International Telecommunication Union

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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 5H: Independent living activity hub: Agent

Recommendation ITU-T H.845.8

International Telecommunication Union

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Recommendation ITU-T H.845.8

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 5H: Independent living activity hub: Agent

Summary

Recommendation ITU-T H.845.8 is a transposition of Continua Test Tool DG2013, Test Suite Structure & Test Purposes, PAN-LAN-TAN Interface; Part 5H: Device Specializations. Agent (Activity Hub) (Version 1.5, 2014-01-24), that was developed by the Continua Health Alliance. A number of versions of this specification existed before transposition.

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

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T H.845.8	2015-01-13	16	11.1002/1000/12269
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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.

INTELLECTUAL PROPERTY RIGHTS

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

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

Table of Contents

Electronic attachment: 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 5H: Device Specializations. Agent (Activity Hub) (Version 1.5, 2014-01-24), that was developed by the Continua Health Alliance. A number of versions of this specification existed before transposition and these can be found in the table below.

Version	Date	Revision history
1.2	2012-10-05	Initial release for Test Tool DG2011. This is the same version as "TSS&TP_1.5_PAN-LAN_PART_3H_v1.3.doc" because new features included in [b-CDG 2011] do not affect the test procedures specified in this document.
1.3	2013-05-24	Initial release for Test Tool DG2012. This uses "TSS&TP_DG2011_PAN-LAN_PART_5H_v1.3.doc" as a baseline and adds new features included in [b-CDG 2012]: Max APDU size for GM, BCA and ECG.
1.4	2014-01-24	Initial release for Test Tool DG2013. This uses "TSS&TP_DG2012_PAN-LAN_PART_5H_v1.4.doc" as a baseline and adds new features included in [ITU-T H.810 (2015)]: • Adds glucose meter BLE • Adds BLE SSP support • Adds NFC new transport • Adds INR device specialization

Recommendation ITU-T H.845.8

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 5H: Independent living activity hub: Agent

1 Scope

The scope of this Recommendation[1] is to provide a test suite structure and the test purposes (TSS AND TP) for the PAN/LAN/TAN interface based on the requirements defined in the Continua Design Guidelines (CDG) [ITU-T H.810 (2015)]. 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 in 14 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 white paper. Agent
– **Part 10:** Personal health devices transcoding white paper. 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 (2015)] Recommendation ITU-T H.810 (2015), *Interoperability design guidelines for personal health systems*.

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

[ISO/IEEE 11073-10471] ISO/IEEE 11073-10471-2008, *Health informatics – Personal health device communication – Part* 10471: *Device specialization – Independent living activity hub*.

[ISO/IEEE 11073-104xx] ISO/IEEE 11073-104xx (in force), *Health informatics – Personal health device communication – Device specialization*.

NOTE – Shorthand is 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.

[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>

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
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
TCWG	Test and Certification Working Group
TP	Test Purpose
TSS	Test Suite Structure
USB	Universal Serial Bus
WDM	Windows Driver Model

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 name	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	[b-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 subgroup 1.3.8 (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)
  - Subgroup 2.3.13: Basic electrocardiograph (ECG)
  - Subgroup 2.3.14: International normalized ratio (INR)
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  - Subgroup 2.4.3: Whitepaper blood pressure requirements (BPM)
  - Subgroup 2.4.4: Whitepaper heart rate requirements (HR)
  - 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 bellow:

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

- **Initial condition**: This indicates the state to which the DUT needs to be moved at the beginning of TC execution.
- **Test procedure**: This describes the steps to be followed in order to execute the test case.
- **Pass/Fail criteria**: This provides criteria to decide whether the DUT passes or fails the test case.

A.2 Subgroup 1.3.8: Activity hub (HUB)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/AG/CLASS/HUB/BV-000</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Get MDS Object for Activity Hub specialization: Mandatory, Conditional and Optional Attributes</td></tr>
<tr><td rowspan="7">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10471]</td></tr>
<tr><td rowspan="6">Testable items</td><td>MDSAttr 1; M</td><td>MDSAttr 2; M</td><td>MDSAttr 3; M</td></tr>
<tr><td>MDSAttr 4; M</td><td>MDSAttr 5; O</td><td>MDSAttr 6; O</td></tr>
<tr><td>MDSAttr 7; R</td><td>MDSAttr 8; R</td><td>MDSAttr 9; R</td></tr>
<tr><td>MDSAttr 10; M</td><td>MDSAttr 11; M</td><td>MDSAttr 12; M</td></tr>
<tr><td>OperaProc1;M</td><td></td><td></td></tr>
<tr><td colspan="2">Test purpose</td><td colspan="3">Check that:
The Agent supports a Get command that requests all attributes
[AND]
The MDS Object contains the attributes specified for an Independent living activity hub Agent.</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000</td></tr>
<tr><td colspan="2">Other PICS</td><td colspan="3">C_AG_HUB_034</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The simulated manager and the agent under test are in the operating state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated manager issues a "roiv-cmip-get" command with the handle set to 0 (to request for an MDS object) and an attribute-id-list set to 0 to indicate all attributes.
2. The agent responds with a "rors-cmip-get" service message in which the attribute-list contains a list of all implemented attributes of the MDS object:
MDS Attributes:
a. Mandatory attribute System-model
❑ attribute-id = MDC_ATTR_ID_MODEL
❑ attribute-type = SystemModel
❑ attribute-value.length =<variable>
❑ attribute-value ={Manufacturer, Model}
b. Mandatory attribute Dev-Configuration-Id
❑ attribute-id = MDC_ATTR_DEV_CONFIG_ID
❑ attribute-type = ConfigId
❑ attribute-value.length = 2 bytes
❑ attribute-value = <between 0x4000 and 0x7FFF>
c. Mandatory attribute Date-and-Time</td></tr>
</table>

	❑ attribute-id = MDC_ATTR_TIME_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length =<variable> d. Optional attribute Relative-Time ❑ attribute-id = MDC_ATTR_TIME_REL ❑ attribute-type = RelativeTime (INT-U32) ❑ attribute-value.length = 4 bytes e. Optional attribute HiRes-Relative-Time ❑ attribute-id = MDC_ATTR_TIME_REL_HI_RES ❑ attribute-type = HighResRelativeTime ❑ attribute-value.length =<variable> f. Recommended attribute Power-Status ❑ attribute-id = MDC_ATTR_POWER_STAT ❑ attribute-type = PowerStatus (BITS-16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = IF C_AG_HUB_034= TRUE THEN attribute-value = ON_MAINS (0x8000) and the rest of the bits must not be set ELSE attribute-value = ON_BATTERY(0x4000) Only one of the following may be active: • chargingFull(8), • chargingTrickle(9), • chargingOff(10). • The rest of the bits must not be set g. Recommended attribute Battery-Level ❑ attribute-id = MDC_ATTR_VAL_BATT_CHARGE ❑ attribute-type = INT-U16 ❑ attribute-value.length = 2 bytes ❑ attribute-value = <undefined if value>100 > h. Recommended attribute Remaining-Battery-Time ❑ attribute-id = MDC_ATTR_TIME_BATT_REMAIN ❑ attribute-type = BatMeasure ❑ attribute-value.length = <variable> ❑ attribute-value = <units shall be set to one of: MDC_DIM_MIN, MDC_DIM_HR, MDC_DIM_DAY > i. Mandatory attribute System-Type-Spec_List ❑ attribute-id = MDC_ATTR_SYS_TYPE_SPEC_LIST ❑ attribute-type = TypeVerList ❑ attribute-value.length = 4 bytes attribute-value = MDC_DEV_SPEC_PROFILE_AI_ACTIVITY_HUB, 1 ❑ Attribute System-Type must not be present.
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-000_A		
TP label		Extended Configurations		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	DIM 2; M		
Test purpose		Check that: All configurations shall be specified as extended configurations.		
Applicability		C_AG_OXP_176 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The agent under test sends an Association Request to the simulated manager. The expected fields sent by the agent are: a. dev-config-id ❑ field-type = ConfigId ❑ field-length = 2 bytes ❑ field- value = <between 0x4000 and 0x7FFF> b. Data-Req-Mode-Capab: ❑ field-length = 4 bytes ❑ field- value = 0xXX 0x01 0xXX (Agent initiated) 2. The simulated manager responses with an accepted-unknown-config. 3. The agent sends a configuration event report, with the following fields: dev-config-id ❑ field-type = ConfigId ❑ field-length = 2 bytes ❑ field- value = <between 0x4000 and 0x7FFF> 4. The simulated manager responds with a unsupported-configuration. 5. The agent sends a new configuration event report with a new configuration (if it has more). 6. Repeat the last two steps checking all the ConfigId-values until the agent sends a ReleaseRequest with the reason "no-more-configurations".		
Pass/Fail criteria		All Dev-config-id values are between 0x4000 and 0x7FFF.		
Notes				

TP Id		TP/PLT/AG/CLASS/HUB/BV-001		
TP label		RTC, Set time command and internal clock for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	MDSMethod 3; M		
Test purpose		Check that: For Agents that contain internal clocks, if the Agent is wall powered or has access to a constant non-diminishing supply of power then this support (Set-Time) shall be implemented.		

Applicability	C_AG_OXP_176 AND C_AG_OXP_006 AND C_AG_HUB_034 AND C_AG_OXP_181 AND C_AG_OXP_000
Other PICS	
Initial condition	The simulated manager and the agent under test are in the configuring state.
Test procedure	1. The simulated manager issues a "roiv-cmip-get" command with the handle set to 0 (to request for an MDS object) and the attribute-id-list set to 0 to indicate all attributes. 2. The agent responds with a "rors-cmip-get" service message in which the attribute-list contains a list of all implemented attributes of the MDS object: a. IF Recommended attribute Power-Status is present ❑ attribute-id = MDC_ATTR_POWER_STAT ❑ attribute-type = PowerStatus (BITS-16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = ON_MAINS (0x8000) b. Mandatory attribute Mds-Time-Info ❑ attribute-id = MDC_ATTR_MDS_TIME_INFO ❑ attribute-type = MdsTimeInfo ❑ attribute-value.length = ❑ Sequence of: ▪ Mds-time-cap-state – field-type = MdsTimeCapState – field-length =2 bytes – field-value = Bit 0 (mds-time-capab-real-time-clock) and Bit 1 (mds-time-capab-set-clock) must be set ▪ Time-sync-protocol – field-type = TimeProtocolId – field-length =OID-Type(INT-U16)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-002		
TP label		MDS Configuration objects events for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	MDSEvent 1; M	ConfProc1; M	
Test purpose		Check that: An independent living activity hub sends the MDS-Configuration-Event using a Confirmed event report and it includes the event-info ConfigReport		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_OXP_010		
Initial condition		The simulated manager and the agent under test are in the configuring state.		
Test procedure		1. The simulated manager receives an association request from the agent under test.		

	2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager: a. APDU Type ❑ field- type = PrstApdu ❑ field-length =2 bytes ❑ field-value =0xE7 0x00 b. invoke-id ❑ field- type = InvokeIDType ❑ field-length =INT-U16 ❑ field- value=<Not relevant for this test> c. message ❑ field- type = roiv-cmip-confirmed-event-report ❑ field-length =two bytes ❑ field- value=0x01 (EventReportArgumentSimple) d. obj-handle (EventReportArgumentSimple) ❑ field- type = HANDLE ❑ field-length =INT-U16 e. event-time (EventReportArgumentSimple) ❑ field- type = Relative Time ❑ field-length =INT-U32 ❑ field-value = • IF NOT C_AG_OXP_010 THEN value = 0xFF 0xFF 0xFF 0xFF f. event-type (EventReportArgumentSimple) ❑ field- type = OID-Type ❑ field-length =INT-U16 ❑ field- value=0x 0D 0x 1C (MDC_NOTI_CONFIG) g. config-report-id (ConfigReport) ❑ field- type = ConfigId ❑ field-length = INT-U16 ❑ field- value = <Between 0x40 0x00 and 0x7F 0xFF> h. obj-class (ConfigReport → ConfigObjectList (ConfigObject)) ❑ field- type = OID-Type ❑ field-length = INT-U16 ❑ field- value = One or more of MDC_MOC_VMO_METRIC_ENUM must appear
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-003		
TP label		MDS objects events Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable	MDSEvent 3; M	MDSEvent 4; M	MDSEvent 5; M

	items	MDSEvent 6; M	ServiceModel1; M	ServiceModel2; M
		OperaProc4; M		
Test purpose		Check that: Agent-initiated mode is supported for measurement data transmission and all types of event reports are used in confirmed mode [AND] The Agent sends the MDS-Dynamic-Data-Update-Fixed using a confirmed event report and it includes the event-info ScanReportInfoFixed [OR] The Agent sends the MDS-Dynamic-Data-Update-Var using a confirmed event report and it includes the event-info ScanReportInfoVar [OR] The Agent sends the MDS-Dynamic-Data-Update-MP-Fixed using a confirmed event report and it includes the event-info ScanReportInfoMPFixed [OR] The Agent sends the MDS-Dynamic-Data-Update-MP-Var using a confirmed event report and it includes the event-info ScanReportInfoMPVar		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000 AND (C_AG_OXP_182 OR C_AG_OXP_183 OR C_AG_OXP_184 OR C_AG_OXP_189)		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take measurements for every supported object in the agent under test. 2. Wait to receive every event report and check: a. message ❑ field- type = Event Report ❑ field-length = 2 bytes ❑ field- value=0x01 0x01 (EventReportArgumentSimple, confirmed). This field identifies the type of message sent by the agent, for the confirmed event configuration, roiv-cmip-confirmed-event-report.		
Pass/Fail criteria		Check that every received report is one of the following Data APDU and that it is confirmed: • MDC_NOTI_SCAN_REPORT_FIXED • MDC_NOTI_SCAN_REPORT_MP_FIXED • MDC_NOTI_SCAN_REPORT_VAR • MDC_NOTI_SCAN_REPORT_MP_VAR		
Notes				

TP Id		TP/PLT/AG/CLASS/HUB/BV-005		
TP label		Get activity data Enumeration Object attributes for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 2; M	EnumObj 3; M	EnumObj 4; M
		EnumObj 5; R	EnumObj 6; R	EnumObj 7; R

		EnumObj 8; R	EnumObj 9; R	EnumObj 10; R
		EnumObj 11; R	EnumObj 12, R	EnumObj 13; O
		EnumObj 14; O	EnumObj 15; R	EnumObj 16; R
		EnumObj 17; M	EnumObj 18; R	EnumObj 19; R
		EnumObj 20; R	EnumObj 21; R	EnumObj 22; M
		EnumObj 23; O		
Test purpose		Check that: Extended enumeration object (that is added by the vendor) contains the attributes specified for Extended Configuration.		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. All Enumeration objects must have: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_AIfollowed by one of the next: ▪ MDC_AI_TYPE_SENSOR_FALL ▪ MDC_AI_TYPE_SENSOR_PERS ▪ MDC_AI_TYPE_SENSOR_SMOKE ▪ MDC_AI_TYPE_SENSOR_CO ▪ MDC_AI_TYPE_SENSOR_WATER ▪ MDC_AI_TYPE_SENSOR_GAS ▪ MDC_AI_TYPE_SENSOR_MOTION ▪ MDC_AI_TYPE_SENSOR_PROPEXIT ▪ MDC_AI_TYPE_SENSOR_ENURESIS ▪ MDC_AI_TYPE_SENSOR_CONTACTCLOSURE ▪ MDC_AI_TYPE_SENSOR_USAGE ▪ MDC_AI_TYPE_SENSOR_SWITCH ▪ MDC_AI_TYPE_SENSOR_DOSAGE ▪ MDC_AI_TYPE_SENSOR_TEMP b. Mandatory attribute Supplemental-Types ❑ attribute-id = MDC_ATTR_SPPLEMENTAL_TYPES ❑ attribute-type = SupplementalTypeList ❑ attribute-value.length =Sequence of TYPE (TYPE.length= 4 bytes → partition NomPartition (INT-U16) and code (OID-Type)) ❑ attribute-value=		

	▪ TYPE.partition= 0x00 0x82 (NOM_PART_PHD_AI, dec. value 130) ▪ TYPE.code= Upper 10 bits are one of MDC_AI_LOCATION and the lower bits represent the unique instance of the location. This value denotes sensor location. - MDC_AI_LOCATION_START 1024 - MDC_AI_LOCATION_UNKNOWN 1024 - MDC_AI_LOCATION_UNSPECIFIED 1088 - MDC_AI_LOCATION_RESIDENT 1152 - MDC_AI_LOCATION_LOCALUNIT 1216 - MDC_AI_LOCATION_BEDROOM 3072 - MDC_AI_LOCATION_BEDROOMMASTER 3136 - MDC_AI_LOCATION_TOILET 3200 - MDC_AI_LOCATION_TOILETMAIN 3264 - MDC_AI_LOCATION_OUTSIDETOILET 3328 - MDC_AI_LOCATION_SHOWERROOM 3392 - MDC_AI_LOCATION_KITCHEN 3456 - MDC_AI_LOCATION_KITCHENMAIN 3520 - MDC_AI_LOCATION_LIVINGAREA 3584 - MDC_AI_LOCATION_LIVINGROOM 3648 - MDC_AI_LOCATION_DININGROOM 3712 - MDC_AI_LOCATION_STUDY 3776 - MDC_AI_LOCATION_HALL 3840 - MDC_AI_LOCATION_LANDING 3904 - MDC_AI_LOCATION_STAIRS 3968 - MDC_AI_LOCATION_HALLLANDINGSTAIRS 4032 - MDC_AI_LOCATION_GARAGE 4096 - MDC_AI_LOCATION_GARDENGARAGE 4160 - MDC_AI_LOCATION_GARDENGARAGEAREA 4224 - MDC_AI_LOCATION_FRONTGARDEN 4288 - MDC_AI_LOCATION_BACKGARDEN 4352 - MDC_AI_LOCATION_SHED 4416 - MDC_AI_APPLIANCE_KETTLE 7168 - MDC_AI_APPLIANCE_TELEVISION 7232 - MDC_AI_APPLIANCE_STOVE 7296 - MDC_AI_APPLIANCE_MICROWAVE 7360 - MDC_AI_APPLIANCE_TOASTER 7424 - MDC_AI_APPLIANCE_VACUUM 7488 - MDC_AI_APPLIANCE_APPLIANCE 7552 - MDC_AI_APPLIANCE_FAUCET 7616 - MDC_AI_LOCATION_FRONTDOOR 9216 - MDC_AI_LOCATION_BACKDOOR 9280 - MDC_AI_LOCATION_FRIDGEDOOR 9344 - MDC_AI_LOCATION_MEDCABDOOR 9408 - MDC_AI_LOCATION_WARDROBEDOOR 9472

- MDC_AI_LOCATION_FRONTCUPBOARDDOOR 9536
- MDC_AI_LOCATION_OTHERDOOR 9600
- MDC_AI_LOCATION_BED 11264
- MDC_AI_LOCATION_CHAIR 11328
- MDC_AI_LOCATION_SOFA 11392
- MDC_AI_LOCATION_TOILET_SEAT 11456
- MDC_AI_LOCATION_STOOL 11520

c. Mandatory attribute Metric-Spec-Small

- ❑ attribute-id = MDC_ATTR_METRIC_SPEC_SMALL
- ❑ attribute-type = MetricSpecSmall (BITS-16)
- ❑ attribute-value ≠ 0x00 0x00
  - Bit 0 (mss-avail-intermittent(0)) must be set.
  - Bit 1 (mss-avail-stored-data(1)) must be set.
  - Bit 2 (mss-upd-aperiodic(2)) must be set.
  - Bit 3 (mss-msmt-aperiodic(3)) is set.
  - Bit 9 (mss-acc-agent-initiated(9)) is set.

d. Not recommended attribute Metric-Structure-Small

- ❑ attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL
- ❑ attribute-type = MetricStructureSmall
- ❑ attribute-value.length = Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8))

e. Not recommended attribute Measurement-Status

- ❑ attribute-id = MDC_ATTR_MSMT_STAT
- ❑ attribute-type = MeasurementStatus (BITS-16)
- ❑ attribute-value.length = 2 bytes

f. Only one attribute of Metric-Id and Metric-Id-List shall be present.

g. Not recommended attribute Metric-Id

- ❑ attribute-id = MDC_ATTR_ID_PHYSIO
- ❑ attribute-type = OID-Type (INT-U16)
- ❑ attribute-value.length = 2 bytes
- ❑ attribute-value = Only one attribute of Metric-Id and Metric-Id-List shall be present.

h. Not Recommended attribute Metric-Id-List

- ❑ attribute-id = MDC_ATTR_ID_PHYSIO_LIS
- ❑ attribute-type = MetricIdList
- ❑ attribute-value.length= <variable> (SEQUENCE OF OID-Type (INT-U16))
- ❑ The [Metric-Id-List] attribute shall be used if a compound observed value is used, which does not incorporate the Metric-Id directly. The order of the Metric-Id-List shall correspond to the order of the elements in the compound observed value.

i. Not recommended attribute Metric-Id-Partition

- ❑ attribute-id = MDC_ATTR_METRIC_ID_PART
- ❑ attribute-type = NomPartition (INT-U16)
- ❑ attribute-value.length = 2 bytes

j. Not recommended attribute Unit-Code

	❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes k. Not recommended attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes l. Recommended attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes m. Optional attribute Relative-Time ❑ attribute-id = MDC_ATTR_TIME_REL ❑ attribute-type = RelativeTime (INT-U32) ❑ attribute-value.length =4 bytes n. Optional attribute HiRes-Relative-Time ❑ attribute-id = MDC_ATTR_TIME_REL_HI_RES ❑ attribute-type = HighResRelativeTime ❑ attribute-value.length = 8 bytes o. Not recommended attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes p. Not recommended attribute Enum-Observed-Value-Simple-OID ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_OID ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes q. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes r. Not recommended attribute Enum-Observed-Value-Basic-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR ❑ attribute-type = BITS-16 ❑ attribute-value.length = 2 bytes s. Not recommended attribute Enum-Observed-Value-Simple-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_STR ❑ attribute-type = EnumPrintableString ❑ attribute-value.length =<variable> t. Not recommended attribute Enum-Observed-Value ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS ❑ attribute-type = EnumObsValue ❑ attribute-value.length =<variable> u. Not recommended attribute Enum-Observed-Value-Partition

	❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_PART ❑ attribute-type = NomPartition (INT-U16) ❑ attribute-value-length=2 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-005_A		
TP label		Get activity data Enumeration Objects for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 1; M		
Test purpose		Check that: The independent living activity hub requires one activity data object for each supported sensor instance		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_021, C_AG_HUB_022, C_AG_HUB_023, C_AG_HUB_024, C_AG_HUB_025, C_AG_HUB_026, C_AG_HUB_027, C_AG_HUB_028, C_AG_HUB_029, C_AG_HUB_030, C_AG_HUB_031		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. Record for later comparison the number of sensors of every type. 2. The simulated manager receives an association request from the agent under test. 3. The simulated manager responds with a result = accepted-unknown-config. 4. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 5. Check that for every sensor there is one object of the appropriate type.		
Pass/Fail criteria		All checked values are as specified in the test procedure.		
Notes				

TP Id		TP/PLT/AG/CLASS/HUB/BV-005_B		
TP label		Get activity data fall sensor Enumeration Object attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 2; M	EnumObj 3; M	EnumObj 4; M
		EnumObj 5; R	EnumObj 6; R	EnumObj 7; R
		EnumObj 8; R	EnumObj 9; R	EnumObj 10; R
		EnumObj 11; R	EnumObj 13; O	EnumObj 14; O
		EnumObj 15; R	EnumObj 16; R	EnumObj 17; M
		EnumObj 18; R	EnumObj 19; R	EnumObj 20; R

		EnumObj 21; R	EnumObj 22; M	EnumObj 23; O
		FallSensor 1; M	FallSensor 2; O	FallSensor 3; M
		FallSensor 4; M	FallSensor 5; M	FallSensor X; M
Test purpose		Check that: Activity data enumeration object- Fall sensor contains the attributes specified for Extended Configuration. [AND] A fall detected sensor event is sent whenever a fall has occurred. [AND] If Agent can determine no condition detected event, then a no condition detected sensor event may be sent if this situation occurs.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_021 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the configuring state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Data fall sensor object must be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_AI_TYPE_SENSOR_FALL b. Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes 2. Simulate a fall in each fall sensor with the agent under test. 3. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value: ▪ fall-detected(0) bit must be set		
Pass/Fail criteria		All checked values are as specified in the test procedure.		
Notes				

TP Id	TP/PLT/AG/CLASS/HUB/BV-005_C
TP label	Get activity data PERS sensor Enumeration Object attributes

<table>
<tr><td rowspan="10">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10471]</td></tr>
<tr><td rowspan="9">Testable items</td><td>EnumObj 2; M</td><td>EnumObj 3; M</td><td>EnumObj 4; M</td></tr>
<tr><td>EnumObj 5; R</td><td>EnumObj 6; R</td><td>EnumObj 7; R</td></tr>
<tr><td>EnumObj 8; R</td><td>EnumObj 9; R</td><td>EnumObj 10; R</td></tr>
<tr><td>EnumObj 11; R</td><td>EnumObj 13; O</td><td>EnumObj 14; O</td></tr>
<tr><td>EnumObj 15; R</td><td>EnumObj 16; R</td><td>EnumObj 17; M</td></tr>
<tr><td>EnumObj 18; R</td><td>EnumObj 19; R</td><td>EnumObj 20; R</td></tr>
<tr><td>EnumObj 21; R</td><td>EnumObj 22; M</td><td>EnumObj 23; O</td></tr>
<tr><td>PERSSensor 1; M</td><td>PERSSensor 2; O</td><td>PERSSensor3; M</td></tr>
<tr><td>PERSSensor4; M</td><td>PERSSensor5; M</td><td>PERSSensorX; M</td></tr>
<tr><td colspan="2">Test purpose</td><td colspan="3">Check that:
Activity data enumeration object PERS sensor contains the attributes specified for Extended Configuration.
[AND]
A button-activated sensor PERS sensor event is sent whenever the button is pressed.
[AND]
If Agent can determine no condition detected event, then a no condition detected sensor event may be sent when button is released.</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_176 AND C_AG_HUB_022 AND C_AG_OXP_181 AND C_AG_OXP_000</td></tr>
<tr><td colspan="2">Other PICS</td><td colspan="3"></td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The simulated manager and the agent under test are in the configuring state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated manager receives an association request from the agent under test.
2. The simulated manager responds with a result = accepted-unknown-config.
3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager:
4. The Data PERS sensor object must be:
a. Mandatory attribute Type
❑ attribute-id = MDC_ATTR_ID_TYPE
❑ attribute-type = TYPE
❑ attribute-value = MDC_AI_TYPE_SENSOR_PERS
b. Mandatory attribute Absolute-Time-Stamp
❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS
❑ attribute-type = AbsoluteTime
❑ attribute-value.length = 8 bytes
5. Simulate an emergency with the agent under test.
6. Wait for the simulated manager to receive the event report:
a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str
❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR
❑ attribute-type = BITS-32
❑ attribute-value.length = 4 bytes</td></tr>
</table>

	❑ attribute-value= ▪ Bit 0 (pers-activated(0)) must be set.
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-005_D		
TP label		Get activity data environmental sensor Enumeration Object attributes for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 2; M	EnumObj 3; M	EnumObj 4; M
		EnumObj 5; R	EnumObj 6; R	EnumObj 7; R
		EnumObj 8; R	EnumObj 9; R	EnumObj 10; R
		EnumObj 11; R	EnumObj 13; O	EnumObj 14; O
		EnumObj 15; R	EnumObj 16; R	EnumObj 17; M
		EnumObj 18; R	EnumObj 19; R	EnumObj 20; R
		EnumObj 21; R	EnumObj 22; M	EnumObj 23; O
		EnvironSensor 1; M	EnvironSensor 2; O	EnvironSensor 3; M
		EnvironSensor 4; M	EnvironSensor 5; M	EnvironSensor X; M
Test purpose		Check that: Activity data enumeration object environmental sensor contains the attributes specified for Extended Configuration. [AND] A condition detected event is sent whenever a sensor determines the condition has occurred. [AND] If Agent can determine no condition detected event, then a no condition detected sensor event may be sent if this situation occurs.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_023 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the configuring state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Data environmental sensor object must be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE		

	❑ attribute-value = MDC_AI_TYPE_SENSOR_SMOKE or MDC_AI_TYPE_SENSOR_CO or MDC_AI_TYPE_SENSOR_WATER or MDC_AI_TYPE_SENSOR_GAS b. Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes 5. Simulate an environmental change with the agent under test. 6. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 0 (condition-detected(0)) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-005_E		
TP label		Get activity data motion sensor Enumeration Object attributes for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 2; M	EnumObj 3; M	EnumObj 4; M
		EnumObj 5; R	EnumObj 6; R	EnumObj 7; R
		EnumObj 8; R	EnumObj 9; R	EnumObj 10; R
		EnumObj 11; R	EnumObj 13; O	EnumObj 14; O
		EnumObj 15; R	EnumObj 16; R	EnumObj 17; M
		EnumObj 18; R	EnumObj 19; R	EnumObj 20; R
		EnumObj 21; R	EnumObj 22; M	EnumObj 23; O
		MotionSensor 1; M	MotionSensor 2; O	MotionSensor3; M
		MotionSensor4; M	MotionSensor5; M	MotionSensorX; M
Test purpose		Check that: Activity data enumeration object motion sensor contains the attributes specified for Extended Configuration. [AND] A motion detected event is sent whenever a sensor determines the motion has occurred. [AND] If Agent can determine no condition detected event, motion detected delayed or tamper detected, then a motion detected delayed, tamper detected, or no condition detected sensor events may be sent if the sensor can determine such a status and any of these situations occurs.		

Applicability	C_AG_OXP_176 AND C_AG_HUB_024 AND C_AG_OXP_181 AND C_AG_OXP_000
Other PICS	
Initial condition	The simulated manager and the agent under test are in the configuring state.
Test procedure	1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager: 4. The Data motion sensor object must be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_AI_TYPE_SENSOR_MOTION b. Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes 5. Simulate a motion with the agent under test. 6. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value= Only one of the following bits can be set: ▪ motion-detected(0) ▪ motion-detected-delayed(1) ▪ tamper-detected(2)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-005_F		
TP label		Get activity data property exit sensor Enumeration Object attributes for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 2; M	EnumObj 3; M	EnumObj 4; M
		EnumObj 5; R	EnumObj 6; R	EnumObj 7; R
		EnumObj 8; R	EnumObj 9; R	EnumObj 10; R
		EnumObj 11; R	EnumObj 13; O	EnumObj 14; O
		EnumObj 15; R	EnumObj 16; R	EnumObj 17; M
		EnumObj 18; R	EnumObj 19; R	EnumObj 20; R
		EnumObj 21; R	EnumObj 22; M	EnumObj 23; O

		PropExitSensor3; M	PropExitSensor4; M	PropExitSensor 1; M
		PropExitSensor 2; O	PropExitSensor5; M	PropExitSensorX; M
Test purpose		Check that: Activity data enumeration object property exit sensor contains the attributes specified for Extended Configuration. [AND] An occupant exit detected event is sent whenever a sensor determines an occupant exiting event has occurred. [AND] If Agent can determine no condition detected event or exit door left open, then an exit door left open or no condition detected sensor event may be sent if the sensor can determine such a status and any of these situations occurs.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_025 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_OXP_183		
Initial condition		The simulated manager and the agent under test are in the configuring state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Data exit sensor object must be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_AI_TYPE_SENSOR_PROPEXIT a. Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes 5. Simulate a property exit with the agent under test. 6. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value= Only one of the following bits can be set: ▪ occupant-exit-property(0) ▪ exit-door-left-open(1)		
Pass/Fail criteria		All checked values are as specified in the test procedure.		
Notes				

TP Id	TP/PLT/AG/CLASS/HUB/BV-005_G
TP label	Get activity data property enuresis sensor Enumeration Object attributes for Activity Hub

<table>
<tr><td rowspan="10">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10471]</td></tr>
<tr><td rowspan="9">Testable items</td><td>EnumObj 2; M</td><td>EnumObj 3; M</td><td>EnumObj 4; M</td></tr>
<tr><td>EnumObj 5; R</td><td>EnumObj 6; R</td><td>EnumObj 7; R</td></tr>
<tr><td>EnumObj 8; R</td><td>EnumObj 9; R</td><td>EnumObj 10; R</td></tr>
<tr><td>EnumObj 11; R</td><td>EnumObj 13; O</td><td>EnumObj 14; O</td></tr>
<tr><td>EnumObj 15; R</td><td>EnumObj 16; R</td><td>EnumObj 17; M</td></tr>
<tr><td>EnumObj 18; R</td><td>EnumObj 19; R</td><td>EnumObj 20; R</td></tr>
<tr><td>EnumObj 21; R</td><td>EnumObj 22; M</td><td>EnumObj 23; O</td></tr>
<tr><td>EnurSensor 1; M</td><td>EnurSensor 2; O</td><td>EnurSensor3; M</td></tr>
<tr><td>EnurSensor4; M</td><td>EnurSensor5; M</td><td>EnurSensorX; M</td></tr>
<tr><td colspan="2">Test purpose</td><td colspan="3">Check that:
Activity data enumeration object enuresis sensor contains the attributes specified for Extended Configuration.
[AND]
An enuresis detected event is sent whenever a sensor determines the condition has occurred.
[AND]
If Agent can determine no condition detected event, then a no condition detected sensor event may be sent if this situation occurs.</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_176 AND C_AG_HUB_026 AND C_AG_OXP_181 AND C_AG_OXP_000</td></tr>
<tr><td colspan="2">Other PICS</td><td colspan="3"></td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The simulated manager and the agent under test are in the configuring state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated manager receives an association request from the agent under test.
2. The simulated manager responds with a result = accepted-unknown-config.
3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager:
4. The Data enuresis sensor object must be:
a. Mandatory attribute Type
❑ attribute-id = MDC_ATTR_ID_TYPE
❑ attribute-type = TYPE
❑ attribute-value = MDC_AI_TYPE_SENSOR_ENURESIS
b. Mandatory attribute Absolute-Time-Stamp
❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS
❑ attribute-type = AbsoluteTime
❑ attribute-value.length = 8 bytes
5. Simulate an enuresis with the agent under test.
6. Wait for the simulated manager to receive the event report:
a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str
❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR
❑ attribute-type = BITS-32</td></tr>
</table>

	❑ attribute-value.length = 4 bytes ❑ attribute-value= Only one of the following bits can be set: ▪ enuresis-detected(0)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-005_H		
TP label		Get activity data property contact closure sensor Enumeration Object attributes for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 2; M	EnumObj 3; M	EnumObj 4; M
		EnumObj 5; R	EnumObj 6; R	EnumObj 7; R
		EnumObj 8; R	EnumObj 9; R	EnumObj 10; R
		EnumObj 11; R	EnumObj 13; O	EnumObj 14; O
		EnumObj 15; R	EnumObj 16; R	EnumObj 17; M
		EnumObj 18; R	EnumObj 19; R	EnumObj 20; R
		EnumObj 21; R	EnumObj 23; O	EnumObj 22; M
		ContactSensor 1; M	ContactSensor 2; O	ContactSensor 3; M
		ContactSensor 4; M	ContactSensor 5; M	ContactSensor X; M
Test purpose		Check that: Activity data enumeration object contact closure sensor contains the attributes specified for Extended Configuration. [AND] A closure closed event and closure opened event is sent whenever a sensor determines the condition has occurred [AND] If Agent can determine no condition detected event, then a no condition detected sensor event may be sent if this situation occurs.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_027 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the configuring state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Data contact/closure sensor object must be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE		

	❑ attribute-value = MDC_AI_TYPE_SENSOR_CONTACTCLOSURE b. Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes 5. Simulate a contact closure sensor activation with the agent under test. 6. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = Only one of the following bits can be set: ▪ contact-opened(0) ▪ contact-opened(1)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-005_I		
TP label		Get activity data property usage sensor Enumeration Object attributes for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 2; M	EnumObj 3; M	EnumObj 4; M
		EnumObj 5; R	EnumObj 6; R	EnumObj 7; R
		EnumObj 8; R	EnumObj 9; R	EnumObj 10; R
		EnumObj 11; R	EnumObj 13; O	EnumObj 14; O
		EnumObj 15; R	EnumObj 16; R	EnumObj 17; M
		EnumObj 18; R	EnumObj 19; R	EnumObj 20; R
		EnumObj 21; R	EnumObj 22; M	EnumObj 23; O
		UsageSensor 1; O	UsageSensor 2; M	UsageSensor 3; O
		UsageSensor 4; M	UsageSensor 5; M	UsageSensor 6; M
		UsageSensor X; M		
Test purpose		Check that: Activity data enumeration object usage sensor contains the attributes specified for Extended Configuration. [AND] A usage started event and usage ended event is sent whenever a sensor determines the condition has occurred. [AND] If Agent can determine no condition detected event or generate events based on violation of timing constraints based on usage or absence, then an expected use start violation,		

	expected use stop violation, absence violation, or no condition detected sensor events may be sent if the sensor can determine such a status and any of these situations occurs.
Applicability	C_AG_OXP_176 AND C_AG_HUB_028 AND C_AG_OXP_181 AND C_AG_OXP_000
Other PICS	
Initial condition	The simulated manager and the agent under test are in the configuring state.
Test procedure	1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Data usage sensor object must be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_AI_TYPE_SENSOR_USAGE b. Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes 5. Simulate an usage sensor activation with the agent under test. 6. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = Only one of the following bits can be set: ▪ usage-started(0) ▪ usage-started(1) ▪ usage-started(2) ▪ usage-started(3) ▪ usage-started(4)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-005_J		
TP label		Get activity data switch sensor Enumeration Object attributes for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 2; M	EnumObj 3; M	EnumObj 4; M
		EnumObj 5; R	EnumObj 6; R	EnumObj 7; R
		EnumObj 8; R	EnumObj 9; R	EnumObj 10; R
		EnumObj 11; R	EnumObj 13; O	EnumObj 14; O

		EnumObj 15; R	EnumObj 16; R	EnumObj 17; M
		EnumObj 18; R	EnumObj 19; R	EnumObj 20; R
		EnumObj 21; R	EnumObj 23; O	EnumObj 22; M
		SwitchSensor 1; M	SwitchSensor 2; O	SwitchSensor 3; M
		SwitchSensor 4; M	SwitchSensor 5; M	SwitchSensor X; M
Test purpose		Check that: Activity data enumeration object switch sensor contains the attributes specified for Extended Configuration. [AND] A switch on and switch off event is sent whenever a sensor determines the condition has occurred. [AND] If Agent can determine no condition detected event, then a no condition detected sensor event may be sent if this situation occurs.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_029 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the configuring state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager: 4. The Data switch sensor object must be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_AI_TYPE_SENSOR_SWITCH b. Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes 5. Simulate a switch-on or switch-off with the agent under test. 6. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = Only one of the following bits can be set: ▪ switch-on(0) ▪ switch-off(1)		
Pass/Fail criteria		All checked values are as specified in the test procedure.		
Notes				

TP Id		TP/PLT/AG/CLASS/HUB/BV-005_K		
TP label		Get activity data dosage sensor Enumeration Object attributes for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 2; M	EnumObj 3; M	EnumObj 4; M
		EnumObj 5; R	EnumObj 6; R	EnumObj 7; R
		EnumObj 8; R	EnumObj 9; R	EnumObj 10; R
		EnumObj 11; R	EnumObj 13; O	EnumObj 14; O
		EnumObj 15; R	EnumObj 16; R	EnumObj 17; M
		EnumObj 18; R	EnumObj 19; R	EnumObj 20; R
		EnumObj 21; R	EnumObj 22; M	EnumObj 23; O
		DosageSensor 1; M	DosageSensor 2; O	DosageSensor 3; M
		DosageSensor 4; M	DosageSensor 5; M	DosageSensor X; M
Test purpose		Check that: Activity data enumeration object medication dosage sensor contains the attributes specified for Extended Configuration. AND] A dosage taken event is sent whenever a sensor determines the condition has occurred. [AND] If Agent can determine no condition detected event or dosage missed, then a dosage missed or no condition detected sensor event may be sent if the sensor can determine such a status and any of these situations occurs.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_030 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the configuring state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Data dosage sensor object must be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_AI_TYPE_SENSOR_DOSAGE b. Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes 5. Simulate a valid dose or missed dose with the agent under test. 6. Wait for the simulated manager to receive the event report:		

	a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = = Only one of the following bits can be set: ▪ dosage-taken(0) ▪ dosage-taken(1)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-005_L		
TP label		Get activity data temperature sensor Enumeration Object attributes for Activity Hub		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 2; M	EnumObj 3; M	EnumObj 4; M
		EnumObj 5; R	EnumObj 6; R	EnumObj 7; R
		EnumObj 8; R	EnumObj 9; R	EnumObj 10; R
		EnumObj 11; R	EnumObj 13; O	EnumObj 14; O
		EnumObj 15; R	EnumObj 16; R	EnumObj 17; M
		EnumObj 18; R	EnumObj 19; R	EnumObj 20; R
		EnumObj 21; R	EnumObj 22; M	EnumObj 23; O
		TempSensor 1; M	TempSensor 2; O	TempSensor3; M
		TempSensor4; M	TempSensor5; M	TempSensorX; M
Test purpose		Check that: Activity data enumeration object temperature sensor contains the attributes specified for Extended Configuration. [AND] A high temperature detected and low temperature detected event are sent whenever a sensor determines the condition has occurred. [AND] If Agent can determine no condition detected event or rate of change too fast, then a rate of change too fast or no condition detected sensor event may be sent if the sensor can determine such a status and any of these situations occurs.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_031 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the configuring state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager.		

	4. The Data temperature sensor object must be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_AI_TYPE_SENSOR_TEMP b. Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes 5. Simulate a change of temperature with the agent under test. 6. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = Only one of the following bits can be set: ▪ high-temperature-detected(0) ▪ high-temperature-detected(1) ▪ high-temperature-detected(2)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-006_A		
TP label		Semantic of activity data property exit sensor.		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	PropExitSensor5;M		
Test purpose		Check that: If Activity data enumeration property exit sensor object is supported by the agent, the Enum-Observed-Value-Simple-Bit-Str attribute shall be present. The specific sensor event properties flags are contained in the most significant (high) 16 bits.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_025 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Simulate a property exit with the agent under test. 2. Wait for the simulated manager to receive the event report: b. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes		

	❑ attribute-value= Only one of the following bits can be set: ▪ occupant-exit-properly(0) 7. Simulate an exit that leaves open the door with the agent under test. 8. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value= Only one of the following bits can be set: ▪ exit-door-left-open(1)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-006_B		
TP label		Sematic of activity data property contact closure sensor.		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	ContactSensor5;M		
Test purpose		Check that: If Activity data enumeration property exit sensor object is supported by the agent, the Enum-Observed-Value-Simple-Bit-Str attribute shall be present. The specific sensor event properties flags are contained in the most significant (high) 16 bits.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_027 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Simulate an opening with the agent under test. 2. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = contact-opened(0) 3. Simulate a closing with the agent under test. 4. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = contact-closed(1)		
Pass/Fail criteria		All checked values are as specified in the test procedure.		

Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-006_C		
TP label		Semantic of activity data property usage sensor.		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	UsageSensor6;M		
Test purpose		Check that: If Activity data enumeration property exit sensor object is supported by the agent, the Enum-Observed-Value-Simple-Bit-Str attribute shall be present. The specific sensor event properties flags are contained in the most significant (high) 16 bits.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_028 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Simulate a correct start of usage with the agent under test. 2. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = usage-started(0) 3. Simulate a correct ending of usage with the agent under test. 4. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = usage-ended(1) 5. Simulate an incorrect start of usage with the agent under test. 6. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = expected-use-start-violation(2) 7. Simulate an incorrect ending of usage with the agent under test. 8. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes		

	❑ attribute-value = expected-use-stop-violation(3) 9. Simulate a correct start of usage with the agent under test. 10. Do not end it. 11. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = absence-violation(4)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-006_D		
TP label		Semantic of activity data switch sensor.		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	SwitchSensor5;M		
Test purpose		Check that: If Activity data enumeration property exit sensor object is supported by the agent, the Enum-Observed-Value-Simple-Bit-Str attribute shall be present. The specific sensor event properties flags are contained in the most significant (high) 16 bits.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_029 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Simulate a switch-on with the agent under test. 2. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = switch-on(0) 3. Simulate a switch-off with the agent under test. 4. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes attribute-value = switch-off(1)		
Pass/Fail criteria		All checked values are as specified in the test procedure.		

Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-006_E		
TP label		Semantic of activity data dosage sensor.		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	DosageSensor5;M		
Test purpose		Check that: If Activity data enumeration property exit sensor object is supported by the agent, the Enum-Observed-Value-Simple-Bit-Str attribute shall be present. The specific sensor event properties flags are contained in the most significant (high) 16 bits.		
Applicability		C_AG_OXP_176 AND C_AG_HUB_030 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Simulate a valid dose with the agent under test. 2. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = dosage-taken(0) 3. Simulate a missed dose with the agent under test. 4. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = dosage-missed(1)		
Pass/Fail criteria		All checked values are as specified in the test procedure.		
Notes				

TP Id		TP/PLT/AG/CLASS/HUB/BV-006_F		
TP label		Semantic of activity data temperature sensor.		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	TempSensor5;M		
Test purpose		Check that: If Activity data enumeration property exit sensor object is supported by the agent,		

	the Enum-Observed-Value-Simple-Bit-Str attribute shall be present. The specific sensor event properties flags are contained in the most significant (high) 16 bits.
Applicability	C_AG_OXP_176 AND C_AG_HUB_031 AND C_AG_OXP_181 AND C_AG_OXP_000
Other PICS	
Initial condition	The simulated manager and the agent under test are in the operating state.
Test procedure	1. Simulate high temperature with the agent under test. 2. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = high-temperature-detected(0) 3. Simulate a low temperature with the agent under test. 4. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = low-temperature-detected(1) 5. Simulate a fast changing of temperatures with the agent under test. 6. Wait for the simulated manager to receive the event report: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = rate-of-change-too-fast(2)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-008		
TP label		Association Activity Hub Agent		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	MDSMethod 6; M	AssocRqt1; M	AssocRqt2; M
		AssocRqt3; M	AssocRqt4; M	AssocRqt5; M
		AssocRqt6; M	AssocRqt7; M	AssocRqt8; M
		AssocRqt9; M	AssocRqt11; M	AssocRqt12; M
		AssocRqt13; M		
Test purpose		Check that:		

	During the association procedure, Activity Hub Agent sends the correct association request to the simulated Manager
Applicability	C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000
Other PÎCS	C_AG_OXP_017
Initial condition	The simulated manager and the agent under test are in the unassociated state.
Test procedure	1. The agent sends a message to associate to the simulated manager, the expected fields sent by the agent are: a. APDU Type ❑ field- type = AarqApdu ❑ field-length =2 bytes ❑ field-value =0xE2 0x00. b. assoc-version ❑ field- type = AssociationVersion ❑ field-length =BITS-32 ❑ field- value=0x80 0x00 0x00 0x00 c. data-proto-id ❑ field- type = DataProtoId(INT-U16) ❑ field-length =2 bytes ❑ field- value=0x50 0x79 (20601) d. protocol-version ❑ field- type = Protocol Version ❑ field-length = 4 bytes ❑ field- value=0x80 0x00 0x00 0x00 e. encoding rules ❑ field- type = EncodingRules ❑ field-length = 2 bytes ❑ field- value= ▪ Bit 0 must be set (support MDER) ▪ Bits 1 and 2 may be set ▪ The rest of the bits must be 0 f. nomenclature version ❑ field- type = NomenclatureVersion ❑ field-length = 4 bytes ❑ field- value=0x80 0x00 0x00 0x00 ❑ This value indicates version1 is supported (nom-version1(0) is set). g. functional–units ❑ field- type = FunctionalUnits ❑ field-length = 4 bytes ❑ field-value = ▪ Bit 0 must not be set h. System type ❑ field- type = SystemType ❑ field-length = 4 bytes

	❑ field- value = 0x00 0x80 0x00 0x00 (sys-type-agent) i. System-Id ❑ field- type = OCTET STRING ❑ field-length = 8 bytes ❑ field- value = 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX (octet string length = 8 | UI-64 manufacturer and device) ❑ This value will be System Id attribute of MDS object. j. dev-config-id ❑ field- type = ConfigId(INT-U16) ❑ field-length = 2 bytes ❑ field- value = • <between 0x40 0x00 and 0x7F 0xFF > for extended configuration. k. data-req-mode-flags (DataReqModeCapab) ❑ field- type = DataReqModeFlags ❑ field-length = 2 bytes ❑ If the Agent supports Agent-initiated measurement transfer → Bit 15 is set (data-req-supp-init-agent(15)) ❑ If the agent supports requesting objects based on the object handle →Bit 6 will be set (data-req-supp-scope-handle(6)). ❑ If the agent supports single response →Bit 8 will be set (data-req-supp-mode-single-rsp(8)). ❑ If the agent supports time unlimited data request →Bit 10 will be set (data-req-supp-mode-time-no-limit(10)). l. data-req-init-agent-count (DataReqModeCapab) ❑ field- type = INT-U8 ❑ field-length = 2 bytes ❑ field.value = 0x01 m. data-req-init-manager-count (DataReqModeCapab) ❑ field- type = INT-U8 ❑ field-length = 2 bytes ❑ field.value = 0x00
Pass/Fail criteria	All checked attributes have proper values.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_A		
TP label		Activity data Fall sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	FallSensor 5;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		

Other PICS	C_AG_HUB_033
Initial condition	The simulated manager and the agent under test are in the Operating state.
Test procedure	1. Trigger a fall sensor supported by the agent under test. 2. Wait for the event report, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ IF C_AG_HUB_033 = TRUE, then • Bit 16 (auto-presence-received) must be set • Bit 17 (auto-presence-failed) must **not** be set ▪ IF C_AG_HUB_033 = FALSE, then • Bit 16 (auto-presence-received) must not be set • Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by the vendor. In that time an event report must be received by the simulated manager. 4. IF C_AG_HUB_033 = TRUE: Disable or disconnect the sensor (as defined by the vendor) and again wait the specified time. In that time an event report must be received by the simulated manager, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_B		
TP label		Activity data PERS sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	PERSSensor5;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_033, C_AG_HUB_035		
Initial condition		The simulated manager and the agent under test are in the operating state.		

Test procedure	1. Trigger a PERS sensor supported by the agent under test. 2. Wait for the event report, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ❑ IF C_AG_HUB_035 = TRUE, then ▪ Bit 16 (auto-presence-received) must be set ▪ Bit 17 (auto-presence-failed) must **not** be set ❑ IF C_AG_HUB_035 = FALSE, then ▪ Bit 16 (auto-presence-received) must not be set ▪ Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by the vendor. In that time an event report must be received by the simulated manager. 4. IF C_AG_HUB_035 = TRUE: Disable or disconnect the sensor (as defined by vendor) and wait again the specified time. In that time an event report must be received by the simulated manager, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_C		
TP label		Activity data Environmental sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	EnvironSensor5;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_033, C_AG_HUB_036		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Trigger an Environmental sensor supported by the agent under test. 2. Wait for the event report, check the following attribute:		

	a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ❑ IF C_AG_HUB_036 = TRUE, then ▪ Bit 16 (auto-presence-received) must be set ▪ Bit 17 (auto-presence-failed) must **not** be set ❑ IF C_AG_HUB_036 = FALSE, then ▪ Bit 16 (auto-presence-received) must not be set ▪ Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by the vendor. In that time an event report must be received by the simulated manager. 4. IF C_AG_HUB_036 = TRUE: Disable or disconnect the sensor (as defined by the vendor) and again wait the specified time. In that time an event report must be received by the simulated manager, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_D		
TP label		Activity data Motion sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	MotionSensor5;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_033, C_AG_HUB_037		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Trigger a Motion sensor supported by the agent under test. 2. Wait for the event report, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR		

	❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ❑ IF C_AG_HUB_037 = TRUE, then ▪ Bit 16 (auto-presence-received) must be set ▪ Bit 17 (auto-presence-failed) must **not** be set ❑ IF C_AG_HUB_037 = FALSE, then ▪ Bit 16 (auto-presence-received) must not be set ▪ Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by the vendor. In that time an event report must be received by the simulated manager. 4. IF C_AG_HUB_037 = TRUE: Disable or disconnect the sensor (as defined by the vendor) and again wait the specified time. In that time an event report must be received by the simulated manager, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_E		
TP label		Activity data Property Exit sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	PropExitSensor5;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_033, C_AG_HUB_038		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Trigger a Property Exit sensor supported by the agent under test. 2. Wait for the event report, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes		

	❑ attribute-value = ❑ IF C_AG_HUB_038 = TRUE, then ▪ Bit 16 (auto-presence-received) must be set ▪ Bit 17 (auto-presence-failed) must **not** be set ❑ IF C_AG_HUB_038 = FALSE, then ▪ Bit 16 (auto-presence-received) must not be set ▪ Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by the vendor. In that time an event report must be received by the simulated manager. 4. IF C_AG_HUB_038 = TRUE: Disable or disconnect the sensor (as defined by the vendor) and again wait the specified time. In that time an event report must be received by the simulated manager, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_F		
TP label		Activity data Enuresis sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	EnurSensor5;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_033, C_AG_HUB_039		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Trigger an Enuresis sensor supported by the agent under test. 2. Wait for the event report, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ❑ IF C_AG_HUB_039 = TRUE, then		

	▪ Bit 16 (auto-presence-received) must be set ▪ Bit 17 (auto-presence-failed) must **not** be set ❑ IF C_AG_HUB_039 = FALSE, then ▪ Bit 16 (auto-presence-received) must not be set ▪ Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by the vendor. In that time an event report must be received by the simulated manager. 4. IF C_AG_HUB_039 = TRUE: Disable or disconnect the sensor (as defined by the vendor) and again wait the specified time. In that time an event report must be received by the simulated manager, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_G		
TP label		Activity data Contact Closure sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	ContactSensor5;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_033, C_AG_HUB_040		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Trigger a Contact Closure sensor supported by the agent under test. 2. Wait for the event report, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ❑ IF C_AG_HUB_040 = TRUE, then ▪ Bit 16 (auto-presence-received) must be set ▪ Bit 17 (auto-presence-failed) must **not** be set		

	❑ IF C_AG_HUB_040 = FALSE, then ▪ Bit 16 (auto-presence-received) must not be set ▪ Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by the vendor. In that time an event report must be received by the simulated manager. 4. IF C_AG_HUB_040 = TRUE: Disable or disconnect the sensor (as defined by the vendor) and again wait the specified time. In that time an event report must be received by the simulated manager, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_H		
TP label		Activity data Usage sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	UsageSensor6;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_033, C_AG_HUB_041		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Trigger a Usage sensor supported by the agent under test. 2. Wait for the event report, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ❑ IF C_AG_HUB_041 = TRUE, then ▪ Bit 16 (auto-presence-received) must be set ▪ Bit 17 (auto-presence-failed) must **not** be set ❑ IF C_AG_HUB_041 = FALSE, then ▪ Bit 16 (auto-presence-received) must not be set		

	▪ Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by vendor. In that time an event report must be received by the simulated manager. 4. IF C_AG_HUB_041 = TRUE: Disable or disconnect the sensor (as defined by the vendor) and again wait the specified time. In that time an event report must be received by the simulated manager, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_I		
TP label		Activity data Switch sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	SwitchSensor5;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_033, C_AG_HUB_042		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Trigger a Switch sensor supported by the agent under test. 2. Wait for the event report, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ❑ IF C_AG_HUB_042 = TRUE, then ▪ Bit 16 (auto-presence-received) must be set ▪ Bit 17 (auto-presence-failed) must **not** be set ❑ IF C_AG_HUB_042 = FALSE, then ▪ Bit 16 (auto-presence-received) must not be set ▪ Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by the vendor. In that time an event report must be received by the simulated manager.		

	4. IF C_AG_HUB_042 = TRUE: Disable or disconnect the sensor (as defined by the vendor) and again wait the specified time. In that time an event report must be received by the simulated manager, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_J		
TP label		Activity data Dosage sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	DosageSensor5;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_033, C_AG_HUB_043		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Trigger a Dosage sensor supported by the agent under test. 2. Wait for the event report, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ❑ IF C_AG_HUB_043 = TRUE, then ▪ Bit 16 (auto-presence-received) must be set ▪ Bit 17 (auto-presence-failed) must **not** be set ❑ IF C_AG_HUB_043 = FALSE, then ▪ Bit 16 (auto-presence-received) must not be set ▪ Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by the vendor. In that time an event report must be received by the simulated manager. 4. IF C_AG_HUB_043 = TRUE: Disable or disconnect the sensor (as defined by the vendor) and again wait the specified time. In that time an event report must be received by the simulated manager, check the following attribute:		

	a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-009_K		
TP label		Activity data Temperature sensor Enumeration Object. Heartbeat Operational Status		
Coverage	**Spec**	[ISO/IEEE 11073-10471]		
	Testable items	EnumObj 24; C	TempSensor5;M	
Test purpose		Check that: Generic Sensor Health properties flags value: auto-presence-received(16),auto-presence-failed(17)		
Applicability		C_AG_OXP_176 AND C_AG_OXP_181 AND C_AG_OXP_000		
Other PICS		C_AG_HUB_033, C_AG_HUB_044		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Trigger a temperature sensor supported by the agent under test. 2. Wait for the event report, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ❑ IF C_AG_HUB_044 = TRUE, then ▪ Bit 16 (auto-presence-received) must be set ▪ Bit 17 (auto-presence-failed) must **not** be set ❑ IF C_AG_HUB_044 = FALSE, then ▪ Bit 16 (auto-presence-received) must not be set ▪ Bit 17 (auto-presence-failed) must **not** be set 3. Wait the time specified by the vendor. In that time an event report must be received by the simulated manager. 4. IF C_AG_HUB_044 = TRUE: Disable or disconnect the sensor (as defined by the vendor) and again wait the specified time. In that time an event report must be received by the simulated manager, check the following attribute: a. Mandatory attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR		

	❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = ▪ Bit 16 (auto-presence-received) must **not** be set ▪ Bit 17 (auto-presence-failed) must be set
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/HUB/BV-010		
TP label		Operating State. Manager to Agent Maximum APDU Size		
Coverage	**Spec**	[ISO/IEEE 11073-20601A]		
	Testable items	CommonCharac 3; M		
	Spec	[ISO/IEEE 11073-10471]		
	Testable items	ComCharac2; M		
Test purpose		Check that: Check that the total size of the response do not exceed of the maximum APDU size established by the specialization [AND] An Agent according to this definition shall be capable of receiving an APDU up to the size of at least Nrx. For this standard it is Nrx = 224 octets		
Applicability		C_AG_OXP_000 AND C_AG_OXP_176		
Other PICS		C_AG_OXP_041, C_AG_OXP_100		
Initial condition		The simulated manager and the agent are in the operating state.		
Test procedure		1. The simulated manager issues a "Remote Operation Invoke | Get" command with: a. Obj-handle set to 0 (to request for MDS object) b. attribute-id-list.count = 103 c. attribute-id-list: (MDC_ATTR_ID_MODEL, MDC_ATTR_SYS_ID, MDC_ATTR_DEV_CONFIG_ID) repeated 34 times followed by an additional MDC_ATTR_ID_MODEL 2. Check the response of the agent. 3. The simulated manager issues a "Remote Operation Invoke | Get" command with the handle set to 0 (to request for an MDS object) and an empty attribute-id-list to indicate all attributes. 4. Check the response of the agent		
Pass/Fail criteria		• In step 2, the agent under test may respond with a rors-cmip-get listing all the requested attributes, or with a roer message. If PICS C_AG_OXP_100 =TRUE and the agent does not respond with a rors-cmip-get message, it responds with a roer message or rorj(resource-limitation) message, a WARNING will appear. o If the response is a get response, the total size of the response cannot exceed the sum of the APDU sizes of the supported specializations (limited to an absolute limit of 64512 octets):		

	▪ Pulse oximeter -> 9216 octets ▪ Weighing scales -> 896 octets ▪ Glucose meter -> 5120 octets or 64512 octets if the agent supports PM-Store ▪ Blood pressure -> 896 octets ▪ Thermometer -> 896 octets ▪ Independent activity hub -> 5120 octets ▪ Cardiovascular -> 64512 octets or 6624 octets if the agent under test only supports Step Counter Profile ▪ Strength -> 64512 octets: ▪ Adherence monitor -> 1024 octets ▪ Peak Flow -> 2030 octets ▪ Body composition analyser -> 7730 octets ▪ Basic ECG/Simple ECG -> 7168 octets or 64512 octets if the agent supports PM-Store ▪ Basic ECG/Heart Rate -> 1280 octets or 64512 octets if the agent supports PM-Store ▪ International normalized ratio -> 896 octets or 64512 if the agent supports PM-Store o In the case where it responds with a roer, the reason must not be protocol-violation (23) • In step 4, the agent must respond with a rors-cmip-get message.
Notes	

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