation.
Pass/Fail criteria	In step 4, the manager under test completes the pairing process successfully.
Notes	

TP Id		TP/PAN/MAN/TR/BDG/BV-008		
TP label		Secure Simple Pairing with agent with NoInputNoOutput capabilities		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Discovery_Pairing 17;M		
Test purpose		Check that: Manager shall support all pairing methods for Bluetooth 2.1, including Numeric Comparison, and Passkey Entry, if the manager has the appropriate I/O capabilities		
Applicability		C_MAN_OXP_039 AND C_MAN_OXP_000		
Other PICS				
Initial condition		The manager under test and the simulated agent support the same device specialization, they are in the disconnected state and they have not been paired before.		
Test procedure		1. Check the manager under test Secure Simple Pairing support declared in PIXIT I_MAN_BDG_004. 2. Check manager under test IO capabilities declared in PIXIT I_MAN_BDG_005 and the Man In The Middle (MITM) protection declared in PIXIT I_MAN_BDG_006 a. IF the manager under test does not support MITM protection (PIXIT I_MAN_BDG_006 = FALSE) THEN the test tool simulated agent is configured with Secure Simple Pairing, NoInputNoOutput capabilities and without MITM protection. The Just Works Association Model shall be used during the pairing process and the generated link key will be unauthenticated (without MITM protection). b. IF the manager under test supports MITM protection (PIXIT I_MAN_BDG_006 = TRUE) THEN • IF the manager under test supports NoInputNoOutput capabilities (PIXIT I_MAN_BDG_005 = 3) THEN the combination of IO capabilities and MITM support declared by the manager under test in PIXITs is not feasible and the test case ends giving a FAIL verdict due to inconsistency among the manager under test SSP features declared in PIXITs. • IF the manager under test supports other IO capabilities (PIXIT I_MAN_BDG_005 = 0 or 1 or 2) it will not pair with agents with NoInputNoOutput capabilities because they do not fulfil the security level required (i.e. MITM protection) and the test case execution ends giving a PASS verdict. 3. Set the test tool simulated agent in discoverable and pairable mode. 4. The manager under test initiates discovery process as stated in the product documentation. 5. Once the simulated agent has been discovered, make the manager under test pair with it as stated in the documentation.		

Pass/Fail criteria	In step 1, the manager under test supports Secure Simple Pairing (PIXIT I_MAN_BDG_004 = TRUE). In step 5, the manager under test completes the pairing process successfully.
Notes	

TP Id		TP/PAN/MAN/TR/BDG/BV-009		
TP label		Secure Simple Pairing with agent with DisplayOnly capabilities		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Discovery_Pairing 17;M		
Test purpose		Check that: Manager shall support all pairing methods for Bluetooth 2.1, including Numeric Comparison, and Passkey Entry, if the manager has the appropriate I/O capabilities		
Applicability		C_MAN_OXP_039 AND C_MAN_OXP_000		
Other PICS				
Initial condition		The manager under test and the simulated agent support the same device specialization, they are in the disconnected state and they have not been paired before.		
Test procedure		1. Check the manager under test Secure Simple Pairing support declared in PIXIT I_MAN_BDG_004 2. Check the manager under test IO capabilities declared in PIXIT I_MAN_BDG_005 and the Man In The Middle (MITM) protection declared in PIXIT I_MAN_BDG_006 a. IF the Manager under test does not support MITM protection (PIXIT I_MAN_BDG_006 = FALSE) THEN the test tool simulated agent is configured with Secure Simple Pairing, NoInputNoOutput capabilities and without MITM protection and the Just Works Association Model shall be used during the Pairing process and the generated link key will be unauthenticated (without MITM protection). b. IF the manager under test supports MITM protection (PIXIT I_MAN_BDG_006 = TRUE) THEN • IF the manager under test supports KeyboardOnly capabilities (PIXIT I_MAN_BDG_005 = 2) THEN the test tool simulated agent is configured with Secure Simple Pairing, DisplayOnly capabilities and with MITM protection and the Passkey Entry Association Model shall be used during the Pairing process and the generated link key will be authenticated (with MITM protection). • IF the manager under test supports DisplayOnly or DisplayYesNo capabilities (PIXIT I_MAN_BDG_005 = 0 or 1) THEN it will not pair with the agents with DisplayOnly capabilities because they do not fulfil the security level required (i.e. MITM protection) and the test case execution ends giving a PASS verdict. • IF the manager under test supports NoInputNoOutput capabilities (PIXIT I_MAN_BDG_005 = 3) THEN the combination of IO capabilities and MITM support declared by the manager under test in PIXITs is not feasible and the test case ends giving a FAIL verdict due to inconsistency among the agent under test SSP features declared in PIXITs. 3. Set the test tool simulated agent in discoverable and pairable mode. 4. The manager under test initiates a discovery process as stated in the product documentation. 5. Once the simulated agent has been discovered, make the manager under test pair with it as stated in the documentation.		
Pass/Fail criteria		In step 1, the manager under test supports Secure Simple Pairing (PIXIT I_MAN_BDG_004 = TRUE). In step 5, the manager under test completes the pairing process successfully.		
Notes				

TP Id		TP/PAN/MAN/TR/BDG/BV-010		
TP label		Secure Simple Pairing with agent with DisplayYesNo capabilities		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Discovery_Pairing 17;M		
Test purpose		Check that: Manager shall support all pairing methods for Bluetooth 2.1, including Numeric Comparison, and Passkey Entry, if the manager has the appropriate I/O capabilities		
Applicability		C_MAN_OXP_039 AND C_MAN_OXP_000		
Other PICS				
Initial condition		The manager under test and the simulated agent support the same device specialization, they are in the disconnected state and they have not been paired before.		
Test procedure		1. Check the manager under test Secure Simple Pairing support declared in PIXIT I_MAN_BDG_004. 2. Check the manager under test IO capabilities declared in PIXIT I_MAN_BDG_005 and the Man In The Middle (MITM) protection declared in PIXIT I_MAN_BDG_006 a. IF the manager under test does not support MITM protection (PIXIT I_MAN_BDG_006 = FALSE) THEN the test tool simulated agent is configured with Secure Simple Pairing, NoInputNoOutput capabilities and without MITM protection and the Just Works Association Model shall be used during the Pairing process and the generated link key will be unauthenticated (without MITM protection). b. IF the manager under test supports MITM protection (PIXIT I_MAN_BDG_006 = TRUE) THEN • IF the manager under test supports DisplayYesNo capabilities (PIXIT I_MAN_BDG_005 = 1) THEN the test tool simulated agent is configured with Secure Simple Pairing, DisplayYesNo capabilities and with MITM protection and the Numeric Comparison Association Model shall be used during the Pairing process and the generated link key will be authenticated (with MITM protection). • IF the manager under test supports KeyboardOnly capabilities (PIXIT I_MAN_BDG_005 = 2) THEN the test tool simulated agent is configured with Secure Simple Pairing, DisplayYesNo capabilities and with MITM protection and the Passkey Entry Association Model shall be used during the Pairing process and the generated link key will be authenticated (with MITM protection). • IF the manager under test supports DisplayOnly capabilities (PIXIT I_MAN_BDG_005 = 0) THEN it will not pair with agents with DisplayYesNo capabilities because they do not fulfil the security level required (i.e. MITM protection) and the test case execution ends giving a PASS verdict. • IF the manager under test supports NoInputNoOutput capabilities (PIXIT I_MAN_BDG_005 = 3) THEN the combination of IO capabilities and MITM support declared by the manager under test in PIXITs is not feasible and the test case ends giving a FAIL verdict due to inconsistency among the agent under test SSP features declared in PIXITs. 3. Set the test tool simulated agent in discoverable and pairable mode. 4. The manager under test initiates the discovery process as stated in the product documentation. 5. Once the simulated agent has been discovered, make the manager under test pair with it as stated in the documentation.		
Pass/Fail criteria		In step 1, the manager under test supports Secure Simple Pairing (PIXIT I_MAN_BDG_004 = TRUE). In step 5, the manager under test completes the pairing process successfully.		
Notes				

TP Id		TP/PAN/MAN/TR/BDG/BV-011		
TP label		Secure Simple Pairing with agent with KeyboardOnly capabilities		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Discovery_Pairing 17;M		
Test purpose		Check that: Manager shall support all pairing methods for Bluetooth 2.1, including Numeric Comparison, and Passkey Entry, if the manager has the appropriate I/O capabilities		
Applicability		C_MAN_OXP_039 AND C_MAN_OXP_000		
Other PICS				
Initial condition		The manager under test and the simulated agent support the same device specialization, they are in the disconnected state and they have not been paired before.		
Test procedure		1. Check the manager under test Secure Simple Pairing support declared in PIXIT I_MAN_BDG_004 2. Check the manager under test IO capabilities declared in PIXIT I_MAN_BDG_005 and the Man In The Middle (MITM) protection declared in PIXIT I_MAN_BDG_006 a. IF the manager under test does not support MITM protection (PIXIT I_MAN_BDG_006 = FALSE) THEN the test tool simulated agent is configured with Secure Simple Pairing, NoInputNoOutput capabilities and without MITM protection and the Just Works Association Model shall be used during the Pairing process and the generated link key will be unauthenticated (without MITM protection). b. IF the manager under test supports MITM protection (PIXIT I_MAN_BDG_006 = TRUE) THEN • IF the manager under test supports DisplayOnly capabilities (PIXIT I_MAN_BDG_005 = 0) THEN the test tool simulated agent is configured with Secure Simple Pairing, KeyboardOnly capabilities and with MITM protection and the Passkey Entry Association Model shall be used during the Pairing process and the generated link key will be authenticated (with MITM protection). • IF the manager under test supports DisplayYesNo capabilities (PIXIT I_MAN_BDG_005 = 1) THEN the test tool simulated agent is configured with Secure Simple Pairing, KeyboardOnly capabilities and with MITM protection and the Passkey Entry Association Model shall be used during the Pairing process and the generated link key will be authenticated (with MITM protection). • IF the manager under test supports KeyboardOnly capabilities (PIXIT I_MAN_BDG_005 = 2) THEN the test tool simulated agent is configured with Secure Simple Pairing, KeyboardOnly capabilities and with MITM protection and the Passkey Entry Association Model shall be used during the Pairing process and the generated link key will be authenticated (with MITM protection). • IF the manager under test supports NoInputNoOutput capabilities (PIXIT I_MAN_BDG_005 = 3) THEN the combination of IO capabilities and MITM support declared by the manager under test in PIXITs is not feasible and the test case ends giving a FAIL verdict due to inconsistency among the agent under test SSP features declared in PIXITs. 3. Set the test tool simulated agent in discoverable and pairable mode. 4. The manager under test initiates a discovery process as stated in the product documentation. 5. Once the simulated agent has been discovered, make the manager under test pair with it as stated in the documentation.		
Pass/Fail criteria		In step 1, the manager under test supports Secure Simple Pairing (PIXIT I_MAN_BDG_004 = TRUE). In step 5, the manager under test completes the pairing process successfully.		
Notes				

A.5 Subgroup 2.1.4 – Cardiovascular device specialization design guidelines (CVDG)

TP Id		TP/PLT/MAN/CLASS/CVDG/BV-000		
TP label		Step Counter Manager Maximum APDU size		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Cardio_DG 2; M		
Test purpose		Check that: Continua PAN/Sensor- LAN step counter client components shall be able to support a maximum APDU size of 6624 octets from Continua PAN/Sensor-LAN service components.		
Applicability		C_MAN_OXP_023 AND C_MAN_CV_030 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The manager and the simulated agent are in the operating state.		

Test procedure		1. The simulated agent sends a Confirmed variable event report:
		a. ScanReportInfoVar. obs_scan_var:
		▪ Count =2
		▪ Length = 6586
		`ObservationScan ::= {`
		`obj-handle: 1`
		`attributes: AttributeList ::= {`
		`AVA-Type ::= {`
		`attribute-id: 61441`
		`attribute-value: '00.....( 6562 bytes)...... 00'O`
		`}`
		`}`
		`}`
		`ObservationScan ::= {`
		`obj-handle: 1`
		`attributes: AttributeList ::= {`
		`AVA-Type ::= {`
		`attribute-id: 2633 (MDC_ATTR_ENUM_OBS_VAL_SIMP _OID)`
		`attribute-value: 1017 (MDC_HF_ACT_WALK)`
		`}`
		`}`
		`}`
		2. Check the response of the manager under test.
		3. The simulated agent sends a Confirmed variable event report:
		a. ScanReportInfoVar. obs_scan_var:
		▪ Count =2
		▪ Length = 64490
		`ObservationScan ::= {`
		`obj-handle: 1`
		`attributes: AttributeList ::= {`		

	AVA-Type ::= {
	attribute-id: 61441
	attribute-value:
	'00.....(64464 bytes)..... 00'O
	}
	}
	}
	ObservationScan ::= {
	obj-handle: 1
	attributes: AttributeList ::= {
	AVA-Type ::= {
	attribute-id: 2633
	(MDC_ATTR_ENUM_OBS_VAL_SIMP _OID)
	attribute-value: 1017 (MDC_HF_ACT_WALK)
	}
	}
	}
	4. Check the response of the manager under test.

Pass/Fail criteria	• In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report". • In step 4 the manager under test must respond with a roer with reason = "protocol-violation".
Notes	

TP Id		TP/PLT/MAN/CLASS/CVDG/BV-001		
TP label		Step Counter Manager sub-specialization(profile) 1		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Cardio_DG 4; M		
Test purpose		Check that: Continua PAN/ Sensor-LAN step counter client components shall support the Session and Distance object (all unit codes).		
Applicability		C_MAN_OXP_023 AND C_MAN_CV_030 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent and the manager under test are in the operating state using a configuration that supports a Session and two Distance objects. The Unit-code for the first Distance object is MDC_DIM_X_STEP and for the second Distance object is MDC_DIM_X_M.		
Test procedure		1. Send a confirmed variable format event report using a measurement for the second Distance object in meters. 2. The simulated agent waits until it receives a confirmation.		
Pass/Fail criteria		Verify that the manager under test is able to accept the data properly and applies meters to the observation (e.g. if there is a UI verify the measurement and date are displayed properly even if they are converted to a different set of units).		
Notes				

TP Id		TP/PLT/MAN/CLASS/CVDG/BV-002		
TP label		Step Counter Manager sub-specialization(profile) 2		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Cardio_DG 4; M		
Test purpose		Check that: Continua PAN/Sensor-LAN step counter client components shall support the Session and Distance object (all unit codes).		
Applicability		C_MAN_OXP_023 AND C_MAN_CV_030 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent and the manager under test are in the operating state using a configuration that supports a Session and two Distance objects. The Unit-code for the first Distance object is MDC_DIM_X_STEP and for the second Distance object it is MDC_DIM_X_FOOT.		
Test procedure		1. Send a confirmed variable format event report using a measurement for the second Distance object in feet. 2. The simulated agent waits until it receives a confirmation.		
Pass/Fail criteria		Verify that the manager under test is able to accept the data properly and applies feet to the observation (e.g. if there is a UI verify the measurement and date are displayed properly even if they are converted to a different set of units).		
Notes				

TP Id		TP/PLT/MAN/CLASS/CVDG/BV-003		
TP label		Step Counter Manager sub-specialization(profile) 3		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Cardio_DG 4; M		
Test purpose		Check that: Continua PAN/Sensor-LAN step counter client components shall support the Session and Distance object (all unit codes).		
Applicability		C_MAN_OXP_023 AND C_MAN_CV_030 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent and the manager under test are in the operating state using a configuration that supports a Session and Distance object, and the unit-code for the Distance object is MDC_DIM_X_STEP.		
Test procedure		1. Send a confirmed variable format event report using a measurement for the Distance object in steps. 2. The simulated agent waits until it receives a confirmation.		
Pass/Fail criteria		Verify that the manager under test is able to accept the data properly and applies steps to the observation (e.g. if there is a UI verify the measurement and date are displayed properly even if they are converted to a different set of units).		
Notes				

TP Id		TP/PLT/MAN/CLASS/CVDG/BV-004		
TP label		Step Counter Manager sub-specialization(profile) 4		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Cardio_DG 6; M		
Test purpose		Check that: Continua PAN/ Sensor-LAN step counter client components may support the Subsession, Cadence, Speed, Stride Length, or Energy Expended objects as defined in ISO/IEEE Std 11073-10441-2008		
Applicability		C_MAN_OXP_023 AND C_MAN_CV_030 AND (C_MAN_CV_027 OR C_MAN_CV_010 OR C_MAN_CV_011 OR C_MAN_CV_017 OR C_MAN_CV_019) AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent and the manager under test are in the operating state using a configuration that supports Session, Distance object, and optional objects supported by the manager. (Unit-code for Distance object is MDC_DIM_X_STEP).		
Test procedure		1. Send a confirmed variable format event report using a measurement for every object in the configuration. 2. The simulated agent waits until it receives a confirmation.		
Pass/Fail criteria		Verify that the manager under test is able to accept the data properly (e.g. if there is a UI verify that the measurement and date are displayed properly even if they are converted to a different set of units).		
Notes				

A.6 Subgroup 2.1.5 – Activity hub device specialization design guidelines (HUBDG)

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-000		
TP label		Fall Sensor Manager sub-specialization (profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 1; M		
Test purpose		Check that: Continua PAN/ Sensor-LAN Fall Sensor client components shall implement the Fall Sensor enumeration object.		
Applicability		C_MAN_HUB_016 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a Fall Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a Fall Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes		

	– field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated gent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicate: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-001		
TP label		Motion Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 3; M		
Test purpose		Check that: Continua PAN/Sensor-LAN Motion Sensor client components shall implement the Motion Sensor enumeration object.		
Applicability		C_MAN_HUB_017 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a Motion Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a Motion Sensor		

	object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-002		
TP label		Enuresis Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 5; M		
Test purpose		Check that: Continua PAN/Sensor-LAN Enuresis Sensor client components shall implement the Enuresis Sensor enumeration object.		
Applicability		C_MAN_HUB_018 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports an Enuresis Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16		

	– field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting an Enuresis Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicate: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config"
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-003		
TP label		Contact Closure Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 7; M		
Test purpose		Check that: Continua PAN/Sensor-LAN Contact Closure Sensor client components shall implement the Contact Closure Sensor enumeration object.		
Applicability		C_MAN_HUB_019 AND (C_MAN_OXP_000)		
Initial condition		The simulated agent supports a Contact Closure Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test.		

	2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a Contact Closure Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-004		
TP label		Switch Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 9; M		
Test purpose		Check that: Continua PAN/Sensor-LAN Switch Sensor client components shall implement the Switch Sensor enumeration object.		

Applicability	C_MAN_HUB_020 AND (C_MAN_OXP_000)
Other PICS	
Initial condition	The simulated agent supports a Switch Sensor object.
Test procedure	1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a Switch Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-005
TP label		Dosage Sensor Manager sub-specialization(profile)
Coverage	**Spec**	[ITU-T H.810 (2015)]

	Testable items	Hub_DG 11; M		
Test purpose		Check that: Continua PAN/Sensor-LAN Dosage Sensor client components shall implement the Dosage Sensor enumeration object.		
Applicability		C_MAN_HUB_021 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a Dosage Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a Dosage Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message ConfigReportRsp.config-result: accepted-config: 0x00 0x00		
Pass/Fail criteria		The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".		
Notes				

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-006		
TP label		Water Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 13; M		
Test purpose		Check that: Continua PAN /Sensor-LAN Water Sensor client components shall implement the Water Sensor enumeration object.		
Applicability		C_MAN_HUB_022 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a Water Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a Water Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message		

	ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-007		
TP label		Smoke Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 15; M		
Test purpose		Check that: Continua PAN/Sensor-LAN Smoke Sensor client components shall implement the Smoke Sensor enumeration object.		
Applicability		C_MAN_HUB_023 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a Smoke Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a Smoke Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG		

	f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-008		
TP label		Property Exit Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 17; M		
Test purpose		Check that: Continua PAN/Sensor-LAN Property Exit Sensor client components shall implement the Property Exit Sensor enumeration object.		
Applicability		C_MAN_HUB_024 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a Property Exit Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a Property Exit Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes		

	– field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message – ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-009		
TP label		Ambient Temperature Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 19; M		
Test purpose		Check that: Continua PAN/Sensor-LAN Ambient Temperature Sensor client components shall implement the Temperature Sensor enumeration object.		
Applicability		C_MAN_HUB_025 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a Temperature Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a Temperature Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes		

	– field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message – ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-010		
TP label		Usage Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 21; M		
Test purpose		Check that: Continua PAN/Sensor-LAN Usage Sensor client components shall implement the Usage Sensor enumeration object.		
Applicability		C_MAN_HUB_026 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a Usage Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a Usage Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's		

	message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message – ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-011		
TP label		PERS Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 23; M		
Test purpose		Check that: Continua PAN/Sensor-LAN PERS Sensor client components shall implement the PERS Sensor enumeration object.		
Applicability		C_MAN_HUB_027 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a PERS Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a PERS Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu)		

	b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message – ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-012		
TP label		CO Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 25; M		
Test purpose		Check that: Continua PAN/Sensor-LAN CO Sensor client components shall implement the CO Sensor enumeration object.		
Applicability		C_MAN_HUB_028 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a CO Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config) IF the result of the Association Response was "accepted-unknown-config": 3. The simulated agent sends a configuration event report, supporting a CO Sensor object. 4. The manager under test must respond with:		

	a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message – ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

TP Id		TP/PLT/MAN/CLASS/HUBDG/BV-013		
TP label		Gas Sensor Manager sub-specialization(profile)		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Hub_DG 27; M		
Test purpose		Check that: Continua PAN/Sensor-LAN Gas Sensor client components shall implement the Gas Sensor enumeration object.		
Applicability		C_MAN_HUB_029 AND (C_MAN_OXP_000)		
Other PICS				
Initial condition		The simulated agent supports a Gas Sensor object.		
Test procedure		1. The simulated agent test sends an Association Request to the manager under test. 2. The manager under test responds with an Association Response, the field of interest is: a. Result – field- type = INT-U16 – field-length = 2 bytes – field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)		

	IF the result of the Association Response was "accepted-unknown-config". 3. The simulated agent sends a configuration event report, supporting a Gas Sensor object. 4. The manager under test must respond with: a. APDU Type – field-length = 2 bytes – field-value = 0xE7 0x00 (PrstAdpu) b. Invoke-id – field- type = INT-U16 – field-length = 2 bytes – field-value = it must be the same as the invoke-id of the simulated agent's message. c. Obj-Handle: – field- type = HANDLE – field-length = 2 bytes – field-value = 0x00 0x00 d. Event-time: – field- type = INT-U32 – field-length = 4 bytes – field-value = 0xXX 0xXX e. Event-type: – field-length = 2 bytes – field-value = MDC_NOTI_CONFIG f. The following six bytes indicates: – Event-replay-info.length (2 bytes) – ConfigReportRsp.config-report-id: it must be the same as the config-report-id of the simulated agent's message – ConfigReportRsp.config-result: accepted-config: 0x00 0x00
Pass/Fail criteria	The manager under test must respond either to the Association Request with an "accepted" message or to the Configuration Event Report with an "accepted-config".
Notes	

A.7 Subgroup 2.1.6 – ZigBee design guidelines (ZDG)

TP Id		TP/LAN/MAN/TR/ZDG/BV-000		
TP label		ZigBee QoS best.medium		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	ZQoS 1; M		
Test purpose		Check that: Continua Sensor-LAN client components that implement the Continua best.medium QoS bin shall utilize ZigBee APS acknowledgements		
Applicability		C_MAN_OXP_000 and C_MAN_OXP_063		
Other PICS				
Initial condition		The simulated agent and the manager under test are in the unassociated state.		

Test procedure	1. The simulated agent sends an AARQ message. 2. Check that Manager utilizes APS-ack when it receives the AARQ message
Pass/Fail criteria	Client shall use APS-ack when it receives an AARQ message.
Notes	

A.8 Subgroup 2.1.8 – NFC design guidelines (NDG)

TP Id		TP/TAN/MAN/TR/NDG/BV-000		
TP label		NFC_QoS		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	NFCQoS 1;M	NFCQoS 2;M	
Test purpose		Check that: NFC PHDC transport does exchange all data on best.medium QoS bin		
Applicability		C_MAN_OXP_082 AND (C_MAN_OXP_000)		
Other PICS		C_MAN_OXP_001, C_MAN_OXP_006		
Initial condition		The manager under test is in the disconnected state.		
Test procedure		**NOTE –** This test case must be executed manually. NFC sniffer is needed to perform the verification required in this test case. 1. Enable the NFC transport of the simulated agent. 2. Follow the steps listed in the product documentation to ask the manager to initiate communication with service components. 3. Once the simulated agent has been discovered, the simulated agent issues an "Association Request" to the manager under test. 4. The manager under test issues an "Association response" on the best.medium QoS bin. 5. The manager under test sends a Set Time message on the best.medium QoS bin. 6. The simulated agent issues a Set Time response. 7. The simulated agent issues a confirmed event report. 8. The manager under test sends a confirmation on the on the best.medium QoS bin. 9. The simulated agent issues an "Association Release Request". 10. The manager under test sends an "Association Release Response" on the best.medium QoS bin.		
Pass/Fail criteria		The manager under test issues all responses on the best.medium QoS bin as defined by the steps above.		
Notes		In step 5, if the manager under test does not perform the Set-Time automatically a pop-up will appear asking for the operator to force the manager to issue a Set-Time.		

TP Id		TP/TAN/MAN/TR/NDG/BV-001		
TP label		Notification when data exchange is completed		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	NFCUser 2; O		
Test purpose		Check that: Continua TAN client component with appropriate UI capabilities should notify the user when data exchange is completed		
Applicability		C_MAN_OXP_082 AND (C_MAN_OXP_000)		
Other PICS				

Initial condition	The manager under test is in the disconnected state.
Test procedure	1. The simulated agent sends an Association Request to the manager. 2. Association Response a. IF the manager under test responds with an Association Response (accepted-unknown-config) THEN the simulated agent sends a configuration event report. The manager under test accepts that configuration and moves to operating state. b. IF the manager under test responds with an Association Response (accepted) THEN the manager moves to operating state. 3. The simulated agent sends a confirmed fixed event report with one measurement. 4. The manager under test confirms the event report. 5. The simulated agent sends a Release Request to the agent under test with reason = normal(0). 6. The manager under test responds with a Release Response. 7. The manager under test notifies the user that the data Exchange is completed.
Pass/Fail criteria	• In step 7, the manager under test should notify the user when data exchange is completed.
Notes	

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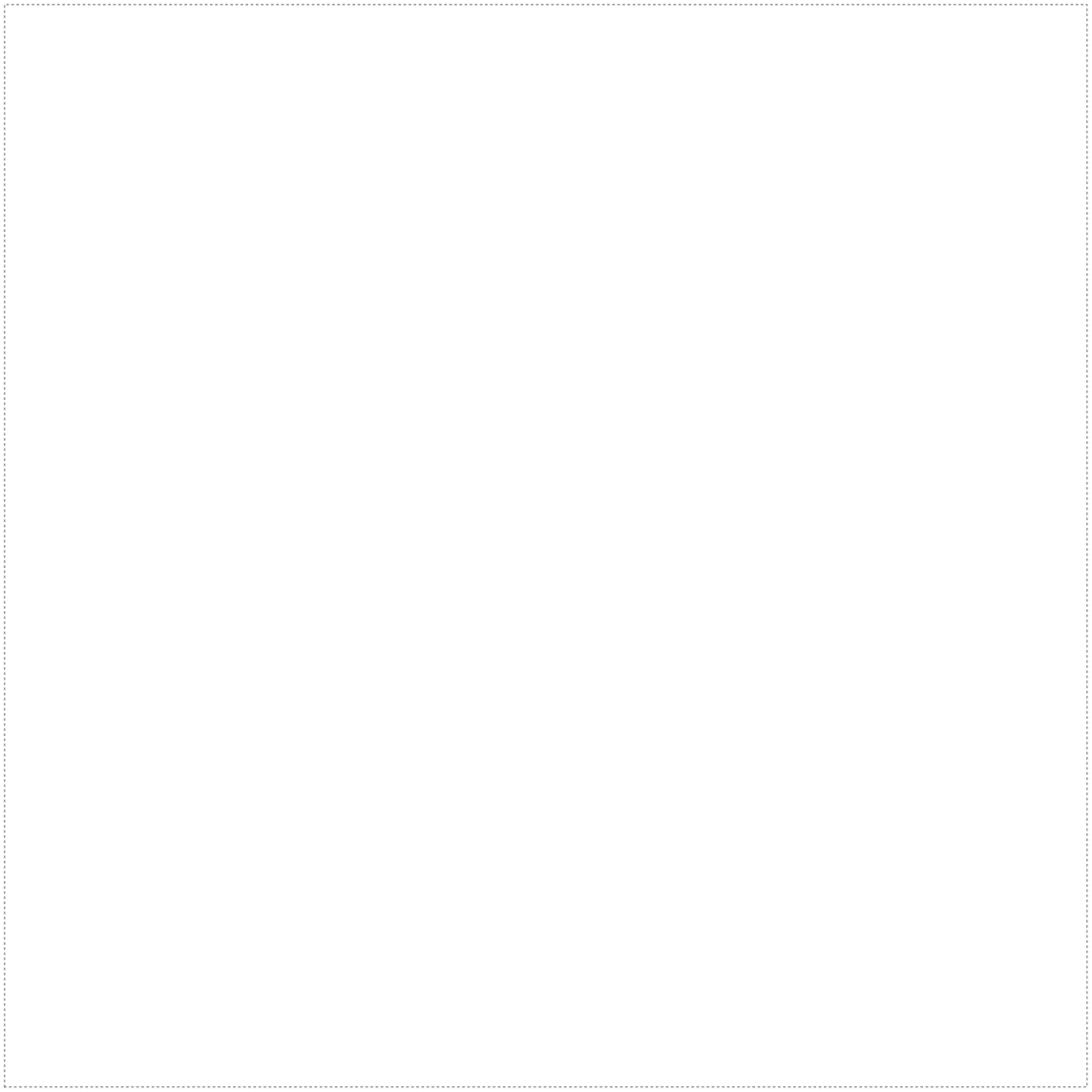

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