International Telecommunication Union

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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

E-health multimedia services and applications – Interoperability compliance testing of personal health systems (HRN, PAN, LAN, TAN and WAN)

## Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 6: Device specializations: Manager

Recommendation ITU-T H.846

International Telecommunication Union

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# Recommendation ITU-T H.846

## Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 6: Device specializations: Manager


**Summary**

The scope of Recommendation ITU-T H.846 is to provide the test suite structure and test purposes (TSS & TP) for the PAN/LAN/TAN interface based on the requirements defined in Continua specifications. The objective of this test specification is to provide a high probability of air interface interoperability between different devices.

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.846 | 2015-01-13 | 16 | 11.1002/1000/12275 |


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

## FOREWORD

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

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

## NOTE

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

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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 6: Device Specializations. Manager (Version 1.6, 2014-01-24), that was developed by the Continua Health Alliance. Versions of this specification existed before transposition and are indicated below.

| Version | Date | Revision History |
|---|---|---|
| 1.4 | 2012-10-05 | Initial release for Test Tool DG2011. It uses "TSS&TP_1.5_PAN-LAN_PART_6_v1.3.doc" as a baseline and it adds the following maintenance bugs fixes:<br>• TP/PLT/MAN/CLASS/AM/BV-032: Modified according to bug report 874<br>• TP/PLT/MAN/CLASS/PF/BV-013: Modified according to bug report 875 |
| 1.5 | 2013-05-24 | Initial release for Test Tool DG2012. It uses "TSS&TP_DG2011_PAN-LAN_PART_6_v1.4.doc" as a baseline and it adds new features included in Continua DG 2012:<br>• Add Glucose Meter new spec version<br>• Add Body Composition Analyser Device Specialization<br>• Add Basic Electrocardiograph Device Specialization |
| 1.6 | 2014-01-24 | Initial release for Test Tool DG2013. It uses "TSS&TP_DG2012_PAN-LAN_PART_6_v1.5.doc" as a baseline and it adds new features included in Continua DG 2013:<br>• Add Glucose Meter BLE<br>• Add BLE SSP support<br>• Add NFC new transport<br>• Add INR Device Specialization |

# Recommendation ITU-T H.846

## Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 6: Device specializations: Manager

### 1 Scope

The scope of this Recommendation[1] is to provide a test suite structure and the test purposes (TSS & TP) for the PAN/LAN/TAN interface based on the requirements defined in Continua specifications. 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 [IEEE 11073-20601A] Agent
– **Part 2**: Optimized exchange protocol [IEEE 11073-20601A] Manager
– **Part 3**: Continua design guidelines. Agent
– **Part 4**: Continua design guidelines. Manager
– **Part 5**: Device specializations. Agent. This document is divided into 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 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*.

[IEEE 11073-10406] IEEE 11073-10406-2011, *Health informatics – Personal health device communication – Part 10406: Device specialization – Basic electrocardiograph (ECG) (1- to 3-lead ECG)*.

[IEEE 11073-10417] IEEE 11073-10417-2009, *Health informatics – Personal health device communication Part 10417: Device specialization – Glucose meter*.

[IEEE 11073-10418] IEEE 11073-10418-2011, *Health informatics – Personal health device communication – Part 10418: Device specialization – International Normalized Ratio (INR) monitor*.

[IEEE 11073-10420] IEEE 11073-10420-2010, *Health informatics – Personal health device communication – Part 10420: Device specialization – Body composition analyzer*.

[IEEE 11073-10441] IEEE 11073-10441-2008, *Health informatics – Personal Health Device Communication – Part 10441: Device Specialization – Cardiovascular Fitness and Activity Monitor*.

[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 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 11073-10404] ISO/IEEE 11073-10404:2010, *Health informatics – Personal health device communication – Part 10404: Device specialization – Pulse oximeter*.

[ISO/IEEE 11073-10407] ISO/IEEE 11073-10407:2010, *Health informatics – Personal health device communication – Device specialization – Blood pressure monitor, version 1.0*.

[ISO/IEEE 11073-10408] ISO/IEEE 11073-10408:2010, *Health informatics – Personal health device communication – Part 10408: Device specialization – Thermometer*.

[ISO/IEEE 11073-10415] ISO/IEEE 11073-10415:2010, *Health informatics – Personal health device communication – Part 10415: Device specialization – Weighing scale.*

[ISO/IEEE 11073-10421] ISO/IEEE 11073-10421:2012, *Health informatics – Personal health device communication – Part 10421: Device specialization – Peak expiratory flow monitor (peak flow).*

[ISO/IEEE 11073-10442] ISO/IEEE 11073-10442:2012, *Health informatics – Personal health device communication – Part 10442: Device specialization – Strength fitness equipment.*

[ISO/IEEE 11073-10471] ISO/IEEE 11073-10471:2010, *Health informatics – Personal health device communication – Part 10471: Device specialization – Independent living activity hub.*

[ISO/IEEE 11073-10472] ISO/IEEE 11073-10472:2012, *Health informatics – Personal health device communication – Part 10472: Device specialization – Medication 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

BPM Blood pressure monitor

CDG Continua Design Guidelines

DUT Device Under Test

GUI Graphical User Interface

INR International Normalized Ratio

IUT Implementation Under Test

MAP Mean arterial pressure

MDS Medical Device System

NaN Not a number

NFC Near Field Communication

NRes Not at this resolution

PAN Personal Area Network

PCO Point of Control and Observation

PCT Protocol Conformance Testing

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

UI User interface

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 with the various versions of the CDG**

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

## 6 Test suite structure (TSS)

The test purposes (TPs) for the PAN/LAN/TAN interface have been divided into the main subgroups specified below. Annex A describes the TPs for subgroups 2.3.1, 2.3.2, 2.3.3, 2.3.4, 2.3.5, 2.3.6, 2.3.7, 2.3.8, 2.3.9, 2.3.11, 2.3.12, 2.3.13 and 2.3.14 (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 scales (WEG)
  - Subgroup 1.3.2: Glucose meter (GL)
  - Subgroup 1.3.3: Pulse oximeter (PO)
  - Subgroup 1.3.4: Blood pressure monitor (BPM)
  - Subgroup 1.3.5: Thermometer (TH)
  - Subgroup 1.3.6: Cardiovascular (CV)
  - Subgroup 1.3.7: Strength (ST)
  - Subgroup 1.3.8: Activity hub (HUB)
  - Subgroup 1.3.9: Adherence monitor (AM)
  - Subgroup 1.3.10: Insulin pump (IP) (Future development)
  - Subgroup 1.3.11: Peak flow (PF)
  - Subgroup 1.3.12: Body composition analyser (BCA)
  - Subgroup 1.3.13: Basic electrocardiograph (ECG)
  - Subgroup 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 scales (WEG)
  - **Subgroup 2.3.2**: Glucose meter (GL)
  - **Subgroup 2.3.3**: Pulse oximeter (PO)
  - **Subgroup 2.3.4**: Blood pressure monitor (BPM)
  - **Subgroup 2.3.5**: Thermometer (TH)
  - **Subgroup 2.3.6**: Cardiovascular (CV)
  - **Subgroup 2.3.7**: Strength (ST)
  - **Subgroup 2.3.8**: Activity hub (HUB)
  - **Subgroup 2.3.9**: Adherence monitor (AM)
  - Subgroup 2.3.10: Insulin pump (IP) (Future development)
  - **Subgroup 2.3.11**: Peak flow (PF)
  - **Subgroup 2.3.12**: Body composition analyser (BCA)
  - **Subgroup 2.3.13**: Basic electrocardiograph (ECG)
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  - Subgroup 2.4.3: Whitepaper blood pressure measurement requirements (BPM)
  - 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 (TP)

(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 below:
  - Each test purpose identifier is introduced by the prefix "TP".
  - <TT>: This is the test tool that will be used in the test case.
    - PAN: Personal area network (Bluetooth or USB)
    - LAN: Local area network (ZigBee)
    - PAN-LAN: Personal area network (Bluetooth or USB) – Local area network (ZigBee)
    - LP-PAN: Low power personal area network (Bluetooth low energy)
    - TAN: Touch area network (NFC)
    - 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 2.3.1: Weighing scales (WEG)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/MAN/CLASS/WEG/BV-001</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Association procedure Manager WEG</td></tr>
<tr><td rowspan="6">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10415]</td></tr>
<tr><td rowspan="5">Testable items</td><td>Weighing.Association 8;O</td><td>Weighing.Association 12;M</td><td>Weighing.Association 13;M</td></tr>
<tr><td>Weighing.Association 14;M</td><td>Weighing.Association 15;M</td><td>Weighing.Association 16;M</td></tr>
<tr><td>Weighing.Association 17;M</td><td>Weighing.Association 18;M</td><td>Weighing.Association 19;M</td></tr>
<tr><td>Weighing.Association 20;M</td><td>Weighing.Association 21;M</td><td>Weighing.Association 22;M</td></tr>
<tr><td>Weighing.Association 23;M</td><td></td><td></td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_MAN_OXP_000 AND C_MAN_OXP_024</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The manager is in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16449<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0;<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes<br>❑ field-value = 0xE3 0x00 (AareApdu)<br>b. Result<br>❑ field- type = AssociateResult<br>❑ field-length = 2 bytes<br>❑ field-value = One of the following:<br>▪ If association is accepted, field-value=0x00 0x00.<br>▪ If association is rejected-permanent, field-value=0x00 0x01.<br>▪ If association is rejected-transient, field-value=0x00 0x02.<br>▪ If association is accepted-unknown-config, field-value=0x00 0x03.<br>▪ If association is rejected-no-common-protocol, field-value=0x00 0x04.<br>▪ If association is rejected-no-common-parameter, field-value=0x00 0x05.<br>▪ If association is rejected-unknown,field-value=0x00 0x06.</td></tr>
</table>

- If association is rejected-unauthorized, field-value=0x00 0x07.
- If association is rejected–unsupported-assoc-version, field-value=0x00 0x08.

c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))

d. data-proto-id
   - ❑ field- type = DataProtoId
   - ❑ field-length = 2 bytes
   - ❑ field-value=0x50 0x79 (20601)

e. protocol-version
   - ❑ field- type = Protocol Version
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value=0x80 0x00 0x00 0x00

f. encoding-rules
   - ❑ field-type = EncodingRules
   - ❑ field-length = 2 bytes (BITS-16)
   - ❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time

g. nomenclature version
   - ❑ field- type = NomenclatureVersion
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value= Bit 0 must be set (nom-version1)

h. functional units
   - ❑ field-type = FunctionalUnits
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value =
     - Bit 0 must be 0
     - Bits 1 and 2 may be set
     - The rest of the bits must not be set

i. system type
   - ❑ field- type = SystemType
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)

j. system-id
   - ❑ field- type = OCTET STRING
   - ❑ field-length = 8 bytes
   - ❑ field-value = (EUI-64 manufacturer and device)

k. dev-config-id
   - ❑ field- type = ConfigId
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00 (manager-config-response)

l. data-req-mode-flags (DataReqModeCapab)
   - ❑ field- type = DataReqModeFlags
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00

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| | ❑ manager response to data-req-mode-flags is always 0.<br>m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 b |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-002 | | |
| **TP label** | | Configuration Event Report. Weighing Scale standard configuration | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x05 0xDC (Weighing Scales).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x05 0xDC<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 | | |

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| | d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | See bug http://continua.plugfests.com/show_bug.cgi?id=123 |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-003 | | |
| **TP label** | | Attribute-Value-Map. Order change. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 22;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report that matches the Attribute-Value-Map order of MDC_ATTR_NU_VAL_OBS_SIMP, then MDC_ATTR_TIME_STAMP_ABS.<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Body Weight Object) to reverse the values to: MDC_ATTR_TIME_STAMP_ABS, then MDC_ATTR_NU_VAL_OBS_SIMP.<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the date first followed by a weight value (in kilograms since it is the standard configuration unit code).<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted- | | |

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| | unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent.<br>11. The simulated agent sends a fixed event report following the standard configuration attribute-value-format (MDC_ATTR_NU_VAL_OBS_SIMP, then MDC_ATTR_TIME_STAMP_ABS). The weight observation should be a reasonable kilogram weight observation.<br>12. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes. E.g. if there is a user interface (UI), verify that the measurement and date are displayed properly.<br>• In steps 2, 6 and 12 verify that the manager under test uses kilograms as the unit-code for the measurement report (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-004 | | |
| **TP label** | | Attribute-Value-Map. Adding additional attributes to the Attribute-Value-Map | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 22;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 AND C_MAN_WEG_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. (Body Weight Numeric standard configuration Unit code attribute is set to MDC_DIM_KILO_G) | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Body Weight Object) to set the values to: MDC_ATTR_NU_VAL_OBS_SIMP, MDC_ATTR_UNIT_CODE, then MDC_ATTR_TIME_STAMP_ABS.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report with the new data layout. For the unit-code attribute, use pounds MDC_DIM_LB (1760).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends a confirmed variable event report with just MDC_ATTR_NU_VAL_OBS_SIMP attribute.<br>6. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In step 6, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the | | |

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| | measurement is displayed properly).<br>• In steps 4 and 6, verify that the manager under test uses pounds as the unit-code for the measurement reports. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-005 | | |
| **TP label** | | Unit-Code. Change from default kilograms to pounds – fixed format observation | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 20;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 AND C_MAN_WEG_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 1 (Body Weight Object) to pounds nomenclature code MDC_DIM_LB (1760).<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report using a measurement in pounds followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a fixed event report with an observation in kilograms followed by date and time stamp.<br>10. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies pounds to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies kilograms to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-005_A |
| **TP label** | | Unit-Code. Do not change from default kilograms to pounds – fixed format observation |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] |

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| | **Testable items** | WeightNumClass 20;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 AND (NOT(C_MAN_WEG_001)) | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 1 (Body Weight Object) to pounds nomenclature code MDC_DIM_LB (1760).<br>2. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or until TO cer-mds expires.<br>3. If the manager has sent a confirmation in step 2, send a confirmed fixed format event report using a measurement in pounds followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or TO cer-mds expires.<br>5. If the manager has sent a confirmation in step 4, ask to the operator if the measurements have been properly received and displayed. | | |
| **Pass/Fail criteria** | | • In step 2, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 4, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 5, verify that measurements do not appear, or if they do appear, they are somehow designated as 'unsupported' data. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-006 | | |
| **TP label** | | Unit-Code. Use default kilograms – variable format observation. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 20;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report using a measurement in kilograms.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data properly and applies kilograms to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-007 |
| **TP label** | | Unit-Code. Change from default kilograms to pounds – variable format observation |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] |

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| | **Testable items** | WeightNumClass 20;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 AND C_MAN_WEG_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report to set the unit code to pounds MDC_DIM_LB (1760) for handle 1 (Body Weight Object) and a measurement in pounds<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a second confirmed variable format event report with just a measurement in pounds (i.e., do not transmit the unit-code attribute in the event report).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a confirmed variable event report with an observation in kilograms followed by date and time stamp (i.e., do not send the unit-code attribute it should be set to kilograms by the standard configuration).<br>10. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In steps 2 and 4, verify that the manager under test is able to accept the data properly and applies pounds to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies kilograms to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-008 | | |
| **TP label** | | Maximum APDU size: Weighing Scale | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2 | | |

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| | ❑ Length = 858<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(832 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2646 (MDC_ATTR_NU_VAL_OBS_SIMP)`<br>`attribute-value: 68`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a confirmed fixed format event report with one measurement.<br>4. Check the response of the manager under test. |
| **Pass/Fail criteria** | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-009 | | |
| **TP label** | | Special values. Not a number – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Weight Object) containing an observation with the value for "not a number" (NaN, [exponent 0, mantissa +(2**23 –1) = 0x007FFFFF]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-010 | | |
| **TP label** | | Special values. Not a number – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 27; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Weight Object) containing an observation with the value for NaN ([exponent 0, mantissa +(2**23 –1) = 0x007FFFFF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-011 | | |
| **TP label** | | Special values. Not at this resolution – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Weight Object) containing an observation with the value for "not at this resolution" (NRes, [exponent 0, mantissa –(2**23) = 0x00800000]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-012 | | |
| **TP label** | | Special values. Not at this resolution – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 27; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |

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| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration. |
| **Test procedure** | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Weight Object) containing an observation with the value for NRes ([exponent 0, mantissa –(2**23) = 0x00800000])<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-013 | | |
| **TP label** | | Special values. Positive infinity – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 containing an observation with the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**23 –2) = 0x007FFFFE]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-014 | | |
| **TP label** | | Special values. Positive infinity – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 27; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Weight Object) containing an observation with the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**23 –2) = 0x007FFFFE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the | | |

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| | measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-015 | | |
| **TP label** | | Special values. Negative infinity – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Weight Object) containing an observation with the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**23 –2) = 0x00800002]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-016 | | |
| **TP label** | | Special values. Negative infinity – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 27; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Weight Object) containing an observation with the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**23 –2) = 0x00800002]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-017 |
| **TP label** | | Special values. Reserved – fixed format |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] |

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|---|---|---|---|---|
| | **Testable items** | WeightNumClass 22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Weight Object) containing an observation with the value that is reserved (Reserved for future use, [exponent 0, mantissa –(2**23–1) = 0x00800001]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/WEG/BV-018 | | |
| **TP label** | | Special values. Reserved – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10415] | | |
| | **Testable items** | WeightNumClass 27; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_024 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Weight Object) containing an observation with the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**23–1) = 0x00800001]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

## A.3 Subgroup 2.3.2: Glucose meter (GL)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/MAN/CLASS/GL/BV-000</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Association procedure Manager GL</td></tr>
<tr><td rowspan="5">Coverage</td><td>Spec</td><td colspan="3">[IEEE 11073-10417]</td></tr>
<tr><td rowspan="4">Testable items</td><td>ManProcAs 1;M</td><td>ManProcAs 2;M</td><td>ManProcAs 3;M</td></tr>
<tr><td>ManProcAs 4;M</td><td>ManProcAs 5;M</td><td>ManProcAs 6;M</td></tr>
<tr><td>ManProcAs 7;M</td><td>ManProcAs 8;M</td><td>ManProcAs 9;M</td></tr>
<tr><td>ManProcAs 10;M</td><td>ManProcAs 11;M</td><td>ManProcAs 12;M</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_MAN_OXP_000 AND C_MAN_OXP_019</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The manager is in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16440<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes<br>❑ field-value = 0xE3 0x00 (AareApdu)<br>b. Result<br>❑ field- type = AssociateResult<br>❑ field-length = 2 bytes<br>❑ field-value = One of the following:<br>▪ If association is accepted, field-value=0x00 0x00.<br>▪ If association is rejected-permanent, field-value=0x00 0x01.<br>▪ If association is rejected-transient, field-value=0x00 0x02.<br>▪ If association is accepted-unknown-config, field-value=0x00 0x03.<br>▪ If association is rejected-no-common-protocol, field-value=0x00 0x04.<br>▪ If association is rejected-no-common-parameter, field-value=0x00 0x05.<br>▪ If association is rejected–unknown = 0x00 0x06.<br>▪ If association is rejected-unauthorized, field-value=0x00 0x07.</td></tr>
</table>

- If association is rejected–unsupported-assoc-version, field-value=0x00 0x08.

c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))

d. data-proto-id
   - ❑ field- type = DataProtoId
   - ❑ field-length = 2 bytes
   - ❑ field-value=0x50 0x79 (20601)

e. protocol-version
   - ❑ field- type = Protocol Version
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value=0x80 0x00 0x00 0x00

f. encoding-rules
   - ❑ field-type = EncodingRules
   - ❑ field-length = 2 bytes (BITS-16)
   - ❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time

g. nomenclature version
   - ❑ field- type = NomenclatureVersion
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value= Bit 0 must be set (nom-version1)

h. functional units
   - ❑ field-type = FunctionalUnits
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value =
     - Bit 0 must be 0
     - Bits 1 and 2 may be set
     - The rest of the bits must not be set

i. system type
   - ❑ field- type = SystemType
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)

j. system-id
   - ❑ field- type = OCTET STRING
   - ❑ field-length = 8 bytes
   - ❑ field-value = (EUI-64 manufacturer and device)

k. dev-config-id
   - ❑ field- type = ConfigId
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00 (manager-config-response)

l. data-req-mode-flags (DataReqModeCapab)
   - ❑ field- type = DataReqModeFlags
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00
   - ❑ manager response to data-req-mode-flags is always 0.

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| | m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-001 | | |
| **TP label** | | Configuration Event Report. Glucose Meter standard configuration 1700 | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | ConfProc 4;M | MDSEvents 2;M | ObjAccServ 5;M |
| | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. The simulated agent implements a glucose meter device specialization with standard configuration 1700. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x06 0xA4 (Glucose Meter – Std Config 1700).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x06 0xA4<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's message. | | |

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| | c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one Blood Glucose (Capillary Whole blood reference method) measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-001_A | | |
| **TP label** | | Configuration Event Report. Glucose Meter standard configuration 1701 | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | ConfProc 4;M | MDSEvents 2;M | ObjAccServ 5;M |
| | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. The simulated agent implements a glucose meter device specialization with standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x06 0xA5 (Glucose Meter – Std Config 1701).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16 | | |

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| | ❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x06 0xA5<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one Blood Glucose (Undetermined plasma reference method) measurement and other fixed event report with Control Solution measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-002 |
| **TP label** | | Maximum APDU size: Glucose Meter without PM-Store |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] |

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| | **Testable items** | CommonCharac 4;M | | |
| | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | ComChar 2; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2<br>❑ Length = 5080<br>`ObservationScan ::= { obj-handle: 1 attributes: AttributeList ::= { AVA-Type ::= { attribute-id: 61441 attribute-value: '00.....(5056 bytes)...... 00'O } } } ObservationScan ::= { obj-handle: 1 attributes: AttributeList ::= { AVA-Type ::= { attribute-id: 2636 (MDC_ATTR_NU_VAL_OBS_BASIC) attribute-value: 100 } } }`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a confirmed fixed format event report with one measurement.<br>4. Check the response of the manager under test. | | |
| **Pass/Fail criteria** | | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-002_A | | |
| **TP label** | | Maximum APDU size: Glucose Meter with PM-Store | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| | **Spec** | [IEEE 11073-10417] | | |

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| | **Testable items** | ComChar 2; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 AND C_MAN_OXP_003 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count = 2<br>❑ Length = 64472<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(64448 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2636 (MDC_ATTR_NU_VAL_OBS_BASIC)`<br>`attribute-value: 80`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a confirmed fixed format event report with one measurement.<br>4. Check the response of the manager under test. | | |
| **Pass/Fail criteria** | | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-003 | | |
| **TP label** | | Blood Glucose Attribute-Value-Map. Order change | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 10;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report that matches the Attribute-Value-Map order of MDC_ATTR_NU_VAL_OBS_BASIC, then | | |

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| | MDC_ATTR_TIME_STAMP_ABS.<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Blood Glucose Object) to reverse the values to: MDC_ATTR_TIME_STAMP_ABS, then MDC_ATTR_NU_VAL_OBS_BASIC.<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the date first followed by a blood glucose value (in mg/dL since it is the standard configuration unit code).<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent.<br>11. The simulated agent sends a fixed event report following the standard configuration attribute-value-format (MDC_ATTR_NU_VAL_OBS_BASIC, then MDC_ATTR_TIME_STAMP_ABS). The observation should be a reasonable mg/dL blood glucose observation.<br>12. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In steps 2, 6 and 12 verify that the manager under test uses mg/dL as the unit code for the measurement report (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-004 | | |
| **TP label** | | Blood Glucose Attribute-Value-Map. Adding additional attributes to the Attribute-Value-Map | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 10;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 AND C_MAN_GL_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. (Blood Glucose Numeric standard configuration Unit code attribute is set to MDC_DIM_MILLI_G_PER_DL) | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Blood Glucose Object) to set the values to: | | |

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| | MDC_ATTR_NU_VAL_OBS_BASIC, MDC_ATTR_UNIT_CODE, then MDC_ATTR_TIME_STAMP_ABS.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report with the new data layout. For the unit-code attribute, use MDC_DIM_MILLI_MOLE_PER_L (4722).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends a confirmed variable event report with just MDC_ATTR_NU_VAL_OBS_BASIC attribute.<br>6. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In step 4, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In step 6, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement is displayed properly).<br>• In steps 4 and 6, verify that the manager under test uses mmol/L as the unit code for the measurement reports. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-005 | | |
| **TP label** | | Blood Glucose Unit-Code. Change from default mg/dL to mmol/L – fixed format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 8;M | | |
| | **Spec** | [ITU-T H.810] | | |
| | **Testable items** | Communication 9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 AND C_MAN_GL_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 1 (Blood Glucose Object) to mmol/L nomenclature code MDC_DIM_MILLI_MOLE_PER_L (4722).<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report using a measurement in mmol/L followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed | | |

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| | configuration event report just sent.<br>9. The simulated agent sends a fixed event report with an observation in mg/dL followed by date and time stamp.<br>10. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In step 4, verify that the manager under test is able to accept the data properly and applies mmol/L to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies mg/dL to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-005_A | | |
| **TP label** | | Blood Glucose Unit-Code. Do not change from default mg/dL to mmol/L – fixed format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 8;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 AND (NOT(C_MAN_GL_001)) | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 1 (Blood Glucose Object) to mmol/L nomenclature code MDC_DIM_MILLI_MOLE_PER_L (4722).<br>2. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or until TO cer-mds expires.<br>3. If the manager has sent a confirmation in step 2, send a confirmed fixed format event report using a measurement in mmol/L followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or TO cer-mds expires.<br>5. If the manager has sent a confirmation in step 4, ask to the operator if the measurements have been properly received and displayed. | | |
| **Pass/Fail criteria** | | • In step 2, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 4, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 5, verify that measurements do not appear, or if they do appear, they are somehow designated as 'unsupported' data. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-006 | | |
| **TP label** | | Blood Glucose Unit-Code. Use default mg/dL – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 8;M | | |

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| **Applicability** | C_MAN_OXP_000 AND C_MAN_OXP_019 |
| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration. |
| **Test procedure** | 1. Send a confirmed variable format event report using a measurement in mg/dL.<br>2. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data properly and applies mg/dL to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-007 | | |
| **TP label** | | Blood Glucose Unit-Code. Change from default mg/dL to mmol/L – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 8;M | | |
| | **Spec** | [ITU-T H.810] | | |
| | **Testable items** | Communication 9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 AND C_MAN_GL_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report to set the unit code to mmol/L MDC_DIM_MILLI_MOLE_PER_L (4722) for handle 1 (Blood Glucose Object) and a measurement in mmol/L.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a second confirmed variable format event report with just a measurement in mmol/L (i.e., do not transmit the unit-code attribute in the event report).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a confirmed variable event report with an observation in mg/dL followed by date and time stamp (i.e., do not send the unit-code attribute it should be set to mg/dL by the standard configuration).<br>10. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In steps 2 and 4, verify that the manager under test is able to accept the data properly and applies mmol/L to the observations (e.g. if there is a UI, verify that the measurement | | |

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| | and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies mg/dL to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-008 | | |
| **TP label** | | Special values. Not a number – fixed format (Std Config 1700) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1700. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Blood Glucose Object) containing an observation value with the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-009 | | |
| **TP label** | | Special values. Not a number – variable format (Std Config 1700) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 20; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1700. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Blood Glucose Object) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-010 | | |
| **TP label** | | Special values. Not at this resolution – fixed format (Std Config 1700) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1700. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Blood Glucose Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-011 | | |
| **TP label** | | Special values. Not at this resolution – variable format (Std Config 1700) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 20; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1700. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Blood Glucose Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI,, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-012 | | |
| **TP label** | | Special values. Positive infinity – fixed format (Std Config 1700) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |

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| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration 1700. |
| **Test procedure** | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Blood Glucose Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-013 | | |
| **TP label** | | Special values. Positive infinity – variable format (Std Config 1700) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 20; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1700. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Blood Glucose Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-014 | | |
| **TP label** | | Special values. Negative infinity – fixed format (Std Config 1700) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1700. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Blood Glucose Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the | | |

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| | measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-015 | | |
| **TP label** | | Special values. Negative infinity – variable format (Std Config 1700) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 20; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1700. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Blood Glucose Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-016 | | |
| **TP label** | | Special values. Reserved – fixed format (Std Config 1700) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1700. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Blood Glucose Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | TP/PLT/MAN/CLASS/GL/BV-017 |
| **TP label** | Special values. Reserved – variable format (Std Config 1700) |

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| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | BloodGL 20; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1700. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Blood Glucose Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-018 | | |
| **TP label** | | Control Solution Attribute-Value-Map. Order change | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 8;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a Control Solution confirmed fixed format event report that matches the Attribute-Value-Map order of MDC_ATTR_NU_VAL_OBS_BASIC, then MDC_ATTR_TIME_STAMP_ABS<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 2 (Control Solution Object) to reverse the values to: MDC_ATTR_TIME_STAMP_ABS, then MDC_ATTR_NU_VAL_OBS_BASIC.<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the date first followed by a control solution value (in mg/dL since it is the standard configuration unit code).<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent. | | |

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| | 11. The simulated agent sends a fixed event report following the standard configuration attribute-value-format (MDC_ATTR_NU_VAL_OBS_BASIC, then MDC_ATTR_TIME_STAMP_ABS). The observation should be a reasonable mg/dL blood glucose observation.<br>12. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In steps 2, 6 and 12 verify that the manager under test uses mg/dL as the unit code for the measurement report (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-019 | | |
| **TP label** | | Control Solution Attribute-Value-Map. Adding additional attributes to the Attribute-Value-Map | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 8;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 AND C_MAN_GL_002 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (Control Solution Numeric standard configuration Unit code attribute is set to MDC_DIM_MILLI_G_PER_DL). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 2 (Control Solution Object) to set the values to: MDC_ATTR_NU_VAL_OBS_BASIC, MDC_ATTR_UNIT_CODE, then MDC_ATTR_TIME_STAMP_ABS.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report with the new data layout. For the unit-code attribute, use MDC_DIM_MILLI_MOLE_PER_L (4722).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends a confirmed variable event report with just MDC_ATTR_NU_VAL_OBS_BASIC attribute.<br>6. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In step 6, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement is displayed properly).<br>• In steps 4 and 6, verify that the manager under test uses mmol/L as the unit code for the measurement reports. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-020 | | |
| **TP label** | | Control Solution Unit-Code. Change from default mg/dL to mmol/L – fixed format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 6;M | | |
| | **Spec** | [ITU-T H.810] | | |
| | **Testable items** | Communication 9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 AND C_MAN_GL_002 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 2 (Control Solution Object) to mmol/L nomenclature code MDC_DIM_MILLI_MOLE_PER_L (4722).<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report using a measurement in mmol/L followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a fixed event report with an observation in mg/dL followed by date and time stamp.<br>10. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies mmol/L to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies mg/dL to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-021 |
| **TP label** | | Control Solution Unit-Code. Do not change from default mg/dL to mmol/L – fixed format observation |
| **Coverage** | **Spec** | [IEEE 11073-10417] |

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| | **Testable items** | CtrlSol 6;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 AND (NOT(C_MAN_GL_002)) | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 2 (Control Solution Object) to mmol/L nomenclature code MDC_DIM_MILLI_MOLE_PER_L (4722).<br>2. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or until TO cer-mds expires.<br>3. If the manager has sent a confirmation in step 2, send a confirmed fixed format event report using a measurement in mmol/L followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or TO cer-mds expires.<br>5. If the manager has sent a confirmation in step 4, ask to the operator if the measurements have been properly received and displayed. | | |
| **Pass/Fail criteria** | | • In step 2, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 4, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 5, verify that measurements do not appear, or if they do appear, they are somehow designated as 'unsupported' data. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-022 | | |
| **TP label** | | Control Solution Unit-Code. Use default mg/dL – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 6;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report using a measurement in mg/dL.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data properly and applies mg/dL to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-023 |
| **TP label** | | Control Solution Unit-Code. Change from default mg/dL to mmol/L – variable format observation |
| **Coverage** | **Spec** | [IEEE 11073-10417] |

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| | **Testable items** | CtrlSol 6;M | | |
| | **Spec** | [ITU-T H.810] | | |
| | **Testable items** | Communication 9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 AND C_MAN_GL_002 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report to set the unit code to mmol/L MDC_DIM_MILLI_MOLE_PER_L (4722) for handle 2 (Control Solution Object) and a measurement in mmol/L.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a second confirmed variable format event report with just a measurement in mmol/L (i.e., do not transmit the unit-code attribute in the event report).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a confirmed variable event report with an observation in mg/dL followed by date and time stamp (i.e., do not send the unit-code attribute it should be set to mg/dL by the standard configuration).<br>10. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In steps 2 and 4, verify that the manager under test is able to accept the data properly and applies mmol/L to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies mg/dL to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-024 | | |
| **TP label** | | Special values. Not a number – fixed format (Std Config 1701) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 8; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |

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| **Test procedure** | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Control Solution Object) containing an observation value with the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). |
| **Notes** | This test case has been considered as an implicit test case. |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-025 | | |
| **TP label** | | Special values. Not a number – variable format (Std Config 1701) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Control Solution Object) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-026 | | |
| **TP label** | | Special values. Not at this resolution – fixed format (Std Config 1701) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 8; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Control Solution Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |

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| **Notes** | This test case has been considered as an implicit test case. |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-027 | | |
| **TP label** | | Special values. Not at this resolution – variable format (Std Config 1701) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Control Solution Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-028 | | |
| **TP label** | | Special values. Positive infinity – fixed format (Std Config 1701) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 8; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Control Solution Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-029 |
| **TP label** | | Special values. Positive infinity – variable format (Std Config 1701) |
| **Coverage** | **Spec** | [IEEE 11073-10417] |

| | | | | |
|---|---|---|---|---|
| | **Testable items** | CtrlSol 12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Control Solution Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-030 | | |
| **TP label** | | Special values. Negative infinity – fixed format (Std Config 1701) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 8; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Control Solution Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-031 | | |
| **TP label** | | Special values. Negative infinity – variable format (Std Config 1701) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Control Solution Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]). | | |

| | |
|---|---|
| | 2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-032 | | |
| **TP label** | | Special values. Reserved – fixed format (Std Config 1701) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 8; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Control Solution Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/GL/BV-033 | | |
| **TP label** | | Special values. Reserved – variable format (Std Config 1701) | | |
| **Coverage** | **Spec** | [IEEE 11073-10417] | | |
| | **Testable items** | CtrlSol 12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_019 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Control Solution Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

## A.4 Subgroup 2.3.3: Pulse oximeter (PO)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/MAN/CLASS/PO/BV-003</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Association procedure Manager PO</td></tr>
<tr><td rowspan="4">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10404]</td></tr>
<tr><td rowspan="3">Testable items</td><td>PulseAssocResp 1;M</td><td>PulseAssocResp 2;M</td><td>PulseAssocResp 5;M</td></tr>
<tr><td>PulseAssocResp 6;M</td><td>PulseAssocResp 7;M</td><td>PulseAssocResp 8;M</td></tr>
<tr><td>PulseAssocResp 9;M</td><td>PulseAssocResp 10;M</td><td>PulseAssocResp 11;M</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_MAN_OXP_000 AND C_MAN_OXP_026</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The manager is in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16443<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes<br>❑ field-value = 0xE3 0x00 (AareApdu)<br>b. Result<br>❑ field- type = AssociateResult<br>❑ field-length = 2 bytes<br>❑ field-value = One of the following:<br>▪ If association is accepted, field-value=0x00 0x00.<br>▪ If association is rejected-permanent, field-value=0x00 0x01.<br>▪ If association is rejected-transient, field-value=0x00 0x02.<br>▪ If association is accepted-unknown-config, field-value=0x00 0x03.<br>▪ If association is rejected-no-common-protocol, field-value=0x00 0x04.<br>▪ If association is rejected-no-common-parameter, field-value=0x00 0x05.<br>▪ If association is rejected–unknown = 0x00 0x06.<br>▪ If association is rejected-unauthorized, field-value=0x00 0x07.<br>▪ If association is rejected–unsupported-assoc-version, field-value=0x00 0x08.</td></tr>
</table>

c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))

d. data-proto-id
   - ❑ field- type = DataProtoId
   - ❑ field-length = 2 bytes
   - ❑ field-value=0x50 0x79 (20601)

e. protocol-version
   - ❑ field- type = Protocol Version
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value=0x80 0x00 0x00 0x00

f. encoding-rules
   - ❑ field-type = EncodingRules
   - ❑ field-length = 2 bytes (BITS-16)
   - ❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time

g. nomenclature version
   - ❑ field- type = NomenclatureVersion
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value= Bit 0 must be set (nom-version1)

h. functional units
   - ❑ field-type = FunctionalUnits
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value =
     - Bit 0 must be 0
     - Bits 1 and 2 may be set
     - The rest of the bits must not be set

i. system type
   - ❑ field- type = SystemType
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)

j. system-id
   - ❑ field- type = OCTET STRING
   - ❑ field-length = 8 bytes
   - ❑ field-value = (EUI-64 manufacturer and device)

k. dev-config-id
   - ❑ field- type = ConfigId
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00 (manager-config-response)

l. data-req-mode-flags (DataReqModeCapab)
   - ❑ field- type = DataReqModeFlags
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00
   - ❑ manager response to data-req-mode-flags is always 0.

m. data-req-init-agent-count (DataReqModeCapab)

| | |
|---|---|
| | ❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-004 | | |
| **TP label** | | Configuration Event Report. Pulse Oximeter standard configuration 400 | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x01 0x90 (PulseOximeter).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x01 0x90.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32 | | |

| | |
|---|---|
| | ❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | See http://continua.plugfests.com/show_bug.cgi?id=123 |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-005 | | |
| **TP label** | | Configuration Event Report. Pulse Oximeter standard configuration 401 | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x01 0x91 (PulseOximeter).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x01 0x91.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes | | |

| | |
|---|---|
| | ❑ field-value= it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length = 4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | See http://continua.plugfests.com/show_bug.cgi?id=123 |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-006 | | |
| **TP label** | | Maximum APDU size: Pulse Oximeter | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2<br>❑ Length = 5080<br>`ObservationScan ::= {`<br>`obj-handle: 1 (SPO2)`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441` | | |

| | |
|---|---|
| | attribute-value:<br>'00.....(5056 bytes)..... 00'O<br>}<br>}<br>}<br>ObservationScan ::= {<br>obj-handle: 1 (SPO2)<br>attributes: AttributeList ::= {<br>AVA-Type ::= {<br>attribute-id: 2636 (MDC_ATTR_NU_VAL_OBS_BASIC)<br>attribute-value: 98<br>}<br>}<br>}<br><br>2. Check the response of the manager under test.<br>3. The simulated agent sends a confirmed fixed event report with one measurement.<br>4. Check the response of the manager under test. |
| **Pass/Fail criteria** | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". |
| **Notes** | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-007 | | |
| **TP label** | | Attribute-Value-Map. Adding additional attributes to the Attribute-Value-Map | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 11;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 0x190. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 ($SpO_2$ Object) to set the values to: MDC_ATTR_TIME_STAMP_ABS, then MDC_ATTR_NU_VAL_OBS_BASIC. For handle 10 (Pulse Rate Object), set the attribute value map to: MDC_ATTR_TIME_STAMP_ABS, then MDC_ATTR_NU_VAL_OBS_BASIC<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report with the new data layout.<br>4. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In step 4, verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past). | | |
| **Notes** | | | | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-008 | | |
| **TP label** | | Unit-Code. Use default % and beats per minute (beats/min) – variable format observation. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 10;M | | |
| | **Spec** | [ITU-T H.810] | | |
| | **Testable items** | Communication 9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 0x190. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report for handle 1 using a measurement in % and for handle 10 using a measurement in beats/min.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data properly and applies % and beats/min to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-009 | | |
| **TP label** | | Supplemental-Type: $SpO_2$ — Standard configuration 0x191 | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | Spo2StandConf 1;C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 0x191. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report from handle 1 ($SpO_2$ Object) that matches the Attribute-Value-Map order of MDC_ATTR_NU_VAL_OBS_BASIC.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | In step 2. Verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes and Supplemental-Type for Object with handle 1 is MDC_MODALITY_SPOT (e.g. if there is a UI, verify that the measurement and date are displayed properly). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-010 |
| **TP label** | | Supplemental-Type: Pulse Rate— Standard configuration 0x191 |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] |

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| | **Testable items** | PulseRateStandConf 1;C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 0x191. | | |
| **Test procedure** | | 1. Simulated Agent sends a confirmed fixed format event report from handle 10 (Pulse Rate Object) that matches the Attribute-Value-Map order of MDC_ATTR_NU_VAL_OBS_BASIC.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | In step 2. Verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes and Supplemental-Type for Object with handle 10 is MDC_MODALITY_SPOT (e.g. if there is a UI, verify that the measurement and date are displayed properly). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-011 | | |
| **TP label** | | Special values. Not a number – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 11; M | PulseRateNumObjAttr 28; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 ($SpO_2$ Object) and handle 10 (Pulse Rate Object) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-012 | | |
| **TP label** | | Special values. Not a number – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 16; C | PulseRateNumObjAttr 33; C | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 ($SpO_2$ Object) | | |

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| | and handle 10 (Pulse Rate Object) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-013 | | |
| **TP label** | | Special values. Not at this resolution – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 11; M | PulseRateNumObjAttr 28; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 ($SpO_2$ Object) and handle 10 (Pulse Rate Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-014 | | |
| **TP label** | | Special values. Not at this resolution – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 16; C | PulseRateNumObjAttr 33; C | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 ($SpO_2$ Object) and handle 10 (Pulse Rate Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-015 | | |
| **TP label** | | Special values. Positive infinity – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 11; M | PulseRateNumObjAttr 28; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 ($SpO_2$ Object) and handle 10 (Pulse Rate Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-016 | | |
| **TP label** | | Special values. Positive infinity – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 16; C | PulseRateNumObjAttr 33; C | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 ($SpO_2$ Object) and handle 10 (Pulse Rate Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-017 | | |
| **TP label** | | Special values. Negative infinity – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 11; M | PulseRateNumObjAttr 28; M | |

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|---|---|
| **Applicability** | C_MAN_OXP_000 AND C_MAN_OXP_026 |
| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration. |
| **Test procedure** | 1. The simulated agent sends a confirmed fixed event report for handle 1 ($SpO_2$ Object) and handle 10 (Pulse Rate Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-018 | | |
| **TP label** | | Special values. Negative infinity – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 16; C | PulseRateNumObjAttr 33; C | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 ($SpO_2$ Object) and handle 10 (Pulse Rate Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-019 | | |
| **TP label** | | Special values. Reserved – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 11; M | PulseRateNumObjAttr 28; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 ($SpO_2$ Object) and handle 10 (Pulse Rate Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |

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| **Pass/Fail criteria** | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/PO/BV-020 | | |
| **TP label** | | Special values. Reserved – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10404] | | |
| | **Testable items** | SpO2NumObjAttr 16; C | PulseRateNumObjAttr 33; C | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_026 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 ($SpO_2$ Object) and handle 10 (Pulse Rate Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

## A.5 Subgroup 2.3.4: Blood pressure monitor (BPM)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/MAN/CLASS/BPM/BV-000</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Association procedure Manager BPM</td></tr>
<tr><td rowspan="6">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10407]</td></tr>
<tr><td rowspan="5">Testable items</td><td>ConfProc_4;M</td><td>AsProc_14;M</td><td>AsProc_15;M</td></tr>
<tr><td>AsProc_16;M</td><td>AsProc_17;M</td><td>AsProc_18;M</td></tr>
<tr><td>AsProc_19;M</td><td>AsProc_20;M</td><td>AsProc_21;M</td></tr>
<tr><td>AsProc_22;M</td><td>AsProc_23;M</td><td>AsProc_24;M</td></tr>
<tr><td>AsProc_25;M</td><td></td><td></td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_MAN_OXP_000 AND C_MAN_OXP_020</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The manager is in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16437<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes<br>❑ field-value = 0xE3 0x00 (AareApdu)<br>b. Result<br>❑ field- type = AssociateResult<br>❑ field-length = 2 bytes<br>❑ field-value = One of the following:<br>▪ If association is accepted, field-value=0x00 0x00.<br>▪ If association is rejected-permanent, field-value=0x00 0x01.<br>▪ If association is rejected-transient, field-value=0x00 0x02.<br>▪ If association is accepted-unknown-config, field-value=0x00 0x03.<br>▪ If association is rejected-no-common-protocol, field-value=0x00 0x04.<br>▪ If association is rejected-no-common-parameter, field-value=0x00 0x05.<br>▪ If association is rejected–unknown = 0x00 0x06.</td></tr>
</table>

- If association is rejected-unauthorized, field-value=0x00 0x07.
- If association is rejected-unsupported-assoc-version, field-value=0x00 0x08.

c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))

d. data-proto-id
   - ❑ field- type = DataProtoId
   - ❑ field-length = 2 bytes
   - ❑ field-value=0x50 0x79 (20601)

e. protocol-version
   - ❑ field- type = Protocol Version
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value=0x80 0x00 0x00 0x00

f. encoding-rules
   - ❑ field-type = EncodingRules
   - ❑ field-length = 2 bytes (BITS-16)
   - ❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time

g. nomenclature version
   - ❑ field- type = NomenclatureVersion
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value= Bit 0 must be set (nom-version1)

h. functional units
   - ❑ field-type = FunctionalUnits
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value =
     - Bit 0 must be 0
     - Bits 1 and 2 may be set
     - The rest of the bits must not be set

i. system type
   - ❑ field- type = SystemType
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)

j. system-id
   - ❑ field- type = OCTET STRING
   - ❑ field-length = 8 bytes
   - ❑ field-value = (EUI-64 manufacturer and device)

k. dev-config-id
   - ❑ field- type = ConfigId
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00 (manager-config-response)

l. data-req-mode-flags (DataReqModeCapab)
   - ❑ field- type = DataReqModeFlags
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00

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| | ❑ manager response to data-req-mode-flags is always 0.<br>m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-001 | | |
| **TP label** | | Configuration Event Report. Blood Pressure Meter standard configuration | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | MDSEvents 8;M | | |
| | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x02 0xBC (Blood Pressure Meter).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x02 0xBC<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's message. | | |

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| | c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement with:<br>❑ event_type = MDC_NOTI_SCAN_REPORT_FIXED<br>❑ event_info = ScanReportInfoFixed<br>▪ obs_scan_fixed: Sys-Diast-MAP 120-90-100 mmHg and pulse rate 60 beats/min |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | See bug http://continua.plugfests.com/show_bug.cgi?id=123 |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-003 | | |
| **TP label** | | Attribute-Value-Map. Order change. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_23;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report with a report from handle 1 (Non-invasive blood pressure) that matches the Attribute-Value-Map order of MDC_ATTR_NU_CMPD_VAL_OBS_BASIC, MDC_ATTR_TIME_STAMP_ABS and handle 2 (pulse) that matches the Attribute-Value-Map order of MDC_ATTR_NU_VAL_OBS_BASIC, MDC_ATTR_TIME_STAMP_ABS<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 to reverse the values to: | | |

| | |
|---|---|
| | MDC_ATTR_TIME_STAMP_ABS, then MDC_<br>MDC_ATTR_NU_CMPD_VAL_OBS_BASIC and to reverse handle 2 values to:<br>MDC_ATTR_TIME_STAMP_ABS, MDC_ATTR_NU_ VAL_OBS_BASIC.<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with handle 1 values set to the date first followed by blood pressure values (in millimetres of mercury (MDC_DIM_MMHG) since it is the standard configuration unit code) and handle 2 values set to the date first followed by pulse rate (in beats per minute (MDC_DIM_BEAT_PER_MIN)).<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent.<br>11. The simulated agent sends a fixed event report for handles 1 and 2 following the standard configuration attribute-value-format (MDC_ATTR_NU_CMPD_VAL_OBS_BASIC, MDC_ATTR_TIME_STAMP_ABS) and (MDC_ATTR_NU_ VAL_OBS_BASIC, MDC_ATTR_TIME_STAMP_ABS), respectively.<br>12. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly). If the manager only displays the values from handle 1 (non-invasive blood pressure) that is fine since the specification implies that agents nor manager have to support (pulse) but the pulse object must be there in the standard configuration.<br>• In steps 2, 6 and 12 verify that the manager under test uses millimetres of mercury as the unit code for the measurement report (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past). |
| **Notes** | This may require the simulated agent to provide a proper date-and-time attribute in the MDS object.<br>When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-004 | | |
| **TP label** | | Attribute-Value-Map. Adding additional attributes to the Attribute-Value-Map | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_23;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 AND C_MAN_BPM_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. (Non-invasive blood pressure Compound Numeric standard configuration Unit code attribute is set to millimetres of mercury (MDC_DIM_MMHG)). | | |

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| **Test procedure** | 1. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Non-invasive blood pressure) to set the values to: MDC_ATTR_NU_CMPD_VAL_OBS_BASIC, MDC_ATTR_UNIT_CODE, then MDC_ATTR_TIME_STAMP_ABS. For handle 2 (pulse), set the attribute value map to: MDC_ATTR_MSMT_STAT, MDC_ATTR_NU_ VAL_OBS_BASIC, MDC_ATTR_UNIT_CODE, then MDC_ATTR_TIME_STAMP_ABS.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report with the new data layout. For the unit-code attribute of handle 1, use MDC_DIM_KILO_PASCAL (3843), for handle 2, use MDC_DIM_BEAT_PER_MIN (2720).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends a confirmed variable event report with handle 1 reporting just a MDC_ATTR_NU_CMPD_VAL_OBS_BASIC attribute and handle 2 just a MDC_ATTR_NU_VAL_OBS_BASIC.<br>6. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In step 4, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In step 6, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement is displayed properly).<br>• In steps 4 and 6, verify that the manager under test uses kilopascals and beats per minute as the unit codes for the measurement reports. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-005 | | |
| **TP label** | | Unit-Code. Change from default millimetres of mercury (mmHg) to kilopascals (kPa) – fixed format observation. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_21;M | | |
| | **Spec** | [ITU-T H.810] | | |
| | **Testable items** | Communication 9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 AND C_MAN_BPM_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 1 (non-invasive blood pressure) to kPa nomenclature code MDC_DIM_KILO_PASCAL (3843).<br>NOTE – No need to change handle 2 (pulse), since the only option is beats per minute.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report for handle 1 using a measurement in kPa (e.g., 16 kPa is 120 mmHg and 10 kPa is 80 mmHg) followed by date and time stamp and for handle 2 using a measurement in beats per minute followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal). | | |

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| | 6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a fixed event report for handle 1 using a measurement in mmHg followed by date and time stamp and for handle 2 using a measurement in beats per minute followed by date and time stamp.<br>10. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In step 4, verify that the manager under test is able to accept the data properly and applies kPa and beats/min to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies mmHg and beats/min to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-005_A | | |
| **TP label** | | Unit-Code. Do not change from default millimetres of mercury (mmHg) to kilopascals (kPa) – fixed format observation. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_21;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 AND (NOT(C_MAN_BPM_001)) | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 1 (non-invasive blood pressure) to kPa nomenclature code MDC_DIM_KILO_PASCAL (3843).<br>NOTE – No need to change handle 2 (pulse), since the only option is beats per minute.<br>2. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or until TO cer-mds expires.<br>3. If the manager has sent a confirmation in step 2, send a confirmed fixed format event report for handle 1 using a measurement in kPa (e.g., 16 kPa is 120 mmHg and 10 kPa is 80 mmHg) followed by date and time stamp and for handle 2 using a measurement in beats per minute followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or TO cer-mds expires.<br>5. If the manager has sent a confirmation in step 4, ask to the operator if the measurements have been properly received and displayed. | | |
| **Pass/Fail criteria** | | • In step 2, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 4, verify that manager sends a confirmation, or TOcer-mds expires, or manager | | |

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| | sends a roer message, abrt message, release association or rorj message.<br>• In step 5, verify that measurements do not appear, or if they do appear, they are somehow designated as 'unsupported' data. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-006 | | |
| **TP label** | | Unit-Code. Use default millimetres of mercury (mmHg) and beats per minute (BPM) – variable format observation. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_21;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report for handle 1 using a measurement in mmHg and for handle 2 using a measurement in beats/min.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data properly and applies mmHg and beats/min to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-007 | | |
| **TP label** | | Unit-Code. Change from default millimetres of mercury (mmHg) to kilopascals (kPa) – variable format observation. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_21;M | | |
| | **Spec** | [ITU-T H.810] | | |
| | **Testable items** | Communication 9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 AND C_MAN_BPM_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report to set the unit code to kPa MDC_DIM_KILO_PASCAL (3843) for handle 1 (non-invasive blood pressure) and a measurement in kPa. For handle 2, set the unit code to beats per minute MDC_DIM_BEAT_PER_MIN (2720) and a beats/min measurement value.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a second confirmed variable format event report with just a measurement in kPa and beats/min (i.e., do not transmit the unit-code attribute in the event report).<br>4. The simulated agent waits until it receives a confirmation. | | |

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| | 5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a confirmed variable event report for handle 1 with an observation in mmHg (i.e., do not send the unit-code attribute it should be set to mmHg by the standard configuration). For handle 2, use an observation of beats/min.<br>10. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2 and 4, verify that the manager under test is able to accept the data properly and applies kPa and beats/min to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies mmHg and beats/min to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-008 | | |
| **TP label** | | Metric-id-list. Standard configuration | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_17;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (non-invasive blood pressure object) containing an observation with the compound field values (SFLOAT) set to (120.0, 80.0, 93.3) and for handle 2 containing an observation (SFLOAT) of 60.0.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data and applies the data properly as systolic = 120.0, diastolic = 80.0, mean arterial pressure (MAP) = 93.3, and pulse = 60.0. | | |
| **Notes** | | If there are no other tests for various different FLOAT and SFLOAT values, the values above at least help cover the negative exponent values (e.g. 120.0 is 0xF4B0 as the SFLOAT). | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-009 | | |
| **TP label** | | Metric-id-list. Id order change – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_17;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (non-invasive blood pressure object) setting MDC_ATTR_ID_PHYSIO_LIST to (MDC_PRESS_BLD_NONINV_MEAN, MDC_PRESS_BLD_NONINV_SYS, then MDC_PRESS_BLD_NONINV_DIA).<br>2. The simulated agent sends a confirmed fixed event report for handle 1 containing an observation with the compound field values (SFLOAT) set to (106.6, 140.0, 90.0) along with a known time stamp, and Pulse Rate of 60 beats/min along with a known time stamp.<br>3. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data and time stamp and applies the data properly as systolic = 140.0, diastolic = 90.0, MAP = 106.6. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-010 | | |
| **TP label** | | Metric-id-list. Id order change – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_17;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (non-invasive blood pressure object) setting MDC_ATTR_ID_PHYSIO_LIST to (MDC_PRESS_BLD_NONINV_DIA, MDC_PRESS_BLD_NONINV_MEAN, then MDC_PRESS_BLD_NONINV_SYS) in the first observation scan. In a second observation scan, for handle 1 set the compound field values (SFLOAT) to (74.0, 86.0, 110.0) along with a known time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data and time stamp and applies the data properly as systolic = 110.0, diastolic = 74.0, MAP = 86.0. | | |
| **Notes** | | | | |

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| **TP Id** | TP/PLT/MAN/CLASS/BPM/BV-011 |
| **TP label** | Metric-id-list. Reduced ids – fixed format |

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| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_17;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (non-invasive blood pressure object) setting MDC_ATTR_METRIC_STRUCT_SMALL to {ms-struct-compound-fix, 2}, MDC_ATTR_ID_PHYSIO_LIST to (MDC_PRESS_BLD_NONINV_SYS, then MDC_PRESS_BLD_NONINV_DIA) and MDC_ATTR_ATTRIBUTE_VAL_MAP to {MDC_ATTR_NU_CMPD_VAL_OBS_BASIC, 8, MDC_ATTR_TIME_STAMP_ABS, 8}.<br>2. The simulated agent sends a confirmed fixed event report for handle 1 containing an observation with the compound field values (SFLOAT) set to (135.5, 86.3) along with a known time stamp.<br>3. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data and time stamp and applies the data properly as systolic = 135.5, diastolic = 86.3. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-012 | | |
| **TP label** | | Metric-id-list. Reduced ids – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_17;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (non-invasive blood pressure object) setting MDC_ATTR_METRIC_STRUCT_SMALL to {ms-struct-compound-fix, 2} and MDC_ATTR_ID_PHYSIO_LIST to (MDC_PRESS_BLD_NONINV_DIA, then MDC_PRESS_BLD_NONINV_SYS).<br>2. The simulated agent waits until it receives a confirmation from the manager under test.<br>3. The simulated agent sends a confirmed variable event report for handle 1 containing an observation with the compound field values (SFLOAT) set to (150.0, 95.0) along with a known time stamp.<br>4. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data and time stamp and applies the data properly as systolic = 150.0, diastolic = 95.0. | | |
| **Notes** | | | | |

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| **TP Id** | TP/PLT/MAN/CLASS/BPM/BV-013 |
| **TP label** | Maximum APDU size: Blood Pressure Meter |

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| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2<br>❑ Length = 856<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(824 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id:`<br>`2677 (MDC_ATTR_NU_CMPD_VAL_OBS_BASIC)`<br>`attribute-value: (130 / 85 / 100)`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a confirmed fixed event report with one measurement.<br>4. Check the response of the manager under test. | | |
| **Pass/Fail criteria** | | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-014 | | |
| **TP label** | | Special values. Not a number – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_23; M | PulsRat_22; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |

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| **Test procedure** | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Systolic/Diastolic/MAP Object) and handle 2 (Pulse Rate Object) containing all observation values set to the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-015 | | |
| **TP label** | | Special values. Not a number – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_45; C | PulsRat_42; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Systolic/Diastolic/MAP Object) and handle 2 (Pulse Rate Object) containing all observation values set to the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-016 | | |
| **TP label** | | Special values. Not at this resolution – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_23; M | PulsRat_22; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Systolic/Diastolic/MAP Object) and handle 2 (Pulse Rate) containing all observation values set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |

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| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-017 | | |
| **TP label** | | Special values. Not at this resolution – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_45; C | PulsRat_42; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Systolic/Diastolic/MAP Object) and handle 2 (Pulse Rate Object) containing all observation values set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-018 | | |
| **TP label** | | Special values. Positive infinity – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_23; M | PulsRat_22; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Systolic/Diastolic/MAP Object) and handle 2 (Pulse Rate Object) containing all observation values set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-019 | | |
| **TP label** | | Special values. Positive infinity – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_45; C | PulsRat_42; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Systolic/Diastolic/MAP Object) and handle 2 (Pulse Rate Object) containing all observation values set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-020 | | |
| **TP label** | | Special values. Negative infinity – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_23; M | PulsRat_22; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Systolic/Diastolic/MAP Object) and handle 2 (Pulse Rate Object) containing all observation values set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-021 | | |
| **TP label** | | Special values. Negative infinity – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_45; C | PulsRat_42; M | |

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|---|---|
| **Applicability** | C_MAN_OXP_000 AND C_MAN_OXP_020 |
| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration. |
| **Test procedure** | 1. The simulated agent sends a confirmed variable event report for handle 1 (Systolic/Diastolic/MAP Object) and handle 2 (Pulse Rate) containing all observation values set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 – 2) = 0x0802]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-022 | | |
| **TP label** | | Special values. Reserved – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_23; M | PulsRat_22; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Systolic/Diastolic/MAP Object) and handle 2 (Pulse Rate) containing all observation values set to the value for reserved (Reserved for future use, [exponent 0, mantissa -(2**11 –1) = 0x0801]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BPM/BV-023 | | |
| **TP label** | | Special values. Reserved – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10407] | | |
| | **Testable items** | SystDiast_45; C | PulsRat_42; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_020 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Systolic/Diastolic/MAP Object) and handle 2 (Pulse Rate Object) containing all observation values set to the value for reserved (Reserved for future use, [exponent 0, | | |

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| | mantissa –(2**11 –1) = 0x0801]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

## A.6 Subgroup 2.3.5: Thermometer (TH)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/MAN/CLASS/TH/BV-003</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Association procedure Manager TH</td></tr>
<tr><td rowspan="4">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10408]</td></tr>
<tr><td rowspan="3">Testable items</td><td>TH_ CM_Assoc10 ;M</td><td>TH_ CM_Assoc14 ;M</td><td>TH_ CM_Assoc15 ;M</td></tr>
<tr><td>TH_ CM_Assoc16 ;M</td><td>TH_ CM_Assoc17 ;M</td><td>TH_ CM_Assoc18 ;M</td></tr>
<tr><td>TH_ CM_Assoc19 ;M</td><td>TH_ CM_Assoc20 ;M</td><td></td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_MAN_OXP_000 AND C_MAN_OXP_025</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The manager is in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16447<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes<br>❑ field-value = 0xE3 0x00 (AareApdu)<br>b. Result<br>❑ field- type = AssociateResult<br>❑ field-length = 2 bytes<br>❑ field-value = One of the following:<br>▪ If association is accepted, field-value=0x00 0x00.<br>▪ If association is rejected-permanent, field-value=0x00 0x01.<br>▪ If association is rejected-transient, field-value=0x00 0x02.<br>▪ If association is accepted-unknown-config, field-value=0x00 0x03.<br>▪ If association is rejected-no-common-protocol, field-value=0x00 0x04.<br>▪ If association is rejected-no-common-parameter, field-value=0x00 0x05.<br>▪ If association is rejected–unknown = 0x00 0x06.<br>▪ If association is rejected-unauthorized, field-value=0x00 0x07.<br>▪ If association is rejected–unsupported-assoc-version, field-value=0x00 0x08.<br>c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-</td></tr>
</table>

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| | proto-info(defined by data-proto-id))<br>d. data-proto-id<br>❑ field- type = DataProtoId<br>❑ field-length = 2 bytes<br>❑ field-value=0x50 0x79 (20601)<br>e. protocol-version<br>❑ field- type = Protocol Version<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value=0x80 0x00 0x00 0x00<br>f. encoding-rules<br>❑ field-type = EncodingRules<br>❑ field-length = 2 bytes (BITS-16)<br>❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time<br>g. nomenclature version<br>❑ field- type = NomenclatureVersion<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value= Bit 0 must be set (nom-version1)<br>h. functional units<br>❑ field-type = FunctionalUnits<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value =<br>▪ Bit 0 must be 0<br>▪ Bits 1 and 2 may be set<br>▪ The rest of the bits must not be set<br>i. system type<br>❑ field- type = SystemType<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)<br>j. system-id<br>❑ field- type = OCTET STRING<br>❑ field-length = 8 bytes<br>❑ field-value = (EUI-64 manufacturer and device)<br>k. dev-config-id<br>❑ field- type = ConfigId<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00 (manager-config-response)<br>l. data-req-mode-flags (DataReqModeCapab)<br>❑ field- type = DataReqModeFlags<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00<br>❑ manager response to data-req-mode-flags is always 0.<br>m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8 |

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| | ❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

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| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-004 | | |
| **TP label** | | Configuration Event Report. Thermometer standard configuration | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x03 0x20 (Thermometer).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x03 0x20.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes | | |

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| | ❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-005 | | |
| **TP label** | | Maximum APDU size: Thermometer | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2<br>❑ Length = 856<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(832 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2636 (MDC_ATTR_NU_VAL_OBS_BASIC)`<br>`attribute-value: 36`<br>`}`<br>`}`<br>`}` | | |

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| | 2. Check the response of the manager under test.<br>3. The simulated agent sends a Confirmed fixed event report with one measurement.<br>4. Check the response of the manager under test. |
| **Pass/Fail criteria** | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-006 | | |
| **TP label** | | Attribute-Value-Map. Order change. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp17;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report that matches the Attribute-Value-Map order of MDC_ATTR_NU_VAL_OBS_BASIC, then MDC_ATTR_TIME_STAMP_ABS.<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Body Temperature Object) to reverse the values to: MDC_ATTR_TIME_STAMP_ABS, then MDC_ATTR_NU_VAL_OBS_BASIC.<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the date first followed by a body temperature value (in Celsius degrees since it is the standard configuration unit code).<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent.<br>11. The simulated agent sends a fixed event report following the standard configuration attribute-value-format (MDC_ATTR_NU_VAL_OBS_BASIC, then MDC_ATTR_TIME_STAMP_ABS). The observation should be a reasonable Celsius degrees body temperature observation.<br>12. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly). | | |

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| | • In steps 2, 6 and 12 verify that the manager under test uses Celsius degrees as the unit code for the measurement report (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-007 | | |
| **TP label** | | Attribute-Value-Map. Adding additional attributes to the Attribute-Value-Map | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp17;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 AND C_MAN_TH_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. (Body Temperature Numeric standard configuration Unit code attribute is set to MDC_DIM_DEGC). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Body Temperature Object) to set the values to: MDC_ATTR_NU_VAL_OBS_BASIC, MDC_ATTR_UNIT_CODE, then MDC_ATTR_TIME_STAMP_ABS.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report with the new data layout. For the unit-code attribute, use MDC_DIM_FAHR (4416).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends a confirmed variable event report with just MDC_ATTR_NU_VAL_OBS_BASIC attribute.<br>6. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In step 6, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement is displayed properly).<br>• In steps 4 and 6, verify that the manager under test uses Fahrenheit degrees as the unit code for the measurement reports. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-008 |
| **TP label** | | Unit-Code. Change from default Celsius degrees to Fahrenheit degrees – fixed format observation. |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] |

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| | **Testable items** | Num Objec Temp15;M | | |
| | **Spec** | [ITU-T H.810] | | |
| | **Testable items** | Communication 9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 AND C_MAN_TH_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 1 (Body Temperature Object) to Fahrenheit nomenclature code MDC_DIM_FAHR (4416).<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report using a measurement in Fahrenheit degrees followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a fixed event report with an observation in Celsius degrees followed by date and time stamp.<br>10. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies Fahrenheit degrees to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies Celsius degrees to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-008_A | | |
| **TP label** | | Unit-Code. Do not change from default Celsius degrees to Fahrenheit degrees – fixed format observation. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp15;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 AND (NOT(C_MAN_TH_001)) | | |

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| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration. |
| **Test procedure** | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 1 (Body Temperature Object) to Fahrenheit nomenclature code MDC_DIM_FAHR (4416).<br>2. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or until TO cer-mds expires.<br>3. If the manager has sent a confirmation in step 2, send a confirmed fixed format event report using a measurement in Fahrenheit degrees followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or TO cer-mds expires.<br>5. If the manager has sent a confirmation in step 4, ask to the operator if the measurements have been properly received and displayed. |
| **Pass/Fail criteria** | • In step 2, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 4, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 5, verify that measurements do not appear, or if they do appear, they are somehow designated as 'unsupported' data. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-009 | | |
| **TP label** | | Unit-Code. Use default Celsius degrees – variable format observation. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp15;M | Communication 9; M | |
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| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report using a measurement in Celsius degrees.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data properly and applies Celsius degrees to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-010 | | |
| **TP label** | | Unit-Code. Change from default Celsius degrees to Fahrenheit degrees – variable format observation. | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp15;M | | |

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| | **Spec** | [ITU-T H.810] | | |
| | **Testable items** | Communication 9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 AND C_MAN_TH_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report to set the unit code to Fahrenheit degrees MDC_DIM_FAHR (4416) for handle 1 (Body Temperature Object) and a measurement in Fahrenheit degrees.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a second confirmed variable format event report with just a measurement in Fahrenheit degrees (i.e., do not transmit the unit-code attribute in the event report).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a confirmed variable event report with an observation in Celsius degrees followed by date and time stamp (i.e., do not send the unit-code attribute it should be set to Celsius degrees by the standard configuration).<br>10. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In steps 2 and 4, verify that the manager under test is able to accept the data properly and applies Fahrenheit degrees to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies Celsius degrees to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-011 | | |
| **TP label** | | Special values. Not a number – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp17; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body | | |

| | |
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| | Temperature Object) containing an observation value with the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). |
| **Notes** | This test case has been considered as an implicit test case. |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-012 | | |
| **TP label** | | Special values. Not a number – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp21; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Temperature Object) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-013 | | |
| **TP label** | | Special values. Not at this resolution – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp17; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Temperature Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-014 | | |
| **TP label** | | Special values. Not at this resolution – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp21; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Temperature Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/ TH /BV-015 | | |
| **TP label** | | Special values. Positive infinity – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp17; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Temperature Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-016 | | |
| **TP label** | | Special values. Positive infinity – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp21; C | | |

| | |
|---|---|
| **Applicability** | C_MAN_OXP_000 AND C_MAN_OXP_025 |
| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration. |
| **Test procedure** | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Temperature Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-017 | | |
| **TP label** | | Special values. Negative infinity – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp17; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1(Body Temperature Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-018 | | |
| **TP label** | | Special values. Negative infinity – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp21; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Temperature Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |

| | |
|---|---|
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-019 | | |
| **TP label** | | Special values. Reserved – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp17; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Temperature Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/TH/BV-020 | | |
| **TP label** | | Special values. Reserved – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10408] | | |
| | **Testable items** | Num Objec Temp21; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_025 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Temperature Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

## A.7 Subgroup 2.3.6: Cardiovascular (CV)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/MAN/CLASS/CV/BV-002</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Association procedure Manager CV</td></tr>
<tr><td rowspan="5">Coverage</td><td>Spec</td><td colspan="3">[IEEE 11073-10441]</td></tr>
<tr><td rowspan="4">Testable items</td><td>AssocResp1;M</td><td>AssocResp2;M</td><td>AssocResp3;M</td></tr>
<tr><td>AssocResp4;M</td><td>AssocResp5;M</td><td>AssocResp6;M</td></tr>
<tr><td>AssocResp7;M</td><td>AssocResp8;M</td><td>AssocResp9;M</td></tr>
<tr><td>AssocResp10;M</td><td>AssocResp11;M</td><td>AssocResp12;M</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_MAN_OXP_000 AND (C_MAN_OXP_023)</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The manager is in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16438<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes<br>❑ field-value = 0xE3 0x00 (AareApdu)<br>b. Result<br>❑ field- type = AssociateResult<br>❑ field-length = 2 bytes<br>❑ field-value = One of the following:<br>▪ If association is accepted, field-value=0x00 0x00.<br>▪ If association is rejected-permanent, field-value=0x00 0x01.<br>▪ If association is rejected-transient, field-value=0x00 0x02.<br>▪ If association is accepted-unknown-config, field-value=0x00 0x03.<br>▪ If association is rejected-no-common-protocol, field-value=0x00 0x04.<br>▪ If association is rejected-no-common-parameter, field-value=0x00 0x05.<br>▪ If association is rejected–unknown = 0x00 0x06.<br>▪ If association is rejected-unauthorized, field-value=0x00 0x07.<br>▪ If association is rejected–unsupported-assoc-version, field-value=0x00</td></tr>
</table>

| | |
|---|---|
| | 0x08.<br>c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))<br>d. data-proto-id<br>❑ field- type = DataProtoId<br>❑ field-length = 2 bytes<br>❑ field-value=0x50 0x79 (20601)<br>e. protocol-version<br>❑ field- type = Protocol Version<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value=0x80 0x00 0x00 0x00<br>f. encoding-rules<br>❑ field-type = EncodingRules<br>❑ field-length = 2 bytes (BITS-16)<br>❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time<br>g. nomenclature version<br>❑ field- type = NomenclatureVersion<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value= Bit 0 must be set (nom-version1)<br>h. functional units<br>❑ field-type = FunctionalUnits<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value =<br>▪ Bit 0 must be 0<br>▪ Bits 1 and 2 may be set<br>▪ The rest of the bits must not be set<br>i. system type<br>❑ field- type = SystemType<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)<br>j. system-id<br>❑ field- type = OCTET STRING<br>❑ field-length = 8 bytes<br>❑ field-value = (EUI-64 manufacturer and device)<br>k. dev-config-id<br>❑ field- type = ConfigId<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00 (manager-config-response)<br>l. data-req-mode-flags (DataReqModeCapab)<br>❑ field- type = DataReqModeFlags<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00<br>❑ manager response to data-req-mode-flags is always 0. |

| | |
|---|---|
| | m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/CV/BV-003 | | |
| **TP label** | | Maximum APDU size: Cardiovascular | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_023 AND NOT(C_MAN_CV_030) | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2<br>❑ Length = 64472<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(64448 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id:`<br>`2633 (MDC_ATTR_ENUM_OBS_VAL_SIMP_OID)`<br>`attribute-value: 1017 (MDC_HF_ACT_WALK)`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a Confirmed fixed event report with one measurement.<br>4. Check the response of the manager under test. | | |
| **Pass/Fail criteria** | | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event- | | |

| | |
|---|---|
| | report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". |
| **Notes** | |

## A.8 Subgroup 2.3.7: Strength (ST)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/MAN/CLASS/ST/BV-001</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Association procedure Manager ST</td></tr>
<tr><td rowspan="5">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10442]</td></tr>
<tr><td rowspan="4">Testable items</td><td>StrenAssocRes 1;M</td><td>StrenAssocRes 2;M</td><td>StrenAssocRes 3;M</td></tr>
<tr><td>StrenAssocRes 4;M</td><td>StrenAssocRes 5;M</td><td>StrenAssocRes 6;M</td></tr>
<tr><td>StrenAssocRes 7;M</td><td>StrenAssocRes 8;M</td><td>StrenAssocRes 9;M</td></tr>
<tr><td>StrenAssocRes 10;M</td><td>StrenAssocRes 11;M</td><td></td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_MAN_OXP_000 AND C_MAN_OXP_022</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The manager is in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16445<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes<br>❑ field-value = 0xE3 0x00 (AareApdu)<br>b. Result<br>❑ field- type = AssociateResult<br>❑ field-length = 2 bytes<br>❑ field-value = One of the following:<br>▪ If association is accepted, field-value=0x00 0x00.<br>▪ If association is rejected-permanent, field-value=0x00 0x01.<br>▪ If association is rejected-transient, field-value=0x00 0x02.<br>▪ If association is accepted-unknown-config, field-value=0x00 0x03.<br>▪ If association is rejected-no-common-protocol, field-value=0x00 0x04.<br>▪ If association is rejected-no-common-parameter, field-value=0x00 0x05.<br>▪ If association is rejected–unknown = 0x00 0x06.<br>▪ If association is rejected-unauthorized, field-value=0x00 0x07.</td></tr>
</table>

- If association is rejected–unsupported-assoc-version, field-value=0x00 0x08.

c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))

d. data-proto-id
   - ❑ field- type = DataProtoId
   - ❑ field-length = 2 bytes
   - ❑ field-value=0x50 0x79 (20601)

e. protocol-version
   - ❑ field- type = Protocol Version
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value=0x80 0x00 0x00 0x00

f. encoding-rules
   - ❑ field-type = EncodingRules
   - ❑ field-length = 2 bytes (BITS-16)
   - ❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time

g. nomenclature version
   - ❑ field- type = NomenclatureVersion
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value= Bit 0 must be set (nom-version1)

h. functional units
   - ❑ field-type = FunctionalUnits
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value =
     - Bit 0 must be 0
     - Bits 1 and 2 may be set
     - The rest of the bits must not be set

i. system type
   - ❑ field- type = SystemType
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)

j. system-id
   - ❑ field- type = OCTET STRING
   - ❑ field-length = 8 bytes
   - ❑ field-value = (EUI-64 manufacturer and device)

k. dev-config-id
   - ❑ field- type = ConfigId
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00 (manager-config-response)

l. data-req-mode-flags (DataReqModeCapab)
   - ❑ field- type = DataReqModeFlags
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00
   - ❑ manager response to data-req-mode-flags is always 0.

| | |
|---|---|
| | m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/ST/BV-002 | | |
| **TP label** | | Maximum APDU size: Strength | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| | | | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_022 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |

**Test procedure**

1. The simulated agent sends a Confirmed variable event report:

   a. ScanReportInfoVar. obs_scan_var:

   ❑ Count =2

   ❑ Length = 64472

```
ObservationScan ::= {
   obj-handle: 1
   attributes: AttributeList ::= {
     AVA-Type ::= {
       attribute-id: 61441
       attribute-value:
            '00.....(64448 bytes)...... 00'O
     }
   }
 }
ObservationScan ::= {
   obj-handle: 1
   attributes: AttributeList ::= {
     AVA-Type ::= {
       attribute-id: 2633
(MDC_ATTR_ENUM_OBS_VAL_SIMP_OID)
       attribute-value: 284 (MDC_MUSC_HEAD_FACIAL)
     }
   }
 }
```

2. Check the response of the manager under test.
3. The simulated agent sends a Confirmed fixed event report with one measurement.
4. Check the response of the manager under test.

| | |
|---|---|
| **Pass/Fail criteria** | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". |
| **Notes** | |

## A.9 Subgroup 2.3.8: Activity hub (HUB)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/MAN/CLASS/HUB/BV-003</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Association procedure manager HUB</td></tr>
<tr><td rowspan="5">Coverage</td><td>Spec</td><td colspan="3">[ISO/IEEE 11073-10471]</td></tr>
<tr><td rowspan="4">Testable items</td><td>AssocResp1;M</td><td>AssocResp2;M</td><td>AssocResp3;M</td></tr>
<tr><td>AssocResp4;M</td><td>AssocResp5;M</td><td>AssocResp6;M</td></tr>
<tr><td>AssocResp7;M</td><td>AssocResp8;M</td><td>AssocResp9;M</td></tr>
<tr><td>AssocResp10;M</td><td>AssocResp11;M</td><td></td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_MAN_OXP_000 AND (C_MAN_OXP_021)</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The manager is in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16441<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes<br>❑ field-value = 0xE3 0x00 (AareApdu)<br>b. Result<br>❑ field- type = AssociateResult<br>❑ field-length = 2 bytes<br>❑ field-value = One of the following:<br>▪ If association is accepted, field-value=0x00 0x00.<br>▪ If association is rejected-permanent, field-value=0x00 0x01.<br>▪ If association is rejected-transient, field-value=0x00 0x02.<br>▪ If association is accepted-unknown-config, field-value=0x00 0x03.<br>▪ If association is rejected-no-common-protocol, field-value=0x00 0x04.<br>▪ If association is rejected-no-common-parameter, field-value=0x00 0x05.<br>▪ If association is rejected–unknown = 0x00 0x06.<br>▪ If association is rejected-unauthorized, field-value=0x00 0x07.<br>▪ If association is rejected–unsupported-assoc-version, field-value=0x00</td></tr>
</table>

| | |
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| | 0x08.<br>c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))<br>d. data-proto-id<br>❑ field- type = DataProtoId<br>❑ field-length = 2 bytes<br>❑ field-value=0x50 0x79 (20601)<br>e. protocol-version<br>❑ field- type = Protocol Version<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value=0x80 0x00 0x00 0x00<br>f. encoding-rules<br>❑ field-type = EncodingRules<br>❑ field-length = 2 bytes (BITS-16)<br>❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time<br>g. nomenclature version<br>❑ field- type = NomenclatureVersion<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value= Bit 0 must be set (nom-version1)<br>h. functional units<br>❑ field-type = FunctionalUnits<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value =<br>▪ Bit 0 must be 0<br>▪ Bits 1 and 2 may be set<br>▪ The rest of the bits must not be set<br>i. system type<br>❑ field- type = SystemType<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)<br>j. system-id<br>❑ field- type = OCTET STRING<br>❑ field-length = 8 bytes<br>❑ field-value = (EUI-64 manufacturer and device)<br>k. dev-config-id<br>❑ field- type = ConfigId<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00 (manager-config-response)<br>l. data-req-mode-flags (DataReqModeCapab)<br>❑ field- type = DataReqModeFlags<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00<br>❑ manager response to data-req-mode-flags is always 0. |

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| | m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/HUB/BV-004 | | |
| **TP label** | | Maximum APDU size: Activity Hub | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| | | | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_021 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |

**Test procedure**

1. The simulated agent sends a Confirmed variable event report:

   a. ScanReportInfoVar. obs_scan_var:

   ❑ Count =2

   ❑ Length = 5080

```
ObservationScan ::= {
   obj-handle: 1
   attributes: AttributeList ::= {
     AVA-Type ::= {
       attribute-id: 61441
       attribute-value:
                  '00.....(5054 bytes)...... 00'O
     }
   }
  }
 ObservationScan ::= {
   obj-handle: 1
   attributes: AttributeList ::= {
     AVA-Type ::= {
       attribute-id:
            2661 (MDC_ATTR_ENUM_OBS_VAL_SIMP_BIT_STR)
       attribute-value: 0x80 0x00 0x00 0x00
     }
   }
 }
```

2. Check the response of the manager under test.
3. The simulated agent sends a Confirmed fixed event report with one measurement.
4. Check the response of the manager under test.

| | |
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| **Pass/Fail criteria** | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". |
| **Notes** | |

## A.10 Subgroup 2.3.9: Adherence monitor (AM)

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-000 | | |
| **TP label** | | Configuration Event Report. Adherence Monitor standard configuration 7200 | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent sends an association request to the manager under test with dev-config-id set to 0x1c 0x20 (MedicalMonitor).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x1c 0x20.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message | | |

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| | ❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | The manager can request Get MDS while they are in the associated state. |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-001 | | |
| **TP label** | | Configuration Event Report. Adherence Monitor standard configuration 7201 | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x1c 0x21 (MedicalMonitor).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x1c 0x21.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes | | |

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| | ❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | The manager can request Get MDS while they are in the associated state. |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-002 | | |
| **TP label** | | Configuration Event Report. Adherence Monitor standard configuration 7202 | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent sends an association request to the manager under test with dev-config-id set to 0x1c 0x22 (MedicalMonitor).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x1c 0x22.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's | | |

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| | message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | The manager can request Get MDS while they are in the associated state. |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-003 | | |
| **TP label** | | Configuration Event Report. Adherence Monitor standard configuration 7203 | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x1c 0x23 (MedicalMonitor).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x1c 0x23. | | |

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| | 4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | The manager can request Get MDS while they are in the associated state. |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-004 | | |
| **TP label** | | Maximum APDU size: Adherence Monitor | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var: | | |

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| | ❑ Count =2<br>❑ Length = 984<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(960 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2636 (MDC_ATTR_NU_VAL_OBS_BASIC)`<br>`attribute-value: 3`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a Confirmed fixed event report with one measurement.<br>4. Check the response of the manager under test. |
| **Pass/Fail criteria** | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-005 | | |
| **TP label** | | Attribute-Value-Map. Order change. (0x1c20) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | FixedDosage12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c20). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report that matches the Attribute-Value-Map order of MDC_ATTR_TIME_STAMP_ABS, then MDC_ATTR_NU_VAL_OBS_BASIC.<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Fixed Dosage Medication Object) to reverse the values to:, MDC_ATTR_NU_VAL_OBS_BASIC then MDC_ATTR_TIME_STAMP_ABS.<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the measurement followed by the date (absolute-time-stamp).<br>6. The simulated agent waits until it receives a confirmation. | | |

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| | 7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent.<br>11. The simulated agent sends a fixed event report following the standard configuration attribute-value-format (MDC_ATTR_TIME_STAMP_ABS, then MDC_ATTR_NU_VAL_OBS_BASIC). The observation should be a reasonable Fixed Dosage Medication observation.<br>12. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-006 | | |
| **TP label** | | Attribute-Value-Map. Order change. (0x1c23) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | VarDosage12; M | UserFeedback12; M | StatReporter12; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report that matches the Attribute-Value-Map order of:<br>• MDC_ATTR_TIME_STAMP_ABS then MDC_ATTR_NU_VAL_OBS_BASIC for Variable Dosage Medication Object<br>• MDC_ATTR_TIME_STAMP_ABS then MDC_ATTR_NU_CMPD_VAL_OBS_BASIC for User Feedback Object<br>• MDC_ATTR_TIME_STAMP_ABS then MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR for Status Reporter Object<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 2 (Variable Dosage Medication Object), of handle 4 (User Feedback objec) and of handle 3 (Status Reporter Object) to reverse the values to:<br>• MDC_ATTR_NU_VAL_OBS_BASIC then MDC_ATTR_TIME_STAMP_ABS for | | |

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| | Variable Dosage Medication Object<br>• MDC_ATTR_NU_CMPD_VAL_OBS_BASIC then MDC_ATTR_TIME_STAMP_ABS for User Feedback Object<br>• MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR then MDC_ATTR_TIME_STAMP_ABS for Status Reporter Object<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the date (absolute-time-stamp) by a measurement data for every object.<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent.<br>11. The simulated agent sends a fixed event report following the standard configuration attribute-value-format (Observed value defined for every object, then MDC_ATTR_TIME_STAMP_ABS). The observations should be reasonable Variable Dosage Medication, User Feedback and Status Reporter values.<br>12. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In steps 2, 6 and 12 verify that the manager under test uses ml as the unit code for Variable Dosage Medication report (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-007 | | |
| **TP label** | | Metric-id-list. Standard configuration | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | UserFeedback9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 4 (user feedback) containing an observation with the compound field values (SFLOAT) set to (1, | | |

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| | 0), for handle 2 containing an observation (FLOAT) of 3 and for handle 3 containing an observation (Enum-Observed-Value-Basic-Bit-Str) with bit 0 set to 1 (*A medication dosage was not dispensed within the regimen allowed timing*).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data and applies the data properly as User Feedback: location = 1, response = 0, Variable Dosage Medication= 3 and Status Reporter informing that medication dosage was not dispensed within the regimen allowed timing (bit 0 set to 1). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-008 | | |
| **TP label** | | Metric-id-list. Id order change – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | UserFeedback9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 4 (user feedback) setting MDC_ATTR_ID_PHYSIO_LIST to (MDC_AI_MED_UF_RESPONSE, then MDC_AI_MED_UF_LOCATION).<br>2. The simulated agent sends a confirmed fixed event report for handle 4 containing a time-stamp and an observation with the compound field values (SFLOAT) set to (2, 3), for handle 2 containing a time-stamp and observation for Variable Dosage Medication of 3ml and for handle 3 containing a time-stamp and observation for Status reporter (Bit 0 set to 1).<br>3. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data and time stamp and applies the data (for compound value) properly as Location = 3, Response = 2. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-009 | | |
| **TP label** | | Metric-id-list. Id order change – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | UserFeedback9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 4 (user feedback) setting MDC_ATTR_ID_PHYSIO_LIST to (MDC_AI_MED_UF_RESPONSE, then MDC_AI_MED_UF_LOCATION). In a second observation scan, for handle 4 set the compound field values (SFLOAT) to (4, 5) along with a known time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |

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| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data and time stamp and applies the data properly as Location = 5, Response = 4. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-010 | | |
| **TP label** | | Metric-id-list. Reduced ids – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | UserFeedback9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 4 (user feedback) setting MDC_ATTR_ID_PHYSIO_LIST to (MDC_AI_MED_UF_LOCATION) and MDC_ATTR_ATTRIBUTE_VAL_MAP to { MDC_ATTR_TIME_STAMP_ABS, 8, MDC_ATTR_NU_CMPD_VAL_OBS_BASIC, 6}.<br>2. The simulated agent sends a confirmed fixed event report for handle 4 containing an observation with the compound field values (SFLOAT) set to (5) along with a known time stamp.<br>3. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data and time stamp and applies the data properly location=5. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-011 | | |
| **TP label** | | Metric-id-list. Reduced ids – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | UserFeedback9; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 4 (user feedback) setting MDC_ATTR_ID_PHYSIO_LIST to (MDC_AI_MED_UF_LOCATION).<br>2. The simulated agent waits until it receives a confirmation from the manager under test.<br>3. The simulated agent sends a confirmed variable event report for handle 4 containing an observation with the compound field values (SFLOAT) set to (3.0) along with a known time stamp.<br>4. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data and time stamp and applies the data properly as location = 3.0. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-012 | | |
| **TP label** | | Special values. Not a number – fixed format (0x1c20) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | FixedDosage12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c20). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Fixed Dosage Medication Object) containing an observation with the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-013 | | |
| **TP label** | | Special values. Not a number – variable format(0x1c20) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | FixedDosage22; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c20). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Fixed Dosage Medication Object) containing an observation with the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-014 |
| **TP label** | | Special values. Not at this resolution – fixed format(0x1c20) |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] |

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| | **Testable items** | FixedDosage12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c20). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Fixed Dosage Medication) containing an observation with the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-015 | | |
| **TP label** | | Special values. Not at this resolution – variable format (0x1c20) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | FixedDosage22; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c20). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Fixed Dosage Medication) containing an observation with the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-016 | | |
| **TP label** | | Special values. Positive infinity – fixed format (0x1c20) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | FixedDosage12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c20). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 containing an observation with the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]) and a time stamp. | | |

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| | 2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-017 | | |
| **TP label** | | Special values. Positive infinity – variable format(0x1c20) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | FixedDosage22; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c20). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Fixed Dosage Medication) containing an observation with the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-018 | | |
| **TP label** | | Special values. Negative infinity – fixed format (0x1c20) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | FixedDosage12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c20). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Fixed Dosage Medication) containing an observation with the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-019 | | |
| **TP label** | | Special values. Negative infinity – variable format (0x1c20) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | FixedDosage22; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Fixed Dosage Medication) containing an observation with the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-020 | | |
| **TP label** | | Special values. Reserved – fixed format (0x1c20) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | FixedDosage12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c20). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Fixed Dosage Medication) containing an observation with the value that is reserved (Reserved for future use, [exponent 0, mantissa –(2**11–1) = 0x0801]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-021 | | |
| **TP label** | | Special values. Reserved – variable format (0x1c20) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | FixedDosage22; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |

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| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c20). |
| **Test procedure** | 1. The simulated agent sends a confirmed variable event report for handle 1 (Fixed Dosage Medication) containing an observation with the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11–1) = 0x0801]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-022 | | |
| **TP label** | | Special values. Not a number – fixed format (0x1c23) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | VarDosage12; M | UserFeedback12; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Variable Dosage Medication) and handle 4 (User Feedback) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**23 –1) = 0x007FFFFF] for Variable Dosage Medication, and [exponent 0, mantissa +(2**11 –1) = 0x07FF] for User Feedback).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-023 | | |
| **TP label** | | Special values. Not a number – variable format (0x1c23) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | VarDosage20; C | UserFeedback23; C | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Variable Dosage Medication) and handle 4 (User Feedback) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**23 –1) = 0x007FFFFF] for Variable Dosage Medication and [exponent 0, mantissa +(2**11 –1) = 0x07FF] for User Feedback). | | |

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| | 2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-024 | | |
| **TP label** | | Special values. Not at this resolution – fixed format (0x1c23) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | VarDosage12; M | UserFeedback12; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Variable Dosage Medication) and handle 4 (User Feedback) containing an observation value set to the value for NRes ([exponent 0, mantissa +(2**23) = 0x00800000] for Variable Dosage Medication and [exponent 0, mantissa –(2**11) = 0x0800] for User Feedback).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-025 | | |
| **TP label** | | Special values. Not at this resolution – variable format (0x1c23) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | VarDosage20; C | UserFeedback23; C | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Variable Dosage Medication) and handle 4 (User Feedback) containing an observation value set to the value for NRes ([exponent 0, mantissa +(2**23) = 0x00800000] for Variable Dosage Medication and [exponent 0, mantissa -(2**11) = 0x0800] for User Feedback).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-026 | | |
| **TP label** | | Special values. Positive infinity – fixed format (0x1c23) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | VarDosage12; M | UserFeedback12; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Variable Dosage Medication) and handle 4 (User Feedback) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**23 – 2) = 0x007FFFFE] for Variable Dosage Medication and [exponent 0, mantissa +(2**11 –2) = 0x07FE] for User Feedback).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-027 | | |
| **TP label** | | Special values. Positive infinity – variable format (0x1c23) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | VarDosage20; C | UserFeedback23; C | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Variable Dosage Medication) and handle 4 (User Feedback) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**23 – 2) = 0x007FFFFE] for Variable Dosage Medication and [exponent 0, mantissa +(2**11 –2) = 0x07FE] for User Feedback).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-028 |
| **TP label** | | Special values. Negative infinity – fixed format (0x1c23) |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] |

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| | **Testable items** | VarDosage12; M | UserFeedback12; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Variable Dosage Medication) and handle 4 (User Feedback) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**23 – 2) = 0x00800002] for Variable Dosage Medication and [exponent 0, mantissa –(2**11 -2) = 0x0802] for User Feedback).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-029 | | |
| **TP label** | | Special values. Negative infinity – variable format (0x1c23) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | VarDosage20; C | UserFeedback23; C | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Variable Dosage Medication) and handle 4 (User Feedback) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**23 – 2) = 0x00800002] for Variable Dosage Medication and [exponent 0, mantissa –(2**11 –2) = 0x0802] for User Feedback).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-030 | | |
| **TP label** | | Special values. Reserved – fixed format (0x1c23) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | VarDosage12; M | UserFeedback12; M | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |

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| **Test procedure** | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Variable Dosage Medication) and handle 4 (User Feedback) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**23 – 1) = 0x00800001] for Variable Dosage Medication and [exponent 0, mantissa –(2**11 –1) = 0x0801] for User Feedback).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-031 | | |
| **TP label** | | Special values. Reserved – variable format (0x1c23) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | VarDosage20; C | UserFeedback23; C | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x1c23). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Variable Dosage Medication) and handle 4 (User Feedback) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**23 – 1) = 0x00800001] for Variable Dosage Medication and [exponent 0, mantissa –(2**11 –1) = 0x0801] for User Feedback).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/AM/BV-032 | | |
| **TP label** | | Association procedure Manager AM | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10472] | | |
| | **Testable items** | MM_AssocReq9; M | MM_AssocResp1; M | MM_AssocResp2; M |
| | | MM_AssocResp3; M | MM_AssocResp4; M | MM_AssocResp5; M |
| | | MM_AssocResp6; M | MM_AssocResp7; M | MM_AssocResp8; M |
| | | MM_AssocResp9; M | MM_AssocResp10; M | MM_AssocResp11; M |
| | | MM_AssocResp12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The manager is in the unassociated state. | | |

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| **Test procedure** | 1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16481<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes<br>❑ field-value = 0xE3 0x00 (AareApdu)<br>b. Result<br>❑ field- type = AssociateResult<br>❑ field-length = 2 bytes<br>❑ field-value = One of the following:<br>▪ If association is accepted, field-value=0x00 0x00.<br>▪ If association is rejected-permanent, field-value=0x00 0x01.<br>▪ If association is rejected-transient, field-value=0x00 0x02.<br>▪ If association is accepted-unknown-config, field-value=0x00 0x03.<br>▪ If association is rejected-no-common-protocol, field-value=0x00 0x04.<br>▪ If association is rejected-no-common-parameter, field-value=0x00 0x05.<br>▪ If association is rejected–unknown = 0x00 0x06.<br>▪ If association is rejected-unauthorized, field-value=0x00 0x07.<br>▪ If association is rejected–unsupported-assoc-version, field-value=0x00 0x08.<br>c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))<br>d. data-proto-id<br>❑ field- type = DataProtoId<br>❑ field-length = 2 bytes<br>❑ field-value=0x50 0x79 (20601)<br>e. protocol-version<br>❑ field- type = Protocol Version<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value=0x80 0x00 0x00 0x00<br>f. encoding-rules<br>❑ field-type = EncodingRules<br>❑ field-length = 2 bytes (BITS-16)<br>❑ field-value= depends on the encoding rules supported/selected, but only one |

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| | can be supported at a time<br>g. nomenclature version<br>❑ field- type = NomenclatureVersion<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value= Bit 0 must be set (nom-version1)<br>h. functional units<br>❑ field-type = FunctionalUnits<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value =<br>▪ Bit 0 must be 0<br>▪ Bits 1 and 2 may be set<br>▪ The rest of the bits must not be set<br>i. system type<br>❑ field- type = SystemType<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)<br>j. system-id<br>❑ field- type = OCTET STRING<br>❑ field-length = 8 bytes<br>❑ field-value = (EUI-64 manufacturer and device)<br>k. dev-config-id<br>❑ field- type = ConfigId<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00 (manager-config-response)<br>l. data-req-mode-flags (DataReqModeCapab)<br>❑ field- type = DataReqModeFlags<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00<br>❑ manager response to data-req-mode-flags is always 0.<br>m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A].<br>data-req-init-agent-count verification has been updated according to IEEE PHD errata. See http://continua.plugfests.com/show_bug.cgi?id=786 for further details. |

## A.11 Subgroup 2.3.11: Peak flow (PF)

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-000 | | |
| **TP label** | | Configuration Event Report. Peak Flow standard configuration 2100 | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x08 0x34 (Peak Flow)<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x08 0x34.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value = MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message | | |

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| | ❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | The manager can request Get MDS while they are in the associated state. |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-001 | | |
| **TP label** | | Maximum APDU size: Peak Flow | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2<br>❑ Length = 1996<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(1970 bytes)..... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2646 (MDC_ATTR_NU_VAL_OBS_SIMP)`<br>`attribute-value: 500`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a Confirmed fixed event report with one measurement.<br>4. Check the response of the manager under test. | | |
| **Pass/Fail criteria** | | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". | | |

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| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-002 | | |
| **TP label** | | Attribute-Value-Map. Order change. (0x0834) | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF12; M | PersBest12; M | FEV1S12; M |
| | | ReadStatus12; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report that matches the Attribute-Value-Map order of:<br>• MDC_ATTR_NU_ VAL_OBS_SIMP then MDC_ATTR_TIME_STAMP_ABS for PEF Object<br>• MDC_ATTR_NU_ VAL_OBS_SIMP then MDC_ATTR_TIME_STAMP_ABS for Personal Best Object<br>• MDC_ATTR_NU_ VAL_OBS_SIMP then MDC_ATTR_TIME_STAMP_ABS for FEV1 Object<br>• MDC_ATTR_NU_VAL_OBS_BASIC_BIT_STRING then MDC_ATTR_TIME_STAMP_ABS for Reading status Object<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (PEF Object), of handle 2 (Personal Best object), of handle 3 (FEV1 Object) and of handle 5 (Reading status Object) to reverse the values to:<br>• MDC_ATTR_TIME_STAMP_ABS then MDC_ATTR_NU_ VAL_OBS_SIMP for PEF Object<br>• MDC_ATTR_TIME_STAMP_ABS then MDC_ATTR_NU_ VAL_OBS_SIMP for Personal Best Object<br>• MDC_ATTR_TIME_STAMP_ABS then MDC_ATTR_NU_ VAL_OBS_SIMP for FEV1 Object<br>• MDC_ATTR_TIME_STAMP_ABS then MDC_ATTR_NU_VAL_OBS_BASIC_BIT_STRING for Reading status Object<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the date (absolute-time-stamp) by a measurement data for every object.<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent. | | |

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| | 11. The simulated agent sends a fixed event report following the standard configuration attribute-value-format (Observed value defined for every object, then MDC_ATTR_TIME_STAMP_ABS). The observations should be reasonable PEF, Personal Best, FEV1 and Reading status values.<br>12. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In steps 2, 6 and 12 verify that the manager under test uses l/min as the unit code for PEF and Personal best report, and it uses l as the unit code for FEV1 report (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-003 | | |
| **TP label** | | Special values. Not a number – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF12; M | PersBest12; M | FEV1S12; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1(PEF), handle 2 (Personal Best) and handle 3 (FEV1) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**23 –1) = 0x007FFFFF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-004 | | |
| **TP label** | | Special values. Not a number – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF20; C | PersBest20; C | FEV1S20; C |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |

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| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). |
| **Test procedure** | 1. The simulated agent sends a confirmed variable event report for handle 1(PEF), handle 2 (Personal Best) and handle 3 (FEV1) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**23 –1) = 0x007FFFFF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurements are displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-005 | | |
| **TP label** | | Special values. Not at this resolution – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF12; M | PersBest12; M | FEV1S12; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1(PEF), handle 2 (Personal Best) and handle 3 (FEV1)containing an observation value set to the value for NRes ([exponent 0, mantissa +(2**23) = 0x00800000]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurements are displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-006 | | |
| **TP label** | | Special values. Not at this resolution – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF20; C | PersBest20; C | FEV1S20; C |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1(PEF), handle 2 (Personal Best) and handle 3 (FEV1) containing an observation value set to the value for NRes ([exponent 0, mantissa +(2**23) = 0x00800000]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the | | |

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| | values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-007 | | |
| **TP label** | | Special values. Positive infinity – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF12; M | PersBest12; M | FEV1S12; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1(PEF), handle 2 (Personal Best) and handle 3 (FEV1) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**23 – 2) = 0x007FFFFE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-008 | | |
| **TP label** | | Special values. Positive infinity – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF20; C | PersBest20; C | FEV1S20; C |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1(PEF), handle 2 (Personal Best) and handle 3 (FEV1) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**23 – 2) = 0x007FFFFE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | TP/PLT/MAN/CLASS/PF/BV-009 |
| **TP label** | Special values. Negative infinity – fixed format |

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| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF12; M | PersBest12; M | FEV1S12; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1(PEF), handle 2 (Personal Best) and handle 3 (FEV1) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**23 – 2) = 0x00800002]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-010 | | |
| **TP label** | | Special values. Negative infinity – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF20; C | PersBest20; C | FEV1S20; C |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1(PEF), handle 2 (Personal Best) and handle 3 (FEV1) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**23 – 2) = 0x00800002]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-011 | | |
| **TP label** | | Special values. Reserved – fixed format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF12; M | PersBest12; M | FEV1S12; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1(PEF), handle 2 | | |

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| | (Personal Best) and handle 3 (FEV1) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**23 – 1) = 0x00800001]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-012 | | |
| **TP label** | | Special values. Reserved – variable format | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PEF20; C | PersBest20; C | FEV1S20; C |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_018 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (0x0834). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1(PEF), handle 2 (Personal Best) and handle 3 (FEV1) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**23 – 1) = 0x00800001]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/PF/BV-013 | | |
| **TP label** | | Association procedure Manager PF | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-10421] | | |
| | **Testable items** | PF_AssocResp1; M | PF_AssocResp2; M | PF_AssocResp3; M |
| | | PF_AssocResp4; M | PF_AssocResp5; M | PF_AssocResp6; M |
| | | PF_AssocResp7; M | PF_AssocResp8; M | PF_AssocResp9; M |
| | | PF_AssocResp10; M | PF_AssocResp11; M | PF_AssocResp12; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_016 | | |
| **Initial condition** | | The manager is in the unassociated state. | | |
| **Test procedure** | | 1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B | | |

- ❑ encoding-rules= '1000000000000000'B
- ❑ nomenclature-version = '10000000000000000000000000000000'B
- ❑ functional-units = '00000000000000000000000000000000'B
- ❑ system-type = '00000000100000000000000000000000'B
- ❑ dev-config-id = 16481
- ❑ data-rep-mode-capab =
  - data_req_mode_flags= '0000000000000001'B
  - data_req_init_agent_count = 1
  - data_req_init_manager_count =0
- ❑ option-list.length=0

2. The manager under test sends an association response. The fields of interest are:
   a. APDU Type
      - ❑ field-length = 2 bytes
      - ❑ field-value = 0xE3 0x00 (AareApdu)
   b. Result
      - ❑ field- type = AssociateResult
      - ❑ field-length = 2 bytes
      - ❑ field-value = One of the following:
        - If association is accepted, field-value=0x00 0x00.
        - If association is rejected-permanent, field-value=0x00 0x01.
        - If association is rejected-transient, field-value=0x00 0x02.
        - If association is accepted-unknown-config, field-value=0x00 0x03.
        - If association is rejected-no-common-protocol, field-value=0x00 0x04.
        - If association is rejected-no-common-parameter, field-value=0x00 0x05.
        - If association is rejected–unknown = 0x00 0x06.
        - If association is rejected-unauthorized, field-value=0x00 0x07.
        - If association is rejected–unsupported-assoc-version, field-value=0x00 0x08.
   c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))
   d. data-proto-id
      - ❑ field- type = DataProtoId
      - ❑ field-length = 2 bytes
      - ❑ field-value=0x50 0x79 (20601)
   e. protocol-version
      - ❑ field- type = Protocol Version
      - ❑ field-length = 4 bytes (BITS-32)
      - ❑ field-value=0x80 0x00 0x00 0x00
   f. encoding-rules
      - ❑ field-type = EncodingRules
      - ❑ field-length = 2 bytes (BITS-16)
      - ❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time
   g. nomenclature version
      - ❑ field- type = NomenclatureVersion

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| | ❑ field-length = 4 bytes (BITS-32)<br>❑ field-value= Bit 0 must be set (nom-version1)<br>h. functional units<br>❑ field-type = FunctionalUnits<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value =<br>▪ Bit 0 must be 0<br>▪ Bits 1 and 2 may be set<br>▪ The rest of the bits must not be set<br>i. system type<br>❑ field- type = SystemType<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)<br>j. system-id<br>❑ field- type = OCTET STRING<br>❑ field-length = 8 bytes<br>❑ field-value = (EUI-64 manufacturer and device)<br>k. dev-config-id<br>❑ field- type = ConfigId<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00 (manager-config-response)<br>l. data-req-mode-flags (DataReqModeCapab)<br>❑ field- type = DataReqModeFlags<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00<br>❑ manager response to data-req-mode-flags is always 0.<br>m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A].<br>data-req-init-agent-count verification has been updated according to IEEE PHD errata. See http://continua.plugfests.com/show_bug.cgi?id=787 for further details. |

## A.12 Subgroup 2.3.12: Body composition analyser (BCA)

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-000 | | |
| **TP label** | | Configuration Event Report. Body Composition Analyser standard configuration 2000 | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x07D0 (BCA).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x07D0.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message | | |

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| | ❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | The manager can request Get MDS while they are in the associated state. |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-001 | | |
| **TP label** | | Maximum APDU size: Body Composition Analyser | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4; M | | |
| | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | CommChar1; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2<br>❑ Length = 7696<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(7670 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2636 (MDC_ATTR_NU_VAL_OBS_BASIC)`<br>`attribute-value: 70`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a Confirmed fixed event report with one measurement.<br>4. Check the response of the manager under test. | | |

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| **Pass/Fail criteria** | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-002 | | |
| **TP label** | | Attribute-Value-Map. Order change | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 21; M | BodyHeight22; M | BodyFat23; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report that matches the Attribute-Value-Map order of:<br>• MDC_ATTR_NU_ VAL_OBS_SIMP then MDC_ATTR_TIME_STAMP_ABS for Body Weight Object<br>• MDC_ATTR_NU_ VAL_OBS_SIMP then MDC_ATTR_TIME_STAMP_ABS for Body Height Object<br>• MDC_ATTR_NU_ VAL_OBS_SIMP then MDC_ATTR_TIME_STAMP_ABS for Body Fat Object<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Body Weight Object), of handle 2 (Body Height object) and of handle 3 (Body Fat Object) to reverse the values to:<br>• MDC_ATTR_TIME_STAMP_ABS then MDC_ATTR_NU_ VAL_OBS_SIMP for Body Weight Object<br>• MDC_ATTR_TIME_STAMP_ABS then MDC_ATTR_NU_ VAL_OBS_SIMP for Body Height Object<br>• MDC_ATTR_TIME_STAMP_ABS then MDC_ATTR_NU_ VAL_OBS_SIMP for Body Fat Object<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the date (absolute-time-stamp) by a measurement data for every object.<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent.<br>11. The simulated agent sends a fixed event report following the standard configuration | | |

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| | attribute-value-format (Observed value defined for every object, then MDC_ATTR_TIME_STAMP_ABS). The observations should be reasonable Body Weight, Body Height and Body Fat.<br>12. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In steps 2, 6 and 12 verify that the manager under test uses kg as the unit code for Body Weight, it uses cm as the unit code for Body Height, and it uses % as the unit code for Body Fat report (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-003 | | |
| **TP label** | | Attribute-Value-Map. Adding additional attributes to the Attribute-Value-Map | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 21;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 AND C_MAN_BCA_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. (Body Weight Numeric standard configuration Unit code attribute is set to MDC_DIM_KILO_G) | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Body Weight Object) to set the values to: MDC_ATTR_NU_VAL_OBS_SIMP, MDC_ATTR_UNIT_CODE, then MDC_ATTR_TIME_STAMP_ABS.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report with the new data layout. For the unit-code attribute, use pounds MDC_DIM_LB (1760).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends a confirmed variable event report with just MDC_ATTR_NU_VAL_OBS_SIMP attribute.<br>6. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In step 6, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement is displayed properly).<br>• In steps 4 and 6, verify that the manager under test uses pounds as the unit code for the measurement reports. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-004 | | |
| **TP label** | | Unit-Code Body Weight. Change from default kilograms to pounds – fixed format observation. | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 19; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 AND C_MAN_BCA_001 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 1 (Body Weight Object) to pounds nomenclature code MDC_DIM_LB (1760).<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report using a measurement in pounds followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a fixed event report with an observation in kilograms followed by date and time stamp.<br>10. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies pounds to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies kilograms to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-005 | | |
| **TP label** | | Unit-Code Body Weight. Do not change from default kilograms to pounds – fixed format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 19; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 AND (NOT(C_MAN_BCA_001)) | | |

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| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration. |
| **Test procedure** | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 1 (Body Weight Object) to pounds nomenclature code MDC_DIM_LB (1760).<br>2. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or until TO cer-mds expires.<br>3. If the manager has sent a confirmation in step 2, send a confirmed fixed format event report using a measurement in pounds followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or TO cer-mds expires.<br>5. If the manager has sent a confirmation in step 4, ask to the operator if the measurements have been properly received and displayed. |
| **Pass/Fail criteria** | • In step 2, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 4, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 5, verify that measurements do not appear, or if they do appear, they are somehow designated as 'unsupported' data. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-006 | | |
| **TP label** | | Unit-Code Body Weight. Use default kilograms – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 19; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report using a measurement in kilograms.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data properly and applies kilograms to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-007 | | |
| **TP label** | | Unit-Code Body Weight. Change from default kilograms to pounds – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 19; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 AND C_MAN_BCA_001 | | |

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| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration. |
| **Test procedure** | 1. Send a confirmed variable format event report to set the unit code to pounds MDC_DIM_LB (1760) for handle 1 (Body Weight Object) and a measurement in pounds.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a second confirmed variable format event report with just a measurement in pounds (i.e., do not transmit the unit-code attribute in the event report).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a confirmed variable event report with an observation in kilograms followed by date and time stamp (i.e., do not send the unit-code attribute it should be set to kilograms by the standard configuration).<br>10. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2 and 4, verify that the manager under test is able to accept the data properly and applies pounds to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies kilograms to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-008 | | |
| **TP label** | | Unit-Code Body Height. Change from default centimetres to inches – fixed format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | BodyHeight20; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 AND C_MAN_BCA_002 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 2 (Body Height Object) to inches nomenclature code MDC_DIM_INCH (1376).<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report using a measurement in inches followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal). | | |

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| | 6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a fixed event report with an observation in centimetres followed by date and time stamp.<br>10. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In step 4, verify that the manager under test is able to accept the data properly and applies inches to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies centimetres to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-009 | | |
| **TP label** | | Unit-Code Body Height. Do not change from default centimetres to inches – fixed format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | BodyHeight20; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 AND (NOT(C_MAN_BCA_002)) | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 2 (Body Height Object) to inches nomenclature code MDC_DIM_INCH (1376).<br>2. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or until TO cer-mds expires.<br>3. If the manager has sent a confirmation in step 2, send a confirmed fixed format event report using a measurement in inches followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or TO cer-mds expires.<br>5. If the manager has sent a confirmation in step 4, ask to the operator if the measurements have been properly received and displayed. | | |
| **Pass/Fail criteria** | | • In step 2, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 4, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 5, verify that measurements do not appear, or if they do appear, they are somehow designated as ‘unsupported’ data. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-010 | | |
| **TP label** | | Unit-Code Body Height. Use default centimetres – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | BodyHeight20; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report using a measurement in centimetres.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data properly and applies centimetres to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-011 | | |
| **TP label** | | Unit-Code Body Height. Change from default centimetres to inches – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | BodyHeight20; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 AND C_MAN_BCA_002 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report to set the unit code to inches MDC_DIM_INCH (1376) for handle 2 (Body Height Object) and a measurement in inches.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a second confirmed variable format event report with just a measurement in inches (i.e., do not transmit the unit-code attribute in the event report).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends an association release request (normal).<br>6. The simulated agent waits until it receives an association release response.<br>7. The simulated agent sends an association request using the same configuration that was used initially.<br>8. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>9. The simulated agent sends a confirmed variable event report with an observation in centimetres followed by date and time stamp (i.e., do not send the unit-code attribute it | | |

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| | should be set to kilograms by the standard configuration).<br>10. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2 and 4, verify that the manager under test is able to accept the data properly and applies inches to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 10, verify that the manager under test is able to accept the data properly and applies centimetres to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-012 | | |
| **TP label** | | Unit-Code Body Fat. Change from default % to kilograms/pounds – fixed format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | BodyFat21; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 AND C_MAN_BCA_003 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 3 (Body fat Object) to kilograms nomenclature code MDC_DIM_KILO_G (1731).<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report using a measurement in kilograms followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 3 (Body fat Object) to pounds nomenclature code MDC_DIM_LB (1760).<br>6. The simulated agent waits until it receives a confirmation.<br>7. Send a confirmed fixed format event report using a measurement in kilograms followed by date and time stamp.<br>8. The simulated agent waits until it receives a confirmation.<br>9. The simulated agent sends an association release request (normal).<br>10. The simulated agent waits until it receives an association release response.<br>11. The simulated agent sends an association request using the same configuration that was used initially.<br>12. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>13. The simulated agent sends a fixed event report with an observation in % followed by date and time stamp.<br>14. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies kilograms to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |

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| | • In step 8, verify that the manager under test is able to accept the data properly and applies pounds to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 14, verify that the manager under test is able to accept the data properly and applies % to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-013 | | |
| **TP label** | | Unit-Code Body Fat. Do not change from default % to kilograms/pounds – fixed format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | BodyFat21; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 AND (NOT(C_MAN_BCA_003)) | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Unit-Code of handle 3 (Body Fat Object) to kilograms nomenclature code MDC_DIM_KILO_G (1731).<br>2. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or until TO cer-mds expires.<br>3. If the manager has sent a confirmation in step 2, send a confirmed fixed format event report using a measurement in inches followed by date and time stamp.<br>4. The simulated agent waits until it receives a confirmation, roer message, abrt message, release association or rorj message or TO cer-mds expires.<br>5. If the manager has sent a confirmation in step 4, ask to the operator if the measurements have been properly received and displayed. | | |
| **Pass/Fail criteria** | | • In step 2, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 4, verify that manager sends a confirmation, or TOcer-mds expires, or manager sends a roer message, abrt message, release association or rorj message.<br>• In step 5, verify that measurements do not appear, or if they do appear, they are somehow designated as 'unsupported' data. | | |
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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-014 | | |
| **TP label** | | Unit-Code Body Fat. Use default % – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | BodyFat21; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |

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| **Test procedure** | 1. Send a confirmed variable format event report using a measurement in centimetres.<br>2. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data properly and applies centimetres to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-015 | | |
| **TP label** | | Unit-Code Body Fat. Change from default % to kilograms/pounds – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | BodyFat21; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 AND C_MAN_BCA_003 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report to set the unit code to kilograms MDC_DIM_KILO_G (1731) for handle 3 (Body Fat Object) and a measurement in kilograms.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a second confirmed variable format event report with just a measurement in kilograms (i.e., do not transmit the unit-code attribute in the event report).<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed variable format event report to set the unit code to pounds MDC_DIM_LB (1760) for handle 3 (Body Fat Object) and a measurement in pounds.<br>6. The simulated agent waits until it receives a confirmation.<br>7. Send a second confirmed variable format event report with just a measurement in pounds (i.e., do not transmit the unit-code attribute in the event report).<br>8. The simulated agent waits until it receives a confirmation.<br>9. The simulated agent sends an association release request (normal).<br>10. The simulated agent waits until it receives an association release response.<br>11. The simulated agent sends an association request using the same configuration that was used initially.<br>12. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until it receives a confirmation from the confirmed configuration event report just sent.<br>13. The simulated agent sends a confirmed variable event report with an observation in % followed by date and time stamp (i.e., do not send the unit-code attribute it should be set to kilograms by the standard configuration).<br>14. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In steps 2 and 4, verify that the manager under test is able to accept the data properly and applies kilograms to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |

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| | • In steps 6 and 8, verify that the manager under test is able to accept the data properly and applies pounds to the observations (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units).<br>• In step 14, verify that the manager under test is able to accept the data properly and applies centimetres to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-016 | | |
| **TP label** | | Special values. Not a number – fixed format | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 21; M | BodyHeight22; M | BodyFat23; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Weight), handle 2 (Body Height) and handle 3 (Body Fat) containing an observation with the value for NaN ([exponent 0, mantissa +(2**23 –1) = 0x007FFFFF]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-017 | | |
| **TP label** | | Special values. Not a number – variable format | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 26; M | BodyHeight38; M | BodyFat39; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Weight), handle 2 (Body Height) and handle 3 (Body Fat) containing an observation with the value for NaN ([exponent 0, mantissa +(2**23 –1) = 0x007FFFFF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |

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| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-018 | | |
| **TP label** | | Special values. Not at this resolution – fixed format | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 21; M | BodyHeight22; M | BodyFat23; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Weight), handle 2 (Body Height) and handle 3 (Body Fat) containing an observation with the value for NRes ([exponent 0, mantissa +(2**23) = 0x00800000]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-019 | | |
| **TP label** | | Special values. Not at this resolution – variable format | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 26; M | BodyHeight38; M | BodyFat39; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Weight), handle 2 (Body Height) and handle 3 (Body Fat) containing an observation with the value for NRes ([exponent 0, mantissa +(2**23) = 0x00800000]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-020 |
| **TP label** | | Special values. Positive infinity – fixed format |
| **Coverage** | **Spec** | [IEEE 11073-10420] |

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| | **Testable items** | WeightNumClass 21; M | BodyHeight22; M | BodyFat23; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Weight), handle 2 (Body Height) and handle 3 (Body Fat) containing an observation with the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**23 –2) = 0x007FFFFE]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-021 | | |
| **TP label** | | Special values. Positive infinity – variable format | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 26; M | BodyHeight38; M | BodyFat39; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Weight), handle 2 (Body Height) and handle 3 (Body Fat) containing an observation with the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**23 –2) = 0x007FFFFE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-022 | | |
| **TP label** | | Special values. Negative infinity – fixed format | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 21; M | BodyHeight22; M | BodyFat23; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Weight), | | |

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| | handle 2 (Body Height) and handle 3 (Body Fat) containing an observation with the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**23 –2) = 0x00800002]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-023 | | |
| **TP label** | | Special values. Negative infinity – variable format | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 26; M | BodyHeight38; M | BodyFat39; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Weight), handle 2 (Body Height) and handle 3 (Body Fat) containing an observation with the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**23 –2) = 0x00800002]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-024 | | |
| **TP label** | | Special values. Reserved – fixed format | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 21; M | BodyHeight22; M | BodyFat23; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Body Weight), handle 2 (Body Height) and handle 3 (Body Fat) containing an observation with the value that is reserved (Reserved for future use, [exponent 0, mantissa –(2**23–1) = 0x00800001]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |

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| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-025 | | |
| **TP label** | | Special values. Reserved – variable format | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | WeightNumClass 26; M | BodyHeight38; M | BodyFat39; M |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Body Weight), handle 2 (Body Height) and handle 3 (Body Fat) containing an observation with the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**23–1) = 0x00800001]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/BCA/BV-026 | | |
| **TP label** | | Association procedure Manager BCA | | |
| **Coverage** | **Spec** | [IEEE 11073-10420] | | |
| | **Testable items** | ManProcAsResp1; M | ManProcAsResp2; M | ManProcAsResp3; M |
| | | ManProcAsResp4; M | ManProcAsResp5; M | ManProcAsResp6; M |
| | | ManProcAsResp7; M | ManProcAsResp8; M | ManProcAsResp9; M |
| | | ManProcAsResp10; M | ManProcAsResp11; M | ManProcAsResp12; M |
| | | ManProcAsResp13; C | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_027 | | |
| **Initial condition** | | The manager is in the unassociated state. | | |
| **Test procedure** | | 1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '10000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16481 | | |

- ❑ data-rep-mode-capab =
  - data_req_mode_flags= '0000000000000001'B
  - data_req_init_agent_count = 1
  - data_req_init_manager_count =0
- ❑ option-list.length=0

2. The manager under test sends an association response. The fields of interest are:
   a. APDU Type
      - ❑ field-length = 2 bytes
      - ❑ field-value = 0xE3 0x00 (AareApdu)
   b. Result
      - ❑ field- type = AssociateResult
      - ❑ field-length = 2 bytes
      - ❑ field-value = One of the following:
        - If association is accepted, field-value=0x00.
        - If association is rejected-permanent, field-value=0x00 0x01.
        - If association is rejected-transient, field-value=0x00 0x02.
        - If association is accepted-unknown-config, field-value=0x00 0x03.
        - If association is rejected-no-common-protocol, field-value=0x00 0x04.
        - If association is rejected -no-common-parameter, field-value=0x00 0x05.
        - If association is rejected-unknown = 0x00 0x06.
        - If association is rejected-unauthorized, field-value=0x00 0x07.
        - If association is rejected-unsupported-assoc-version, field-value=0x00 0x08.
   c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))
   d. data-proto-id
      - ❑ field- type = DataProtoId
      - ❑ field-length = 2 bytes
      - ❑ field-value=0x50 0x79 (20601)
   e. protocol-version
      - ❑ field- type = Protocol Version
      - ❑ field-length = 4 bytes (BITS-32)
      - ❑ field-value=0x80 0x00
   f. encoding-rules
      - ❑ field-type = EncodingRules
      - ❑ field-length = 2 bytes (BITS-16)
      - ❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time
   g. nomenclature version
      - ❑ field- type = NomenclatureVersion
      - ❑ field-length = 4 bytes (BITS-32)
      - ❑ field-value= Bit 0 must be set (nom-version1)
   h. functional units
      - ❑ field-type = FunctionalUnits
      - ❑ field-length = 4 bytes (BITS-32)

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| | ❑ field-value =<br>▪ Bit 0 must be 0<br>▪ Bits 1 and 2 may be set<br>▪ The rest of the bits must not be set<br>i. system type<br>❑ field- type = SystemType<br>❑ field-length = 4 bytes (BITS-32)<br>❑ field-value = 0x80 0x00 (sys-type-manager)<br>j. system-id<br>❑ field- type = OCTET STRING<br>❑ field-length = 8 bytes<br>❑ field-value = (EUI-64 manufacturer and device)<br>k. dev-config-id<br>❑ field- type = ConfigId<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 (manager-config-response)<br>l. data-req-mode-flags (DataReqModeCapab)<br>❑ field- type = DataReqModeFlags<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00<br>❑ manager response to data-req-mode-flags is always 0.<br>m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

## A.13 Subgroup 2.3.13: Basic electrocardiograph (ECG)

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-000 | | |
| **TP label** | | Configuration Event Report. Basic ECG specialization/Heart Rate profile standard configuration 600 | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x0258 (HR).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x0258.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value = MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message | | |

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| | ❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | The manager can request Get MDS while they are in the associated state. |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-001 | | |
| **TP label** | | Maximum APDU size: Basic ECG specialization/Heart Rate profile without PM-Store | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | CommChar1; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2<br>❑ Length = 1248<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(1224 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id:`<br>`2636 (2646 (MDC_ATTR_NU_VAL_OBS_BASIC)`<br>`attribute-value: 79`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a Confirmed fixed event report with one measurement.<br>4. Check the response of the manager under test. | | |

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| **Pass/Fail criteria** | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-002 | | |
| **TP label** | | Maximum APDU size: Basic ECG specialization/ Simple ECG profile without PM-Store | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | CommChar1; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_030 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2<br>❑ Length = 7136<br>`ObservationScan ::= {`<br>`obj-handle: 9`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(7112 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 9`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2454 (MDC_ATTR_UNIT_CODE)`<br>`attribute-value: 2194 (MDC_DIM_MILLI_VOLT)`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a Confirmed variable event report with one attribute update.<br>4. Check the response of the manager under test. | | |
| **Pass/Fail criteria** | | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". | | |

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| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-003 | | |
| **TP label** | | Maximum APDU size: Basic ECG Specialization/Heart Rate profile with PM-Store | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | CommChar1; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_003 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count = 2<br>❑ Length = 64472<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(64448 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2636 (MDC_ATTR_NU_VAL_OBS_BASIC)`<br>`attribute-value: 79`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a confirmed fixed format event report with one measurement.<br>4. Check the response of the manager under test. | | |
| **Pass/Fail criteria** | | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-004 | | |
| **TP label** | | Maximum APDU size: Basic ECG/Simple ECG profile with PM-Store | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | CommChar1; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_003 AND C_MAN_OXP_030 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count = 2<br>❑ Length = 64472<br>`ObservationScan ::= {`<br>`obj-handle: 9`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(64448 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 9`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2454 (MDC_ATTR_UNIT_CODE)`<br>`attribute-value: 2194 (MDC_DIM_MILLI_VOLT)`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a Confirmed variable event report with one attribute update.<br>4. Check the response of the manager under test. | | |
| **Pass/Fail criteria** | | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-005 | | |
| **TP label** | | Basic ECG Specialization/Heart Rate profile. Attribute-Value-Map. Order change | | |
| **Coverage** | **Spec** | [IEEE 11073-10406] | | |

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|---|---|---|---|---|
| | **Testable items** | HeartRate22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report that matches the Attribute-Value-Map order of:<br>– MDC_ATTR_NU_VAL_OBS_BASIC then MDC_ATTR_TIME_STAMP_REL for Heart Rate Object<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (Heart Rate Object) to reverse the values to:<br>– MDC_ATTR_TIME_STAMP_REL then MDC_ATTR_NU_VAL_OBS_BASIC for Heart Rate Object<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the date (relative-time-stamp) by a measurement data for Heart Rate Object.<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent.<br>11. The simulated agent sends a fixed event report following the standard configuration attribute-value-format (MDC_ATTR_NU_VAL_OBS_BASIC then MDC_ATTR_TIME_STAMP_REL). The observations should be reasonable Heart Rate.<br>12. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In steps 2, 6 and 12 verify that the manager under test uses beats/min as the unit code for Heart Rate (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. | | |
| **Notes** | | | | |

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| **TP Id** | TP/PLT/MAN/CLASS/ECG/BV-006 |
| **TP label** | Basic ECG Specialization/Heart Rate profile. Special values. Not a number – fixed format (Std Config 600) |

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| **Coverage** | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | HeartRate22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 600. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Heart Rate Object) containing an observation value with the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-007 | | |
| **TP label** | | Basic ECG Specialization/Heart Rate profile. Special values. Not a number – variable format (Std Config 600) | | |
| **Coverage** | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | HeartRate44; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 600. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Heart Rate Object) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-008 | | |
| **TP label** | | Basic ECG Specialization/Heart Rate profile. Special values. Not at this resolution – fixed format (Std Config 600) | | |
| **Coverage** | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | HeartRate22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |

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| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration 600. |
| **Test procedure** | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Heart Rate Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-009 | | |
| **TP label** | | Basic ECG Specialization/Heart Rate profile. Special values. Not at this resolution – variable format (Std Config 600) | | |
| **Coverage** | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | HeartRate44; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 600. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Heart Rate Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-010 | | |
| **TP label** | | Basic ECG Specialization/Heart Rate profile. Special values. Positive infinity – fixed format (Std Config 600) | | |
| **Coverage** | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | HeartRate22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 600. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Heart Rate Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |

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| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-011 | | |
| **TP label** | | Basic ECG Specialization/Heart Rate profile. Special values. Positive infinity – variable format (Std Config 600) | | |
| **Coverage** | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | HeartRate44; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 600. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Heart Rate Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-012 | | |
| **TP label** | | Basic ECG Specialization/Heart Rate profile. Special values. Negative infinity – fixed format (Std Config 600) | | |
| **Coverage** | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | HeartRate22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 600. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Heart Rate Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-013 | | |
| **TP label** | | Basic ECG Specialization/Heart Rate profile. Special values. Negative infinity – variable format (Std Config 600) | | |
| **Coverage** | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | HeartRate44; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 600. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Heart Rate Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-014 | | |
| **TP label** | | Basic ECG Specialization/Heart Rate profile. Special values. Reserved – fixed format (Std Config 600) | | |
| **Coverage** | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | HeartRate22; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 600. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (Heart Rate Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | |
|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-015 |
| **TP label** | | Basic ECG Specialization/Heart Rate profile. Special values. Reserved – variable format (Std Config 600) |
| **Coverage** | **Spec** | [IEEE 11073-10406] |

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|---|---|---|---|---|
| | **Testable items** | HeartRate44; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_029 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1701. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (Heart Rate Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/ECG/BV-016 | | |
| **TP label** | | Association procedure Manager ECG | | |
| **Coverage** | **Spec** | [IEEE 11073-10406] | | |
| | **Testable items** | ManProcAsResp1; M | ManProcAsResp2; M | ManProcAsResp3; M |
| | | ManProcAsResp4; M | ManProcAsResp6; M | ManProcAsResp7; M |
| | | ManProcAsResp8; M | ManProcAsResp9; M | ManProcAsResp10; M |
| | | ManProcAsResp11; M | ManProcAsResp12; M | ManProcAsResp13; M |
| | | ManProcAsResp14; C | | |
| **Applicability** | | C_MAN_OXP_000 AND (C_MAN_OXP_029 OR C_MAN_OXP_030) | | |
| **Initial condition** | | The manager is in the unassociated state. | | |
| **Test procedure** | | 1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '01000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16481<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes | | |

- ❑ field-value = 0xE3 0x00 (AareApdu)

b. Result
   - ❑ field- type = AssociateResult
   - ❑ field-length = 2 bytes
   - ❑ field-value = One of the following:
     - If association is accepted, field-value=0x00 0x00.
     - If association is rejected-permanent, field-value=0x00 0x01.
     - If association is rejected-transient, field-value=0x00 0x02.
     - If association is accepted-unknown-config, field-value=0x00 0x03.
     - If association is rejected-no-common-protocol, field-value=0x00 0x04.
     - If association is rejected-no-common-parameter, field-value=0x00 0x05.
     - If association is rejected-unknown = 0x00 0x06.
     - If association is rejected-unauthorized, field-value=0x00 0x07.
     - If association is rejected-unsupported-assoc-version, field-value=0x00 0x08.

c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))

d. data-proto-id
   - ❑ field- type = DataProtoId
   - ❑ field-length = 2 bytes
   - ❑ field-value=0x50 0x79 (20601)

e. protocol-version
   - ❑ field- type = Protocol Version
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value=0x40 0x00 0x00 0x00

f. encoding-rules
   - ❑ field-type = EncodingRules
   - ❑ field-length = 2 bytes (BITS-16)
   - ❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time

g. nomenclature version
   - ❑ field- type = NomenclatureVersion
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value= Bit 0 must be set (nom-version1)

h. functional units
   - ❑ field-type = FunctionalUnits
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value =
     - Bit 0 must be 0
     - Bits 1 and 2 may be set
     - The rest of the bits must not be set

i. system type
   - ❑ field- type = SystemType
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)

| | |
|---|---|
| | j. system-id<br>❑ field- type = OCTET STRING<br>❑ field-length = 8 bytes<br>❑ field-value = (EUI-64 manufacturer and device)<br>k. dev-config-id<br>❑ field- type = ConfigId<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00 (manager-config-response)<br>l. data-req-mode-flags (DataReqModeCapab)<br>❑ field- type = DataReqModeFlags<br>❑ field-length = 2 bytes<br>❑ field-value = 0x00 0x00<br>❑ manager response to data-req-mode-flags is always 0.<br>m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

## A.14 Subgroup 2.3.14: International normalized ratio (INR)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/MAN/CLASS/INR/BV-000</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Association procedure Manager INR</td></tr>
<tr><td rowspan="5">Coverage</td><td>Spec</td><td colspan="3">[IEEE 11073-10418]</td></tr>
<tr><td rowspan="4">Testable items</td><td>ManProcAs 1;M</td><td>ManProcAs 2;M</td><td>ManProcAs 3;M</td></tr>
<tr><td>ManProcAs 4;M</td><td>ManProcAs 5;M</td><td>ManProcAs 6;M</td></tr>
<tr><td>ManProcAs 7;M</td><td>ManProcAs 8;M</td><td>ManProcAs 9;M</td></tr>
<tr><td>ManProcAs 10;M</td><td>ManProcAs 11;M</td><td>ManProcAs 12;M</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_MAN_OXP_000 AND C_MAN_OXP_067</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The manager is in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated agent sends an association request to the manager under test, with the fields:<br>❑ protocol-version = '01000000000000000000000000000000'B<br>❑ encoding-rules= '1000000000000000'B<br>❑ nomenclature-version = '10000000000000000000000000000000'B<br>❑ functional-units = '00000000000000000000000000000000'B<br>❑ system-type = '00000000100000000000000000000000'B<br>❑ dev-config-id = 16440<br>❑ data-rep-mode-capab =<br>▪ data_req_mode_flags= '0000000000000001'B<br>▪ data_req_init_agent_count = 1<br>▪ data_req_init_manager_count =0<br>❑ option-list.length=0<br>2. The manager under test sends an association response. The fields of interest are:<br>a. APDU Type<br>❑ field-length = 2 bytes<br>❑ field-value = 0xE3 0x00 (AareApdu)<br>b. Result<br>❑ field- type = AssociateResult<br>❑ field-length = 2 bytes<br>❑ field-value = One of the following:<br>▪ If association is accepted, field-value=0x00 0x00.<br>▪ If association is rejected-permanent, field-value=0x00 0x01.<br>▪ If association is rejected-transient, field-value=0x00 0x02.<br>▪ If association is accepted-unknown-config, field-value=0x00 0x03.<br>▪ If association is rejected-no-common-protocol, field-value=0x00 0x04.<br>▪ If association is rejected-no-common-parameter, field-value=0x00 0x05.<br>▪ If association is rejected–unknown = 0x00 0x06.<br>▪ If association is rejected-unauthorized, field-value=0x00 0x07.</td></tr>
</table>

- If association is rejected–unsupported-assoc-version, field-value=0x00 0x08.

c. selected-data-proto (DataProto: sequence of data-proto-id (DataProtoId) and data-proto-info(defined by data-proto-id))

d. data-proto-id
   - ❑ field- type = DataProtoId
   - ❑ field-length = 2 bytes
   - ❑ field-value=0x50 0x79 (20601)

e. protocol-version
   - ❑ field- type = Protocol Version
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value=0x80 0x00 0x00 0x00

f. encoding-rules
   - ❑ field-type = EncodingRules
   - ❑ field-length = 2 bytes (BITS-16)
   - ❑ field-value= depends on the encoding rules supported/selected, but only one can be supported at a time

g. nomenclature version
   - ❑ field- type = NomenclatureVersion
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value= Bit 0 must be set (nom-version1)

h. functional units
   - ❑ field-type = FunctionalUnits
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value =
     - Bit 0 must be 0
     - Bits 1 and 2 may be set
     - The rest of the bits must not be set

i. system type
   - ❑ field- type = SystemType
   - ❑ field-length = 4 bytes (BITS-32)
   - ❑ field-value = 0x80 0x00 0x00 0x00 (sys-type-manager)

j. system-id
   - ❑ field- type = OCTET STRING
   - ❑ field-length = 8 bytes
   - ❑ field-value = (EUI-64 manufacturer and device)

k. dev-config-id
   - ❑ field- type = ConfigId
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00 (manager-config-response)

l. data-req-mode-flags (DataReqModeCapab)
   - ❑ field- type = DataReqModeFlags
   - ❑ field-length = 2 bytes
   - ❑ field-value = 0x00 0x00
   - ❑ manager response to data-req-mode-flags is always 0.

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| | m. data-req-init-agent-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00<br>n. data-req-init-manager-count (DataReqModeCapab)<br>❑ field- type = INT-U8<br>❑ field-length = = 1 byte<br>❑ field-value = 0x00 |
| **Pass/Fail criteria** | All checked values are as specified in the test procedure. |
| **Notes** | Value for protocol-version has been modified according to [ISO/IEEE 11073-20601A]. |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-001 | | |
| **TP label** | | Configuration Event Report. INR monitor standard configuration 1800 | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | ConfProc 4;M | MDSEvents 2;M | ObjAccServ 5;M |
| | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. The simulated agent implements an INR monitor device specialization with standard configuration 1800. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x07 0x08 (INR monitor – Std Config 1800)<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x07 0x08.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value= it must be the same as the invoke-id of the simulated agent's message. | | |

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| | c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one INR measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-002 | | |
| **TP label** | | Configuration Event Report. Glucose Meter standard configuration 1801 | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | ConfProc 4;M | MDSEvents 2;M | ObjAccServ 5;M |
| | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | ConfEventRep 18;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in an unassociated state. The simulated agent implements an INR monitor device specialization with standard configuration 1801. | | |
| **Test procedure** | | 1. The simulated agent test sends an association request to the manager under test with dev-config-id set to 0x07 0x09 (INR monitor – Std Config 1801).<br>2. The manager under test responds with an association response, the field of interest is:<br>a. Result<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes | | |

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| | ❑ field-value = 0x00 0x00 (accepted) or 0x00 0x03 (accepted-unknown-config)<br>If the result of the association response was "accepted-unknown-config"<br>3. The simulated agent sends a configuration event report with config-report-id set to 0x06 0xA5.<br>4. The manager under test must respond with:<br>a. APDU Type<br>❑ field-length =2 bytes<br>❑ field-value =0xE7 0x00 (PrstAdpu)<br>b. Invoke-id<br>❑ field- type = INT-U16<br>❑ field-length =2 bytes<br>❑ field-value = it must be the same as the invoke-id of the simulated agent's message.<br>c. Obj-Handle:<br>❑ field- type = HANDLE<br>❑ field-length =2 bytes<br>❑ field-value = 0x00 0x00<br>d. Event-time:<br>❑ field- type = INT-U32<br>❑ field-length =4 bytes<br>❑ field-value: 0xXX 0xXX<br>e. Event-type:<br>❑ field-length = 2 bytes<br>❑ field-value= MDC_NOTI_CONFIG<br>f. The following six bytes indicate:<br>❑ Event-replay-info.length (2 bytes)<br>❑ ConfigReportRsp.config-report-id: it must be the same as config-report-id of the simulated agent's message<br>❑ ConfigReportRsp.config-result: One of:<br>▪ accepted-config: 0x00 0x00<br>Wait until the operating state is reached in both cases.<br>5. The simulated agent sends a fixed event report with one INR measurement and other fixed event report with Control Solution measurement. |
| **Pass/Fail criteria** | • The manager under test must respond either to the association request with an "accepted" message or to the Configuration Event Report with an "accepted-config".<br>• The measurement is correctly presented. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-003 | | |
| **TP label** | | Maximum APDU size: INR monitor without PM-Store | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |

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| | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | ComChar 2; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The manager under test is in the operating state. | | |
| **Test procedure** | | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count =2<br>❑ Length = 856<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value: '00.....(832 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2636 (MDC_ATTR_NU_VAL_OBS_BASIC)`<br>`attribute-value: 1`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a confirmed fixed format event report with one measurement.<br>4. Check the response of the manager under test. | | |
| **Pass/Fail criteria** | | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-004 | | |
| **TP label** | | Maximum APDU size: INR monitor with PM-Store | | |
| **Coverage** | **Spec** | [ISO/IEEE 11073-20601A] | | |
| | **Testable items** | CommonCharac 4;M | | |
| | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | ComChar 2; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 AND C_MAN_OXP_003 | | |

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| **Initial condition** | The manager under test is in the operating state. |
| **Test procedure** | 1. The simulated agent sends a Confirmed variable event report:<br>a. ScanReportInfoVar. obs_scan_var:<br>❑ Count = 2<br>❑ Length = 64472<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 61441`<br>`attribute-value:`<br>`'00.....(64448 bytes)...... 00'O`<br>`}`<br>`}`<br>`}`<br>`ObservationScan ::= {`<br>`obj-handle: 1`<br>`attributes: AttributeList ::= {`<br>`AVA-Type ::= {`<br>`attribute-id: 2636 (MDC_ATTR_NU_VAL_OBS_BASIC)`<br>`attribute-value: 1`<br>`}`<br>`}`<br>`}`<br>2. Check the response of the manager under test.<br>3. The simulated agent sends a confirmed fixed format event report with one measurement.<br>4. Check the response of the manager under test. |
| **Pass/Fail criteria** | • In step 2 the manager under test must respond with a "rors-cmip-confirmed-event-report".<br>• In step 4 the manager under test must respond with a "rors-cmip-confirmed-event-report". |
| **Notes** | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-005 | | |
| **TP label** | | INR Attribute-Value-Map. Order change | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed format event report that matches the Attribute-Value-Map order of MDC_ATTR_NU_VAL_OBS_BASIC, then MDC_ATTR_TIME_STAMP_BO.<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (INR Object) to reverse the values to: MDC_ATTR_TIME_STAMP_BO, then MDC_ATTR_NU_VAL_OBS_BASIC. | | |

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| | 4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the date first followed by an INR value.<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent.<br>11. The simulated agent sends a fixed event report following the standard configuration attribute-value-format (MDC_ATTR_NU_VAL_OBS_BASIC, then MDC_ATTR_TIME_STAMP_BO). The observation should be a reasonable INR observation.<br>12. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In steps 2, 6 and 12 verify that the manager under test uses INR unit as the unit code for the measurement report (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. |
| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-006 | | |
| **TP label** | | INR Attribute-Value-Map. Adding additional attributes to the Attribute-Value-Map | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 10;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. (INR Numeric standard configuration Unit code attribute is set to MDC_DIM_INR) | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 1 (INR Object) to set the values to: MDC_ATTR_NU_VAL_OBS_BASIC, MDC_ATTR_UNIT_CODE, then MDC_ATTR_TIME_STAMP_BO.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report with the new data layout. For the unit-code attribute, use MDC_DIM_INR (6608). | | |

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| | 4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends a confirmed variable event report with just MDC_ATTR_NU_VAL_OBS_BASIC attribute.<br>6. The simulated agent waits until it receives a confirmation. |
| **Pass/Fail criteria** | • In step 4, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In step 6, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement is displayed properly).<br>• In steps 4 and 6, verify that the manager under test uses INR unit as the unit code for the measurement reports. |
| **Notes** | |

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|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-007 | | |
| **TP label** | | INR Unit-Code. Use default INR units – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 8;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report using a measurement in INR unit.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data properly and applies INR unit to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-008 | | |
| **TP label** | | Special values. Not a number – fixed format (Std Config 1800) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1800. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (INR Object) containing an observation value with the value for NaN ([exponent 0, mantissa +(2**11 – 1) = 0x07FF]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |

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| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-009 | | |
| **TP label** | | Special values. Not a number – variable format (Std Config 1800) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 20; R | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1800. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (INR Object) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-010 | | |
| **TP label** | | Special values. Not at this resolution – fixed format (Std Config 1800) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1800. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (INR Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-011 | | |
| **TP label** | | Special values. Not at this resolution – variable format (Std Config 1800) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 20; R | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1800. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (INR Object) containing an observation value set to the value for NRes ([exponent 0, mantissa – (2**11) = 0x0800]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-012 | | |
| **TP label** | | Special values. Positive infinity – fixed format (Std Config 1800) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1800. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (INR Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-013 | | |
| **TP label** | | Special values. Positive infinity – variable format (Std Config 1800) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 20; R | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |

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| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration 1800. |
| **Test procedure** | 1. The simulated agent sends a confirmed variable event report for handle 1 (INR Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-014 | | |
| **TP label** | | Special values. Negative infinity – fixed format (Std Config 1800) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1800. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (INR Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-015 | | |
| **TP label** | | Special values. Negative infinity – variable format (Std Config 1800) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 20; R | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1800. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (INR Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |

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| **Pass/Fail criteria** | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-016 | | |
| **TP label** | | Special values. Reserved – fixed format (Std Config 1800) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 10; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1800. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 1 (INR Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-017 | | |
| **TP label** | | Special values. Reserved – variable format (Std Config 1800) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | INR 20; R | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1800. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 1 (INR Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-018 | | |
| **TP label** | | Control Calibration Attribute-Value-Map. Order change | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 7;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. The simulated agent sends a Control Solution confirmed fixed format event report that matches the Attribute-Value-Map order of MDC_ATTR_NU_VAL_OBS_BASIC, then MDC_ATTR_TIME_STAMP_BO.<br>2. The simulated agent waits until it receives a confirmation.<br>3. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 2 (Control Calibration Object) to reverse the values to: MDC_ATTR_TIME_STAMP_BO, then MDC_ATTR_NU_VAL_OBS_BASIC.<br>4. The simulated agent waits until it receives a confirmation.<br>5. Send a confirmed fixed format event report with the date first followed by a control calibration value (in INR units since it is the standard configuration unit code).<br>6. The simulated agent waits until it receives a confirmation.<br>7. The simulated agent sends an association release request (normal).<br>8. The simulated agent waits until there is an association release response.<br>9. The simulated agent sends an association request using the same standard configuration that was used previously.<br>10. If the manager under test responds with association request response with "accepted-unknown-config", then<br>• The simulated agent sends the confirmed configuration event report with the standard configuration.<br>• The simulated agent waits until there is a confirmation to the configuration event report that was sent.<br>11. The simulated agent sends a fixed event report following the standard configuration attribute-value-format (MDC_ATTR_NU_VAL_OBS_BASIC, then MDC_ATTR_TIME_STAMP_BO). The observation should be a reasonable INR units INR observation.<br>12. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In steps 2, 6 and 12 verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In steps 2, 6 and 12 verify that the manager under test uses INR units as the unit code for the measurement report (or reports the proper value after conversion to another unit code).<br>• In steps 2, 6 and 12 verify that if the manager utilizes a date / time stamp, then the manager uses a time stamp derived from the observation's time stamp (i.e. the actual observation may have occurred sometime in the past).<br>• When automated, it is necessary to be careful about sending these messages back to back since the ability to look at things like an UI may require that there be pauses for operator verification. | | |
| **Notes** | | | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-019 | | |
| **TP label** | | Control Calibration Attribute-Value-Map. Adding additional attributes to the Attribute-Value-Map | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 7;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration (Control Calibration Numeric standard configuration Unit code attribute is set to MDC_DIM_INR). | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report to change the Attribute-Value-Map configuration of handle 2 (Control Calibration Object) to set the values to: MDC_ATTR_NU_VAL_OBS_BASIC, MDC_ATTR_UNIT_CODE, then MDC_ATTR_TIME_STAMP_BO.<br>2. The simulated agent waits until it receives a confirmation.<br>3. Send a confirmed fixed format event report with the new data layout. For the unit-code attribute, use MDC_DIM_INR (6608).<br>4. The simulated agent waits until it receives a confirmation.<br>5. The simulated agent sends a confirmed variable event report with just MDC_ATTR_NU_VAL_OBS_BASIC attribute.<br>6. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • In step 4, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement and date are displayed properly).<br>• In step 6, verify that the manager under test is able to accept the data properly and applies the correct bytes to the correct attributes (e.g. if there is a UI, verify that the measurement is displayed properly).<br>• In steps 4 and 6, verify that the manager under test uses INR units as the unit code for the measurement reports. | | |
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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-020 | | |
| **TP label** | | Control Calibration Unit-Code. Use default INR units – variable format observation | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 6;M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration. | | |
| **Test procedure** | | 1. Send a confirmed variable format event report using a measurement in INR units.<br>2. The simulated agent waits until it receives a confirmation. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data properly and applies INR units to the observation (e.g. if there is a UI, verify that the measurement and date are displayed properly even if they are converted to a different set of units). | | |

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| **Notes** | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-021 | | |
| **TP label** | | Special values. Not a number – fixed format (Std Config 1801) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 7; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1801. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Control Calibration Object) containing an observation value with the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-022 | | |
| **TP label** | | Special values. Not at this resolution – fixed format (Std Config 1801) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 7; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1801. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Control Calibration Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-023 |
| **TP label** | | Special values. Positive infinity – fixed format (Std Config 1801) |
| **Coverage** | **Spec** | [IEEE 11073-10418] |

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| | **Testable items** | CtrlCal 7; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1801. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Control Calibration Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-024 | | |
| **TP label** | | Special values. Negative infinity – fixed format (Std Config 1801) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 7; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1801. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Control Calibration Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]) and a time stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-025 | | |
| **TP label** | | Special values. Reserved – fixed format (Std Config 1801) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 7; M | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1801. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed fixed event report for handle 2 (Control Calibration Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]) and a time | | |

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| | stamp.<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-026 | | |
| **TP label** | | Special values. Not a number – variable format (Std Config 1801) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 13; R | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1801. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Control Calibration Object) containing an observation value set to the value for NaN ([exponent 0, mantissa +(2**11 –1) = 0x07FF]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement such as "—" or blanking the display area). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-027 | | |
| **TP label** | | Special values. Not at this resolution – variable format (Std Config 1801) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 13; R | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1801. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Control Calibration Object) containing an observation value set to the value for NRes ([exponent 0, mantissa –(2**11) = 0x0800]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

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| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-028 | | |
| **TP label** | | Special values. Positive infinity – variable format (Std Config 1801) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 13; R | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1801. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Control Calibration Object) containing an observation value set to the value for positive infinity (+INFINITY, [exponent 0, mantissa +(2**11 –2) = 0x07FE]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-029 | | |
| **TP label** | | Special values. Negative infinity – variable format (Std Config 1801) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 13; R | | |
| **Applicability** | | C_MAN_OXP_000 AND C_MAN_OXP_067 | | |
| **Initial condition** | | The simulated agent and the manager under test are in the operating state using the standard configuration 1801. | | |
| **Test procedure** | | 1. The simulated agent sends a confirmed variable event report for handle 2 (Control Calibration Object) containing an observation value set to the value for negative infinity (–INFINITY, [exponent 0, mantissa –(2**11 –2) = 0x0802]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. | | |
| **Pass/Fail criteria** | | • Verify that the manager under test is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). | | |
| **Notes** | | This test case has been considered as an implicit test case. | | |

| | | | | |
|---|---|---|---|---|
| **TP Id** | | TP/PLT/MAN/CLASS/INR/BV-030 | | |
| **TP label** | | Special values. Reserved – variable format (Std Config 1801) | | |
| **Coverage** | **Spec** | [IEEE 11073-10418] | | |
| | **Testable items** | CtrlCal 13; R | | |

| | |
|---|---|
| **Applicability** | C_MAN_OXP_000 AND C_MAN_OXP_067 |
| **Initial condition** | The simulated agent and the manager under test are in the operating state using the standard configuration 1801. |
| **Test procedure** | 1. The simulated agent sends a confirmed variable event report for handle 2 (Control Calibration Object) containing an observation value set to the value for reserved (Reserved for future use, [exponent 0, mantissa –(2**11 –1) = 0x0801]).<br>2. The simulated agent waits until it receives a confirmation from the manager under test. |
| **Pass/Fail criteria** | • Verify that the manager under test either reports an error or is able to accept the data, but does not use the values as if they were an actual measurement (e.g. if there is a UI, verify that the measurement is displayed in some form that indicates it is not a measurement). |
| **Notes** | This test case has been considered as an implicit test case. |

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