

International Telecommunication Union

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

H.845.14

(04/2017)

SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

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

**Conformance of ITU-T H.810 personal health
system: Personal Health Devices interface
Part 5N: International normalized ratio**

Recommendation ITU-T H.845.14



ITU-T H-SERIES RECOMMENDATIONS
AUDIOVISUAL AND MULTIMEDIA SYSTEMS

| | |
|--|--------------------|
| CHARACTERISTICS OF VISUAL TELEPHONE SYSTEMS | H.100–H.199 |
| INFRASTRUCTURE OF AUDIOVISUAL SERVICES | |
| General | H.200–H.219 |
| Transmission multiplexing and synchronization | H.220–H.229 |
| Systems aspects | H.230–H.239 |
| Communication procedures | H.240–H.259 |
| Coding of moving video | H.260–H.279 |
| Related systems aspects | H.280–H.299 |
| Systems and terminal equipment for audiovisual services | H.300–H.349 |
| Directory services architecture for audiovisual and multimedia services | H.350–H.359 |
| Quality of service architecture for audiovisual and multimedia services | H.360–H.369 |
| Telepresence | H.420–H.429 |
| Supplementary services for multimedia | H.450–H.499 |
| MOBILITY AND COLLABORATION PROCEDURES | |
| Overview of Mobility and Collaboration, definitions, protocols and procedures | H.500–H.509 |
| Mobility for H-Series multimedia systems and services | H.510–H.519 |
| Mobile multimedia collaboration applications and services | H.520–H.529 |
| Security for mobile multimedia systems and services | H.530–H.539 |
| Security for mobile multimedia collaboration applications and services | H.540–H.549 |
| Mobility interworking procedures | H.550–H.559 |
| Mobile multimedia collaboration inter-working procedures | H.560–H.569 |
| BROADBAND, TRIPLE-PLAY AND ADVANCED MULTIMEDIA SERVICES | |
| Broadband multimedia services over VDSL | H.610–H.619 |
| Advanced multimedia services and applications | H.620–H.629 |
| Ubiquitous sensor network applications and Internet of Things | H.640–H.649 |
| IPTV MULTIMEDIA SERVICES AND APPLICATIONS FOR IPTV | |
| General aspects | H.700–H.719 |
| IPTV terminal devices | H.720–H.729 |
| IPTV middleware | H.730–H.739 |
| IPTV application event handling | H.740–H.749 |
| IPTV metadata | H.750–H.759 |
| IPTV multimedia application frameworks | H.760–H.769 |
| IPTV service discovery up to consumption | H.770–H.779 |
| Digital Signage | H.780–H.789 |
| E-HEALTH MULTIMEDIA SERVICES AND APPLICATIONS | |
| Personal health systems | H.810–H.819 |
| Interoperability compliance testing of personal health systems (HRN, PAN, LAN, TAN and WAN) | H.820–H.859 |
| Multimedia e-health data exchange services | H.860–H.869 |

For further details, please refer to the list of ITU-T Recommendations.

Recommendation ITU-T H.845.14

Conformance of ITU-T H.810 personal health system: Personal Health Devices interface Part 5N: International normalized ratio

Summary

Recommendation ITU-T H.845.14 provides a test suite structure (TSS) and the test purposes (TP) for devices measuring the international normalized ratio in the Personal Health Devices (PHD) interface, based on the requirements defined in the Recommendations of the ITU-T H.810 sub-series, of which Recommendation ITU-T H.810 (2016) is the base Recommendation. The objective of this test specification is to provide a high probability of interoperability at this interface.

Recommendation ITU-T H.845.14 is a transposition of Continua Test Tool DG2016, Test Suite Structure & Test Purposes, Personal Health Devices Interface; Part 5N: Device Specializations. Personal Health Device (International Normalized Ratio, INR) (Version 1.3, 2016-09-20), that was developed by the Personal Connected Health Alliance. A number of versions of this specification existed before transposition.

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

History

| Edition | Recommendation | Approval | Study Group | Unique ID* |
|---------|----------------|------------|-------------|---|
| 1.0 | ITU-T H.845.14 | 2015-01-13 | 16 | 11.1002/1000/12274 |
| 2.0 | ITU-T H.845.14 | 2016-07-14 | 16 | 11.1002/1000/12951 |
| 3.0 | ITU-T H.845.14 | 2017-04-13 | 16 | 11.1002/1000/13231 |

Keywords

Conformance testing, Continua Design Guidelines, e-health, IEEE 11073 device specialization, international normalized ratio, ITU-T H.810, personal area network, personal connected health devices, Personal Health Devices interface, touch area network.

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

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications, information and communication technologies (ICTs). The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

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

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

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

NOTE

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

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

INTELLECTUAL PROPERTY RIGHTS

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

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

© ITU 2017

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

Table of Contents

| | Page |
|--------------|--|
| 1 | Scope..... 1 |
| 2 | References..... 2 |
| 3 | Definitions 2 |
| 3.1 | Terms defined elsewhere 2 |
| 3.2 | Terms defined in this Recommendation 2 |
| 4 | Abbreviations and acronyms 3 |
| 5 | Conventions 3 |
| 6 | Test suite structure (TSS) 5 |
| 7 | Electronic attachment 7 |
| Annex A | Test purposes 8 |
| A.1 | TP definition conventions..... 8 |
| A.2 | Subgroup 1.3.14 – International normalized ratio (INR) 9 |
| Bibliography | 50 |

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

Introduction

This Recommendation is a transposition of Continua Test Tool DG2016, Test Suite Structure & Test Purposes, Personal Health Devices Interface; Part 5N: Device Specializations. Personal Health Device (International Normalized Ratio -INR-) (Version 1.3, 2016-09-20), that was developed by the Personal Connected Health Alliance. The table below shows the revision history of this test specification; it may contain versions that existed before transposition.

| Version | Date | Revision history |
|---------|------------|--|
| 1.0 | 2014-01-24 | Initial release for Test Tool DG2013 based on the requirements in [b-ITU-T H.810 (2013)]/[b-CDG 2013]. |
| 1.1 | 2014-04-24 | TM Lite & Doc Enhancements (Test Tool v4.0 Maintenance Release 1). It uses "TSS&TP_DG2013_PLT_PART_5N_v1.0.doc" as a baseline and adds new features included in Documentation Enhancements: <ul style="list-style-type: none">• "Other PICS" row added |
| 1.2 | 2015-07-01 | Initial release for Test Tool DG2015. It uses "TSS&TP_DG2013_PLT_PART_5N_v1.1.doc" as a baseline and adds new features included in [b-ITU-T H.810 (2015)]/[b-CDG 2015] |
| 1.3 | 2016-09-20 | Initial release for Test Tool DG2016. It uses "TSS&TP_DG2015_PLT_PART_5N_v1.2.doc" as a baseline and adds new features included in [ITU-T H.810 (2016)]/[b-CDG 2016] |

Recommendation ITU-T H.845.14

Conformance of ITU-T H.810 personal health system: Personal Health Devices interface Part 5N: International normalized ratio

1 Scope

The scope of this Recommendation¹ is to provide a test suite structure (TSS) and the test purposes (TP) for the Personal Health Devices interface based on the requirements defined in the Continua Design Guidelines (CDG) [ITU-T H.810 (2016)]. The objective of this test specification is to provide a high probability of interoperability at this interface.

The TSS and TP for the Personal Health Devices interface have been divided into the parts specified below. This Recommendation covers Part 5, subpart 5N.

- Part 1: Optimized exchange protocol. Personal Health Device
- Part 2: Optimized exchange protocol. Personal Health Gateway
- Part 3: Continua design guidelines. Personal Health Device
- Part 4: Continua design guidelines. Personal Health Gateway
- Part 5: Device specializations. Personal Health Devices interface. This document is divided into the following 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
 - Part 5K: Peak expiratory flow monitor
 - Part 5L: Body composition analyser
 - Part 5M: Basic electrocardiograph
 - **Part 5N: International normalized ratio monitor**
 - Part 5O: Sleep apnoea breathing therapy equipment (SABTE)
 - Part 5P: Continuous glucose monitor (CGM)
- Part 6: Device specializations. Personal Health Gateway
- Part 7: Continua Design Guidelines. BLE Personal Health Device
- Part 8: Continua Design Guidelines. BLE Personal Health Gateway

¹ This Recommendation includes an electronic attachment with the protocol implementation conformance statements (PICS) and the protocol implementation extra information for testing (PIXIT) required for the implementation of Annex A.

- Part 9: Personal Health Devices Transcoding Whitepaper. Personal Health Devices
- Part 10: Personal Health Devices Transcoding Whitepaper. Personal Health Gateway

2 References

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published. The reference to a document within this Recommendation does not give it, as a stand-alone document, the status of a Recommendation.

- [ITU-T H.810 (2016)] Recommendation ITU-T H.810 (2016), *Interoperability design guidelines for personal health systems*.
- [ISO/IEEE 11073-10418C] ISO/IEEE 11073-10418-2014, *Health informatics – Personal health device communication – Part 10418: Device specialization – International Normalized Ratio (INR) monitor*, including ISO/IEEE 11073-10418:2014/Cor 1:2016.
<https://www.iso.org/standard/61897.html> with
<https://www.iso.org/standard/70740.html>
- [ISO/IEEE 11073-20601-2015A] 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.
<https://www.iso.org/standard/54331.html> with
<https://www.iso.org/standard/63972.html>
- [ISO/IEEE 11073-20601-2016C] ISO/IEEE 11073-20601:2016, *Health informatics – Personal health device communication – Part 20601: Application profile – Optimized exchange protocol*, including ISO/IEEE 11073-20601:2016/Cor.1:2016.
<https://www.iso.org/standard/66717.html> with
<https://www.iso.org/standard/71886.html>

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

3.1.1 agent [ISO/IEEE 11073-20601-2016C]: A node that collects and transmits personal health data to an associated manager.

3.1.2 manager [ISO/IEEE 11073-20601-2016C]: A node receiving data from one or more agent systems. Some examples of managers include a cellular phone, health appliance, set top box, or a computer system.

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

| | |
|-------|---|
| ATS | Abstract Test Suite |
| DUT | Device Under Test |
| CDG | Continua Design Guidelines |
| CGM | Continuous Glucose Monitor |
| GUI | Graphical User Interface |
| INR | International Normalized Ratio |
| IP | Insulin Pump |
| IUT | Implementation Under Test |
| MDS | Medical Device System |
| NFC | Near Field Communication |
| PAN | Personal Area Network |
| PCT | Protocol Conformance Testing |
| PCO | Point of Control and Observation |
| PHD | Personal Health Device |
| PHDC | Personal Healthcare Device Class |
| PHG | Personal Health Gateway |
| PICS | Protocol Implementation Conformance Statement |
| PIXIT | Protocol Implementation extra Information for Testing |
| SABTE | Sleep Apnoea Breathing Therapy Equipment |
| SCR | Static Conformance Review |
| SDP | Service Discovery Protocol |
| SOAP | Simple Object Access Protocol |
| TCWG | Test and Certification Working Group |
| TP | Test Purpose |
| TSS | Test Suite Structure |
| USB | Universal Serial Bus |
| WDM | Windows Driver Model |

5 Conventions

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

- SHALL is equivalent to 'must' or 'it is required to'.
- SHALL NOT is equivalent to 'must not' or 'it is not allowed'.
- SHOULD is equivalent to 'it is recommended to'.
- SHOULD NOT is equivalent to 'it is not recommended to'.
- MAY is equivalent to 'is permitted'.

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

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

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

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

| CDG release | Transposed as | Version | Description | Designation |
|------------------|------------------------|---------|--|-------------|
| 2016 plus errata | [ITU-T H.810 (2016)] | 6.1 | Release 2016 plus errata noting all ratified bugs [b-CDG 2016]. | – |
| 2016 | – | 6.0 | Release 2016 of the CDG including maintenance updates of the CDG 2015 and additional guidelines that cover new functionalities. | Iris |
| 2015 plus errata | [b-ITU-T H.810 (2015)] | 5.1 | Release 2015 plus errata noting all ratified bugs [b-CDG 2015]. The 2013 edition of H.810 is split into eight parts in the H.810-series. | – |
| 2015 | – | 5.0 | Release 2015 of the CDG including maintenance updates of the CDG 2013 and additional guidelines that cover new functionalities. | Genome |
| 2013 plus errata | [b-ITU-T H.810 (2013)] | 4.1 | Release 2013 plus errata noting all ratified bugs [b-CDG 2013]. | – |
| 2013 | – | 4.0 | Release 2013 of the CDG including maintenance updates of the CDG 2012 and additional guidelines that cover new functionalities. | Endorphin |
| 2012 plus errata | – | 3.1 | Release 2012 plus errata noting all ratified bugs [b-CDG 2012]. | – |
| 2012 | – | 3.0 | Release 2012 of the CDG including maintenance updates of the CDG 2011 and additional guidelines that cover new functionalities. | Catalyst |
| 2011 plus errata | – | 2.1 | CDG 2011 integrated with identified errata. | – |
| 2011 | – | 2.0 | Release 2011 of the CDG including maintenance updates of the CDG 2010 and additional guidelines that cover new functionalities [b-CDG 2011]. | Adrenaline |
| 2010 plus errata | – | 1.6 | CDG 2010 integrated with identified errata | – |
| 2010 | – | 1.5 | Release 2010 of the CDG with 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 Personal Health Devices interface have been divided into the main subgroups specified below. Annex A describes the TPs for subgroup 1.3.14 (shown in bold).

- Group 1: Personal Health Device (PHD)
 - 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: IEEE 20601 Optimized exchange protocol (OXP)
 - Subgroup 1.2.1: PHD domain information model (DIM)
 - Subgroup 1.2.2: PHD service model (SER)
 - Subgroup 1.2.3: PHD communication model (COM)
 - Group 1.3: Devices class specializations (CLASS)
 - Subgroup 1.3.1: Weighing scales (WEG)
 - Subgroup 1.3.2: Glucose meter (GL)
 - Subgroup 1.3.3: Pulse oximeter (PO)
 - Subgroup 1.3.4: Blood pressure monitor (BPM)
 - Subgroup 1.3.5: Thermometer (TH)
 - Subgroup 1.3.6: Cardiovascular (CV)
 - Subgroup 1.3.7: Strength (ST)
 - Subgroup 1.3.8: Activity hub (HUB)
 - Subgroup 1.3.9: Adherence monitor (AM)
 - Subgroup 1.3.10: Insulin pump (IP)
 - 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)**
 - Subgroup 1.3.15: Sleep apnoea breathing therapy equipment (SABTE)
 - Subgroup 1.3.16: Continuous glucose monitor (CGM)
 - Group 1.4: Personal health device transcoding whitepaper (PHDTW)
 - Subgroup 1.4.1: Whitepaper general requirements (GEN)
 - Subgroup 1.4.2: Whitepaper thermometer requirements (TH)
 - Subgroup 1.4.3: Whitepaper blood pressure requirements (BPM)

- Subgroup 1.4.4: Whitepaper heart rate requirements (HR)
 - Subgroup 1.4.5: Whitepaper glucose meter requirements (GL)
 - Subgroup 1.4.6: Whitepaper weight scale requirements (WS)
 - Subgroup 1.4.7: Whitepaper pulse oximeter requirements (PLX)
 - Subgroup 1.4.8: Whitepaper continuous glucose monitoring requirements (CGM)
- Group 2: Personal Health Gateway (PHG)
- 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 (BLEDDG)
 - Subgroup 2.1.8: NFC design guidelines (NDG)
 - Group 2.2: IEEE 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)
 - Subgroup 2.3.11: Peak flow (PF)
 - Subgroup 2.3.12: Body composition analyser (BCA)
 - Subgroup 2.3.13: Basic electrocardiograph (ECG)
 - Subgroup 2.3.14: International normalized ratio (INR)
 - Subgroup 2.3.15: Sleep apnoea breathing therapy equipment (SABTE)
 - Subgroup 2.3.16: Continuous glucose monitor (CGM)
 - Group 2.4: Personal health device transcoding whitepaper (PHDTW)
 - Subgroup 2.4.1: Whitepaper general requirements (GEN)
 - Subgroup 2.4.2: Whitepaper thermometer requirements (TH)
 - 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)
- Subgroup 2.4.6: Whitepaper weight scale requirements (WS)
- Subgroup 2.4.7: Whitepaper pulse oximeter requirements (PLX)
- Subgroup 2.4.8: Whitepaper continuous glucose monitoring requirements (CGM)

7 Electronic attachment

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

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

Annex A

Test purposes

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

A.1 TP definition conventions

The test purposes (TPs) are defined according to the following rules:

- **TP Id:** This is a unique identifier (TP/<TT>/<DUT>/<GR>/<SGR>/<XX> – <NNN>). It is specified according to the naming convention defined below:
 - Each test purpose identifier is introduced by the prefix "TP".
 - <TT>: This is the test tool that will be used in the test case:
 - PAN: Personal area network (Bluetooth or USB)
 - LAN: Local area network (ZigBee)
 - PAN-LAN: Personal area network (Bluetooth or USB) – Local area network (ZigBee)
 - LP-PAN: Low power personal area network (Bluetooth low energy)
 - TAN: Touch area network (NFC)
 - PLT: Personal area network (Bluetooth or USB) – Local area network (ZigBee) – Touch Area Network (NFC)
 - <DUT>: This is the device under test:
 - PHD: Personal Health Device
 - PHG: Personal Health Gateway
 - <GR>: This identifies a group of test cases.
 - <SGR>: This identifies a subgroup of test cases.
 - <XX>: This identifies the type of testing:
 - BV: Valid behaviour test
 - BI: Invalid behaviour test
 - <NNN>: This is a sequential number that identifies the test purpose.
- **TP label:** This is the TP's title.
- **Coverage:** This contains the specification reference and clause to be checked by the TP:
 - Spec: This indicates the earliest version of the specification from which the testable items to be checked by the TP were included.
 - Testable item: This contains testable items to be checked by the TP.
- **Test purpose:** This is a description of the requirements to be tested.
- **Applicability:** This contains the PICS items that define if the test case is applicable or not for a specific device. When a TP contains an "ALL" in this field it means that it applies to the device under test within that scope of the test (specialization, transport used, etc.).
- **Other PICS:** This contains additional PICS items (apart from the PICS specified in the Applicability row) which are used within the test case implementation and can modify the final verdict. When this row is empty, it means that only the PICS specified in the Applicability row are used within the test case implementation
- **Initial condition:** This indicates the state to which the DUT needs to be moved at the beginning of TC execution.

- **Test procedure:** This describes the steps to be followed in order to execute the test case.
- **Pass/Fail criteria:** This provides criteria to decide whether the DUT passes or fails the test case.

A.2 Subgroup 1.3.14 – International normalized ratio (INR)

| | | | | |
|---------------------------|-----------------------|--|-----------------|-----------------|
| TP Id | | TP/PLT/PHD/CLASS/INR/BV-000_A | | |
| TP label | | Get MDS Object for INR monitor specialization: Mandatory, Conditional and Optional Attributes. | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | MDSINR Atr 1; M | MDSINR Atr 2; M | MDSINR Atr 4; M |
| | | MDSINR Atr 5; M | | |
| Test purpose | | Check that: The MDS Object contains the attributes specified for a INR Monitor PHD | | |
| Applicability | | C_AG_OXP_000 AND C_AG_OXP_163 | | |
| Other PICS | | C_AG_OXP_181, C_AG_INR_001, C_AG_INR_002 | | |
| Initial condition | | The simulated Personal Health Gateway (PHG) and the Personal Health Device (PHD) under test are in the Operating state. | | |
| Test procedure | | <p>1. The simulated PHG issues a "roiv-cmip-get" command with the handle set to 0 (to request an MDS object) and the attribute-id-list set to 0 to indicate all attributes.</p> <p>2. The PHD responds with a "rors-cmip-get" service message in which the attribute-list contains a list of all implemented attributes of the MDS object.</p> <p>MDS Attributes:</p> <p>a. Attribute System-Type must not be present.</p> <p>b. Mandatory attribute System-Type-Spec_List</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SYS_TYPE_SPEC_LIST <input type="checkbox"/> attribute-type = TypeVerList <input type="checkbox"/> attribute-value.length = 4 bytes for each configuration supported <input type="checkbox"/> attribute-value = {MDC_DEV_SPEC_PROFILE_COAG, 1} must be found in the list <p>c. Mandatory attribute System-model</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_MODEL (0x09 0x28) <input type="checkbox"/> attribute-type = SystemModel <input type="checkbox"/> attribute-value.length = <Variable> <input type="checkbox"/> attribute-value = <ul style="list-style-type: none"> • Manufacturer = Check against PIXIT I_AG_OXP_003 • Model = Check against PIXIT I_AG_OXP_004 <p>d. Mandatory attribute Dev-Configuration-Id</p> <ul style="list-style-type: none"> <input type="checkbox"/> IF C_AG_INR_001 THEN attribute-value = 0x0708 (1800) <input type="checkbox"/> IF C_AG_INR_002 THEN attribute-value = 0x0709 (1801) <input type="checkbox"/> IF C_AG_OXP_181 THEN attribute-value = < between 0x4000 and 0x7FFF > | | |
| Pass/Fail criteria | | All checked values are as specified in the test procedure. | | |
| Notes | | | | |

| | |
|-----------------|--|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-000_B |
| TP label | MDS Configuration objects events for INR monitor specialization. |

| | | | |
|--------------------------|--|-------------------------|--|
| Coverage | Spec | [ISO/IEEE 11073-10418C] | |
| | Testable items | MDSEvents 1; M | |
| Test purpose | Check that: INR monitor PHD sends the MDS-Configuration-Event using a Confirmed event report and it includes the event-info ConfigReport | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 | | |
| Other PICS | C_AG_OXP_010, C_AG_OXP_181, C_AG_INR_001, C_AG_INR_002 | | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. | | |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. 3. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG: <ol style="list-style-type: none"> a. APDU Type <ul style="list-style-type: none"> <input type="checkbox"/> field- type = PrstApdu <input type="checkbox"/> field-length =2 bytes <input type="checkbox"/> field-value =0xE7 0x00 b. invoke-id <ul style="list-style-type: none"> <input type="checkbox"/> field- type = InvokeIDType <input type="checkbox"/> field-length =INT-U16 <input type="checkbox"/> field- value =<Not relevant for this test> c. message <ul style="list-style-type: none"> <input type="checkbox"/> field- type = roiv-cmip-confirmed-event-report <input type="checkbox"/> field-length =two bytes <input type="checkbox"/> field- value =0x01 0x01 (EventReportArgumentSimple) d. obj-handle (EventReportArgumentSimple) <ul style="list-style-type: none"> <input type="checkbox"/> field- type = HANDLE <input type="checkbox"/> field-length =INT-U16 e. event-time (EventReportArgumentSimple) <ul style="list-style-type: none"> <input type="checkbox"/> field- type = Relative Time <input type="checkbox"/> field-length =INT-U32 <input type="checkbox"/> field-value = <ul style="list-style-type: none"> • IF NOT C_AG_OXP_010 THEN value = 0xFF 0xFF 0xFF 0xFF f. event-type (EventReportArgumentSimple) <ul style="list-style-type: none"> <input type="checkbox"/> field- type = OID-Type <input type="checkbox"/> field-length =INT-U16 <input type="checkbox"/> field- value=0x0D 0x1C (MDC_NOTI_CONFIG) g. config-report-id (ConfigReport) <ul style="list-style-type: none"> <input type="checkbox"/> field- type = ConfigId <input type="checkbox"/> field-length = INT-U16 <input type="checkbox"/> field value = <It matches the tested configuration> <ul style="list-style-type: none"> • IF C_AG_INR_001 THEN attribute-value = 0x 0708 (1800) • IF C_AG_INR_002 THEN attribute-value = 0x 0709 (1801) • IF C_AG_OXP_181 THEN <between 0x40 0x00 and 0x7F 0xFF > for extended configuration. | | |

| | |
|---------------------------|--|
| | <p>h. obj-class (ConfigReport → ConfigObjectList (ConfigObject))</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = OID-Type <input type="checkbox"/> field-length = INT-U16 <input type="checkbox"/> field- value = At least one MDC_MOC_VMO_METRIC_NU |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|---------------------------|--|-------------------------|-----------------|-----------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-000_C | | | |
| TP label | MDS objects events for INR monitor specialization. | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | MDSEvents 3; M | MDSEvents 4; M | MDSEvents 5; M |
| | | MDSEvents 6; M | MDSEvents 7; M | MDSEvents 8; M |
| | | MDSEvents 9; M | MDSEvents 10; M | ObjAccServ 1; M |
| Test purpose | <p>Check that:</p> <p>Agent-initiated mode is supported for measurement data transmission and all types of event reports are used in confirmed mode</p> <p>[AND]</p> <p>The PHD sends the MDS-Dynamic-Data-Update-Fixed using a confirmed event report and it includes the event-info ScanReportInfoFixed</p> <p>[OR]</p> <p>The PHD sends the MDS-Dynamic-Data-Update-Var using a confirmed event report and it includes the event-info ScanReportInfoVar</p> <p>[OR]</p> <p>The PHD sends the MDS-Dynamic-Data-Update-MP-Fixed using a confirmed event report and it includes the event-info ScanReportInfoMPFixed</p> <p>[OR]</p> <p>The PHD sends the MDS-Dynamic-Data-Update-MP-Var using a confirmed event report and it includes the event-info ScanReportInfoMPVar</p> | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND (C_AG_OXP_182 OR C_AG_OXP_183 OR C_AG_OXP_184 OR C_AG_OXP_189) | | | |
| Other PICS | | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Operating state. | | | |
| Test procedure | <ol style="list-style-type: none"> 1. Take measurements for every supported object in the PHD under test. 2. Wait to receive every event report and check: <ol style="list-style-type: none"> a. APDU Type <ul style="list-style-type: none"> <input type="checkbox"/> field- type = Event Report <input type="checkbox"/> field-length = 2 bytes <input type="checkbox"/> field- value=0x01 0x01 (EventReportArgumentSimple, confirmed) <p>This field identifies the type of message sent by the PHD, for the confirmed event configuration, roiv-cmip-confirmed-event-report.</p> | | | |
| Pass/Fail criteria | <p>Check that every received report is one of the following confirmed Data APDU</p> <ul style="list-style-type: none"> • MDC_NOTI_SCAN_REPORT_FIXED • MDC_NOTI_SCAN_REPORT_MP_FIXED • MDC_NOTI_SCAN_REPORT_VAR • MDC_NOTI_SCAN_REPORT_MP_VAR | | | |
| Notes | | | | |

| | | | | |
|---------------------------|-----------------------|--|--------------|----------------|
| TP Id | | TP/PLT/PHD/CLASS/INR/BV-001 | | |
| TP label | | Objects for INR monitor specialization – Standard Configuration (1800 or 1801) | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | INR 1; M | CtrlCal 2; M | ProthTime 7; M |
| | | QuickVal 2; M | ISI 2; M | Target 2; M |
| | | CurrentMed 2; M | | |
| Test purpose | | <p>Check that:</p> <p>Only the INR Numeric object with Type MDC_RATIO_INR_COAG is supported by an INR monitor PHD for Standard Configuration 1800 (0x0708).</p> <p>[AND]</p> <p>INR Numeric object with Type MDC_RATIO_INR_COAG is supported by an INR PHD for Standard Configuration 1801 (0x0709).</p> <p>[AND]</p> <p>The Control Calibration Numeric object is supported by an INR monitor PHD for Standard Configuration 1801 (0x0709).</p> | | |
| Applicability | | C_AG_OXP_000 AND C_AG_OXP_163 AND (NOT C_AG_OXP_181) | | |
| Other PICS | | | | |
| Initial condition | | The simulated PHG and the PHD are in the Unassociated state. | | |
| Test procedure | | <ol style="list-style-type: none"> The simulated PHG receives an association request from the PHD under test. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. Check that the field Dev-Config-Id is set to 0x0708 (1800) OR 0x0709 (1801), if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. Once the PHD under test sends a standard configuration, check that: <ul style="list-style-type: none"> IF (Dev-Config-Id = 0x0708) THEN Attribute-List: <ol style="list-style-type: none"> attribute-value (ConfigReport → ConfigObjectList (ConfigObject) → Attribute List), this value depends on the attribute Type. The values to be checked are: <ul style="list-style-type: none"> <input type="checkbox"/> INR Object is present → MDC_PART_SCADA (0x00 0x02), MDC_RATIO_INR_COAG (0x72 0x04) IF (Dev-Config-Id = 0x0709) THEN Attribute-List: <ol style="list-style-type: none"> attribute-value (ConfigReport → ConfigObjectList (ConfigObject) → Attribute List), this value depends on the attribute Type. The values to be checked are: <ul style="list-style-type: none"> <input type="checkbox"/> INR Object is present → MDC_PART_SCADA (0x00 0x02), MDC_RATIO_INR_COAG (0x72 0x04) <input type="checkbox"/> Control calibration Object is present → MDC_PART_SCADA (0x00 0x02), MDC_COAG_CONTROL (0x72 0x14) | | |
| Pass/Fail criteria | | All checked values are as specified in the test procedure and no other object listed. | | |
| Notes | | | | |

| | | | | |
|-----------------|-----------------------|---|----------------|-----------------|
| TP Id | | TP/PLT/PHD/CLASS/INR/BV-002 | | |
| TP label | | Objects for INR monitor specialization – Extended Configuration | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | INR 1; M | DevSenAn 3; R | ProthTime 6; O |
| | | CtrlCal 1; O | ProthTime 6; O | QuickVal 1; O |
| | | ISI 1; O | Target 1; O | CurrentMed 1; O |

| | | | | |
|--------------------------|--|--------------------|----------------|--|
| | | ContextTester 2; R | BatchCode 1; M | |
| Test purpose | <p>Check that:</p> <p>The INR Numeric object is supported by an INR monitor PHD.</p> <p>[AND]</p> <p>Control Calibration, Prothrombin Time, Quick Value, International Sensitivity Index (ISI), INR Target Level, Current Medication Level, New Medication Level Numeric or Control Calibration objects can be implemented by the vendor.</p> <p>[AND]</p> <p>PHD should support Device and Sensor Status Annunciation object to transmit these occurrences.</p> <p>[AND]</p> <p>PHD should support Context Tester object to transmit these occurrences.</p> <p>[AND]</p> <p>PHD shall support Batch Code object.</p> | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 | | | |
| Other PICS | C_AG_INR_003, C_AG_INR_004, C_AG_INR_005, C_AG_INR_006, C_AG_INR_007, C_AG_INR_008, C_AG_INR_009, C_AG_INR_010, C_AG_INR_012, C_AG_INR_013, | | | |
| Initial condition | The simulated PHG and the PHD are in the Unassociated state. | | | |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. 3. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 4. Check that the field Dev-Config-Id is in the extended range; if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. 5. Once the PHD under test sends an extended configuration, check that: <ul style="list-style-type: none"> Attribute-List: <ol style="list-style-type: none"> a. attribute-value(ConfigReport → ConfigObjectList (ConfigObject)→Attribute List), this value depends on the attribute type. The values we have to check are: <ul style="list-style-type: none"> <input type="checkbox"/> INR numeric Object is present → MDC_PART_SCADA (0x00 0x02), MDC_RATIO_INR_COAG (0x72 0x04) <input type="checkbox"/> Any of these objects may be present: <ul style="list-style-type: none"> • IF C_AG_INR_003 THEN Control Calibration numeric object is present → MDC_PART_SCADA (0x00 0x02), MDC_COAG_CONTROL (0x72 0x14) • IF C_AG_INR_004 THEN Prothrombin time numeric object is present → MDC_PART_SCADA (0x00 0x02), MDC_TIME_PD_COAG (0x72 0x08) • IF C_AG_INR_005 THEN Quick value numeric object is present → MDC_PART_SCADA (0x00 0x02), MDC_QUICK_VALUE_COAG (0x72 0x0C) • IF C_AG_INR_006 THEN ISI numeric object is present → MDC_PART_SCADA (0x00 0x02), MDC_ISI_COAG (0x72 0x10) • IF C_AG_INR_007 THEN INR Target level numeric object is present → MDC_PART_SCADA (0x00 0x02), MDC_TARGET_LEVEL_COAG (0x72 0x78) • IF C_AG_INR_008 THEN Current medication level numeric object is present → MDC_PART_SCADA (0x00 0x02), MDC_MED_CURRENT_COAG (0x72 0x7C) • IF C_AG_INR_009 THEN New medication level numeric object is present → MDC_PART_SCADA (0x00 0x02), MDC_MED_NEW_COAG (0x72 0x80) • IF C_AG_INR_010 THEN Device and sensor status enumeration object is present → MDC_PART_PHD_DM (0x00 0x80), | | | |

| | |
|---------------------------|---|
| | <p>MDC_INR_METER_DEV_STATUS (0x72 0x75)</p> <ul style="list-style-type: none"> • IF C_AG_INR_012 THEN Context tester enumeration object is present → MDC_PART_PHD_DM (0x00 0x80), MDC_CTXT_INR_TESTER (0x72 0x84) • IF C_AG_INR_013 THEN Batch code enumeration object is present → MDC_PART_PHD_DM (0x00 0x80), MDC_BATCHCODE_COAG (0x72 0x74) |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|--------------------------|---|-------------------------|--------------|--------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-003 | | | |
| TP label | INR Numeric Object – Standard configuration (1800 or 1801) | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | NumObj 2; M | NumObj 4; M | NumObj 6; R |
| | | NumObj 8; M | NumObj 10; R | NumObj 12; R |
| | | NumObj 14; R | NumObj 16; R | NumObj 18; R |
| | | NumObj 20; M | NumObj 22; M | NumObj 24; R |
| | | NumObj 26; O | NumObj 28; O | NumObj 30; C |
| | | NumObj 32; R | NumObj 34; C | NumObj 36; C |
| | | NumObj 38; R | NumObj 40; C | NumObj 42; C |
| | | NumObj 44; R | NumObj 46; C | NumObj 48; C |
| | | NumObj 50; C | NumObj 52; R | |
| | | INR 2; M | INR 4; M | INR 6; M |
| | | INR 8; M | INR 10; M | INR 12; C |
| | | INR 14; C | INR 18; R | INR 20; R |
| | | INR 22; C | INR 24; C | INR 26; R |
| | | INR 28; R | INR 31; M | |
| Test purpose | <p>Check that:</p> <p>The INR Numeric object contains the attributes specified for Standard Configuration.</p> | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND (NOT C_AG_OXP_181) | | | |
| Other PICS | | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. | | | |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 3. Check that the field Dev-Config-Id is set to 0x0708 (1800) or Dev-Config-Id is set to 0x0709 (1801); if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. 4. Once the PHD under test sends a standard configuration, check that the INR object attributes are: <ol style="list-style-type: none"> a. Mandatory attribute Handle <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_HANDLE <input type="checkbox"/> attribute-type = HANDLE <input type="checkbox"/> attribute-value = 0x00 0x01 b. Mandatory attribute Type <ul style="list-style-type: none"> <input type="checkbox"/> IF (Dev-Config-Id = 0x0708) OR (Dev-Config-Id = 0x0709): | | | |

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> • attribute-id = MDC_ATTR_ID_TYPE • attribute-type = TYPE • attribute-value = MDC_PART_SCADA (0x00 0x02), MDC_RATIO_INR_COAG (0x72 0x04). <p>c. Mandatory attribute Metric-Spec-Small</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_SPEC_SMALL <input type="checkbox"/> attribute-type = MetricSpecSmall (BITS-16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value ≠ 0x00 0x00 <ul style="list-style-type: none"> • Bit 0 (mss-avail-intermittent(0)), must be set • Bit 1 (mss-avail-stored-data(1)), must be set • Bit 2 (mss-upd-aperiodic(2)), must be set • Bit 3 (mss-msmt-aperiodic(3)), must be set • Bit 9 (mss-acc-agent-initiated(9)), must be set • The other bits have to be 0. <p>d. Mandatory attribute Unit-Code</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type(INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value= MDC_DIM_INR <p>e. Mandatory attribute Attribute-Value-Map</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ATTRIBUTE_VAL_MAP <input type="checkbox"/> attribute-type = AttrValMap (sequence of attribute-id(OID-Type) and attribute-length(INT-U16)) <input type="checkbox"/> attribute-value.length=<variable> <input type="checkbox"/> attribute-value= MDC_ATTR_NU_VAL_OBS_BASIC MDC_ATTR_TIME_STAMP_BO <p>f. No other attribute shall be present at configuration</p> |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|---------------------|---|-------------------------|--------------|--------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-004 | | | |
| TP label | INR Numeric Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | NumObj 3; M | NumObj 5; R | NumObj 7; M |
| | | NumObj 9; R | NumObj 11; R | NumObj 13; R |
| | | NumObj 15; R | NumObj 17; R | NumObj 19; M |
| | | NumObj 23; R | NumObj 31; R | NumObj 41; C |
| | | NumObj 45; C | NumObj 47; C | NumObj 49; C |
| | | NumObj 51; R | | |
| | | INR 5; M | INR 7; M | INR 8; M |
| | | INR 9; M | INR 11; C | INR 15; C |
| INR 19; R | INR 25; C | INR 27; R | | |
| Test purpose | Check that: | | | |

| | |
|--------------------------|--|
| | The International Normalized Ratio Numeric object contains the attributes specified for Extended Configuration. |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 3. Check that the field Dev-Config-Id is set in the extended range; if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. 4. Once the PHD under test sends an extended configuration, check that the INR object attributes are: <ol style="list-style-type: none"> a. Mandatory attribute Type <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_TYPE <input type="checkbox"/> attribute-type = TYPE <input type="checkbox"/> attribute-value = MDC_PART_SCADA (0x00 0x02) MDC_RATIO_INR_COAG (0x72 0x04) b. Not recommended Supplemental –Types Attribute <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SPPLEMENTAL_TYPES <input type="checkbox"/> attribute-type = SupplementalTypeList <input type="checkbox"/> attribute-value.length = <variable> (Sequence of TYPE (TYPE.length= 4 bytes c. Mandatory attribute Metric-Spec-Small <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_SPEC_SMALL <input type="checkbox"/> attribute-type = MetricSpecSmall (BITS-16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value ≠ 0x00 0x00 <ul style="list-style-type: none"> • Bit 0 must be set (mss-avail-intermittent(0)) • Bit 1 must be set (mss-avail-stored-data(1)) • Bit 2 must be set (mss-upd-aperiodic(2)) • Bit 3 must be set (mss-msmt-aperiodic(3)) • Bit 9 must be set (mss-acc-agent-initiated(9)) d. IF Not recommended attribute Metric-Structure-Small is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL <input type="checkbox"/> attribute-type = MetricStructureSmall <input type="checkbox"/> attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8))) e. IF Not recommended attribute Measurement-Status is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_MSMT_STAT <input type="checkbox"/> attribute-type = MeasurementStatus (BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes f. IF Not recommended attribute Metric-Id is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length= 2 bytes g. IF Not recommended attribute Metric-Id-List is present |

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO_LIST <input type="checkbox"/> attribute-type = MetricIdList <input type="checkbox"/> attribute-value.length= SEQUENCE OF OID-Type (INT-U16) h. IF Not recommended attribute Metric-Id-Partition is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_ID_PART <input type="checkbox"/> attribute-type = NomPartition (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes i. Mandatory attribute Unit-Code <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type(INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value= MDC_DIM_INR j. IF Not recommended attribute Source-Handle-Reference is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes k. IF recommended attribute Base-Offset-Time-Stamp is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes l. IF Not recommended attribute Measure-Active-Period <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes m. IF recommended attribute Basic-Nu-Observed-Value <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC <input type="checkbox"/> attribute-type = BasicNuObsValue <input type="checkbox"/> attribute-value.length = SFLOAT-Type (INT-U16) n. IF NOT Recommended attribute Accuracy is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_ACCUR_MSMT <input type="checkbox"/> attribute-type = FLOAT-Type (INT-U32) <input type="checkbox"/> attribute-value.length = 4 bytes |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|-----------------|--|-------------------------|--------------|--------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-005 | | | |
| TP label | Control Calibration Numeric Object – Standard configuration (1801) | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | NumObj 2; M | NumObj 4; M | NumObj 6; R |
| | | NumObj 8; M | NumObj 10; R | NumObj 12; R |
| | | NumObj 14; R | NumObj 16; R | NumObj 18; R |
| | | NumObj 20; M | NumObj 22; M | NumObj 24; R |
| | | NumObj 26; O | NumObj 28; O | NumObj 30; C |
| | | NumObj 32; R | NumObj 34; C | NumObj 36; C |

| | | | | |
|--------------------------|---|--------------|---------------|---------------|
| | | NumObj 38; R | NumObj 40; C | NumObj 42; C |
| | | NumObj 44; R | NumObj 46; C | NumObj 48; C |
| | | NumObj 50; C | NumObj 52; R | |
| | | CtrlCal 4; M | CtrlCal 6; M | CtrlCal 7; M |
| | | CtrlCal 9; M | CtrlCal 11; R | CtrlCal 13; R |
| Test purpose | Check that: The Control Calibration Numeric object contains the attributes specified for Standard Configuration (1801). | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_INR_002 | | | |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. | | | |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 3. Check that the field Dev-Config-Id is set to 0x0709 (1801); if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. 4. Once the PHD under test sends a standard configuration, check that the Control Calibration object attributes are: <ol style="list-style-type: none"> a. Mandatory attribute Handle <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_HANDLE <input type="checkbox"/> attribute-type = HANDLE <input type="checkbox"/> attribute-value = 0x00 0x02 b. Mandatory attribute Type <ul style="list-style-type: none"> <input type="checkbox"/> IF Dev-Config-Id = 0x0709: <ul style="list-style-type: none"> • attribute-id = MDC_ATTR_ID_TYPE • attribute-type = TYPE • attribute-value = MDC_PART_SCADA (0x00 0x02), MDC_COAG_CONTROL (0x72 0x14) c. Mandatory attribute Metric-Spec-Small <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_SPEC_SMALL <input type="checkbox"/> attribute-type = MetricSpecSmall (BITS-16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value ≠ 0x00 0x00 <ul style="list-style-type: none"> • Bit 0 (mss-avail-intermittent(0)), must be set • Bit 1 (mss-avail-stored-data(1)), must be set • Bit 2 (mss-upd-aperiodic(2)), must be set • Bit 3 (mss-msmt-aperiodic(3)), must be set • Bit 9 (mss-acc-agent-initiated(9)), must be set • The other bits have to be 0. d. Mandatory attribute Unit-Code <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type(INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value = MDC_DIM_INR e. Mandatory attribute Attribute-Value-Map | | | |

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ATTRIBUTE_VAL_MAP <input type="checkbox"/> attribute-type = AttrValMap (sequence of attribute-id(OID-Type) and attribute-length(INT-U16)) <input type="checkbox"/> attribute-value.length=<variable> <input type="checkbox"/> attribute-value= MDC_ATTR_NU_VAL_OBS_BASIC MDC_ATTR_TIME_STAMP_BO <p>f. IF recommended attribute Base-Offset-Time-Stamp is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes <p>g. IF recommended attribute Basic-Nu-Observed-Value</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC <input type="checkbox"/> attribute-type = BasicNuObsValue <input type="checkbox"/> attribute-value.length = SFLOAT-Type (INT-U16) <p>h. No other attribute shall be present at configuration</p> |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|--------------------------|--|-------------------------|---------------|--------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-006 | | | |
| TP label | Control Calibration Numeric Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | NumObj 3; M | NumObj 5; R | NumObj 7; M |
| | | NumObj 9; R | NumObj 11; R | NumObj 13; R |
| | | NumObj 15; R | NumObj 17; R | NumObj 19; M |
| | | NumObj 23; R | NumObj 31; R | NumObj 41; C |
| | | NumObj 45; C | NumObj 47; C | NumObj 49; C |
| | | NumObj 51; R | | |
| | | CtrlCal 3; M | CtrlCal 5; M | CtrlCal 8; M |
| | | CtrlCal 10; R | CtrlCal 12; R | |
| Test purpose | <p>Check that:</p> <p>The Control Calibration Numeric object contains the attributes specified for Extended Configuration.</p> | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 AND C_AG_INR_003 | | | |
| Other PICS | | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. | | | |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 3. Check that the field Dev-Config-Id is set in the extended range; if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. 4. Once the PHD under test sends an extended configuration, check that the Control Calibration object attributes are: <ol style="list-style-type: none"> a. Mandatory attribute Type <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_TYPE <input type="checkbox"/> attribute-type = TYPE | | | |

| | |
|--|--|
| | <ul style="list-style-type: none"> <input type="checkbox"/> attribute-value = MDC_PART_SCADA (0x00 0x02) MDC_COAG_CONTROL (0x72 0x14) b. Not recommended Supplemental –Types Attribute <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SPPLEMENTAL_TYPES <input type="checkbox"/> attribute-type = SupplementalTypeList <input type="checkbox"/> attribute-value.length =<variable> (Sequence of TYPE (TYPE.length= 4 bytes c. Mandatory attribute Metric-Spec-Small <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_SPEC_SMALL <input type="checkbox"/> attribute-type = MetricSpecSmall (BITS-16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value ≠ 0x00 0x00 <ul style="list-style-type: none"> • Bit 0 must be set (mss-avail-intermittent(0)) • Bit 1 must be set (mss-avail-stored-data(1)) • Bit 2 must be set (mss-upd-aperiodic(2)) • Bit 3 must be set (mss-msmt-aperiodic(3)) • Bit 9 must be set (mss-acc-agent-initiated(9)) d. IF Not recommended attribute Metric-Structure-Small is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL <input type="checkbox"/> attribute-type = MetricStructureSmall <input type="checkbox"/> attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8))) e. IF Not recommended attribute Measurement-Status is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_MSMT_STAT <input type="checkbox"/> attribute-type = MeasurementStatus (BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes f. IF Not recommended attribute Metric-Id is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length= 2 bytes g. IF Not recommended attribute Metric-Id-List is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO_LIST <input type="checkbox"/> attribute-type = MetricIdList <input type="checkbox"/> attribute-value.length= SEQUENCE OF OID-Type (INT-U16) h. IF Not recommended attribute Metric-Id-Partition is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_ID_PART <input type="checkbox"/> attribute-type = NomPartition (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes i. Mandatory attribute Unit-Code <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type(INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value= MDC_DIM_INR j. IF Not recommended attribute Source-Handle-Reference is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) |
|--|--|

| | |
|---------------------------|---|
| | <ul style="list-style-type: none"> <input type="checkbox"/> attribute-value.length = 2 bytes k. IF recommended attribute Base-Offset-Time-Stamp is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes l. IF Not recommended attribute Measure-Active-Period <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes m. IF recommended attribute Basic-Nu-Observed-Value <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC <input type="checkbox"/> attribute-type = BasicNuObsValue <input type="checkbox"/> attribute-value.length = SFLOAT-Type (INT-U16) n. IF NOT Recommended attribute Accuracy is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_ACCUR_MSMT <input type="checkbox"/> attribute-type = FLOAT-Type (INT-U32) <input type="checkbox"/> attribute-value.length = 4 bytes |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|--------------------------|--|-------------------------|----------------|----------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-007 | | | |
| TP label | Prothrombin Time Numeric Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | NumObj 3; M | NumObj 5; R | NumObj 7; M |
| | | NumObj 9; R | NumObj 11; R | NumObj 13; R |
| | | NumObj 15; R | NumObj 17; R | NumObj 19; M |
| | | NumObj 23; R | NumObj 31; R | NumObj 41; C |
| | | NumObj 45; C | NumObj 47; C | NumObj 49; C |
| | | NumObj 51; R | | |
| | | ProthTime 1; M | ProthTime 2; M | ProthTime 3; M |
| | ProthTime 4; M | ProthTime 5; M | | |
| Test purpose | Check that: The Prothrombin Time Numeric object contains the attributes specified for Extended Configuration. | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 AND C_AG_INR_004 | | | |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. | | | |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 3. Check that the field Dev-Config-Id is set in the extended range; if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. 4. Once the PHD under test sends an extended configuration, check that the Prothrombin Time object attributes are: | | | |

| | |
|--|---|
| | <p>a. Mandatory attribute Type</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_TYPE <input type="checkbox"/> attribute-type = TYPE <input type="checkbox"/> attribute-value = MDC_PART_SCADA (0x00 0x02) MDC_TIME_PD_COAG (0x72 0x08) <p>b. Not recommended Supplemental –Types Attribute</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SPPLEMENTAL_TYPES <input type="checkbox"/> attribute-type = SupplementalTypeList <input type="checkbox"/> attribute-value.length =<variable> (Sequence of TYPE (TYPE.length= 4 bytes <p>c. Mandatory attribute Metric-Spec-Small</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_SPEC_SMALL <input type="checkbox"/> attribute-type = MetricSpecSmall (BITS-16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value ≠ 0x00 0x00 <ul style="list-style-type: none"> • Bit 0 must be set (mss-avail-intermittent(0)) • Bit 1 must be set (mss-avail-stored-data(1)) • Bit 3 must be set (mss-msmt-aperiodic(3)) • Bit 9 must be set (mss-acc-agent-initiated(9)) <p>d. IF Not recommended attribute Metric-Structure-Small is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL <input type="checkbox"/> attribute-type = MetricStructureSmall <input type="checkbox"/> attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8))) <p>e. IF Not recommended attribute Measurement-Status is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_MSMT_STAT <input type="checkbox"/> attribute-type = MeasurementStatus (BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes <p>f. IF Not recommended attribute Metric-Id is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length= 2 bytes <p>g. IF Not recommended attribute Metric-Id-List is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO_LIST <input type="checkbox"/> attribute-type = MetricIdList <input type="checkbox"/> attribute-value.length= SEQUENCE OF OID-Type (INT-U16) <p>h. IF Not recommended attribute Metric-Id-Partition is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_ID_PART <input type="checkbox"/> attribute-type = NomPartition (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <p>i. Mandatory attribute Unit-Code</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type(INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value= MDC_DIM_SEC <p>j. IF Not recommended attribute Source-Handle-Reference is present</p> |
|--|---|

| | |
|---------------------------|---|
| | <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <p>k. IF recommended attribute Base-Offset-Time-Stamp is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes <p>l. IF Not recommended attribute Measure-Active-Period</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes <p>m. IF recommended attribute Basic-Nu-Observed-Value</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC <input type="checkbox"/> attribute-type = BasicNuObsValue <input type="checkbox"/> attribute-value.length = SFLOAT-Type (INT-U16) <p>n. IF NOT Recommended attribute Accuracy is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_ACCUR_MSMT <input type="checkbox"/> attribute-type = FLOAT-Type (INT-U32) <input type="checkbox"/> attribute-value.length = 4 bytes |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|--------------------------|--|-------------------------|---------------|---------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-008 | | | |
| TP label | Quick Value Numeric Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | NumObj 3; M | NumObj 5; R | NumObj 7; M |
| | | NumObj 9; R | NumObj 11; R | NumObj 13; R |
| | | NumObj 15; R | NumObj 17; R | NumObj 19; M |
| | | NumObj 23; R | NumObj 31; R | NumObj 41; C |
| | | NumObj 45; C | NumObj 47; C | NumObj 49; C |
| | | NumObj 51; R | | |
| | | QuickVal 3; M | QuickVal 4; M | QuickVal 5; M |
| | | QuickVal 6; R | QuickVal 7; R | |
| Test purpose | <p>Check that:</p> <p>The Quick Value Numeric object contains the attributes specified for Extended Configuration.</p> | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 AND C_AG_INR_005 | | | |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. | | | |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 3. Check that the field Dev-Config-Id is set in the extended range; if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. 4. Once the PHD under test sends an extended configuration, check that the Quick Value | | | |

object attributes are:

- a. Mandatory attribute Type
 - attribute-id = MDC_ATTR_ID_TYPE
 - attribute-type = TYPE
 - attribute-value = MDC_PART_SCADA (0x00 0x02) | MDC_QUICK_VALUE_COAG (0x72 0x0C)
- b. Not recommended Supplemental –Types Attribute
 - attribute-id = MDC_ATTR_SPPLEMENTAL_TYPES
 - attribute-type = SupplementalTypeList
 - attribute-value.length =<variable> (Sequence of TYPE (TYPE.length= 4 bytes
- c. Mandatory attribute Metric-Spec-Small
 - attribute-id = MDC_ATTR_METRIC_SPEC_SMALL
 - attribute-type = MetricSpecSmall (BITS-16)
 - attribute-value.length = 2 bytes
 - attribute-value ≠ 0x00 0x00
 - Bit 0 must be set (mss-avail-intermittent(0))
 - Bit 1 must be set (mss-avail-stored-data(1))
 - Bit 3 must be set (mss-msmt-aperiodic(3))
 - Bit 9 must be set (mss-acc-agent-initiated(9))
- d. IF Not recommended attribute Metric-Structure-Small is present
 - attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL
 - attribute-type = MetricStructureSmall
 - attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8)))
- e. IF Not recommended attribute Measurement-Status is present
 - attribute-id = MDC_ATTR_MSMT_STAT
 - attribute-type = MeasurementStatus (BITS-16)
 - attribute-value.length =2 bytes
- f. IF Not recommended attribute Metric-Id is present
 - attribute-id = MDC_ATTR_ID_PHYSIO
 - attribute-type = OID-Type (INT-U16)
 - attribute-value.length= 2 bytes
- g. IF Not recommended attribute Metric-Id-List is present
 - attribute-id = MDC_ATTR_ID_PHYSIO_LIST
 - attribute-type = MetricIdList
 - attribute-value.length= SEQUENCE OF OID-Type (INT-U16)
- h. IF Not recommended attribute Metric-Id-Partition is present
 - attribute-id = MDC_ATTR_METRIC_ID_PART
 - attribute-type = NomPartition (INT-U16)
 - attribute-value.length = 2 bytes
- i. Mandatory attribute Unit-Code
 - attribute-id = MDC_ATTR_UNIT_CODE
 - attribute-type = OID-Type(INT-U16)
 - attribute-value.length = 2 bytes
 - attribute-value= MDC_DIM_PERCENT

| | |
|---------------------------|---|
| | <ul style="list-style-type: none"> j. IF Not recommended attribute Source-Handle-Reference is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes k. IF recommended attribute Base-Offset-Time-Stamp is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes l. IF Not recommended attribute Measure-Active-Period <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes m. IF recommended attribute Basic-Nu-Observed-Value <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC <input type="checkbox"/> attribute-type = BasicNuObsValue <input type="checkbox"/> attribute-value.length = SFLOAT-Type (INT-U16) n. IF NOT Recommended attribute Accuracy is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_ACCUR_MSMT <input type="checkbox"/> attribute-type = FLOAT-Type (INT-U32) <input type="checkbox"/> attribute-value.length = 4 bytes |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|--------------------------|---|-------------------------|--------------|--------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-009 | | | |
| TP label | ISI Numeric Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | NumObj 3; M | NumObj 5; R | NumObj 7; M |
| | | NumObj 9; R | NumObj 11; R | NumObj 13; R |
| | | NumObj 15; R | NumObj 17; R | NumObj 19; M |
| | | NumObj 23; R | NumObj 31; R | NumObj 41; C |
| | | NumObj 45; C | NumObj 47; C | NumObj 49; C |
| | | NumObj 51; R | | |
| | | ISI 3; M | ISI 4; M | ISI 5; M |
| ISI 6; R | ISI 7; R | | | |
| Test purpose | Check that: The ISI Numeric object contains the attributes specified for Extended Configuration. | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 AND C_AG_INR_006 | | | |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. | | | |
| Test procedure | <ol style="list-style-type: none"> The simulated PHG receives an association request from the PHD under test. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. Check that the field Dev-Config-Id is set in the extended range; if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. | | | |

4. Once the PHD under test sends an extended configuration, check that the ISI object attributes are:
- a. Mandatory attribute Type
 - attribute-id = MDC_ATTR_ID_TYPE
 - attribute-type = TYPE
 - attribute-value = MDC_PART_SCADA (0x00 0x02) | MDC_ISI_COAG (0x72 0x10)
 - b. Not recommended Supplemental –Types Attribute
 - attribute-id = MDC_ATTR_SPPLEMENTAL_TYPES
 - attribute-type = SupplementalTypeList
 - attribute-value.length =<variable> (Sequence of TYPE (TYPE.length= 4 bytes
 - c. Mandatory attribute Metric-Spec-Small
 - attribute-id = MDC_ATTR_METRIC_SPEC_SMALL
 - attribute-type = MetricSpecSmall (BITS-16)
 - attribute-value.length = 2 bytes
 - attribute-value ≠ 0x00 0x00
 - Bit 0 must be set (mss-avail-intermittent(0))
 - Bit 1 must be set (mss-avail-stored-data(1))
 - Bit 3 must be set (mss-msmt-aperiodic(3))
 - Bit 9 must be set (mss-acc-agent-initiated(9))
 - d. IF Not recommended attribute Metric-Structure-Small is present
 - attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL
 - attribute-type = MetricStructureSmall
 - attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8)))
 - e. IF Not recommended attribute Measurement-Status is present
 - attribute-id = MDC_ATTR_MSMT_STAT
 - attribute-type = MeasurementStatus (BITS-16)
 - attribute-value.length =2 bytes
 - f. IF Not recommended attribute Metric-Id is present
 - attribute-id = MDC_ATTR_ID_PHYSIO
 - attribute-type = OID-Type (INT-U16)
 - attribute-value.length= 2 bytes
 - g. IF Not recommended attribute Metric-Id-List is present
 - attribute-id = MDC_ATTR_ID_PHYSIO_LIST
 - attribute-type = MetricIdList
 - attribute-value.length= SEQUENCE OF OID-Type (INT-U16)
 - h. IF Not recommended attribute Metric-Id-Partition is present
 - attribute-id = MDC_ATTR_METRIC_ID_PART
 - attribute-type = NomPartition (INT-U16)
 - attribute-value.length = 2 bytes
 - i. Mandatory attribute Unit-Code
 - attribute-id = MDC_ATTR_UNIT_CODE
 - attribute-type = OID-Type(INT-U16)
 - attribute-value.length = 2 bytes

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> <input type="checkbox"/> attribute-value= MDC_DIM_DIMLESS j. IF Not recommended attribute Source-Handle-Reference is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes k. IF recommended attribute Base-Offset-Time-Stamp is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes l. IF Not recommended attribute Measure-Active-Period <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes m. IF recommended attribute Basic-Nu-Observed-Value <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC <input type="checkbox"/> attribute-type = BasicNuObsValue <input type="checkbox"/> attribute-value.length = SFLOAT-Type (INT-U16) n. IF NOT Recommended attribute Accuracy is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_ACCUR_MSMT <input type="checkbox"/> attribute-type = FLOAT-Type (INT-U32) <input type="checkbox"/> attribute-value.length = 4 bytes |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|--------------------------|--|-------------------------|--------------|--------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-010 | | | |
| TP label | Target Level for INR Numeric Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | NumObj 3; M | NumObj 5; R | NumObj 7; M |
| | | NumObj 9; R | NumObj 11; R | NumObj 13; R |
| | | NumObj 15; R | NumObj 17; R | NumObj 19; M |
| | | NumObj 23; R | NumObj 31; R | NumObj 41; C |
| | | NumObj 45; C | NumObj 47; C | NumObj 49; C |
| | | NumObj 51; R | | |
| | | Target 3; M | Target 4; M | Target 5; M |
| | | Target 6; M | Target 7; R | Target 8; R |
| Test purpose | Check that: The Target Level for INR Numeric object contains the attributes specified for Extended Configuration. | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 AND C_AG_INR_007 | | | |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. | | | |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. | | | |

3. Check that the field Dev-Config-Id is set in the extended range; if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration.
4. Once the PHD under test sends an extended configuration, check that the Target Level for INR object attributes are:
 - a. Mandatory attribute Type
 - attribute-id = MDC_ATTR_ID_TYPE
 - attribute-type = TYPE
 - attribute-value = MDC_PART_PHD_DM (0x00 0x80) | MDC_TARGET_LEVEL_COAG (0x72 0x78)
 - b. Not recommended Supplemental –Types Attribute
 - attribute-id = MDC_ATTR_SPPLEMENTAL_TYPES
 - attribute-type = SupplementalTypeList
 - attribute-value.length = <variable> (Sequence of TYPE (TYPE.length= 4 bytes
 - c. Mandatory attribute Metric-Spec-Small
 - attribute-id = MDC_ATTR_METRIC_SPEC_SMALL
 - attribute-type = MetricSpecSmall (BITS-16)
 - attribute-value.length = 2 bytes
 - attribute-value ≠ 0x00 0x00
 - Bit 0 must be set (mss-avail-intermittent(0))
 - Bit 1 must be set (mss-avail-stored-data(1))
 - Bit 9 must be set (mss-acc-agent-initiated(9))
 - Bit 12 may be set (mss-cat-manual(12)) if this value is entered manually
 - Bit 13 must be set (mss-cat-setting(13))
 - d. IF Not recommended attribute Metric-Structure-Small is present
 - attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL
 - attribute-type = MetricStructureSmall
 - attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8))
 - e. IF Not recommended attribute Measurement-Status is present
 - attribute-id = MDC_ATTR_MSMT_STAT
 - attribute-type = MeasurementStatus (BITS-16)
 - attribute-value.length =2 bytes
 - f. IF Not recommended attribute Metric-Id is present
 - attribute-id = MDC_ATTR_ID_PHYSIO
 - attribute-type = OID-Type (INT-U16)
 - attribute-value.length= 2 bytes
 - g. IF Not recommended attribute Metric-Id-List is present
 - attribute-id = MDC_ATTR_ID_PHYSIO_LIST
 - attribute-type = MetricIdList
 - attribute-value.length= SEQUENCE OF OID-Type (INT-U16)
 - h. IF Not recommended attribute Metric-Id-Partition is present
 - attribute-id = MDC_ATTR_METRIC_ID_PART
 - attribute-type = NomPartition (INT-U16)
 - attribute-value.length = 2 bytes
 - i. Mandatory attribute Unit-Code

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type(INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value= MDC_DIM_INR j. IF Not recommended attribute Source-Handle-Reference is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes k. IF recommended attribute Base-Offset-Time-Stamp is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes l. IF Not recommended attribute Measure-Active-Period <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes m. IF recommended attribute Basic-Nu-Observed-Value <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC <input type="checkbox"/> attribute-type = BasicNuObsValue <input type="checkbox"/> attribute-value.length = SFLOAT-Type (INT-U16) n. IF NOT Recommended attribute Accuracy is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_ACCUR_MSMT <input type="checkbox"/> attribute-type = FLOAT-Type (INT-U32) <input type="checkbox"/> attribute-value.length = 4 bytes |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|--------------------------|---|-------------------------|-----------------|-----------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-011 | | | |
| TP label | Current Level of Medication Numeric Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | NumObj 3; M | NumObj 5; R | NumObj 7; M |
| | | NumObj 9; R | NumObj 11; R | NumObj 13; R |
| | | NumObj 15; R | NumObj 17; R | NumObj 19; M |
| | | NumObj 23; R | NumObj 31; R | NumObj 41; C |
| | | NumObj 45; C | NumObj 47; C | NumObj 49; C |
| | | NumObj 51; R | | |
| | | CurrentMed 3; M | CurrentMed 4; M | CurrentMed 5; M |
| | | CurrentMed 6; M | CurrentMed 7; R | CurrentMed 8; R |
| Test purpose | Check that: The Current Level of Medication Numeric object contains the attributes specified for Extended Configuration. | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 AND C_AG_INR_008 | | | |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. | | | |

| | |
|------------------------------|---|
| <p>Test procedure</p> | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 3. Check that the field Dev-Config-Id is set in the extended range; if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. 4. Once the PHD under test sends an extended configuration, check that the Current Level of Medication object attributes are: <ol style="list-style-type: none"> a. Mandatory attribute Type <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_TYPE <input type="checkbox"/> attribute-type = TYPE <input type="checkbox"/> attribute-value = MDC_PART_PHD_DM (0x00 0x80) MDC_MED_CURRENT_COAG (0x72 0x7C) b. Not recommended Supplemental –Types Attribute <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SPPLEMENTAL_TYPES <input type="checkbox"/> attribute-type = SupplementalTypeList <input type="checkbox"/> attribute-value.length = <variable> (Sequence of TYPE (TYPE.length= 4 bytes c. Mandatory attribute Metric-Spec-Small <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_SPEC_SMALL <input type="checkbox"/> attribute-type = MetricSpecSmall (BITS-16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value ≠ 0x00 0x00 <ul style="list-style-type: none"> • Bit 0 must be set (mss-avail-intermittent(0)) • Bit 1 must be set (mss-avail-stored-data(1)) • Bit 9 must be set (mss-acc-agent-initiated(9)) • Bit 12 may be set (mss-cat-manual(12)) if this value is entered manually • Bit 13 must be set (mss-cat-setting(13)) d. IF Not recommended attribute Metric-Structure-Small is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL <input type="checkbox"/> attribute-type = MetricStructureSmall <input type="checkbox"/> attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8))) e. IF Not recommended attribute Measurement-Status is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_MSMT_STAT <input type="checkbox"/> attribute-type = MeasurementStatus (BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes f. IF Not recommended attribute Metric-Id is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length= 2 bytes g. IF Not recommended attribute Metric-Id-List is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO_LIST <input type="checkbox"/> attribute-type = MetricIdList <input type="checkbox"/> attribute-value.length= SEQUENCE OF OID-Type (INT-U16) h. IF Not recommended attribute Metric-Id-Partition is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_ID_PART |
|------------------------------|---|

| | |
|---------------------------|---|
| | <ul style="list-style-type: none"> <input type="checkbox"/> attribute-type = NomPartition (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes i. Mandatory attribute Unit-Code <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type(INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value= MDC_DIM_MILLI_G j. IF Not recommended attribute Source-Handle-Reference is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes k. IF recommended attribute Base-Offset-Time-Stamp is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes l. IF Not recommended attribute Measure-Active-Period <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes m. IF recommended attribute Basic-Nu-Observed-Value <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC <input type="checkbox"/> attribute-type = BasicNuObsValue <input type="checkbox"/> attribute-value.length = SFLOAT-Type (INT-U16) n. IF NOT Recommended attribute Accuracy is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_ACCUR_MSMT <input type="checkbox"/> attribute-type = FLOAT-Type (INT-U32) <input type="checkbox"/> attribute-value.length = 4 bytes |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|---------------------|---|-------------------------|---------------|---------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-012 | | | |
| TP label | Recommended New Level of Medication Numeric Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | NumObj 3; M | NumObj 5; R | NumObj 7; M |
| | | NumObj 9; R | NumObj 11; R | NumObj 13; R |
| | | NumObj 15; R | NumObj 17; R | NumObj 19; M |
| | | NumObj 23; R | NumObj 31; R | NumObj 41; C |
| | | NumObj 45; C | NumObj 47; C | NumObj 49; C |
| | | NumObj 51; R | | |
| | | RecomMed 3; M | RecomMed 4; M | RecomMed 5; M |
| | | RecomMed 6; R | RecomMed 7; R | |
| Test purpose | Check that: The Recommended New Level of Medication Numeric object contains the attributes specified for Extended Configuration. | | | |

| | |
|--------------------------|--|
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 AND C_AG_INR_009 |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 3. Check that the field Dev-Config-Id is set in the extended range; if it is not, the PHG responds with an "unsupported-config" and waits for a new configuration. 4. Once the PHD under test sends an extended configuration, check that the recommended New Level of Medication object attributes are: <ol style="list-style-type: none"> a. Mandatory attribute Type <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_TYPE <input type="checkbox"/> attribute-type = TYPE <input type="checkbox"/> attribute-value = MDC_PART_PHD_DM (0x00 0x80) MDC_MED_NEW_COAG (0x72 0x80) b. Not recommended Supplemental –Types Attribute <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SPPLEMENTAL_TYPES <input type="checkbox"/> attribute-type = SupplementalTypeList <input type="checkbox"/> attribute-value.length = <variable> (Sequence of TYPE (TYPE.length= 4 bytes c. Mandatory attribute Metric-Spec-Small <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_SPEC_SMALL <input type="checkbox"/> attribute-type = MetricSpecSmall (BITS-16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value ≠ 0x00 0x00 <ul style="list-style-type: none"> • Bit 0 must be set (mss-avail-intermittent(0)) • Bit 1 must be set (mss-avail-stored-data(1)) • Bit 9 must be set (mss-acc-agent-initiated(9)) • Bit 14 must be set (mss-cat-calculation(14)) d. IF Not recommended attribute Metric-Structure-Small is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL <input type="checkbox"/> attribute-type = MetricStructureSmall <input type="checkbox"/> attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8))) e. IF Not recommended attribute Measurement-Status is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_MSMT_STAT <input type="checkbox"/> attribute-type = MeasurementStatus (BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes f. IF Not recommended attribute Metric-Id is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length= 2 bytes g. IF Not recommended attribute Metric-Id-List is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO_LIST <input type="checkbox"/> attribute-type = MetricIdList <input type="checkbox"/> attribute-value.length= SEQUENCE OF OID-Type (INT-U16) |

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> h. IF Not recommended attribute Metric-Id-Partition is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_ID_PART <input type="checkbox"/> attribute-type = NomPartition (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes i. Mandatory attribute Unit-Code <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type(INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value= MDC_DIM_MILLI_G j. IF Not recommended attribute Source-Handle-Reference is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes k. IF recommended attribute Base-Offset-Time-Stamp is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes l. IF Not recommended attribute Measure-Active-Period <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes m. IF recommended attribute Basic-Nu-Observed-Value <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC <input type="checkbox"/> attribute-type = BasicNuObsValue <input type="checkbox"/> attribute-value.length = SFLOAT-Type (INT-U16) n. IF NOT Recommended attribute Accuracy is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_NU_ACCUR_MSMT <input type="checkbox"/> attribute-type = FLOAT-Type (INT-U32) <input type="checkbox"/> attribute-value.length = 4 bytes |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|----------------------|---|-------------------------|----------------|---------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-013 | | | |
| TP label | Device and Sensor annunciation status Enumeration Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | EnumObj 2; M | EnumObj 3; R | EnumObj 4; M |
| | | EnumObj 5; R | EnumObj 19; O | |
| | | DevSenAn 1; M | DevSenAn 5; M | DevSenAn 6; M |
| DevSenAn 8; R | | DevSenAn 9; R | DevSenAn 11; O | |
| Test purpose | Check that: Device and Sensor annunciation status Enumeration Object contains the attributes specified for Extended Configuration. | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 AND C_AG_INR_010 | | | |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 | | | |

| | |
|--------------------------|--|
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. 3. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated PHG must respond with an "unsupported-config" and waits for a new configuration. 5. Once the PHD under test sends an extended configuration, check that all Device and Sensor annunciation status objects have: <ol style="list-style-type: none"> a. Mandatory attribute Type <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_TYPE <input type="checkbox"/> attribute-type = TYPE <input type="checkbox"/> attribute-value = MDC_PART_PHD_DM (0x00 0x80), MDC_INR_METER_DEV_STATUS (0x72 0x75) b. IF Not recommended attribute Supplemental-Types is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SUPPLEMENTAL_TYPES <input type="checkbox"/> attribute-type = SupplementalTypeList <input type="checkbox"/> attribute-value.length =<variable>(Sequence of TYPE (TYPE.length= 4 bytes)) c. Mandatory attribute Metric-Spec_Small <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_SPEC_SMALL <input type="checkbox"/> attribute-type = MetricSpecSmall (BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes <input type="checkbox"/> attribute-value ≠ 0x00 0x00 <ul style="list-style-type: none"> • Bit 0 must be set (mss-avail-intermittent(0)) • Bit 1 must be set (mss-avail-stored-data(1)) • Bit 2 must be set (mss-upd-aperiodic(2)) • Bit 3 must be set (mss-msmt-aperiodic(3)) • Bit 9 must be set (mss-acc-agent-initiated(9)) d. IF Not recommended attribute Metric-Structure-Small is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL <input type="checkbox"/> attribute-type = MetricStructureSmall <input type="checkbox"/> attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8))) e. IF Not recommended attribute Measurement-Status <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_MSMT_STAT <input type="checkbox"/> attribute-type = MeasurementStatus(BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes f. IF Not recommended attribute Metric-Id is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value = Only one attribute of Metric-Id and Metric-Id-List shall be present. g. IF Not recommended attribute Metric-Id is present-List <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO_LIS <input type="checkbox"/> attribute-type = MetricIdList |

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> <input type="checkbox"/> attribute-value.length= <variable>(SEQUENCE OF OID-Type (INT-U16)) h. IF Not recommended attribute Metric-Id-Partition is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_ID_PART <input type="checkbox"/> attribute-type = NomPartition (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes i. IF Not recommended attribute Unit-Code is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes j. IF Not recommended attribute Source-Handle-Reference is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes k. IF recommended attribute Base-Offset-Time-Stamp is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes l. IF Not recommended attribute Measure-Active-Period <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes m. IF Mandatory attribute Enum-Observed-Value-Basic-Bit-Str is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id= MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR <input type="checkbox"/> attribute-type = BITS-16 <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value = inr-device-battery-low inr-sensor-malfunction inr-sensor-sample-size-insufficient inr-sensor-strip-insertion inr-sensor-strip-type-incorrect inr-sensor-result-too-high inr-sensor-result-too-low inr-sensor-temp-too-high inr-sensor-temp-too-low inr-sensor-read-interrupt inr-device-gen-fault inr-sensor-calibration due |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|---------------------|---|-------------------------|--------------------|--------------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-014 | | | |
| TP label | Context Tester Enumeration Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | EnumObj 2; M | EnumObj 3; R | EnumObj 4; M |
| | | EnumObj 5; R | EnumObj 6; R | EnumObj 7; R |
| | | EnumObj 8; R | EnumObj 9; R | EnumObj 10; R |
| | | EnumObj 12; R | EnumObj 16; C | EnumObj 17; C |
| | | EnumObj 20; C | EnumObj 21; C | EnumObj 22; C |
| | | EnumObj 23; C | EnumObj 24; C | ContextTester 3; M |
| | | ContextTester 4; M | ContextTester 5; R | ContextTester 6; M |
| Test purpose | Check that: Context Tester Enumeration Object contains the attributes specified for Extended | | | |

| | |
|--------------------------|--|
| | Configuration. |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 AND C_AG_INR_012 |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. 3. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated PHG must respond with an "unsupported-config" and waits for a new configuration. 5. Once the PHD under test sends an extended configuration, check that all Context Tester objects have: <ol style="list-style-type: none"> a. Mandatory attribute Type <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_TYPE <input type="checkbox"/> attribute-type = TYPE <input type="checkbox"/> attribute-value = MDC_PART_PHD_DM (0x00 0x80), MDC_CTXT_INR_TESTER (0x72 0x84) b. IF Not recommended attribute Supplemental-Types is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SUPPLEMENTAL_TYPES <input type="checkbox"/> attribute-type = SupplementalTypeList <input type="checkbox"/> attribute-value.length = <variable>(Sequence of TYPE (TYPE.length= 4 bytes)) c. Mandatory attribute Metric-Spec_Small <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_SPEC_SMALL <input type="checkbox"/> attribute-type = MetricSpecSmall (BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes <input type="checkbox"/> attribute-value ≠ 0x00 0x00 <ul style="list-style-type: none"> • Bit 0 must be set (mss-avail-intermittent(0)) • Bit 1 must be set (mss-avail-stored-data(1)) • Bit 2 must be set (mss-upd-aperiodic(2)) • Bit 3 must be set (mss-msmt-aperiodic(3)) • Bit 9 must be set (mss-acc-agent-initiated(9)) d. IF Not recommended attribute Metric-Structure-Small is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL <input type="checkbox"/> attribute-type = MetricStructureSmall <input type="checkbox"/> attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8))) e. IF Not recommended attribute Measurement-Status <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_MSMT_STAT <input type="checkbox"/> attribute-type = MeasurementStatus(BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes f. IF Not recommended attribute Metric-Id is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value = Only one attribute of Metric-Id and Metric-Id-List shall be present. |

| | |
|---------------------------|--|
| | <p>g. IF Not recommended attribute Metric-Id is present-List</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO_LIS <input type="checkbox"/> attribute-type = MetricIdList <input type="checkbox"/> attribute-value.length= <variable>(SEQUENCE OF OID-Type (INT-U16)) <p>h. IF Not recommended attribute Metric-Id-Partition is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_ID_PART <input type="checkbox"/> attribute-type = NomPartition (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <p>i. IF Not recommended attribute Unit-Code is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <p>j. IF Not recommended attribute Source-Handle-Reference is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <p>k. IF recommended attribute Base-Offset-Time-Stamp is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes <p>l. IF Not recommended attribute Measure-Active-Period</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes <p>m. Mandatory attribute Enum-Observed-Value-Simple_OID is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIMP_OID <input type="checkbox"/> attribute-type = OID-Type(INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute.value= One of the following nomenclature value will be used: <ul style="list-style-type: none"> • MDC_CTXT_INR_TESTER_SELF (0x72 0x85) OR • MDC_CTXT_INR_TESTER_HCP (0x72 0x86) OR • MDC_CTXT_INR_TESTER_LAB (0x72 0x87) |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|-----------------|--|-------------------------|---------------|---------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-015 | | | |
| TP label | Batch Code Enumeration Object – Extended configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | EnumObj 2; M | EnumObj 3; R | EnumObj 4; M |
| | | EnumObj 5; R | EnumObj 6; R | EnumObj 7; R |
| | | EnumObj 8; R | EnumObj 9; R | EnumObj 10; R |
| | | EnumObj 12; R | EnumObj 16; C | EnumObj 17; C |
| | | EnumObj 20; C | EnumObj 21; C | EnumObj 22; C |

| | | | | |
|--------------------------|---|----------------|----------------|----------------|
| | | EnumObj 23; C | EnumObj 24; C | BatchCode 2; M |
| | | BatchCode 3; M | BatchCode 4; M | BatchCode 5; R |
| | | BatchCode 6; M | | |
| Test purpose | Check that: Batch Code Object contains the attributes specified for Extended Configuration. | | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_181 AND C_AG_INR_013 | | | |
| Other PICS | C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189 | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. | | | |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. 3. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated PHG must respond with an "unsupported-config" and waits for a new configuration. 5. Once the PHD under test sends an extended configuration, check that all Batch Code objects have: <ol style="list-style-type: none"> a. Mandatory attribute Type <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_TYPE <input type="checkbox"/> attribute-type = TYPE <input type="checkbox"/> attribute-value = MDC_PART_PHD_DM (0x00 0x80), MDC_BATCHCODE_COAG (0x72 0x74) b. IF Not recommended attribute Supplemental-Types is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SUPPLEMENTAL_TYPES <input type="checkbox"/> attribute-type = SupplementalTypeList <input type="checkbox"/> attribute-value.length = <variable>(Sequence of TYPE (TYPE.length= 4 bytes)) c. Mandatory attribute Metric-Spec_Small <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_SPEC_SMALL <input type="checkbox"/> attribute-type = MetricSpecSmall (BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes <input type="checkbox"/> attribute-value ≠ 0x00 0x00 <ul style="list-style-type: none"> • Bit 0 must be set (mss-avail-intermittent(0)) • Bit 1 must be set (mss-avail-stored-data(1)) • Bit 2 must be set (mss-upd-aperiodic(2)) • Bit 3 must be set (mss-msmt-aperiodic(3)) • Bit 9 must be set (mss-acc-agent-initiated(9)) d. IF Not recommended attribute Metric-Structure-Small is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_STRUCTURE_SMALL <input type="checkbox"/> attribute-type = MetricStructureSmall <input type="checkbox"/> attribute-value.length = <variable>(Sequence of (ms-struct.length =1byte(INT-U8) + ms-comp-no =1byte(INT-U8))) e. IF Not recommended attribute Measurement-Status <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_MSMT_STAT <input type="checkbox"/> attribute-type = MeasurementStatus(BITS-16) <input type="checkbox"/> attribute-value.length =2 bytes f. IF Not recommended attribute Metric-Id is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO | | | |

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value = Only one attribute of Metric-Id and Metric-Id-List shall be present. <p>g. IF Not recommended attribute Metric-Id is present-List</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_ID_PHYSIO_LIS <input type="checkbox"/> attribute-type = MetricIdList <input type="checkbox"/> attribute-value.length= <variable>(SEQUENCE OF OID-Type (INT-U16)) <p>h. IF Not recommended attribute Metric-Id-Partition is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_ID_PART <input type="checkbox"/> attribute-type = NomPartition (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <p>i. IF Not recommended attribute Unit-Code is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_UNIT_CODE <input type="checkbox"/> attribute-type = OID-Type (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <p>j. IF Not recommended attribute Source-Handle-Reference is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SOURCE_HANDLE_REF <input type="checkbox"/> attribute-type = HANDLE (INT-U16) <input type="checkbox"/> attribute-value.length = 2 bytes <p>k. IF recommended attribute Base-Offset-Time-Stamp is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_STAMP_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes <p>l. IF Not recommended attribute Measure-Active-Period</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE <input type="checkbox"/> attribute-type = FLOAT type <input type="checkbox"/> attribute-value.length = 4 bytes <p>m. Mandatory attribute Enum-Observed-Value-Simple-Str is present</p> <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIMP_STR <input type="checkbox"/> attribute-type = BITS-16 <input type="checkbox"/> attribute-value.length = 2 bytes |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | |
|----------------------|--|-------------------------|-------------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-016 | | |
| TP label | PM-Store Attributes for Extended Configuration | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | |
| | Testable items | PMStrObjAtt 1; M | PMStrObjAtt 5; M |
| | | PMStrObjAtt 8; M | PMStrObjAtt 9; R |
| | | PMStrObjAtt 6; M | PMStrObjAtt 12; M |
| Test purpose | Check that: PM-Store Object contains the attributes specified for Extended Configuration. | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_041 AND C_AG_OXP_181 | | |

| | |
|---------------------------|---|
| Other PICS | |
| Initial condition | The simulated PHG and the PHD under test are in the Unassociated state. |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG receives an association request from the PHD under test. 2. The simulated PHG responds with a result = accepted-unknown-config. 3. The PHD responds with a "Remote Operation Invoke Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the PHG. 4. The handle for the PM-Store attribute must be: <ol style="list-style-type: none"> a. Mandatory attribute Handle <ul style="list-style-type: none"> <input type="checkbox"/> attribute-type = HANDLE <input type="checkbox"/> attribute-value.length = 2 bytes <input type="checkbox"/> attribute-value = must be unique and non-zero. Actual value may be specified by the Device Specialization. 5. The simulated PHG shall send a Get request for the PM-Store object with an attribute-id-list set to 0 to indicate all PM-Store attributes. 6. The PHD issues a GET response with the PM-Store attributes it supports: <ol style="list-style-type: none"> a. Mandatory Store-Capacity-Count <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_STORE_CAPAC_CNT <input type="checkbox"/> attribute-type = INT-U32 <input type="checkbox"/> attribute-value.length = 4 bytes <input type="checkbox"/> attribute-value = See relation with next attribute b. Mandatory attribute Store-Usage-Count <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_METRIC_STORE_USAGE_CNT <input type="checkbox"/> attribute-type = INT-U32 <input type="checkbox"/> attribute-value.length = 4 bytes <input type="checkbox"/> attribute-value = consistent with actual number of segments present and always \leq than Storage-Capacity-Count c. Mandatory attribute PM-Store-Label <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_PM_STORE_LABEL_STRING <input type="checkbox"/> attribute-type = OCTET STRING <input type="checkbox"/> attribute-value.length = <Variable> <input type="checkbox"/> attribute-value = Printable ASCII d. IF Not Recommended attribute Sample-Period is present <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_PD_SAMP <input type="checkbox"/> attribute-type = RelativeTime <input type="checkbox"/> attribute-value.length = 4 bytes <input type="checkbox"/> attribute-value = <Not relevant in this test> |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | | |
|-----------------|--|-------------------------|-----------------|-----------------|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-017 | | | |
| TP label | PM Segment Object for Extended Configuration | | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | PMStoreObj 5; M | PMStoreObj 6; O | PMStoreObj 7; M |
| | | PMSegObj 6; M | PMSegObj 7; M | PMSegObj 8; M |
| | | PMSegObj 10; M | | |

| | |
|---------------------------|--|
| Test purpose | Check that: PM-Segment contains the attributes specified for Extended Configuration. |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_041 AND C_AG_OXP_181 |
| Other PICS | |
| Initial condition | The simulated PHG and the PHD under test are in the Operating state. |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG shall send a Get request for the PM-Store object with an attribute-id-list set to 0 to indicate all PM-Store attributes. 2. The simulated PHG shall send a Get-Segment-Info object action for the PM-Segment object with SegmSelection = all-segments to indicate the PM-Segments attributes of all available PM-Segments. 3. The PHD issues a response with the PM-Segment attributes it supports: <ol style="list-style-type: none"> a. Mandatory attribute Segment-Label <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_PM_SEG_LABEL_STRING <input type="checkbox"/> attribute-type = OCTET STRING <input type="checkbox"/> attribute-value.length = consistent with value <input type="checkbox"/> attribute-value = <printable ASCII> b. Mandatory attribute Segment-Start-BO-Time <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_START_SEG_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes <input type="checkbox"/> attribute-value = <Not relevant for this test> c. Mandatory attribute Segment-End-BO-Time <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_TIME_END_SEG_BO <input type="checkbox"/> attribute-type = BaseOffsetTime <input type="checkbox"/> attribute-value.length = 8 bytes <input type="checkbox"/> attribute-value = <Not relevant for this test> d. Mandatory attribute Segment-Usage-Count <ul style="list-style-type: none"> <input type="checkbox"/> attribute-id = MDC_ATTR_SEG_USAGE_CNT <input type="checkbox"/> attribute-type = INT-U32 <input type="checkbox"/> attribute-value.length = 4 bytes <input type="checkbox"/> attribute-value = <not relevant in this test> e. Mandatory attribute PM-Segment-Entry-Map <ul style="list-style-type: none"> <input type="checkbox"/> SegmentEntryHeader.value = One of the next must be set: <ul style="list-style-type: none"> • seg-elem-hdr-relative-time(1) • seg-elem-hdr-hires-relative-time(2) • seg-elem-hdr-bo-time(3) <input type="checkbox"/> SegmEntryElem: < Record the fields for later comparison> 4. Repeat steps 3 and 4 for every Segment. |
| Pass/Fail criteria | <ul style="list-style-type: none"> • All checked values are as specified in the test procedure. • Every segm-entry-header must contain one of the time formats. • At least one PM-Segment must reference the INR in its PM-Segm-Entry-Map. • If there are more than one PM-Segment, the rest of them must reference one of the objects defined in the spec in its PM-Segm-Entry-Map. |
| Notes | |

| | | | | |
|---------------------------|-----------------------|--|-----------------|--|
| TP Id | | TP/PLT/PHD/CLASS/INR/BV-017_A | | |
| TP label | | PM-Segment Object for Extended Configuration.MDS Event Reports | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | PMStoreObj 3; M | PMStoreObj 4; M | |
| Test purpose | | <p>Check that:</p> <p>Any configuration with a PM Store for persistent storage shall disable agent-initiated transmission and enable access to PM-Store transmissions</p> | | |
| Applicability | | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_041 AND C_AG_OXP_181 | | |
| Other PICS | | | | |
| Initial condition | | The simulated PHG and the PHD under test are in the Operating state. | | |
| Test procedure | | <ol style="list-style-type: none"> 1. The simulated PHG shall send a Get request for the PM-Store object with an attribute-id-list set to 0 to indicate all PM-Store attributes. 2. The simulated PHG shall send a Get-Segment-Info object action for the PM-Segment object with SegmSelection = all-segments to indicate the PM-Segments attributes of all available PM-Segments. 3. The simulated PHG asks for a measurement. 4. Check the event reports that are sent by the PHD. | | |
| Pass/Fail criteria | | In step 4, the PHD shall not send the data with MDS event reports. | | |
| Notes | | | | |

| | | | | |
|--------------------------|-----------------------|---|----------------|----------------|
| TP Id | | TP/PLT/PHD/CLASS/INR/BV-018 | | |
| TP label | | Communication Model: Association Procedure | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | | |
| | Testable items | AgProcAs 1; M | AgProcAs 2; M | AgProcAs 4; M |
| | | AgProcAs 5; M | AgProcAs 6; M | AgProcAs 7; M |
| | | AgProcAs 8; M | AgProcAs 9; M | AgProcAs 10; M |
| | | AgProcAs 11; M | AgProcAs 12; M | MDSMethods 3;M |
| AgProcAs 13; O | | | | |
| Test purpose | | <p>Check that:</p> <p>The association procedure data exchange is correct</p> | | |
| Applicability | | C_AG_OXP_000 AND C_AG_OXP_163 | | |
| Other PICS | | C_AG_OXP_002, C_AG_OXP_017 | | |
| Initial condition | | The simulated PHG and the PHD under test are in the Unassociated state. | | |
| Test procedure | | <ol style="list-style-type: none"> 1. The PHD sends a message to associate with the simulated PHG, the expected fields sent by the PHD are: <ol style="list-style-type: none"> a. APDU Type <ul style="list-style-type: none"> <input type="checkbox"/> field- type = AarqApdu <input type="checkbox"/> field-length =2 bytes <input type="checkbox"/> field-value =0xE2 0x00. b. assoc-version <ul style="list-style-type: none"> <input type="checkbox"/> field- type = AssociationVersion <input type="checkbox"/> field-length =BITS-32 <input type="checkbox"/> field- value=0x80 0x00 0x00 0x00 c. data-protol-id <ul style="list-style-type: none"> <input type="checkbox"/> field- type = DataProtold(INT-U16) | | |

| | |
|--|---|
| | <ul style="list-style-type: none"> <input type="checkbox"/> field-length =2 bytes <input type="checkbox"/> field- value=0x50 0x79 (20601) <p>d. protocol-version</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = Protocol Version <input type="checkbox"/> field-length = 4 bytes <input type="checkbox"/> field- value= At least bit protocol-version2(1) is set to 1 (0x40 0x00 0x00 0x00 OR 0xC0 0x00 0x00 0x00) <p>e. encoding rules</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = EncodingRules <input type="checkbox"/> field-length = 2 bytes <input type="checkbox"/> field- value= <ul style="list-style-type: none"> • Bit 0 must be set (support for MDER) • Bits 1 (XER) and 2 (PER) may be set • All other bits must be 0. <p>f. nomenclature version</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = NomenclatureVersion <input type="checkbox"/> field-length = 4 bytes <input type="checkbox"/> field- value=0x80 0x00 0x00 0x00 <input type="checkbox"/> This value indicates version1 is supported (nom-version1(0) is set). <p>g. functional – units</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = FunctionalUnits <input type="checkbox"/> field-length = 4 bytes <ul style="list-style-type: none"> • Bit 0 must be 0. • Bits 1 and 2 may be set • The rest of the bits must not be set <p>h. System type</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = SystemType <input type="checkbox"/> field-length = 4 bytes <input type="checkbox"/> field- value = 0x00 0x80 0x00 0x00 (sys-type-agent) <p>i. System-Id</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = OCTET STRING <input type="checkbox"/> field-length = 8 bytes <input type="checkbox"/> field- value = 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX (octet string length = 8 UI-64 manufacturer and device) <input type="checkbox"/> This value will be System Id attribute of MDS Object. <p>j. dev-config-id</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = ConfigId(INT-U16) <input type="checkbox"/> field-length = 2 bytes <input type="checkbox"/> field- value = <ul style="list-style-type: none"> • 0x07 0x08 OR 0x07 09 for standard configuration. • <between 0x40 0x00 and 0x7F 0xFF > for extended configuration. <p>k. data-req-mode-flags (DataReqModeCapab)</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = DataReqModeFlags <input type="checkbox"/> field-length = 2 bytes |
|--|---|

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> • If the PHD supports Agent-initiated measurement transfer → Bit 15 is set (data-req-supp-init-agent(15)) • If the PHD supports requesting objects based on the object handle → Bit 6 will be set (data-req-supp-scope-handle(6)). • If the PHD supports single response → Bit 8 will be set (data-req-supp-mode-single-rsp(8)). • If the PHD supports time unlimited data request → Bit 10 will be set (data-req-supp-mode-time-no-limit(10)). <p>l. data-req-init-agent-count (DataReqModeCapab)</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = INT-U8 <input type="checkbox"/> field-length = 2 bytes <input type="checkbox"/> field.value = 0x01 <p>m. data-req-init-manager-count (DataReqModeCapab)</p> <ul style="list-style-type: none"> <input type="checkbox"/> field- type = INT-U8 <input type="checkbox"/> field-length = 2 bytes <input type="checkbox"/> field.value = 0x00 |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | |
|--------------------------|---|-------------------------|--|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-019 | | |
| TP label | PM Segment Object for Extended Configuration | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | |
| | Testable items | PMStrObjMeth 1; M | |
| Test purpose | Check that: INR monitor supports the Clear-Segments method with Confirmed mode | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_041 AND C_AG_OXP_071 | | |
| Other PICS | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Operating state and the PHD has at least one PM-Segment with data stored. | | |
| Test procedure | <ol style="list-style-type: none"> 1. Take measurements with the PHD of a value that is stored on a PM-Segment. 2. The simulated PHG shall send a Get request for the PM-Store object with an attribute-id-list set to 0 to indicate all PM-Store attributes. 3. The PHD issues a GET response with the PM-Store attributes, record the values of the PMStoreCapab attribute. 4. The simulated PHG shall send a Get-Segment-Info object action with a segmSelection set to all-segments to check that there are no segments in use. 5. The simulated PHG sends a Clear-Segment to all segments: <ol style="list-style-type: none"> a. Data APDU <ul style="list-style-type: none"> <input type="checkbox"/> Type = Invoke Confirmed Action, <input type="checkbox"/> HANDLE = obj-handle <input type="checkbox"/> Action = MDC_ACT_SEG_CLEAR <input type="checkbox"/> SegmSelection = all-segments 6. The PHD under test operation response: <ol style="list-style-type: none"> a. Data APDU <ul style="list-style-type: none"> <input type="checkbox"/> Type = Response Confirmed Action, <input type="checkbox"/> HANDLE = obj-handle | | |

| | |
|---------------------------|--|
| | <ul style="list-style-type: none"> <input type="checkbox"/> Action = MDC_ACT_SEG_CLEAR <p>7. Delay.</p> <p>8. The simulated PHG sends a request for the PM-Segment Data with SegmSelection = all-segments to obtain all the segments:</p> <p>a. Data APDU</p> <ul style="list-style-type: none"> <input type="checkbox"/> Type = Invoke Confirmed Action, <input type="checkbox"/> HANDLE = obj-handle <input type="checkbox"/> Action = MDC_ACT_SEG_TRIG_XFER <input type="checkbox"/> SegmSelection = <Instance number of the selected PM-Segment that contained data before the clear-segment action> <p>9. The PHD issues an action response with the Data:</p> <p>a. Data APDU</p> <ul style="list-style-type: none"> <input type="checkbox"/> Type = Response Confirmed Action, <input type="checkbox"/> HANDLE = obj-handle <input type="checkbox"/> Action = MDC_ACT_SEG_TRIG_XFER <input type="checkbox"/> TrigSegmXferRsp = <ul style="list-style-type: none"> • IF pmsc-clear-segm-remove is NOT set THEN TrigSegmXferRsp = tsxr-fail-segm-empty • ELSE TrigSegmXferRsp = tsxr-fail-no-such-segment |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | |

| | | | |
|--------------------------|---|---|--|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-021 | | |
| TP label | Operating State. PHG to PHD Maximum APDU Size | | |
| Coverage | Spec | [ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C] | |
| | Testable items | CommonCharac 3; M | |
| | Spec | [ISO/IEEE 11073-10418C] | |
| | Testable items | ComChar 2; M | |
| Test purpose | <p>Check that:</p> <p>The total size of the response does not exceed of the maximum APDU size established by the specialization</p> <p>[AND]</p> <p>An INR PHD implementing only this device specialization shall be capable of receiving any APDU up to the size of Nrx. For this standard, Nrx shall be 224 octets</p> | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 | | |
| Other PICS | C_AG_OXP_041, C_AG_OXP_100 | | |
| Initial condition | The simulated PHG and the PHD are in the Operating state. | | |
| Test procedure | <p>1. The simulated PHG issues a "Remote Operation Invoke Get" command with:</p> <p>a. Obj-handle set to 0 (to request an MDS object)</p> <p>b. attribute-id-list.count = 103</p> <p>c. attribute-id-list: (MDC_ATTR_ID_MODEL, MDC_ATTR_SYS_ID, MDC_ATTR_DEV_CONFIG_ID) repeated 34 times followed by an additional MDC_ATTR_ID_MODEL</p> <p>2. Check the response of the PHD.</p> <p>3. The simulated PHG issues a "Remote Operation Invoke Get" command with the handle</p> | | |

| | |
|---------------------------|--|
| | <p>set to 0 (to request an MDS object) and an empty attribute-id-list to indicate all attributes.</p> <p>4. Check the response of the PHD.</p> |
| Pass/Fail criteria | <ul style="list-style-type: none"> • In step 2, the PHD under test may respond with a rors-cmip-get listing all the requested attributes, or with a roer message. If PICS C_AG_OXP_100 =TRUE and the PHD does not respond with a rors-cmip-get message, it responds with a roer message or rorj (resource-limitation) message, a WARNING will appear. <ul style="list-style-type: none"> ○ If the response is a get response, the total size of the response cannot exceed the sum of the APDU sizes of the supported specializations (limited to an absolute limit of 64512 octets): <ul style="list-style-type: none"> ▪ Pulse oximeter → 9216 octets ▪ Weighing scales → 896 octets ▪ Glucose meter → 5120 octets or 64512 octets if the PHD supports PM-Store ▪ Blood pressure → 896 octets ▪ Thermometer → 896 octets ▪ Independent activity hub → 5120 octets ▪ Cardiovascular → 64512 octets or 6624 octets if the PHD under test only supports the Step Counter Profile ▪ Strength → 64512 octets: ▪ Adherence monitor → 1024 octets ▪ Peak flow → 2030 octets ▪ Body composition analyser → 7730 octets ▪ Basic ECG/Simple ECG → 7168 octets or 64512 octets if the PHD supports PM-Store ▪ Basic ECG/Heart rate → 1280 octets or 64512 octets if the PHD supports PM-Store ▪ International normalized ratio → 896 octets or 64512 if the PHD supports PM-Store ○ In the case where it responds with a roer, the reason must not be protocol-violation (23) • In step 4, the PHD must respond with a rors-cmip-get message. |
| Notes | |

| | | | |
|--------------------------|---|-------------------------|--|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-022 | | |
| TP label | INR measurement above the capabilities of the device sensor | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | |
| | Testable items | INR 29; M | |
| Test purpose | <p>Check that:</p> <p>In standard configurations 1800 (0x0708) and 1801 (0x709), an INR measurement that is above the capabilities of the device sensor shall be indicated with an observed value of +INFINITY</p> | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND (C_AG_INR_001 OR C_AG_INR_002) AND (NOT C_AG_OXP_181) | | |
| Other PICS | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Operating state. | | |
| Test procedure | <ol style="list-style-type: none"> 1. Place in the device sensor an INR sample with an INR level above the capabilities of the device sensor and acquire a measurement with the PHD under test. 2. The test tool simulated PHG waits to receive an event report from the PHD under test. The event report shall contain the following values: | | |

| | |
|---------------------------|---|
| | <ul style="list-style-type: none"> a. Data APDU <ul style="list-style-type: none"> <input type="checkbox"/> event-type = MDC_NOTI_SCAN_REPORT_FIXED (0x0D 0x1D) <input type="checkbox"/> obj-handle = 1 (1st Measurement is INR) <input type="checkbox"/> obs-val-data = <ul style="list-style-type: none"> • Basic-Nu-Observed-Value = 0x07FE • Base-Offset-Time-Stamp = <Not relevant for this Test Case> |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | The vendor must provide an INR sample (or a simulated INR solution) with an INR level above the capabilities of device sensor. |

| | | | |
|---------------------------|---|-------------------------|--|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-023 | | |
| TP label | INR measurement below the capabilities of the device sensor | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | |
| | Testable items | INR 30; M | |
| Test purpose | Check that: In standard configurations 1800 (0x0708) and 1801 (0x709), an INR measurement that is below the capabilities of the device sensor shall be indicated with an observed value of – INFINITY. | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND (C_AG_INR_001 OR C_AG_INR_002) AND (NOT C_AG_OXP_181) | | |
| Other PICS | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Operating state. | | |
| Test procedure | <ol style="list-style-type: none"> 1. Place in the device sensor a blood sample with a blood glucose level below the capabilities of the device sensor and acquire a measurement with the PHD under test. 2. The test tool simulated PHG waits to receive an event report from the PHD, under test. The event report shall contain the following values: <ul style="list-style-type: none"> a. Data APDU <ul style="list-style-type: none"> <input type="checkbox"/> event-type = MDC_NOTI_SCAN_REPORT_FIXED (0x0D 0x1D) <input type="checkbox"/> obj-handle = 1 (1st Measurement is INR) <input type="checkbox"/> obs-val-data = <ul style="list-style-type: none"> • Basic-Nu-Observed-Value = 0x0802 • Base-Offset-Time-Stamp = <Not relevant for this Test Case> | | |
| Pass/Fail criteria | All checked values are as specified in the test procedure. | | |
| Notes | The vendor must provide an INR sample (or a simulated INR solution) with an INR level below the capabilities of device sensor. | | |

| | | | |
|----------------------|--|-------------------------|--|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-024 | | |
| TP label | Control Calibration measurement above the capabilities of the device sensor | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | |
| | Testable items | CtrlCal 6; M | |
| Test purpose | Check that: In standard configurations 1800 (0x0708) and 1801 (0x709), a Control Calibration measurement that is above the capabilities of the device sensor shall be indicated with an observed value of +INFINITY | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_INR_002 AND (NOT C_AG_OXP_181) | | |

| | |
|---------------------------|---|
| Other PICS | |
| Initial condition | The simulated PHG and the PHD under test are in the Operating state. |
| Test procedure | <ol style="list-style-type: none"> 1. Place in the device sensor a control calibration sample with an INR level above the capabilities of the device sensor and check it with the PHD under test. 2. The test tool simulated PHG waits to receive an event report from the PHD under test. The event report shall contain the following values: <ol style="list-style-type: none"> a. Data APDU <ul style="list-style-type: none"> <input type="checkbox"/> event-type = MDC_NOTI_SCAN_REPORT_FIXED (0x0D 0x1D) <input type="checkbox"/> obj-handle = 2 (Control Calibration) <input type="checkbox"/> obs-val-data = <ul style="list-style-type: none"> • Basic-Nu-Observed-Value = 0x07FE • Base-Offset-Time-Stamp = <Not relevant for this Test Case> |
| Pass/Fail criteria | All checked values are as specified in the test procedure. |
| Notes | The vendor must provide a Control Calibration with an INR level above the capabilities of device sensor. |

| | | | |
|---------------------------|--|-------------------------|--|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-025 | | |
| TP label | Control Calibration measurement below the capabilities of the device sensor | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | |
| | Testable items | CtrlCal 7; M | |
| Test purpose | Check that: In standard configurations 1800 (0x0708) and 1801 (0x709), a Control Solution measurement that is below the capabilities of the device sensor shall be indicated with an observed value of -INFINITY | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_INR_002 AND (NOT C_AG_OXP_181) | | |
| Other PICS | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Operating state. | | |
| Test procedure | <ol style="list-style-type: none"> 1. Place in the device sensor a control calibration sample with an INR level above the capabilities of the device sensor and check it with the PHD under test. 2. The test tool simulated PHG waits to receive an event report from the PHD, under test. The event report shall contain the following values: <ol style="list-style-type: none"> a. Data APDU <ul style="list-style-type: none"> <input type="checkbox"/> event-type = MDC_NOTI_SCAN_REPORT_FIXED (0x0D 0x1D) <input type="checkbox"/> obj-handle = 2 (Control Calibration) <input type="checkbox"/> obs-val-data = <ul style="list-style-type: none"> • Basic-Nu-Observed-Value = 0x0802 • Base-Offset-Time-Stamp = <Not relevant for this Test Case> | | |
| Pass/Fail criteria | All checked values are as specified in the test procedure. | | |
| Notes | The vendor must provide a Control Calibration with an INR level below the capabilities of device sensor. | | |

| | | | |
|-----------------|---|-------------------------|--|
| TP Id | TP/PLT/PHD/CLASS/INR/BV-026 | | |
| TP label | Set Time (Base Offset Time) INR monitor | | |
| Coverage | Spec | [ISO/IEEE 11073-10418C] | |
| | Testable | MDSMethods 5; M | |

| | items | | |
|---------------------------|---|--|--|
| Test purpose | Check that: If the PHD supports the [Base-Offset-Time-Stamp] attribute, the Set-Base-Offset-Time method shall be implemented | | |
| Applicability | C_AG_OXP_000 AND C_AG_OXP_163 AND C_AG_OXP_014 | | |
| Other PICS | | | |
| Initial condition | The simulated PHG and the PHD under test are in the Operating state. | | |
| Test procedure | <ol style="list-style-type: none"> 1. The simulated PHG sends a SET action: <ul style="list-style-type: none"> <input type="checkbox"/> CHOICE = SetBOTimeInvoke <input type="checkbox"/> action-type = MDC_ACT_SET_BO_TIME <input type="checkbox"/> the action-info-args are SetBOTimeInvoke <ul style="list-style-type: none"> ▪ date-time = bo-seconds = 0x00 0x00 0x00 0x00, bo-fractions = 0x00 0x00, bo-time-offset = 0x3C 2. The PHD under test response shall be a rors-cmip-confirmed-action: <ul style="list-style-type: none"> <input type="checkbox"/> action-type = MDC_ACT_SET_BO_TIME <input type="checkbox"/> action-info-args shall be empty. | | |
| Pass/Fail criteria | All checked values are as specified in the test procedure. | | |
| Notes | | | |

Bibliography

- [b-ITU-T H.810 (2013)] Recommendation ITU-T H.810 (2013), *Interoperability design guidelines for personal health systems*.
- [b-ITU-T H.810 (2015)] Recommendation ITU-T H.810 (2015), *Interoperability design guidelines for personal health systems*.
- [b-CDG 1.0] Continua Health Alliance, Continua Design Guidelines v1.0 (2008), *Continua Design Guidelines*.
- [b-CDG 2010] Continua Health Alliance, Continua Design Guidelines v1.5 (2010), *Continua Design Guidelines*.
- [b-CDG 2011] Continua Health Alliance, Continua Design Guidelines (2011), "Adrenaline", *Continua Design Guidelines*.
- [b-CDG 2012] Continua Health Alliance, Continua Design Guidelines (2012), "Catalyst", *Continua Design Guidelines*.
- [b-CDG 2013] Continua Health Alliance, Continua Design Guidelines (2013), "Endorphin", *Continua Design Guidelines*.
- [b-CDG 2015] Continua Health Alliance, Continua Design Guidelines (2015), "Genome", *Continua Design Guidelines*.
- [b-CDG 2016] Personal Connected Health Alliance, Continua Design Guidelines (2016), "Iris", *Continua Design Guidelines*.
- [b-ETSI SR 001 262] ETSI SR 001 262 v1.8.1 (2003), *ETSI drafting rules*.
- [b-PHD PICS & PIXIT] Personal Health Device DG2016 PICS and PIXIT excel sheet v1.11. <http://handle.itu.int/11.1002/2000/12067>
- [b-PHG PICS & PIXIT] Personal Health Gateway DG2016 PICS and PIXIT excel sheet v1.9. <http://handle.itu.int/11.1002/2000/12067>
- [b-TCRL] Test Case Reference List_DG2016_v1.11. <http://handle.itu.int/11.1002/2000/12067>
- [b-TI] Continua DG2016 PHD Testable items excel sheet v1.8. <http://handle.itu.int/11.1002/2000/12067>

SERIES OF ITU-T RECOMMENDATIONS

| | |
|-----------------|---|
| Series A | Organization of the work of ITU-T |
| Series D | Tariff and accounting principles and international telecommunication/ICT economic and policy issues |
| Series E | Overall network operation, telephone service, service operation and human factors |
| Series F | Non-telephone telecommunication services |
| Series G | Transmission systems and media, digital systems and networks |
| Series H | Audiovisual and multimedia systems |
| Series I | Integrated services digital network |
| Series J | Cable networks and transmission of television, sound programme and other multimedia signals |
| Series K | Protection against interference |
| Series L | Environment and ICTs, climate change, e-waste, energy efficiency; construction, installation and protection of cables and other elements of outside plant |
| Series M | Telecommunication management, including TMN and network maintenance |
| Series N | Maintenance: international sound programme and television transmission circuits |
| Series O | Specifications of measuring equipment |
| Series P | Telephone transmission quality, telephone installations, local line networks |
| Series Q | Switching and signalling, and associated measurements and tests |
| Series R | Telegraph transmission |
| Series S | Telegraph services terminal equipment |
| Series T | Terminals for telematic services |
| Series U | Telegraph switching |
| Series V | Data communication over the telephone network |
| Series X | Data networks, open system communications and security |
| Series Y | Global information infrastructure, Internet protocol aspects, next-generation networks, Internet of Things and smart cities |
| Series Z | Languages and general software aspects for telecommunication systems |