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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 5F: Cardiovascular fitness and activity monitor: Agent

Recommendation ITU-T H.845.6

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Recommendation ITU-T H.845.6

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 5F: Cardiovascular fitness and activity monitor: Agent

Summary

Recommendation ITU-T H.845.6 is a transposition of Continua Test Tool DG2013, Test Suite Structure & Test Purposes, PAN-LAN-TAN Interface; Part 5F: Device Specializations. Agent (Cardiovascular) (Version 1.4, 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.845.6	2015-01-13	16	11.1002/1000/12267

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FOREWORD

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

Table of Contents

Electronic attachment: Protocol implementation conformance statements (PICS) and 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 5F: Device Specializations. Agent (Cardiovascular) (Version 1.4, 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_5F_v1.2.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_5F_v1.2.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_5F_v1.4.doc" as a baseline and adds new features included in [ITU-T H.810]: • Adds glucose meter BLE • Adds BLE SSP support • Adds NFC new transport • Adds INR device specialization

Recommendation ITU-T H.845.6

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 5F: Cardiovascular fitness and activity monitor: Agent

1 Scope

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

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

– **Part 1**: Optimized exchange protocol [ISO/IEEE 11073-20601A] Agent
– **Part 2**: Optimized exchange protocol [ISO/IEEE 11073-20601A] Manager
– **Part 3**: Continua design guidelines. Agent
– **Part 4**: Continua design guidelines. Manager
– **Part 5**: Device specializations. Agent. This document is divided 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] Recommendation ITU-T H.810 (2013), *Interoperability design guidelines for personal health systems.*

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

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

[ISO/IEEE 11073-10441] ISO/IEEE 11073-10441-2008, *Health informatics – Personal health device communication – Device specialization – Cardiovascular fitness and activity monitor.*

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
SDP	Service Discovery Protocol
SOAP	Simple Object Access Protocol
TCRL	Test Case Reference List
TCWG	Test and Certification Working Group
TP	Test Purpose
TSS	Test Suite Structure
USB	Universal Serial Bus
WDM	Windows Driver Model

5 Conventions

The key words "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "MAY", "MAY NOT" in this document are to be interpreted as in [b-ETSI SR 001 262].

– SHALL is equivalent to 'must' or 'it is required to'.

– SHALL NOT is equivalent to 'must not' or 'it is not allowed'.

– SHOULD is equivalent to 'it is recommended to'.

– SHOULD NOT is equivalent to 'it is not recommended to'.

– MAY is equivalent to 'is permitted'.

– MAY NOT is equivalent to 'it is not required that'.

NOTE – The above-mentioned key words are capitalized for illustrative purposes only and they do not appear capitalized within this Recommendation.

Reference is made in the ITU-T H.800-series of Recommendations to different versions of the Continua Design Guidelines (CDG) by a specific designation. The list of terms that may be used in this Recommendation is provided in Table 1.

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

CDG name	Transposed as	Version	Description	Designation
2013 plus errata	ITU-T H.810	4.1	CDG 2013 plus errata noting all ratified bugs.	–
2013	–	4.0	Release 2013 of the CDG including maintenance updates of CDG 2012 and additional guidelines that cover new functionalities.	Endorphin
2012 plus errata	–	3.1	CDG 2012 plus errata noting all ratified bugs [b-CDG 2012].	–
2012	–	3.0	Release 2012 of the CDG including maintenance updates of CDG 2011 and additional guidelines that cover new functionalities.	Catalyst
2011 plus errata	–	2.1	CDG 2011 integrated with identified errata.	–
2011	–	2.0	Release 2011 of the CDG including maintenance updates of 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 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 1.3.6 (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: 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 scale (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 analyser (BCA)
  - Subgroup 1.3.13: Basic electrocardiograph (ECG)
  - 1.3.14: International normalized ratio (INR)
- 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)

– 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 scale (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 analyser (BCA)
  - Subgroup 2.3.13: Basic electrocardiograph (ECG)
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  - Subgroup 2.4.4: Whitepaper heart rate requirements (HR)
  - Subgroup 2.4.5: Whitepaper glucose meter requirements (GL)

7 Electronic attachment

The protocol implementation conformance statements (PICS) and the protocol implementation extra information for testing (PIXIT) required for the implementation of Annex A can be downloaded from http://handle.itu.int/11.1002/2000/12067

In the electronic attachment, letters "C" and "I" in the column labelled "Mandatory" are used to distinguish between "PICS" and "PIXIT" respectively during testing. If the cell is empty, the corresponding PICS is "independent". If the field contains a "C", the corresponding PICS is dependent on other PICS, and the logical expression is detailed in the "SCR_Expression" field. The static conformance review (SCR) is used in the test tool to assert whether the PICS selection is consistent.

Annex A

Test purposes (TPs)

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

A.1 TP definition conventions

The test purposes 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.).
- **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 1.3.6: Cardiovascular (CV)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/AG/CLASS/CV/BV-000</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">MDS Object for Cardiovascular fitness and activity monitor specialization</td></tr>
<tr><td rowspan="5">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10441]</td></tr>
<tr><td rowspan="4">Testable items</td><td>MDSAttr1; M</td><td>MDSAttr2; M</td><td>MDSAttr3; R</td></tr>
<tr><td>MDSAttr4; R</td><td>MDSAttr5; R</td><td>MDSAttr6; M</td></tr>
<tr><td>MDSAttr7; M</td><td>MDSAttr8; M</td><td>GETServ1; M</td></tr>
<tr><td>GETServ3; M</td><td>OperProc1; M</td><td></td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_000 AND C_AG_OXP_172</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The agent under test is 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 an MDS object) and the attribute-id-list is 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. Mandatory attribute Dev-Configuration-Id
❑ attribute-type = ConfigId
❑ attribute-length = 2 bytes
❑ attribute-value = < between 0x4000 and 0x7FFF >
b. Attribute System-Type shall not be present.
c. Mandatory attribute System-model
❑ attribute-id = MDC_ATTR_ID_MODEL (0x09 0x28)
❑ attribute-type = SystemModel
❑ attribute-value.length = <Variable>
❑ attribute-value ={Manufacturer, Model}
d. 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_HF_CARDIO (0x10 0x29), 1}
e. If Recommended Power-Status attribute is present:
❑ attribute-id = MDC_ATTR_POWER_STAT
❑ attribute-type = PowerStatus
❑ attribute-value.length = 2 bytes
❑ attribute-value =
ON_MAINS (0x8000) or ON_BATTERY(0x4000)
• Only one of the following may be active:
• chargingFull(8),
• chargingTrickle(9),
• chargingOff(10).
f. If Recommended Battery-Level attribute is present
❑ attribute-id = MDC_ATTR_VAL_BATT_CHARGE
❑ attribute-type = BITS-16
❑ attribute-value.length = 2 bytes
❑ attribute-value = <value between 0 and 100> If value >100, the meaning of the value is "undefined"</td></tr>
</table>

	g. If Recommended Remaining-Battery-Time attribute is present: ❑ attribute-id = MDC_ATTR_TIME_BATT_REMAIN ❑ attribute-type = BatMeasure ❑ attribute-value.length = 6 bytes ❑ attribute-value = <4 bytes to define the value. 2 remaining bytes to define the units, which shall be set to one of: MDC_DIM_MIN (0x08 0xA0), MDC_DIM_HR (0x08 0xC0), MDC_DIM_DAY (0x08 0xE0)>
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-001		
TP label		MDS Configuration objects events for Cardiovascular.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	MDSEvent1; M	AltitudeGain1; O	AltitudeLoss1; O
		Altitude1; O	Distance1; O	AscentTime1; O
		DescentTime1; O	Latitude1; O	Longitude1; O
		Slopes1; O	Speed1; O	Cadence1; O
		Incline1; O	Heart rate1; O	Max user heart rate1; O
		Power1; O	Resistance1; O	Stride length1; O
		Breathing rate1; O	Energy expended1; O	Calories ingested1; O
		CarbohydrateCal1; O	SustainedPhysAct1; O	ActIntensity1; O
		BodyWeight1; O	Height1; O	Age1; O
		Session1; M	Sub-session1; O	ActivityTime1; O
		ProgramId1; O		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172		
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 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 = Objects that will be checked:
  - The Session Enumeration Object must appear.
  - IF C_AG_CV_015 Then Altitude Gain Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_016 Then Program identifier Enumeration Object is present, ELSE it is not present.
  - IF C_AG_CV_017 Then Activity Time Enumeration Object is present, ELSE it is not present.
  - IF C_AG_CV_018 Then Age Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_019 Then Height Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_020 Then Body Weight Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_021 Then Activity Intensity Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_022 Then Sustained Phys activity threshold Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_023 Then Carbohydrate calories Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_024 Then Calories ingested Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_025 Then Energy Expended Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_026 Then Breathing Rate Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_027 Then Stride Length Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_028 Then Resistance Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_029 Then Power Numeric Object is present, ELSE it is not present.
  - IF C_AG_CV_030 Then Max User Heart Rate Numeric Object is present,

	ELSE it is not present. • IF C_AG_CV_031 Then Heart Rate Numeric Object is present, ELSE it is not present. • IF C_AG_CV_032 Then Altitude Loss Numeric Object is present, ELSE it is not present. • IF C_AG_CV_033 Then Incline Numeric Object is present, ELSE it is not present. • IF C_AG_CV_034 Then Cadence Numeric Object is present, ELSE it is not present. • IF C_AG_CV_035 Then Speed Numeric Object is present, ELSE it is not present. • IF C_AG_CV_036 Then Slopes Numeric Object is present, ELSE it is not present. • IF C_AG_CV_037 Then Longitude Numeric Object is present, ELSE it is not present. • IF C_AG_CV_038 Then Latitude Numeric Object is present, ELSE it is not present. • IF C_AG_CV_039 Then Altitude Numeric Object is present, ELSE it is not present. • IF C_AG_CV_040 Then Distance Numeric Object is present, ELSE it is not present. • IF C_AG_CV_041 Then Ascent time and Distance Numeric Object is present, ELSE it is not present. • IF C_AG_CV_042 Then Descent time and Distance Numeric Object is present, ELSE it is not present. • IF C_AG_CV_043 Then Sub-session Enumeration Object is present, ELSE it is not present.
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-002		
TP label		MDS object events for Cardiovascular fitness activity monitor agent.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	MDSEvent3; M	MDSEvent4; M	MDSEvent5; M
		MDSEvent6; M	MDSEvent7; M	MDSEvent8; M
		MDSEvent9; M	MDSEvent10; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND (C_AG_OXP_182 OR C_AG_OXP_183 OR C_AG_OXP_184 OR C_AG_OXP_189)		
Initial condition		The agent under test is 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 a 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/CV/BV-005		
TP label		Altitude Gain Numeric Object		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	AltitudeGain1; O
		AltitudeGain2; M	AltitudeGain3; M	AltitudeGain4; M
		AltitudeGain5; M	AltitudeGain6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_015		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config" 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Altitude Gain object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_ALT_GAIN b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16 ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_M or MDC_DIM_X_FOOT d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session		

	object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used, with zero (0) indicating that no altitude was gained.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-005_A		
TP label		Altitude Gain, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_015		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Altitude gain object.		
Pass/Fail criteria		• TheTimestamp attribute used for the Altitude gain object shall be the same as that used for the associated Session or Sub-Session object instance. • The Altitude gain instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-006		
TP label		Altitude Loss Numeric Object		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	AltitudeLoss1; O
		AltitudeLoss2; M	AltitudeLoss3; M	AltitudeLoss4; M
		AltitudeLoss5; M	AltitudeLoss6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_032		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config" 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Altitude Loss object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_ALT_LOSS b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_M or MDC_DIM_X_FOOT d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used, with zero (0) indicating that no altitude was lost.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-006_A		
TP label		Altitude Loss, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_032		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Altitude loss object.		
Pass/Fail criteria		• The Timestamp attribute used for Altitude loss object shall be the same as that used for the associated Session or Sub-Session object instance. • The Altitude loss instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-007
TP label		Altitude Numeric Object Attributes
Coverage	**Spec**	[ISO/IEEE 11073-10441]

	Testable items	NumObj5; M	NumObj6; M	Altitude1; O
		Altitude2; M	Altitude3; M	Altitude4; M
		Altitude5; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_039		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Altitude object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_ALT b. 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)) shall be set. • 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall beis set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_M or MDC_DIM_X_FOOT d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration		
Pass/Fail criteria		All checked values are as specified in the test procedure.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-007_A		
TP label		Altitude, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_039		

Initial condition	The simulated manager and the agent under test are in the operating state.
Test procedure	1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Altitude object.
Pass/Fail criteria	• The Timestamp attribute used for the Altitude object shall be the same as that used for the associated Session or Sub-Session object instance. • The Altitude instance shall have a timestamp identical to its associated session or sub-session object instance.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-008		
TP label		Distance Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Distance1; O
		Distance2; M	Distance 3; M	Distance 4; M
		Distance 5; M	Distance 6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_040		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Distance object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_DISTANCE b. 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-intermittentt(0)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_M or MDC_DIM_X_FOOT or MDC_DIM_X_STEP		

	d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-008_A		
TP label		Distance, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_040		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Distance object		
Pass/Fail criteria		• The Timestamp attribute used for the Distance object shall be the same as that used for the associated Session or Sub-Session object instance. • The Distance instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-009		
TP label		Ascent Time and Distance Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	AscentTime1; O
		AscentTime2; M	AscentTime3; M	AscentTime4; M
		AscentTime5; M	AscentTime6; R	AscentTime7; M
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_041		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Ascent time and Distance object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE		

	❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_ASC_TIME_DIST b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_M or MDC_DIM_X_FOOT or MDC_DIM_X_STEP d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration e. Recommended attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes ❑ attribute-value = <Not relevant for this test> 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used (for observed values of the ascent time and distance object).
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-009_A		
TP label		Ascent time and distance, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_041		
Initial condition		The simulated manager and the agent under test are in the operating state.		

Test procedure	1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Ascent time and distance Object.
Pass/Fail criteria	• The Timestamp attribute used for Ascent time and distance object shall be the same as that used for the associated Session or Sub-Session object instance. • Ascent time and distance instance shall have a timestamp identical to its associated session or sub-session object instance.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-010		
TP label		Descent Time and Distance Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	DescentTime1; O
		DescentTime2; M	DescentTime3; M	DescentTime4; M
		DescentTime5; M	DescentTime6; R	DescentTime7; M
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_042		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_DESC_TIME_DIST b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_M or MDC_DIM_X_FOOT or MDC_DIM_X_STEP d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF		

	❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration e. Recommended attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes ❑ attribute-value = <Not relevant for this test> 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-010_A		
TP label		Descent time and distance, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_042		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Descent time and distance object.		
Pass/Fail criteria		• The Timestamp attribute used for Descent time and distance object shall be the same as the used for the associated Session or Sub-Session object instance. • The Descent time and distance instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-011		
TP label		Latitude Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Latitude1; O
		Latitude2; M	Latitude3; M	Latitude4; R
		Latitude5; M	Latitude6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_038		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager.		

	4. The Latitude object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_LATITUDE b. 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)) shall be set. • bit 1(mss-avail-stored-data (1)) shall be set. • bit 2 (mss-updt-aperiodic (2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated (9)) shall be set. • The other bits have to be 0. c. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_ANG_DEG d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. In step 7, check that the values are limited to -180 to 180.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-011_A		
TP label		Latitude, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_038		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the timestamp and the Measure-Active-Period of the Session and sub-session object and of the Latitude object.		
Pass/Fail criteria		• The Timestamp attribute used for the Latitude object shall be the same as that used for the associated Session or Sub-Session object instance.		

	• The Latitude instance shall have a timestamp identical to its associated session or sub-session object instance.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-012		
TP label		Longitude Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Longitude1; O
		Longitude2; M	Longitude3; M	Longitude4; R
		Longitude5; M	Longitude6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_037		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Longitude object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_LONGITUDE b. 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)) shall be set. • 1(mss-avail-stored-data (1)) shall be set. • bit 2 (mss-updt-aperiodic (2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated (9)) shall be set. • The other bits have to be 0. c. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_ANG_DEG d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent.		

	7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that the values are limited to -180 to 180.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-012_A		
TP label		Longitude, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_037		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Longitude object.		
Pass/Fail criteria		• The Timestamp attribute used for the Longitude object shall be the same as that used for the associated Session or Sub-Session object instance. • The Longitude instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-013		
TP label		Slopes Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Slopes1; O
		Slopes2; M	Slopes3; M	Slopes4; R
		Slopes5; M	Slopes6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_036		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Slopes object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_SLOPES b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set.		

	• 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_DIMLESS d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-013_A		
TP label		Slopes, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_036		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Slopes object.		
Pass/Fail criteria		• The Timestamp attribute used for the Slopes object shall be the same as that used for the associated Session or Sub-Session object instance. • The Slopes instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-014		
TP label		Speed Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Speed1; O
		Speed2; M	Speed3; M	Speed4; M
		Speed5; M	Speed6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_035		

Initial condition	The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Speed object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_SPEED b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Metric-Id ❑ attribute-id = MDC_ATTR_ID_PHYSIO ❑ attribute-type = OID-Type ❑ attribute-value.length =INT-U16 ❑ attribute-value = MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MEAN_NULL_INCLUDE or MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MAX or MDC_HF_MIN d. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_M_PER_MIN or MDC_DIM_X_FOOT_PER_MIN or MDC_DIM_X_INCH_PER_MIN or MDC_DIM_X_STEP_PER_MIN e. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.

Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-014_A		
TP label		Speed, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_035		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Speed object.		
Pass/Fail criteria		• The Timestamp attribute used for Speed object shall be the same as that used for the associated Session or Sub-Session object instance. • The Speed instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-015		
TP label		Cadence Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Cadence1; O
		Cadence2; M	Cadence3; M	Cadence4; M
		Cadence5; R	Cadence6; M	Cadence7; M
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_034		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Cadence object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_CAD b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set.		

	• The other bits have to be 0. c. Mandatory attribute Metric-Id ❑ attribute-id = MDC_ATTR_ID_PHYSIO ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MEAN_NULL_INCLUDE or MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MAX or MDC_HF_MIN d. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_RPM e. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-015_A		
TP label		Cadence, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_034		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Cadence object.		
Pass/Fail criteria		• The Timestamp attribute used for Cadence object shall be the same as that used for the associated Session or Sub-Session object instance. • The Cadence instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-016		
TP label		Incline Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable	NumObj5; M	NumObj6; M	Incline1; O

	items	Incline2; M	Incline3; M	Incline4; M
		Incline5; M	Incline6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_033		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Incline object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_INCLINE b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Metric-Id ❑ attribute-id = MDC_ATTR_ID_PHYSIO ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MEAN_NULL_INCLUDE or MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MAX or MDC_HF_MIN d. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_PERCENT or MDC_DIM_ANG_DEG e. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE ❑ attribute-value.length = INT-U16 ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.		
Pass/Fail criteria		• In step 4, all checked values are as specified.		

	• In step 7, check values.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-016_A		
TP label		Incline, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_033		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Incline object.		
Pass/Fail criteria		• The Timestamp attribute used for Incline object shall be the same as that used for the associated Session or Sub-Session object instance. • The Incline instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-017		
TP label		Heart Rate Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Heart rate1; O
		Heart rate2; M	Heart rate3; M	Heart rate4; M
		Heart rate5; R	Heart rate6; M	Heart rate7 M
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_031		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Heart rate object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_HR b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set		

	• bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Metric-Id ❑ attribute-id = MDC_ATTR_ID_PHYSIO ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MEAN_NULL_INCLUDE or MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MAX or MDC_HF_MIN d. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_BEAT_PER_MIN e. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-017_A		
TP label		Heart Rate, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_031		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Heart rate object.		
Pass/Fail criteria		• The Timestamp attribute used for Heart rate object shall be the same as that used for the associated Session or Sub-Session object instance. • The Heart rate instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-018
TP label		Max user Heart Rate Numeric Object Attributes
Coverage	**Spec**	[ISO/IEEE 11073-10441]

	Testable items	NumObj5; M	NumObj6; M	Max user heart rate1; O
		Max user heart rate2; M	Max user heart rate3; M	Max user heart rate4; X
		Max user heart rate5; R	Max user heart rate6; M	Max user heart rate7; M
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_030		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Max user Heart rate object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_HR_MAX_USER b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Metric-Id ❑ attribute-id = MDC_ATTR_ID_PHYSIO ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes d. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_BEAT_PER_MIN e. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.		
Pass/Fail criteria		• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.		

Notes	Metric-Id has been considered as mandatory, but its qualifier has to be clarified by Continua. Opened bug :http://certification.continuaalliance.org/bugzilla/show_bug.cgi?id=465

TP Id		TP/PLT/AG/CLASS/CV/BV-018_A		
TP label		Max user heart rate, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_030		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Max user heart rate object.		
Pass/Fail criteria		• The Timestamp attribute used for the Max user heart rate object shall be the same as that used for the associated Session or Sub-Session object instance. • The Max user heart rate instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-019		
TP label		Power Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Power1; O
		Power2; M	Power3; M	Power4; M
		Power5; R	Power6; M	Power7; M
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_029		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Power object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_POWER b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set.		

	• bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Metric-Id ❑ attribute-id = MDC_ATTR_ID_PHYSIO ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MEAN_NULL_INCLUDE or MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MAX or MDC_HF_MIN d. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_WATT e. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-019_A		
TP label		Power, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_029		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Power object.		
Pass/Fail criteria		• The Timestamp attribute used for the power object shall be the same as that used for the associated Session or Sub-Session object instance. • The Power instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id	TP/PLT/AG/CLASS/CV/BV-020
TP label	Resistance Numeric Object Attributes

<table>
<tr><td rowspan="4">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10441]</td></tr>
<tr><td rowspan="3">Testable items</td><td>NumObj5; M</td><td>NumObj6; M</td><td>Resistance1; O</td></tr>
<tr><td>Resistance2; M</td><td>Resistance3; M</td><td>Resistance4; M</td></tr>
<tr><td>Resistance5; R</td><td>Resistance6; M</td><td></td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_028</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The agent under test is in the unassociated 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 an Association Response with result = "accepted-unknown-config".
3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager.
4. The Resistance object shall be:
a. Mandatory attribute Type
❑ attribute-id = MDC_ATTR_ID_TYPE
❑ attribute-type = TYPE
❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_RESIST
b. 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)) shall be set.
• bit 1(mss-avail-stored-data(1)) shall be set.
• bit 2 (mss-updt-aperiodic(2)) shall be set.
• bit 3(mss-msmt-aperiodic(3)) shall be set
• bit 9 (mss-acc-agent-initiated(9)) shall be set.
• The other bits have to be 0.
c. Mandatory attribute Metric-Id
❑ attribute-id = MDC_ATTR_ID_PHYSIO
❑ attribute-type = OID-Type (INT-U16)
❑ attribute-value.length = 2 bytes
❑ attribute-value = MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MEAN_NULL_INCLUDE or MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MAX or MDC_HF_MIN
d. Not recommended attribute Unit-Code
❑ attribute-id = MDC_ATTR_UNIT_CODE
❑ attribute-type = OID-Type (INT-U16)
❑ attribute-value.length = 2 bytes
e. Mandatory attribute Source-Handle-Reference
❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF
❑ attribute-type = HANDLE (INT-U16)
❑ attribute-value.length = 2 bytes
❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration</td></tr>
<tr><td colspan="2">Pass/Fail criteria</td><td colspan="3">All checked values are as specified in the test procedure.</td></tr>
<tr><td colspan="2">Notes</td><td colspan="3"></td></tr>
</table>

TP Id		TP/PLT/AG/CLASS/CV/BV-020_A		
TP label		Resistance, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_028		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Resistance object.		
Pass/Fail criteria		• The Timestamp attribute used for resistance object shall be the same as the used for the associated Session or Sub-Session object instance. • The Resistance instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-021		
TP label		Stride Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Stride length1; O
		Stride length2; M	Stride length3; M	Stride length4; M
		Stride length5; M	Stride length6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_027		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Stride object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_STRIDE b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Metric-Id		

	❑ attribute-id = MDC_ATTR_ID_PHYSIO ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MEAN_NULL_INCLUDE or MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MAX or MDC_HF_MIN d. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_M or MDC_DIM_X_INCH e. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-021_A		
TP label		Stride, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_027		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Stride object.		
Pass/Fail criteria		• The Timestamp attribute used for stride object shall be the same as the used for the associated Session or Sub-Session object instance. • The Stride instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-022		
TP label		Breathing Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Breathing rate1; O
		Breathing rate2; M	Breathing rate3; M	Breathing rate4; M
		Breathing rate5; R	Breathing rate6; M	Breathing rate7; M
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_026		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Breathing object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_RESP_RATE b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Metric-Id ❑ attribute-id = MDC_ATTR_ID_PHYSIO ❑ attribute-type = OID-Type ❑ attribute-value.length =INT-U16 ❑ attribute-value = MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MEAN_NULL_INCLUDE or MDC_HF_MEAN_NULL_EXCLUDE or MDC_HF_MAX or MDC_HF_MIN d. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_RESP_PER_MIN e. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. In step 7, check that only non-negative values are used.
Notes	

TP Id	TP/PLT/AG/CLASS/CV/BV-022_A
TP label	Breathing rate, timestamp values

Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_026		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Breathing rate object.		
Pass/Fail criteria		• The Timestamp attribute used for the Breathing rate object shall be the same as that used for the associated Session or Sub-Session object instance. • The Breathing rate instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-023		
TP label		Energy Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Energy expended1; O
		Energy expended2; M	Energy expended3; M	Energy expended4; M
		Energy expended5; M	Energy expended6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_025		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Energy object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_ENERGY b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16)		

	❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_CAL or MDC_DIM_X_JOULES d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (NT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-023_A		
TP label		Energy expended, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_025		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Energy expended object.		
Pass/Fail criteria		• The Timestamp attribute used for the Energy expended object shall be the same as that used for the associated Session or Sub-Session object instance. • The Energy expended instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-024		
TP label		Calories Ingested Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Calories ingested1; O
		Calories ingested2; M	Calories ingested3; M	Calories ingested4; R
		Calories ingested5; M	Calories ingested6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_024		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Calories ingested object shall be:		

	a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_CAL_INGEST b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_CAL d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-024_A		
TP label		Calories ingested, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_024		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Calories ingested object.		

Pass/Fail criteria	• The Timestamp attribute used for the Calories ingested object shall be the same as that used for the associated Session or Sub-Session object instance. • The Calories ingested instance shall have a timestamp identical to its associated session or sub-session object instance.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-025		
TP label		Carbohydrate Calories Ingested Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	CarbohydrateCal1; O
		CarbohydrateCal2; M	CarbohydrateCal3; M	CarbohydrateCal4; R
		CarbohydrateCal5; M	CarbohydrateCal6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_023		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Carbohydrate calories ingested object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_CAL_INGEST_CARB b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_CAL d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration		

	5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-025_A		
TP label		Carbohydrate calories ingested, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_023		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Carbohydrate calories ingested object.		
Pass/Fail criteria		• The Timestamp attribute used for the Carbohydrate calories ingested object shall be the same as that used for the associated Session or Sub-Session object instance. • The Carbohydrate calories ingested instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-026		
TP label		Sustained Phys Activity Threshold Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	SustainedPhysAct1; O
		SustainedPhysAct2; M	SustainedPhysAct3; M	SustainedPhysAct4; R
		SustainedPhysAct5; M	SustainedPhysAct6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_022		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Sustained Phys Activity Threshold object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_SUS_PA_THRESHOLD b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_MIN d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-026_A		
TP label		Sustained phys activity threshold, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_022		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Sustained phys activity threshold object.		
Pass/Fail criteria		• The Timestamp attribute used for the Sustained phys activity threshold object shall be the same as that used for the associated Session or Sub-Session object instance. • The Sustained phys activity threshold instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/AG/CLASS/CV/BV-027</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Activity Intensity Numeric Object Attributes</td></tr>
<tr><td rowspan="4">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10441]</td></tr>
<tr><td rowspan="3">Testable items</td><td>NumObj5; M</td><td>NumObj6; M</td><td>ActIntensity1; O</td></tr>
<tr><td>ActIntensity2; M</td><td>ActIntensity3; M</td><td>ActIntensity4; R</td></tr>
<tr><td>ActIntensity5; M</td><td>ActIntensity6; M</td><td></td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_021</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The agent under test is in the unassociated 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 an Association Response with result = "accepted-unknown-config".
3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager.
4. The Activity Intensity object shall be:
a. Mandatory attribute Type
❑ attribute-id = MDC_ATTR_ID_TYPE
❑ attribute-type = TYPE
❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_ACTIVITY_INTENSITY
b. 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)) shall be set.
• bit 1(mss-avail-stored-data(1)) shall be set.
• bit 2 (mss-updt-aperiodic(2)) shall be set.
• bit 3(mss-msmt-aperiodic(3)) shall be set
• bit 9 (mss-acc-agent-initiated(9)) shall be set.
• The other bits have to be 0.
c. Not Recommended attribute Unit-Code
❑ attribute-id = MDC_ATTR_UNIT_CODE
❑ attribute-type = OID-Type (INT-U16)
❑ attribute-value.length = 2 bytes
❑ attribute-value = MDC_DIM_PERCENT
d. Mandatory attribute Source-Handle-Reference
❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF
❑ attribute-type = HANDLE (INT-U16)
❑ attribute-value.length = 2 bytes
❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration
5. Wait for the agent under test and the simulated manager to reach the operating state.
6. Take a measurement in the agent.
7. Wait until the manager receives an event report.
</td></tr>
</table>

Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only values between zero (0) and 100 are used. The observed value reported in this object is the percentage of maximal intensity effort expended during the measurement period, as defined by the associated Session or Sub-Session object.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-027_A		
TP Label		Activity intensity, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_021		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Activity intensity object.		
Pass/Fail criteria		• The Timestamp attribute used for the Activity intensity object shall be the same as that used for the associated Session or Sub-Session object instance. • The Activity intensity instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-028		
TP label		Body Weight Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	BodyWeight1; O
		BodyWeight2; M	BodyWeight3; M	BodyWeight4; M
		BodyWeight5; M	BodyWeight6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_020		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Body weight object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_SCADA | MDC_MASS_BODY_ACTUAL b. 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)) shall be set.		

	• bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Mandatory attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_X_G or MDC_DIM_X_LB d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-028_A		
TP label		Body weight, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_020		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Body weight object.		
Pass/Fail criteria		• The Timestamp attribute used for the Body weight object shall be the same as that used for the associated Session or Sub-Session object instance. • Body weight instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/AG/CLASS/CV/BV-029</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Height Numeric Object Attributes</td></tr>
<tr><td rowspan="4">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10441]</td></tr>
<tr><td rowspan="3">Testable items</td><td>NumObj5; M</td><td>NumObj6; M</td><td>Height1; O</td></tr>
<tr><td>Height2; M</td><td>Height3; M</td><td>Height4; M</td></tr>
<tr><td>Height5; M</td><td>Height6; M</td><td></td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_019</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The agent under test is in the unassociated 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 an Association Response with result = "accepted-unknown-config".
3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager.
4. The Height object shall be:
a. Mandatory attribute Type
❑ attribute-id = MDC_ATTR_ID_TYPE
❑ attribute-type = TYPE
❑ attribute-value = MDC_PART_SCADA | MDC_LEN_BODY_ACTUAL
b. 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)) shall be set.
• bit 1(mss-avail-stored-data(1)) shall be set.
• bit 2 (mss-updt-aperiodic(2)) shall be set.
• bit 3(mss-msmt-aperiodic(3)) shall be set
• bit 9 (mss-acc-agent-initiated(9)) shall be set.
• The other bits have to be 0.
c. Mandatory attribute Unit-Code
❑ attribute-id = MDC_ATTR_UNIT_CODE
❑ attribute-type = OID-Type (INT-U16)
❑ attribute-value.length = 2 bytes
❑ attribute-value = MDC_DIM_X_M or MDC_DIM_X_FOOT
d. Mandatory attribute Source-Handle-Reference
❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF
❑ attribute-type = HANDLE (INT-U16)
❑ attribute-value.length = 2 bytes
❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration
5. Wait for the agent under test and the simulated manager to reach the operating state.
6. Take a measurement in the agent.
7. Wait until the manager receives an event report.</td></tr>
<tr><td colspan="2">Pass/Fail criteria</td><td colspan="3">• In step 4, all checked values are as specified.
• In step 7, check that only non-negative values are used.</td></tr>
<tr><td colspan="2">Notes</td><td colspan="3"></td></tr>
</table>

TP Id		TP/PLT/AG/CLASS/CV/BV-029_A		
TP label		Height, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_019		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Height object.		
Pass/Fail criteria		• The Timestamp attribute used for the Height object shall be the same as that used for the associated Session or Sub-Session object instance. • The Height instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-030		
TP label		Age Numeric Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj5; M	NumObj6; M	Age1; O
		Age2; M	Age3; M	Age4; R
		Age5; M	Age6; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_018		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Age object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_AGE b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Not Recommended attribute Unit-Code		

	❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = MDC_DIM_YR d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration 5. Wait for the agent under test and the simulated manager to reach the operating state. 6. Take a measurement in the agent. 7. Wait until the manager receives an event report.
Pass/Fail criteria	• In step 4, all checked values are as specified. • In step 7, check that only non-negative values are used.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-030_A		
TP label		Age, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj2; M	NumObj3; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_018		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Age object.		
Pass/Fail criteria		• The Timestamp attribute used for Age object shall be the same as that used for the associated Session or Sub-Session object instance. • The Age instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-031		
TP label		Session Enumeration Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	Session1; M	Session2; M	Session3; M
		Session4; R	Session5; R	Session6; M
		Session7; M	Session8; R	Session9; R
		Session11; M	Session12; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Session object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value.length =Sequence of partition (NomPartition (INT-U16)) and code (OID-Type)) ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_SESSION b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes d. Not Recommended attribute Unit-LabelString ❑ attribute-id = MDC_ATTR_UNIT_LABEL_STRING ❑ attribute-type = OCTET STRING ❑ attribute-value.length = <variable> e. Optional Label-String: ❑ attribute-id = MDC_ATTR_UNIT_LABEL_STRING ❑ attribute-type = OCTET STRING ❑ attribute-value = If an existing acceptable nomenclature term (for activity defined in Enum-Observed-Value-Simple-Oid) is not available → attribute-value = MDC_HF_ACT_UNKONWN and an appropriate clarifying text in the Label-String attribute f. Mandatory attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes g. Mandatory 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 ❑ attribute-value =

	• Valid values→ MDC_HF_ACT_UNKNOWN or MDC_HF_ACT_MONITOR or MDC_HF_ACT_SKI or MDC_HF_ACT_RUN or MDC_HF_ACT_BIKE or MDC_HF_ACT_STAIR or MDC_HF_ACT_ROW or MDC_HF_ACT_HOME or MDC_HF_ACT_WORK or MDC_HF_ACT_WALK • If there are multiple sub-sessions associated: attribute-value = MDC_HF_ACT_MULTIPLE h. Not Recommended attribute Enum-Observed-Value-Simple-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_STR ❑ attribute-type = EnumPrintableString ❑ attribute-value.length= <variable> i. Not Recommended attribute Enum-Observed-Value ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS ❑ attribute-type = EnumObsValue ❑ attribute-value.length= <variable>
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-032		
TP label		Session and associated Sub-Session 1		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	Sub-session10; M	Sub-session13; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_043		
Initial condition		The agent under test is in the operating state.		
Test procedure		1. Take Measurements for the Session and Sub-Session Objects in the agent under test. 2. Wait to receive event reports and record the Session and the Sub-session objects for later comparison.		
Pass/Fail criteria		• If the Session object has a TimeStamp, the associated Sub-session objects shall have the same type of TimeStamp.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-032_A		
TP label		Session and associated Sub-Session 2		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	Session13; M	Session14; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_043		
Initial condition		The agent under test is in the operating state.		
Test procedure		1. Take Measurements for the Session and Sub-Session Objects in the agent under test. 2. Wait to receive event reports and record the Session and the Sub-session objects for later comparison.		
Pass/Fail criteria		• The sum of the Measure-Active-Period of the Sub-Sessions has to be equal to the Measure-Active-Period of the Session. • If the Sub-session objects have a TimeStamp, then it shall fall in the period defined between the TimeStamp and the Measure-Active-Period of the session object.		
Notes				

<table>
<tr><td>TP Id</td><td colspan="4">TP/PLT/AG/CLASS/CV/BV-033</td></tr>
<tr><td>TP label</td><td colspan="4">Sub-Session Enumeration Object Attributes</td></tr>
<tr><td rowspan="5">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10441]</td></tr>
<tr><td rowspan="4">Testable items</td><td>Session16; M</td><td>Sub-session1; O</td><td>Sub-session2; M</td></tr>
<tr><td>Sub-session3; M</td><td>Sub-session4; R</td><td>Sub-session5; R</td></tr>
<tr><td>Sub-session6; M</td><td>Sub-session7; M</td><td>Sub-session8; R</td></tr>
<tr><td>Sub-session9; R</td><td>Sub-session11; R</td><td>Sub-session14; M</td></tr>
<tr><td>Applicability</td><td colspan="4">C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_043</td></tr>
<tr><td>Initial condition</td><td colspan="4">The agent under test is in the unassociated state.</td></tr>
<tr><td>Test procedure</td><td colspan="4">1. The simulated manager receives an association request from the agent under test.
2. The simulated manager responds with an Association Response with result = "accepted-unknown-config".
3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager.
4. The Sub-Session object shall be:
a. Mandatory attribute Type
❑ attribute-id = MDC_ATTR_ID_TYPE
❑ attribute-type = TYPE
❑ attribute-value.length =Sequence of partition (NomPartition (INT-U16)) and code (OID-Type))
❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_SUBSESSION
b. 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)) shall be set.
• bit 1(mss-avail-stored-data(1)) shall be set.
• bit 2 (mss-updt-aperiodic(2)) shall be set.
• bit 3(mss-msmt-aperiodic(3)) shall be set
• bit 9 (mss-acc-agent-initiated(9)) shall be set.
• The other bits have to be 0.
c. Not Recommended attribute Unit-Code
❑ attribute-id = MDC_ATTR_UNIT_CODE
❑ attribute-type = OID-Type (INT-U16)
❑ attribute-value.length = 2 bytes
d. Not Recommended attribute Unit-LabelString
❑ attribute-id = MDC_ATTR_UNIT_LABEL_STRING
❑ attribute-type = OCTET STRING
❑ attribute-value.length = <variable>
j. Optional Label-String:
❑ attribute-id = MDC_ATTR_UNIT_LABEL_STRING
❑ attribute-type = OCTET STRING
❑ attribute-value = If an existing acceptable nomenclature term (for activity defined in Enum-Observed-Value-Simple-Oid) is not available → attribute-value = MDC_HF_ACT_UNKONWN and an appropriate clarifying text in the</td></tr>
</table>

	Label-String attribute e. Mandatory attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes f. Mandatory 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 ❑ attribute-value = MDC_HF_ACT_UNKNOWN or MDC_HF_ACT_MONITOR or MDC_HF_ACT_SKI or MDC_HF_ACT_RUN or MDC_HF_ACT_BIKE or MDC_HF_ACT_STAIR or MDC_HF_ACT_ROW or MDC_HF_ACT_HOME or MDC_HF_ACT_WORK or MDC_HF_ACT_WALK g. Not Recommended attribute Enum-Observed-Value-Simple-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_STR ❑ attribute-type = EnumPrintableString ❑ attribute-value.length= <variable> h. Not Recommended attribute Enum-Observed-Value ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS ❑ attribute-type = EnumObsValue ❑ attribute-value.length= <variable>
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	http://continua.plugfests.com/show_bug.cgi?id=448

TP Id		TP/PLT/AG/CLASS/CV/BV-034		
TP label		Activity Time Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	Session16; M	ActivityTime1; O	ActivityTime2; M
		ActivityTime3; M	ActivityTime4; R	ActivityTime5; R
		ActivityTime6; R	ActivityTime7; M	ActivityTime8; M
		ActivityTime9; R	ActivityTime10; R	ActivityTime11; M
		ActivityTime12; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_017		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Activity Time object shall be: a. Mandatory attribute Type a. attribute-id = MDC_ATTR_ID_TYPE b. attribute-type = TYPE c. attribute-value.length =Sequence of partition (NomPartition (INT-U16)) and code (OID-Type)) d. attribute-value = MDC_PART_PHD_HF | MDC_HF_ ACTIVITY_TIME		

	b. Mandatory attribute Metric-Spec_Small a. attribute-id = MDC_ATTR_METRIC_SPEC_SMALL b. attribute-type = MetricSpecSmall (BITS-16) c. attribute-value ≠ 0x00 0x00 • bit 0 (mss-avail-intermittent(0)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Not Recommended attribute Unit-Code a. attribute-id = MDC_ATTR_UNIT_CODE b. attribute-type = OID-Type (INT-U16) c. attribute-value.length = 2 bytes d. Mandatory attribute Source-Handle-Reference a. attribute-id = MDC_ATTR_SOURCE_HANDLE_REF b. attribute-type = HANDLE (INT-U16) c. attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration e. Not Recommended attribute Absolute-Time-Stamp a. attribute-id = MDC_ATTR_TIME_STAMP_ABS b. attribute-type = AbsoluteTime c. attribute-value.length = 8 bytes f. Not Recommended attribute Unit-LabelString a. attribute-id = MDC_ATTR_UNIT_LABEL_STRING b. attribute-type = OCTET STRING c. attribute-value.length = <variable> d. If an existing acceptable nomenclature term (for activity defined in Enum-Observed-Value-Simple-Oid) is not available → attribute-value = MDC_HF_ACT_UNKONWN g. Mandatory attribute Measure-Active-Period a. attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE b. attribute-type = FLOAT-Type (INT-U32) c. attribute-value.length = 4 bytes h. Mandatory attribute Enum-Observed-Value-Simple-OID a. attribute-id = MDC_ATTR_ENUM_OBS_VAL_SIM_OID b. attribute-type = OID-Type (INT-U16) c. attribute-value.length = 2 bytes d. attribute-value = MDC_HF_ACT_AMB or MDC_HF_ACT_REST, MDC_HF_ACT_MOTOR or MDC_HF_ACT_LYING or MDC_HF_ACT_SPEEP or MDC_HF_ACT_PHYS or MDC_HF_ACT_SUS_PHYS or MDC_HF_ACT_UNKNOWN i. Not Recommended attribute Enum-Observed-Value-Simple-Str a. attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_STR b. attribute-type = EnumPrintableString c. attribute-value.length= <variable>

	j. Not Recommended attribute Enum-Observed-Value a. attribute-id= MDC_ATTR_VAL_ENUM_OBS b. attribute-type = EnumObsValue c. attribute-value.length= <variable>
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-034_A		
TP label		Activity time, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	Session15; M	ActivityTime11; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_017		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Activity time object.		
Pass/Fail criteria		• The Timestamp attribute used for the Activity time object shall be the same as that used for the associated Session or Sub-Session object instance. • The Activity time instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-035		
TP label		Program Identifier Object Attributes		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	Session16; M	ProgramId1; O	ProgramId2; M
		ProgramId3; M	ProgramId4; R	ProgramId5; R
		ProgramId6; R	ProgramId7; R	ProgramId8; M
		ProgramId9; R	ProgramId10; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_016		
Initial condition		The agent under test is 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 an Association Response with result = "accepted-unknown-config". 3. The agent responds with a roiv-cmip-confirmed-event report message with a MDC_NOTI_CONFIG event to send its configuration to the manager. 4. The Program Identifier object shall be: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value.length =Sequence of partition (NomPartition (INT-U16)) and code (OID-Type)) ❑ attribute-value = MDC_PART_PHD_HF | MDC_HF_PROGRAM_ID b. 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)) shall be set. • bit 1(mss-avail-stored-data(1)) shall be set. • bit 2 (mss-updt-aperiodic(2)) shall be set. • bit 3(mss-msmt-aperiodic(3)) shall be set • bit 9 (mss-acc-agent-initiated(9)) shall be set. • The other bits have to be 0. c. Not Recommended attribute Unit-Code ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes d. Mandatory attribute Source-Handle-Reference ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value = It must be equal to the handle of any Session or Sub-session object in the configuration e. Not Recommended attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes f. Not Recommended attribute Unit-LabelString ❑ attribute-id = MDC_ATTR_UNIT_LABEL_STRING ❑ attribute-type = OCTET STRING ❑ attribute-value.length = <variable> g. Mandatory attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes h. 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 ❑ attribute-value = i. Mandatory attribute Enum-Observed-Value-Simple-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_STR ❑ attribute-type = EnumPrintableString ❑ attribute-value.length= <variable> j. Not Recommended attribute Enum-Observed-Value ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS ❑ attribute-type = EnumObsValue ❑ attribute-value.length= <variable>
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-035_A		
TP label		Program identifier, timestamp values		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	Session15; M	ProgramId10; M	
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_016		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take a measurement with the agent under test. 2. Wait for the simulated manager to receive it. Record the Time Stamp and the Measure-Active-Period of the Session and sub-session object and of the Program identifier object.		
Pass/Fail criteria		• The Timestamp attribute used for Program identifier object shall be the same as the used for the associated Session or Sub-Session object instance. • The Program identifier instance shall have a timestamp identical to its associated session or sub-session object instance.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-036		
TP label		Association Request		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	MDSMethod4; M	AssocReq1; M	AssocReq2; M
		AssocReq3; M	AssocReq4; M	AssocReq5; M
		AssocReq6; M	AssocReq7; M	AssocReq8; M
		AssocReq9; M	AssocReq10; M	AssocReq11; M
		AssocReq12; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The agent under test sends an AARQ message to the simulated manager. The expected fields sent by the agent are: a. APDU Type ❑ field-length =2 bytes ❑ field-value =0xE2 0x00 (AareApdu) b. assoc-version ❑ field-type = AssociationVersion ❑ field-length =BITS-32 ❑ field-value =0x80 0x00 0x00 0x00 ❑ assoc-version = 0x80 0x00 0x00 0x00 (asassoc-version1(0) set) indicates that version 1 of the association protocol is supported. c. data-proto-id ❑ field-type = DataProtoId ❑ field-length =INT-U16 ❑ field-value = 0x50 0x79 (20601) ❑ data-proto-id=20601 indicates exchange protocol follows this standard, and data-proto-info field shall contain PhdAssociationInformation. d. protocol-version ❑ field-type = Protocol Version		

	❑ field-length =BITS-32 ❑ field-value = 0x80 0x00 0x00 0x00 ❑ This value shows that version 1 of the data exchange protocol is supported (assoc-version1(0)=1),. e. encoding rules ❑ field-type = EncodingRules ❑ field-length = BITS-16 ❑ field-value= depends on the encoding rules supported/selected. mder(0) always is set (MDER always is supported) and xer(1) or/and per(2) may be set (optional). f. nomenclature version ❑ field-type = NomenclatureVersion ❑ field-length =BITS-32 ❑ field-value = 0x80 0x00 0x00 0x00 ❑ This value indicates version 1 is supported (nom-version1(0) is set). g. functional–units ❑ field-type = FunctionalUnits ❑ field-length = BITS-32 ❑ If the agent has no Test Association capabilities: field-value = 0x00 0x00 0x00 0x00 ❑ If the agent has tested capabilities that can be used within Test Association: field-value = 0x40 0x00 0x00 0x00 ❑ If the agent has tested capabilities that can be used within Test Association and requires that the Manager establishes a Test Association: field-value = 0x60 0x00 0x00 0x00 h. system type ❑ field-type = SystemType ❑ field-length = BITS-32 ❑ field- value = 0x00 0x80 0x00 0x00 (sys-type-agent) i. system-id ❑ field-type = OCTET STRING ❑ field-length = 0x00 0x0A ❑ field-value = 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX (EUI-64 manufacturer and device). This value will be System Id attribute of MDS Object. j. dev-config-id ❑ field-type = ConfigId ❑ field-length = INT-U16 ❑ field-value = <between 0x40 0x00 and 0x7F 0xFF> k. data-req-mode-flags (DataReqModeCapab): ❑ field-type = DataReqModeFlags (BITS-16) ❑ field-length = INT-U16 ❑ If the Agent implements only this Device Specialization: field-value = 0x00 0x01 – Agent initiated data request/flows l. data-req-init-agent-count (DataReqModeCapab) ❑ field-type = INT-U8 ❑ field-length = 1 byte ❑ If the Agent implements only this Device Specialization: field-value = 0x01

	m. data-req-init-manager-count (DataReqModeCapab) ❑ field-type = INT-U8 ❑ field-length = 1 byte ❑ If the Agent implements only this Device Specialization: field-value = 0x00
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-041		
TP label		Config Changes Service. Altitude Gain Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_015 AND C_AG_CV_044		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for Altitude Gain Object (meters to feet or feet to meters.) 3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements. 5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.		
Pass/Fail criteria		• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to a new contextual attribute.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-042		
TP abel		Config Changes Service. Altitude Loss Contextual Attribute		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_032 AND C_AG_CV_045		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for the Altitude Loss object (meters to feet or feet to meters). 3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements.		

	5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.
Pass/Fail criteria	• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to a new contextual attribute.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-043		
TP label		Config Changes Service. Altitude Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_039 AND C_AG_CV_046		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for the Altitude object (meters to feet or feet to meters). 3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements. 5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.		
Pass/Fail criteria		• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to a new contextual attribute.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-044		
TP label		Config Changes Service. Distance Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_040 AND C_AG_CV_047		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for Distance object (meters to feet, feet to meters, meters to steps, steps to meters, feet to steps or steps to feet). 3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements.		

	5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.
Pass/Fail criteria	• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to new contextual attribute.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-045		
TP label		Config Changes Service. Ascent Time and Distance Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_041 AND C_AG_CV_048		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for Ascent Time and Distance object (meters to feet, feet to meters, meters to steps, steps to meters, feet to steps or steps to feet). 3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements. 5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.		
Pass/Fail criteria		• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to new contextual attribute.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-046		
TP label		Config Changes Service. Descent Time and Distance Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_042 AND C_AG_CV_049		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for Descent Time and Distance object (meters to feet, feet to meters, meters to steps, steps to meters, feet to steps or steps to feet). 3. The agent shall send an MDS event report indicating the new contextual attribute value.		

	4. Take some more measurements. 5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.
Pass/Fail criteria	• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to new contextual attribute.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-047		
TP label		Config Changes Service. Speed Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_035 AND C_AG_CV_050		
Initial Condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for Speed Object (meters per minute to feet, inches or steps per minute, feet per minute to meters, inches or steps per minute, steps per minute to meters, feet or inches per minute, or inches per minute to meters, feet or steps per minute). 3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements. 5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.		
Pass/Fail criteria		• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to new contextual attribute.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-048		
TP label		Config Changes Service. Incline Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_033 AND C_AG_CV_051		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for Incline object (percent to angle degrees or angle degrees to percent).		

	3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements. 5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.
Pass/Fail criteria	• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to new contextual attribute.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-049		
TP label		Config Changes Service. Stride-Length Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_027 AND C_AG_CV_052		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for Stride Length object (meters to inches or inches to meters). 3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements. 5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.		
Pass/Fail criteria		• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to new contextual attribute.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-050		
TP label		Config Changes Service. Energy Expended Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_025 AND C_AG_CV_053		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for Energy Expended object (calories to joules or joules to calories).		

	3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements. 5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.
Pass/Fail criteria	• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to new contextual attribute.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-051		
TP label		Config Changes Service. Body Weight Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_020 AND C_AG_CV_054		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for Body Weight object (grams to pounds or pounds to grams). 3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements. 5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.		
Pass/Fail criteria		• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to new contextual attribute.		
Notes				

TP Id		TP/PLT/AG/CLASS/CV/BV-052		
TP label		Config Changes Service. Height Contextual Attribute.		
Coverage	**Spec**	[ISO/IEEE 11073-10441]		
	Testable items	NumObj1; M		
	Spec	[ITU-T H.810]		
	Testable items	Communication 8; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172 AND C_AG_CV_020 AND C_AG_CV_054		
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. If the attribute that is going to be changed is reported in a Fixed format event report, take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for Height Object (meters to feet or feet to meters).		

	3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements. 5. Wait for the manager to receive new event reports from the agent, which report the measurements from step 4.
Pass/Fail criteria	• The agent sends an MDS event report to inform about the contextual attribute that has been changed. • Data has changed accordingly to new contextual attribute.
Notes	

TP Id		TP/PLT/AG/CLASS/CV/BV-053		
TP label		Operating State. Manager to Agent Maximum APDU Size		
Coverage	**Spec**	[ISO/IEEE 11073-20601A]		
	Testable items	CommonCharac 3; M		
	Spec	[ITU-T H.810]		
	Testable items	Cardio_DG 1; M		
Applicability		C_AG_OXP_000 AND C_AG_OXP_172		
Initial condition		The simulated manager and the agent are in the operating state.		
Test procedure		1. IF the agent supports Step Counter sub-specialization (C_AG_CV_001=TRUE) THEN 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 ELSE (the agent does not support Step Counter sub-specialization) THEN the simulated manager issues a "Remote Operation Invoke | Get" command with: d. Obj-handle set to 0 (to request for MDS object) e. attribute-id-list.count = 4087 f. attribute-id-list: (MDC_ATTR_ID_MODEL, MDC_ATTR_SYS_ID, MDC_ATTR_DEV_CONFIG_ID) repeated 1362 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 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 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 ○ 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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