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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

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

Conformance of ITU-T H.810 personal health system: Personal Health Devices interface Part 2: Optimized Exchange Protocol: Personal Health Gateway

Recommendation ITU-T H.842



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Recommendation ITU-T H.842

Conformance of ITU-T H.810 personal health system: Personal Health Devices interface Part 2: Optimized Exchange Protocol: Personal Health Gateway

Summary

Recommendation ITU-T H.842 provides a test suite structure (TSS) and the test purposes (TPs) for personal health gateways (PHGs) using the IEEE 11073-20601 optimized exchange protocol 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.842 is a transposition of Continua Test Tool DG2016, Test Suite Structure & Test Purposes, Personal Health Devices Interface; Part 2: Optimized Exchange Protocol: Personal Health Gateway (Version 1.8, 2017-03-14), 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

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Keywords

Conformance testing, Continua Design Guidelines, e-health, IEEE 11073-20601 optimized exchange protocol, ITU-T H.810, personal area network, personal connected health devices, Personal Health Devices interface, personal Health Gateway, 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>.

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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 2: Optimized Exchange Protocol: Personal Health Gateway (Version 1.8, 2017-03-14), 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
1.2	2012-10-05	Initial release for Test Tool DG2011. This is the same version as "TSS&TP_1.5_PAN-LAN_PART_2_v1.2.doc" because new features included in [b-CDG 2011] do not affect the test procedures specified in this document.
1.3	2013-05-24	Initial release for Test Tool DG2012. This uses "TSS&TP_DG2011_PAN-LAN_PART_2_v1.2.doc" as a baseline and adds new features included in [b-CDG 2012]: • Adds glucose meter new spec version • Adds body composition analyser device specialization • Adds basic electrocardiograph device specialization
1.4	2014-01-24	Initial release for Test Tool DG2013. This uses "TSS&TP_DG2012_PAN-LAN_PART_2_v1.3.doc" as a baseline and adds new features included in [b-ITU-T H.810 (2013)]/[b-CDG 2013]: • Adds glucose meter BLE • Adds BLE SSP support • Adds NFC new transport • Adds INR Device Specialization
1.5	2014-04-24	TM Lite & Doc Enhancements (Test Tool v4.0 Maintenance Release 1). It uses "TSS&TP_DG2013_PLT_PART_2_v1.4.doc" as a baseline and adds new features included in Documentation Enhancements: • "Other PICS" row has been added
1.6	2015-07-01	Initial Release for Test Tool DG2015. It uses "TSS&TP_DG2013_PHT_PART_2_v1.5.doc" as a baseline and adds new features included in [ITU-T H.810 (2015)]/[b-CDG 2015]
1.7	2016-09-20	Initial release for Test Tool DG2016. It uses "TSS&TP_DG2015_PHT_PART_2_v1.6.doc" as a baseline and adds new features included in [ITU-T H.810 (2016)]/[b-CDG 2016]
1.8	2017-03-14	Updates the baseline in "TSS&TP_DG2016_PHD_PART_2_v1.7.doc" as part of the Maintenance 2016 activity: • Update the applicability row for TP/PLT/PHG/OXP/DIM/BV-046

Recommendation ITU-T H.842

Conformance of ITU-T H.810 personal health system: Personal Health Devices interface Part 2: Optimized Exchange Protocol: Personal Health Gateway

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 (PHD) 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 2.

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

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 Annex A.

2 References

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

- [ITU-T H.810 (2016)] Recommendation ITU-T H.810 (2016), *Interoperability design guidelines for personal health systems*.
- [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>
- [ISO/IEEE 11073-104xx] ISO/IEEE 11073-104xx (in force), *Health informatics – Personal health device communication – Device specialization*.
NOTE – This is shorthand used to refer to the collection of device specialization standards that utilize [ISO/IEEE 11073-20601-2015A], where xx can be any number from 01 to 99, inclusive.
- [ISO/IEEE 11073-10404] ISO/IEEE 11073-10404:2010, *Health informatics – Personal health device communication – Part 10404: Device specialization – Pulse oximeter*.
<https://www.iso.org/standard/54572.html>
- [ISO/IEEE 11073-10406] ISO/IEEE 11073-10406-2012, *Health informatics – Personal health device communication – Part 10406: Device specialization – Basic electrocardiograph (ECG) (1- to 3-lead ECG)*.
<https://www.iso.org/standard/61876.html>
- [ISO/IEEE 11073-10407] ISO/IEEE 11073-10407:2010, *Health informatics – Personal health device communication – Part 10407: Device specialization – Blood pressure monitor*.
<https://www.iso.org/standard/54573.html>
- [ISO/IEEE 11073-10408] ISO/IEEE 11073-10408:2010, *Health informatics – Personal health device communication – Part 10408: Device specialization – Thermometer*.
<https://www.iso.org/standard/54310.html>
- [ISO/IEEE 11073-10415] ISO/IEEE 11073-10415:2010, *Health informatics – Personal health device communication – Part 10415: Device*

specialization – Weighing scale.

<https://www.iso.org/standard/54310.html>

- [ISO/IEEE 11073-10417] ISO/IEEE 11073-10417:2014, *Health informatics – Personal health device communication – Part 10417: Device specialization – Glucose meter*.
<https://www.iso.org/standard/61896.html>
- [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 11073-10419] ISO/IEEE 11073-10419:2016, *Health informatics – Personal health device communication – Part 10419: Device specialization – Insulin pump*.
<https://www.iso.org/standard/69528.html>
- [ISO/IEEE 11073-10420] ISO/IEEE 11073-10420-2012, *Health informatics – Personal health device communication – Part 10420: Device specialization – Body composition analyzer*.
<https://www.iso.org/standard/61055.html>
- [ISO/IEEE 11073-10421] ISO/IEEE 11073-10421:2012, *Health informatics – Personal health device communication – Part 10421: Device specialization – Peak expiratory flow monitor (peak flow)*.
<https://www.iso.org/standard/61056.html>
- [ISO/IEEE 11073-10424] ISO/IEEE 11073-10424:2016, *Health informatics – Personal health device communication – Part 10424: Device specialization – Sleep apnoea breathing therapy equipment (SABTE)*.
<https://www.iso.org/standard/68906.html>
NOTE – equivalent to IEEE 11073-10424-2014, *Health informatics – Personal health device communication – Part 10424: Device Specialization – Sleep Apnoea Breathing Therapy Equipment (SABTE)*
<http://dx.doi.org/10.1109/IEEESTD.2014.6911927>
- [ISO/IEEE 11073-10425] ISO/IEEE 11073-10425:2016, *Health informatics – Personal health device communication – Part 10425: Device specialization – Continuous glucose monitor (CGM)*.
<https://www.iso.org/standard/67821.html>
- [ISO/IEEE 11073-10441] ISO/IEEE 11073-10441-2015, *Health informatics – Personal Health Device Communication – Part 10441: Device Specialization – Cardiovascular fitness and activity monitor*, (Revision of IEEE Std 11073-10441-2008).
<https://www.iso.org/standard/64868.html>
- [ISO/IEEE 11073-10442] ISO/IEEE 11073-10442:2015, *Health informatics – Personal health device communication – Part 10442: Device specialization – Strength fitness equipment*.
<http://standards.ieee.org/findstds/standard/11073-10442-2008.html>
- [ISO/IEEE 11073-10471] ISO/IEEE 11073-10471:2010, *Health informatics – Personal health device communication – Part 10471: Device specialization – Independent living activity hub*.
<https://www.iso.org/standard/54328.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
MDS	Medical Device System
NFC	Near Field Communication
PAN	Personal Area Network
PCT	Protocol Conformance Testing
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
TCRL	Test Case Reference List

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

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

CDG release	Transposed as	Version	Description	Designation
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 subgroups 2.2.1, 2.2.2, 2.2.3 and 2.2.4 (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: 20601 Optimized exchange protocol (OXF)
 - 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 (BLEDG)
 - Subgroup 2.1.8: NFC design guidelines (NDG)
- Group 2.2: 20601: Optimized exchange protocol (OXP)
 - **Subgroup 2.2.1: General (GEN)**
 - **Subgroup 2.2.2: PHD domain information model (DIM)**
 - **Subgroup 2.2.3: PHD service model (SER)**
 - **Subgroup 2.2.4: PHD communication model (COM)**

- Group 2.3: Devices class specializations (CLASS)
 - Subgroup 2.3.1: Weighing scales (WEG)
 - Subgroup 2.3.2: Glucose meter (GL)
 - Subgroup 2.3.3: Pulse oximeter (PO)
 - Subgroup 2.3.4: Blood pressure monitor (BPM)
 - Subgroup 2.3.5: Thermometer (TH)
 - Subgroup 2.3.6: Cardiovascular (CV)
 - Subgroup 2.3.7: Strength (ST)
 - Subgroup 2.3.8: Activity hub (HUB)
 - Subgroup 2.3.9: Adherence monitor (AM)
 - Subgroup 2.3.10: Insulin pump (IP)
 - 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)
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7 Electronic attachment

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

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

Annex A

Test purposes

(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 the 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 (DUT) within that scope of the test (specialization, transport used, etc.).
- **Other PICS:** This contains additional PICS items (apart from the PICS specified in the Applicability row) which are used within the test case implementation and can modify the final verdict. When this row is empty, it means that only the PICS specified in the Applicability row are used within the test case implementation.
- **Initial condition:** This indicates the state to which the DUT needs to be moved at the beginning of TC execution.

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

A.2 Subgroup 2.2.1: General (GEN)

There are no test cases defined in this subgroup.

A.3 Subgroup 2.2.2: PHD domain information model (DIM)

TP Id		TP/PLT/PHG/EXP/DIM/BV-000_A		
TP label		Episodic Scanner object not supported		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items			
Test purpose		Check that: Episodic Scanner object, declared by the vendor as “not supported”, is really not supported by the Personal Health Gateway (PHG) under test.		
Applicability		C_MAN_OXP_000 AND NOT(C_MAN_OXP_001)		
Other PICS		C_MAN_OXP_083, C_MAN_OXP_084, C_MAN_OXP_085		
Initial condition		The simulated Personal Health Device (PHD) and the PHG under test are in the unassociated state.		
Test procedure		1. The simulated PHD sends an Association Request to the PHG. 2. IF the PHG under test responds with an Association Response (rejected-*) or an Abort, THEN the PHG shall not move to the Operating state and the test procedure ends. 3. IF the PHG under test responds with an Association Response (accepted-unknown-config) THEN the simulated PHD sends a configuration event report with the config-report-id set to an extended Config-Id, including an episodic scanner object. a. IF the PHG under test responds with rors-cmip-confirmed-event-report (unsupported-config) or Release Request or Abort THEN: ❑ IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN the PHG shall not move to Operating state and the Test Procedure ends. ❑ IF C_MAN_OXP_085 THEN the PHG shall not move to Configuring/Sending GetMDS substate and the Test Procedure ends. b. IF the PHG under test responds with rors-cmip-confirmed-event-report (accepted-config) THEN: ❑ IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN the PHG moves to Operating state and PHG is forced to enable the scanner object. ❑ IF C_MAN_OXP_085 THEN: i. The PHG under test moves to Configuring/Sending GetMDS substate and issues roiv-cmip-command with handle set to 0 (request for MDS object) and attribute-id-list set to 0 to indicate all attributes. ii. The simulated 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 and the mds-time-mgr-set-time bit is not set. iii. Once in Operating state PHG is forced to enable the scanner object. 4. IF the PHG under test responds with an Association Response (accepted) THEN: a. IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN the PHG moves to Operating state, PHG is forced to enable the scanner object. b. IF C_MAN_OXP_085 THEN: ❑ The PHG under test moves to Configuring/Sending GetMDS substate and		

	issues roiv-cmip-command with handle set to 0 (request for MDS object) and attribute-id-list set to 0 to indicate all attributes. ☐ The simulated 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 and the mds-time-mgr-set-time bit is not set. ☐ Once in operating PHG is forced to enable the scanner object.
Pass/Fail criteria	• In step 2 or step 3.a, the PHG does not move to the operating or Configuring/Setting GetMDS state. • In step 3.b or step 4, the PHG does not send the Set action to enable the scanner object.
Notes	

TP Id	TP/PLT/PHG/EXP/DIM/BV-000_B		
TP label	Periodic Scanner object not supported		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]	
	Testable items		
Test purpose	Check that: Periodic Scanner object, declared by the vendor as “not supported”, is really not supported by the PHG under test.		
Applicability	C_MAN_OXP_000 AND NOT(C_MAN_OXP_006)		
Other PICS	C_MAN_OXP_083, C_MAN_OXP_084, C_MAN_OXP_085		
Initial condition	The simulated PHD and the PHG under test are in the Unassociated state.		
Test procedure	1. The simulated PHD sends an Association Request to the PHG. 2. IF the PHG under test responds with an Association Response (rejected-*) or an Abort, THEN the PHG shall not move to Operating state and the test procedure ends. 3. IF the PHG under test responds with an Association Response (accepted-unknown-config) THEN the simulated PHD sends a configuration event report with the config-report-id set to an extended Config-Id, including a periodic scanner object. a. IF the PHG under test responds with a rors-cmip-confirmed-event-report (unsupported-config) or a Release Request or an Abort THEN: ☐ IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN the PHG shall not move to Operating state and the Test Procedure ends. ☐ IF C_MAN_OXP_085 THEN the PHG shall not move to Configuring/Sending GetMDS substate and the Test Procedure ends. b. IF the PHG under test responds with a rors-cmip-confirmed-event-report (accepted-config) THEN: ☐ IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN the PHG moves to Operating state and PHG is forced to enable the scanner object. ☐ IF C_MAN_OXP_085 THEN: i. The PHG under test moves to Configuring/Sending GetMDS substate and issues roiv-cmip-command with handle set to 0 (request for MDS object) and attribute-id-list set to 0 to indicate all attributes. ii. The simulated 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 and the mds-time-mgr-set-time bit is not set. iii. Once in Operating state PHG is forced to enable the scanner object. 4. IF the PHG under test responds with an Association Response (accepted) THEN: a. IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN the PHG moves to Operating state, PHG is forced to enable the scanner object. b. IF C_MAN_OXP_085 THEN:		

	☐ The PHG under test moves to Configuring/Sending GetMDS substate and issues roiv-cmip-command with handle set to 0 (request for MDS object) and attribute-id-list set to 0 to indicate all attributes. ☐ The simulated 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 and the mds-time-mgr-set-time bit is not set. ☐ Once in Operating state PHG is forced to enable the scanner object.
Pass/Fail criteria	• In step 2 or step 3.a, the PHG does not move to the operating or Configuring/Setting GetMDS state • In step 3.b or step 4, the PHG does not send the Set action to enable the scanner object
Notes	

TP Id	TP/PLT/PHG/EXP/DIM/BV-000_C		
TP label	PM-Store object not supported		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]	
	Testable items		
Test purpose	Check that: PM-Store object, declared by the vendor as “not supported”, is really not supported by the PHG under test.		
Applicability	C_MAN_OXP_000 AND NOT(C_MAN_OXP_003)		
Other PICS	C_MAN_OXP_083, C_MAN_OXP_084, C_MAN_OXP_085		
Initial condition	The simulated PHD and the PHG under test are in the Unassociated state.		
Test procedure	1. The simulated PHD sends an Association Request to the PHG. 2. IF the PHG under test responds with an Association Response (rejected-*) or an Abort, THEN the PHG shall not move to Operating state and the test procedure ends. 3. IF the PHG under test responds with an Association Response (accepted-unknown-config) THEN the simulated PHD sends a configuration event report with the config-report-id set to an extended Config-Id, including a PM-Store object. a. IF the PHG under test responds with a rors-cmip-confirmed-event-report (unsupported-config) or a Release Request or an Abort THEN: ☐ IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN the PHG shall not move to Operating state and the Test Procedure ends. ☐ IF C_MAN_OXP_085 THEN the PHG shall not move to Configuring/Sending GetMDS substate and the Test Procedure ends. b. IF the PHG under test responds with a rors-cmip-confirmed-event-report (accepted-config) THEN: ☐ IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN the PHG moves to Operating state and PHG is forced to enable the scanner object. ☐ IF C_MAN_OXP_085 THEN: i. The PHG under test moves to Configuring/Sending GetMDS substate and issues roiv-cmip-command with handle set to 0 (request for MDS object) and attribute-id-list set to 0 to indicate all attributes. ii. The simulated 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 and the mds-time-mgr-set-time bit is not set. iii. Once in Operating state PHG is forced to trigger (Trig-Segment-Data-Xfer) the PM-Store. 4. IF the PHG under test responds with an Association Response (accepted) THEN: a. IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN the PHG moves to Operating state, PHG is forced to trigger (Trig-Segment-Data-Xfer) the PM-Store.		

	b. IF C_MAN_OXP_085 THEN: ☐ The PHG under test moves to Configuring/Sending GetMDS substate and issues roiv-cmip-command with handle set to 0 (request for MDS object) and attribute-id-list set to 0 to indicate all attributes. ☐ The simulated 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 and the mds-time-mgr-set-time bit is not set. ☐ Once in Operating state PHG is forced to trigger (Trig-Segment-Data-Xfer) the PM-Store.
Pass/Fail criteria	• In step 2 or step 3.a, the PHG does not move to the operating or Configuring/Sending GetMDS state • In step 3.b or step 4, the PHG does not send the Trig-Segment-Data-Xfer action • Once in the Operating state, the PHG does send actions for the PM-Store (Get-Segment-Info, Clear-Segment or GET for PM-Store object)
Notes	

TP Id		TP/PLT/PHG/OXP/DIM/BV-001		
TP label		PHG configuring a real-time clock		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	MDSMethod 3;M	AbsTime 6; C	AbsTime 18; M
	Spec	[b-ITU-T H.810 (2015)]		
	Testable items	Communication 14;M		
Test purpose		Check that: The PHG when invoking the Set-Time method shall do so using a roiv-cmip-confirmed-action request. [AND] If the PHD has the mds-time-mgr-set-time bit set, the PHG shall invoke the Set-Time action command to set the absolute time on the PHD [AND] The Set-Time shall be sent within a TO_{config} time period after receiving the attribute from an MDS Get message		
Applicability		C_MAN_OXP_000		
Other PICS		C_MAN_OXP_083, C_MAN_OXP_084, C_MAN_OXP_085		
Initial condition		The simulated PHD and the PHG under test are in the Unassociated state. The PHD has the MDSTimeInfo attribute with the mds-time-mgr-set-time and mds-time-capab-set-clock bits set.		
Test procedure		1. The simulated PHD sends an Association Request to the PHG under test. 2. IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN: a. IF the PHG under test sends a GET request while it is in the Configuring state, within TO_{config} seconds the PHG shall set the time of the simulated PHD, ELSE wait until the Operating state is reached. b. If the PHG under test did not send a GET request, then force the PHG under test to request MDS attributes. c. The simulated PHD sends a rors-cmip-get with MDS attributes (with the mds-time-mgr-set-time bit set). 3. IF C_MAN_OXP_085 THEN: a. PHG under test sends a GET request while it is in Configuring/Sending GetMDS substate.		

	b. The simulated PHD sends rors-cmip-get with MDS attributes (with the mds-time-mgr-set-time bit set). 4. After receiving MDS attributes within TO_{config} seconds, the PHG under test shall set the time of the simulated PHD: a. Data APDU ☐ Type = Remote Operation Invoke Confirmed Action ☐ Handle = 0 (MDS object) ☐ Action = 0x0C 0x17 (MDC_ACT_SET_TIME) ☐ SetTimeInvoke = SEQUENCE: ▪ date-time.length = 8 bytes ▪ date-time.value = <Record for comparison> ▪ Accuracy = 0
Pass/Fail criteria	• The format of the received message must be the one specified • Verify that the time is set to the time of the PHG under test • Verify that Set-Time is sent within the TO_{config} time period after receiving the rors-cmip-get with MDS attributes, in the Configuring state (step 2a or 3b) or the Operating state (step 2c)
Notes	

TP Id		TP/PLT/PHG/EXP/DIM/BV-001_A		
TP label		PHG configuring a Base-Offset-Time clock		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	MDSMethod 5;M	AbsTime 18; M	
Test purpose		Check that: The PHG when invoking the Set-Base-Offset-Time method shall do so using a roiv-cmip-confirmed-action request. [AND] The Set-Base-Offset-Time shall be sent within a TO_{config} time period after receiving the attribute from an MDS Get message		
Applicability		C_MAN_OXP_000 AND (C_MAN_OXP_029 OR C_MAN_OXP_030)		
Other PICS		C_MAN_OXP_083, C_MAN_OXP_084, C_MAN_OXP_085		
Initial condition		The simulated PHD and the PHG under test are in the Unassociated state. The PHD has the MDSTimeInfo attribute with the mds-time-capab-set-clock(1), mds-time-capab-bo-time(7) and mds-time-mgr-set-time(11) bits set.		
Test procedure		1. The simulated PHD sends an Association Request to the PHG under test. 2. IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN: a. If the PHG under test sends a GET request while it is in the Configuring state, within TO_{config} seconds the PHG shall set the time of the simulated PHD, ELSE wait until the Operating state is reached. b. If the PHG under test did not send a GET request, then force the PHG under test to request MDS attributes. c. The simulated PHD sends a rors-cmip-get with MDS attributes (the bits mds-time-capab-bo-time(7) and mds-time-mgr-set-time(11) are set). 3. IF C_MAN_OXP_085 THEN: a. PHG under test sends a GET request while it is in Configuring/Sending GetMDS substate. b. The simulated PHD sends rors-cmip-get with MDS attributes (the bits mds-time-capab-bo-time(7) and mds-time-mgr-set-time(11) are set).		

	4. After receiving MDS attributes within TOconfig seconds, the PHG under test shall set the time of the simulated PHD: a. Data APDU ☐ Type = Remote Operation Invoke Confirmed Action ☐ Handle = 0 (MDS object) ☐ Action = 0x0C 0x1D (MDC_ACT_SET_BO_TIME) ☐ SetBOTimeInvoke = SEQUENCE: ▪ date-time.length = 8 bytes ▪ date-time.value = <Record for comparison>
Pass/Fail criteria	• The format of the received message must be the one specified • Verify that the time is set to the time of the PHG under test • Verify that a Set-Base-Offset-Time is sent within the TOconfig time period after receiving the rors-cmip-get with MDS attributes, in the Configuring state (step 2a or 3b) or the Operating state (step 4)
Notes	

TP Id		TP/PLT/PHG/EXP/DIM/BV-002		
TP label		MDS services. PHG requesting MDS object attributes		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	MDSService 3;O	MDSService 5; R	ConfEventRep 5; O
Test purpose		Check that: The PHG may request the MDS object attributes of the PHD in which case the PHG shall send the "Remote Operation Invoke Get" command (see roiv-cmip-get in B.10.2) with the reserved handle value of 0 [AND] Due to the nature of the attributes reported in the MDS Object, the PHG should send the Get MDS Object request right after sending the Association Response.[AND] Even if PHG knows the PHD's device configuration, the PHG may ask to enter the Configuring state in order to check attributes from the MDS object before deciding to accept the association.		
Applicability		C_MAN_OXP_000		
Other PICS		C_MAN_OXP_083, C_MAN_OXP_084, C_MAN_OXP_085		
Initial condition		The simulated PHD and the PHG under test are in the Unassociated state.		
Test procedure		1. The simulated PHD sends an Association Request to the PHG under test with an extended dev-config-id previously unknown to the PHG. 2. The PHG under test sends an AARE with an "accepted-unknown-config". 3. Check that the PHG under test has sent the GET request while it is in the Configuring state. 4. The simulated PHD sends a configuration event report . 5. The PHG responds to the configuration event report. 6. IF C_MAN_OXP_083 OR C_MAN_OXP_084 THEN the PHG under test reaches the Operating state. 7. IF C_MAN_OXP_085 THEN: a. PHG under test sends a GET request while it is in Configuring/Sending GetMDS substate. b. The simulated PHD sends rors-cmip-get with MDS attributes (the bits mds-time-capab-bo-time(7) are mds-time-mgr-set-time(11) are set). 8. If the PHG under test did not automatically send a GET request for the MDS object or		

	if it has not sent the GET request while in the Configuring state, force the PHG under test to send a GET to the MDS. 9. Whether the above Get request was sent via automatic behavior or was forced, the received message from the PHD shall be: a. APDU Type ☐ field-length = 2 bytes ☐ field-value = 0xE7 0x00 (PrstAdu) b. invoke-id ☐ field-type = InvokeIDType ☐ field-length = 2 bytes ☐ field-value= <Not relevant for this Test> c. CHOICE ☐ field-value = 0x01 0x03 (Remote Operation Invoke Get) d. obj-handle ☐ field-type = HANDLE ☐ field-length = 2 bytes ☐ field-value = 0 e. attribute-id-list ☐ count = 0x00 0x00 ☐ length = 0x00 0x00
Pass/Fail criteria	• The format of the received message shall be the one specified • It is recommended that the GET MDS is received while PHG under test is in the Configuring state. NOTE: If the GET request for the MDS object is received from the PHG under test while in the Configuring state, it is checked in accordance step 9 above.
Notes	

TP Id		TP/PLT/PHG/EXP/DIM/BV-004_A		
TP label		PM-Store object methods. Clear-Segments method 1 (all-segment).		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	PM-StoreMeth 9; O	PM-StoreMeth 18; O	PM-StoreMeth 24; C
Test purpose		Check that: Support for the Clear-Segments method is optional. [AND] If a PHG invokes the Clear-Segments method, it shall use operation type roiv-cmip-confirmed-action. If a PHG invokes the Clear-Segments method, it shall use the Action-type MDC_ACT_SEG_CLR If a PHG invokes the Clear-Segments method, it shall use the action-info-args SegmSelection structure (all-segments) [AND] The PHG shall support at least the all segments choice in the SegmSelection action-info-args of the Clear-Segments method		
Applicability		C_MAN_OXP_000 AND C_MAN_OXP_003 AND (C_MAN_OXP_040 OR C_MAN_OXP_041 OR C_MAN_OXP_042)		
Other PICS				
Initial condition		The simulated PHD and the PHG under test are in the Operating state. The simulated PHD		

	has at least one segment with data stored and PMStoreCapab bits 4 and 10 set.
Test procedure	IF a UI feature exists such that the PHG can clear the segments: - Make the PHG under test perform a Clear Segment with parameter all-segments. IF the PHG under test can clear the segments automatically after a transfer, then perform the action to clear the segments. Either way: - The simulated PHD receives the message: - APDU Type - field-length = 2 bytes - field-value = 0xE7 0x00 (PrstApdu) - invoke-id - field-type = InvokeIDType - field-length = 2 bytes - field-value= This value identifies the message; the confirmed response that will be sent by the simulated PHD shall have the same invoke-id. - CHOICE - value = 0x01 0x07 (roiv-cmip-confirmed-action) - obj-handle - field-type = HANDLE - field-length = 2 bytes - field-value = <Handle of an existing PM-Store> - action-type - field-type = OID-Type - field-length = 2 bytes - field-value = 0x0C 0x0C (MDC_ACT_SEG_CLR) - action-info-args - SegmSelection = - all-segments (0)
Pass/Fail criteria	The format of the received message must be the one specified above.
Notes	

TP Id	TP/PLT/PHG/OSP/DIM/BV-004_B		
TP label	PM-Store Class methods. Clear-Segments method 2 (Time Range).		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]	
	Testable items	PM-StoreMeth 9; O	PM-StoreMeth 18; O
Test purpose	Check that: Support for the Clear-Segments method is optional. [AND] If a PHG invokes the Clear-Segments method, it shall use operation type roiv-cmip-confirmed-action. If a PHG invokes the Clear-Segments method, it shall use the Action-type MDC_ACT_SEG_CLR If a PHG invokes the Clear-Segments method, it shall use the action-info-args SegmSelection structure (AbsTimeRange)		
Applicability	C_MAN_OXP_000 AND C_MAN_OXP_003 AND C_MAN_OXP_041		

Other PICS		
Initial condition		The simulated PHD and the PHG under test are in the Operating state. The simulated PHD has at least one segment with data stored and PMStoreCapab bits 4, 8 and 10 set.
Test procedure		IF a UI feature exists such that the PHG can clear the segments: 1. Make the PHG under test perform a Segment Clear with parameter SegmSelection = AbsTimeRange IF the PHG under test can clear the segments automatically after a transfer, perform the action. Either way: 2. Make the PHG under test perform a Segment Clear by time range. 3. The simulated PHD receives the message: a. APDU Type ☐ field-length = 2 bytes ☐ field-value = 0xE7 0x00 (PrstApdu) b. invoke-id ☐ field-type = InvokeIDType ☐ field-length = 2 bytes ☐ field-value= This value identifies the message; the confirmed response that will be sent by the simulated PHD shall have the same invoke-id. c. CHOICE ☐ value = 0x01 0x07 (roiv-cmip-confirmed-action) d. obj-handle ☐ field-type = HANDLE ☐ field-length = 2 bytes ☐ field-value = <Handle of an existing PM-Store> e. action-type ☐ field-type = OID-Type ☐ field-length =2 bytes ☐ field-value = 0x0C 0x0C (MDC_ACT_SEG_CLR) f. action-info-args ☐ SegmSelection = AbsTimeRange ▪ from-time = AbsTime ▪ to-time = AbsTime
Pass/Fail criteria		The format of the received message must be the one specified above.
Notes		

TP Id		TP/PLT/PHG/OSP/DIM/BV-004_C		
TP label		PM-Store Class methods. Clear-Segments method 3 (segm-id-list)		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	PM-StoreMeth 9; O	PM-StoreMeth 18; O	
Test purpose		Check that: Support for the Clear-Segments method is optional. [AND] If a PHG invokes the Clear-Segments method, it shall use operation type roiv-cmip-confirmed-action.		

	If a PHG invokes the Clear-Segments method, it shall use the Action-type MDC_ACT_SEG_CLR If a PHG invokes the Clear-Segments method, it shall use the action-info-args SegmSelection structure (segm-id-list)		
Applicability	C_MAN_OXP_000 AND C_MAN_OXP_003 AND C_MAN_OXP_042		
Other PICS			
Initial condition	The simulated PHD and the PHG under test are in the Operating state. The simulated PHD has at least one segment with data stored and PMStoreCapab bits 4, 7 and 10 set.		
Test procedure	IF a UI feature exists such that the PHG can clear the segments: - Make the PHG under test perform a Segment Clear with parameter SegmSelection = segm-id-list. IF the PHG under test can clear the segments automatically after a transfer, perform the action. Either way: - Make the PHG under test perform a Segment Clear of a specific Segment. - The simulated PHD receives the message: - APDU Type - field-length = 2 bytes - field-value = 0xE7 0x00 (PrstApdu) - invoke-id - field-type = InvokeIDType - field-length = 2 bytes - field-value= This value identifies the message; the confirmed response that will be sent by the simulated PHD shall have the same invoke-id. - CHOICE - value = 0x01 0x07 (roiv-cmip-confirmed-action) - obj-handle - field-type = HANDLE - field-length = 2 bytes - field-value = <Handle of an existing PM-Store> - action-type - field-type = OID-Type - field-length = 2 bytes - field-value = 0x0C 0x0C (MDC_ACT_SEG_CLR) - action-info-args - SegmSelection = segm-id-list (must contain the instance number of the selected Segment)		
Pass/Fail criteria	The format of the received message must be the one specified above.		
Notes			

TP Id	TP/PLT/PHG/EXP/DIM/BV-004_D		
TP label	PM-Store Class methods. Clear-Segments method 4 (Base-Offset-Time Range)		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]	
	Testable items	PM-StoreMeth 9; O	PM-StoreMeth 18; O
Test purpose	Check that: Support for the Clear-Segments method is optional.		

	[AND] If a PHG invokes the Clear-Segments method, it shall use operation type roiv-cmip-confirmed-action. If a PHG invokes the Clear-Segments method, it shall use the Action-type MDC_ACT_SEG_CLR If a PHG invokes the Clear-Segments method, it shall use the action-info-args SegmSelection structure (BOTimeRange)
Applicability	C_MAN_OXP_000 AND C_MAN_OXP_003 AND C_MAN_OXP_080 AND (C_MAN_OXP_029 OR C_MAN_OXP_030)
Other PICS	
Initial condition	The simulated PHD and the PHG under test are in the Operating state. The simulated PHD has at least one segment with data stored and PMStoreCapab bits 4, 8 and 10 set.
Test procedure	IF a UI feature exists such that the PHG can clear the segments: - Make the PHG under test perform a Segment Clear with parameter SegmSelection = BOTimeRange. IF the PHG under test can clear the segments automatically after a transfer, perform the action. Either way: - Make the PHG under test perform a Segment Clear by time range. - The simulated PHD receives the message: - APDU Type - field-length = 2 bytes - field-value = 0xE7 0x00 (PrstApu) - invoke-id - field-type = InvokeIDType - field-length = 2 bytes - field-value= This value identifies the message; the confirmed response that will be sent by the simulated PHD shall have the same invoke-id. - CHOICE - value = 0x01 0x07 (roiv-cmip-confirmed-action) - obj-handle - field-type = HANDLE - field-length = 2 bytes - field-value = <Handle of an existing PM-Store> - action-type - field-type = OID-Type - field-length =2 bytes - field-value = 0x0C 0x0C (MDC_ACT_SEG_CLR) - action-info-args - SegmSelection = BOTimeRange - from-time = BaseOffsetTime - to-time = BaseOffsetTime
Pass/Fail criteria	The format of the received message must be the one specified above.
Notes	

TP Id	TP/PLT/PHG/XP/DIM/BV-005 A
TP label	PM-Store Class methods. Get-Segment-info method (all-Segments)

Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	PM-StoreMeth 12; O	PM-StoreMeth 17; M	PM-StoreMeth 28; M
		PersStoreMtrDatTransf 26; O		
Test purpose	Check that: If a PHG invokes the Get-Segment-Info method, it shall use operation type roiv-cmip-confirmed-action. If a PHG invokes the Get-Segment-Info method, it shall use the Action-type MDC_ACT_SEG_GET_INFO If a PHG invokes the Get-Segment-Info method, it shall use the action-info-args SegmSelection (all-segments) [AND] If a PHG supports the PM-store class, the support of the Get-Segment-Info and Trig-Segment-Data-Xfer methods is mandatory [AND] If the PHG supports sending the Get-Segment-Info method, the PHG shall support at least the choice all-segments in the SegmSelection action-info-args of the Get-Segment-Info method. The PHG may support additional choices.			
Applicability	C_MAN_OXP_000 AND C_MAN_OXP_003			
Other PICS				
Initial condition	The simulated PHD and the PHG under test are in the Operating state. The simulated PHD has at least one segment with data stored and PMStoreCapab indicates that it supports all the possible actions.			
Test procedure	1. Make the PHG under test perform a GetSegmentInfo action to recover the information of all the segments. 2. The simulated PHD receives the message: a. APDU Type ☐ field-length = 2 bytes ☐ field-value = 0xE7 0x00 (PrstApdu) b. invoke-id ☐ field-type = InvokeIDType ☐ field-length = 2 bytes ☐ field-value= This value identifies the message; the confirmed response that will be sent by the simulated PHD shall have the same invoke-id. c. obj-handle ☐ field-type = HANDLE ☐ field-length = 2 bytes ☐ field-value = <Handle of an existing PM-Store> d. action-type (roiv-cmip-confirmed-action) ☐ field-type = OID-Type ☐ field-length =2 bytes ☐ field-value = 0x0C 0x0D (MDC_ACT_SEG_GET_INFO) e. action-info-args ☐ SegmSelection = all-segments (0)			
Pass/Fail criteria	The PHG shall perform a Get Segment Action (all-segments) and the format of the received message must be the one specified.			
Notes				

TP Id		TP/PLT/PHG/EXP/DIM/BV-005_B		
TP label		PM-Store Class methods. Get-Segment-info method (segment-id-list)		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	PM-StoreMeth 12; O		
Test purpose		Check that: A PHG may invoke the Get-Segment-Info method If a PHG invokes the Get-Segment-Info method, it shall use operation type roiv-cmip-confirmed-action. If a PHG invokes the Get-Segment-Info method, it shall use the Action-type MDC_ACT_SEG_GET_INFO If a PHG invokes the Get-Segment-Info method, it shall use the action-info-args SegmSelection (segm-id-list)		
Applicability		C_MAN_EXP_000 AND C_MAN_EXP_003 AND C_MAN_EXP_045		
Other PICS				
Initial condition		The simulated PHD and the PHG under test are in the Operating state. The simulated PHD has at least one segment with data stored and PMStoreCapab indicates that it supports all the possible actions.		
Test procedure		1. Make the PHG under test perform a GetSegmentinfo action to recover only the information of one segment: 2. The simulated PHD receives the message: a. APDU Type ☐ field-length = 2 bytes ☐ field-value = 0xE7 0x00 (PrstApdu) b. invoke-id ☐ field-type = InvokeIDType ☐ field-length = 2 bytes ☐ field-value= This value identifies the message; the confirmed response that will be sent by the simulated PHD shall have the same invoke-id. c. obj-handle ☐ field-type = HANDLE ☐ field-length = 2 bytes ☐ field-value = <Handle of an existing PM-Store> d. action-type (roiv-cmip-confirmed-action) ☐ field-type = OID-Type ☐ field-length =2 bytes ☐ field-value = 0x0C 0x0D (MDC_ACT_SEG_GET_INFO) e. action-info-args ☐ SegmSelection = segm-id-list ▪ SegmIdList = <List of the selected segments' instance numbers>		
Pass/Fail criteria		The format of the received message must be the one specified.		
Notes				

TP Id		TP/PLT/PHG/EXP/DIM/BV-005_C		
TP label		PM-Store Class methods. Get-Segment-info method (time range)		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable	PM-StoreMeth 12; O		

	items			
Test purpose	Check that: A PHG may invoke the Get-Segment-Info method If a PHG invokes the Get-Segment-Info method, it shall use operation type roiv-cmip-confirmed-action. If a PHG invokes the Get-Segment-Info method, it shall use the Action-type MDC_ACT_SEG_GET_INFO If a PHG invokes the Get-Segment-Info method, it shall use the action-info-args SegmSelection (abs-time-range)			
Applicability	C_MAN_OXP_000 AND C_MAN_OXP_003 AND C_MAN_AG_OXP_044			
Other PICS				
Initial condition	The simulated PHD and the PHG under test are in the Operating state. The simulated PHD has at least one segment with data stored and PMStoreCapab indicates that it supports all the possible actions.			
Test procedure	- Make the PHG under test perform a GetSegmentinfo action to recover the information of a time range. - The simulated PHD receives the message: - APDU Type - field-length = 2 bytes - field-value = 0xE7 0x00 (PrstApdu) - invoke-id - field-type = InvokeIDType - field-length = 2 bytes - field-value= This value identifies the message; the confirmed response that will be sent by the simulated PHD shall have the same invoke-id. - obj-handle - field-type = HANDLE - field-length = 2 bytes - field-value = <Handle of an existing PM-Store> - action-type (roiv-cmip-confirmed-action) - field-type = OID-Type - field-length =2 bytes - field-value = 0x0C 0x0D (MDC_ACT_SEG_GET_INFO) - action-info-args - SegmentSelectiont = abs-time-range - AbsTimeRange.from-time = <Selected date of beginning> - AbsTimeRange.to-time = <Selected date of ending>			
Pass/Fail criteria	The format of the received message must be the one specified.			
Notes				

TP Id	TP/PLT/PHG/EXP/DIM/BV-005_D			
TP label	PM-Store Class methods. Get-Segment-info method 4 (Base-Offset-Time range)			
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	PM-StoreMeth 12; O		
Test purpose	Check that: A PHG may invoke the Get-Segment-Info method			

	If a PHG invokes the Get-Segment-Info method, it shall use operation type roiv-cmip-confirmed-action. If a PHG invokes the Get-Segment-Info method, it shall use the Action-type MDC_ACT_SEG_GET_INFO If a PHG invokes the Get-Segment-Info method, it shall use the action-info-args SegmSelection (bo-time-range)
Applicability	C_MAN_OXP_000 AND C_MAN_OXP_003 AND C_MAN_OXP_081 AND (C_MAN_OXP_029 OR C_MAN_OXP_030)
Other PICS	
Initial condition	The simulated PHD and the PHG under test are in the Operating state. The simulated PHD has at least one segment with data stored and PMStoreCapab indicates that it supports all the possible actions.
Test procedure	- Make the PHG under test perform a GetSegmentinfo action to recover the information of a time range. - The simulated PHD receives the message: - APDU Type ☐ field-length = 2 bytes ☐ field-value = 0xE7 0x00 (PrstApu) - invoke-id ☐ field-type = InvokeIDType ☐ field-length = 2 bytes ☐ field-value= This value identifies the message; the confirmed response that will be sent by the simulated PHD shall have the same invoke-id. - obj-handle ☐ field-type = HANDLE ☐ field-length = 2 bytes ☐ field-value = <Handle of an existing PM-Store> - action-type (roiv-cmip-confirmed-action) ☐ field-type = OID-Type ☐ field-length = 2 bytes ☐ field-value = 0x0C 0x0D (MDC_ACT_SEG_GET_INFO) - action-info-args ☐ SegmentSelection = bo-time-range ▪ BOTimeRange.from-time = <Selected date of beginning> ▪ BOTimeRange.to-time = <Selected date of ending>
Pass/Fail criteria	The format of the received message must be the one specified.
Notes	

TP Id	TP/PLT/PHG/EXP/DIM/BV-006		
TP label	PM-Store Class methods. Trig-Segment-Data-Xfer method		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]	
	Testable items	PM-StoreMeth 15; O	PM-StoreMeth 17; M
			PersStoreMtrDatTransf 5; M
Test purpose	Check that: If a PHG invokes the Trig-Segment-Data-Xfer method, it shall use operation type roiv-cmip-confirmed-action. If a PHG invokes the Trig-Segment-Data-Xfer method, it shall use the Action-type MDC_ACT_SEG_TRIG_XFER		

	If a PHG invokes the Trig-Segment-Data-Xfer method, it shall use the action-info-args TrigSegmDataXferReq [AND] If a PHG supports the PM-store class, the support of the Get-Segment-Info and Trig-Segment-Data-Xfer methods is mandatory. [AND] The PHG sends the ACTION method to the PHD with the handle of the PM-store object to access. The argument to this ACTION method is the instance number of the segment to transfer [AND] If Protocol Version 3, the PHG must send Get-Segment-Info or Get-Segment-Id-List at the beginning of accessing any PM-Store object
Applicability	C_MAN_OXP_000 AND C_MAN_OXP_003
Other PICS	
Initial condition	The simulated PHD and the PHG under test are in the Operating state. The simulated PHD has at least one segment with data stored and PMStoreCapab indicates that it supports all the possible actions.
Test procedure	1. Make the PHG under test perform a Trig-Segment-Data-Xfer. 2. The simulated PHD receives the message: a. APDU Type ☐ field-length = 2 bytes ☐ field-value = 0xE7 0x00 (PrstApu) b. invoke-id ☐ field-type = InvokeIDType ☐ field-length = 2 bytes ☐ field-value= This value identifies the message; the confirmed response that will be sent by the simulated PHD shall have the same invoke-id. c. obj-handle ☐ field-type = HANDLE ☐ field-length = 2 bytes ☐ field-value = <Handle of an existing PM-Store> d. action-type (roiv-cmip-confirmed-action) ☐ field-type = OID-Type ☐ field-length =2 bytes ☐ field-value = 0x0C 0x1C (MDC_ACT_SEG_TRIG_XFER) e. action-info-args ☐ TrigSegmDataXferReq.seg-inst-no = <One of the existing PM-Segments' instance number>
Pass/Fail criteria	The PHG shall perform a Trig-Segment-Data-Xfer Action and the format of the received message must be the one specified.
Notes	

TP Id	TP/PLT/PHG/OXP/DIM/BV-007_A		
TP label	PM-Store Class methods. Segment-Data-Event 1		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]	
	Testable items	PM-StoreEvent 3; M	
Test purpose	Check that:		

	PHGs must respond to Segment-Data-Event events when received When responding to a Segment-Data-Event event the event-reply-info parameter shall be SegmentDataResult.		
Applicability	C_MAN_OXP_000 AND C_MAN_OXP_003		
Other PICS			
Initial condition	The simulated PHD and the PHG under test are in the Operating state. The simulated PHD has at least one segment with data stored and PMStoreCapab indicates that it supports all the possible actions.		
Test procedure	- Make the PHG under test perform a Trig-Segment-Data-Xfer. - The simulated PHD responds to the message with a "TrigSegmDataXferRsp". - The simulated PHD sends a Confirmed event report: - Data APDU - Type = Remote Operation Invoke Confirmed Event ReportAction - HANDLE = PM-Store obj-handle - Action = 0x0D 0x21 (MDC_NOTI_SEGMENT_DATA) - SegmentDataEvent.SegmDataEventDescr = SEQUENCE: - segm-instance - segmt-evt-entry-index - segmt-evt-entry-count - segmt-evt-status = Bit 0 must be set - The PHG under test sends a response to the previous message: - Data APDU - Type = Remote Operation Invoke Confirmed ActionEvent Report - HANDLE = obj-handle - Action = 0x0D 0x21 (MDC_NOTI_SEGMENT_DATA) - SegmentDataResult = SEQUENCE: - segm-instance = <The one previously sent by the simulated PHD> - segmt-evt-entry-index = <The one previously sent by the simulated PHD> - segmt-evt-entry-count = <The one previously sent by the simulated PHD> - segmt-evt-status = Bits 0, 1 must be the same as those previously recorded. Bit 4 must NOT be set. One of bits 8 or 12 must be set.		
Pass/Fail criteria	The format of the received message must be the one specified.		
Notes			

TP Id		TP/PLT/PHG/OXP/DIM/BV-007_B		
TP label		PM-Store Class methods. Segment-Data-Event 2		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	PM-StoreEvent 3; M		
Test purpose		Check that: PHGs must respond to Segment-Data-Event events when received When responding to a Segment-Data-Event event the event-reply-info parameter shall be SegmentDataResult.		
Applicability		C_MAN_OXP_000 AND C_MAN_OXP_003		
Other PICS				

Initial condition	The simulated PHD and the PHG under test are in the Operating state. The simulated PHD has at least one segment with data stored and PMStoreCapab indicates that it supports all the possible actions.
Test procedure	1. Make the PHG under test perform a Trig-Segment-Data-Xfer. 2. The simulated PHD responds to the message with a "TrigSegmDataXferRsp". 3. The simulated PHD sends a Confirmed event report: a. Data APDU ☐ Type = Invoke Confirmed Event Report ☐ HANDLE = PM-Store obj-handle ☐ Action = 0x0D 0x21 (MDC_NOTI_SEGMENT_DATA) ☐ SegmentDataEvent.SegmDataEventDescr = SEQUENCE: ▪ segm-instance ▪ segm-evt-entry-index ▪ segm-evt-entry-count ▪ segm-evt-status = Bit 4 (sevtsta-agent-abort) must be set 4. The PHG under test sends a response to the previous message: a. Data APDU ☐ Type = Invoke Confirmed Event Report ☐ HANDLE = PM-Store obj-handle ☐ Action = 0x0D 0x21 (MDC_NOTI_SEGMENT_DATA) ☐ SegmentDataResult = SEQUENCE: ▪ segm-instance = <The one previously sent by the simulated PHD> ▪ segm-evt-entry-index = <The one previously sent by the simulated PHD> ▪ segm-evt-entry-count = <The one previously sent by the simulated PHD> ▪ segm-evt-status = Bits 4 and 8 must be set
Pass/Fail criteria	The format of the received message must be the one specified.
Notes	

TP Id	TP/PLT/PHG/OSP/DIM/BV-013		
TP label	EpiCfgScanner Class events. Unbuf-Scan-Report-Grouped		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]	
	Testable items	EpiCfgScanEvent 12;C ScanClassAttr 3; M	ObjAccessServ 2;M EpiCfgScanEvent 34; C
Test purpose	Check that: If an Episodic Scanner uses Unbuf-Scan-Report-Grouped Events to report updated data; and it reports data in confirmed mode, a PHG shall use a rors-cmip-confirmed-event-report operation to acknowledge the operation. [AND] The PHG shall use the SET action to request a change in the value of this attribute (Operational State) [AND] If a PHG supports episodic scanners, it shall support all the events identified in Table 16 (Episodic configurable scanner object events).		
Applicability	C_MAN_OXP_000 AND C_MAN_OXP_001		
Other PICS			
Initial condition	The simulated PHD and the PHG under test are in the Operating state.		

Test procedure	1. Make the PHG under test set the OperationalState attribute of an episodic scanner of the simulated PHD to 1: a. APDU Type ☐ field-length = 2 bytes ☐ field-value = 0xE7 0x00 (PrstApu) b. invoke-id ☐ field-type = InvokeIDType ☐ field-length = 2 bytes ☐ field-value= It is not relevant c. CHOICE ☐ value = 0x01 0x05 (roiv-cmip-confirmed-set) d. obj-handle ☐ field-type = Scanner HANDLE ☐ field-length = 2 bytes ☐ field-value = 21 <Handle of the Episodic scanner> e. Modification-list ☐ modify-operator.count = 1 ☐ modify-operator.length = 2 bytes ☐ modify-operator.value = 0 (replace) ☐ attribute.type = 0x09 0x53 (MDC_ATTR_OP_STAT) ☐ attribute.value = 1 2. The simulated PHD responds to the message with a "rors-cmip-confirmed-set". 3. The simulated PHD sends a confirmed event report of the episodic scanner (MDC_NOTI_UNBUF_SCAN_REPORT_GROUPED) to the PHG under test: 4. The PHG under test responds with a "rors-confirmed-event-report": a. APDU Type ☐ field-length = 2 bytes ☐ field-value = 0xE7 0x00 (PrstApu) b. invoke-id ☐ field-type = InvokeIDType ☐ field-length = 2 bytes ☐ field-value= The same as the one sent by the simulated PHD. c. obj-handle ☐ field-type = HANDLE ☐ field-length = 2 bytes ☐ field-value = 21 <Handle of the Episodic scanner> d. event-type (rors-confirmed-event-report) ☐ field-type = OID-Type ☐ field-length =2 bytes ☐ field-value = 0x0D 0x24 (MDC_NOTI_UNBUF_SCAN_REPORT_GROUPED)
Pass/Fail criteria	The format of the received messages in steps 1 and 4 must be the one specified.
Notes	

TP Id		TP/PLT/PHG/EXP/DIM/BV-016		
TP label		EpiCfgScanner Class events. Unbuf-Scan-Report-MP-Grouped		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	EpiCfgScanEvent 24;C	ObjAccessServ 2;M	EpiCfgScanEvent 34; C
Test purpose		Check that: If an Episodic Scanner uses Unbuf-Scan-Report-MP-Grouped Events to report updated data; and it reports data in confirmed mode, a PHG shall use a rors-cmip-confirmed-event-report operation to acknowledge the operation. [AND] If a PHG supports episodic scanners, it shall support all the events identified in Table 16 (Episodic configurable scanner object events).		
Applicability		C_MAN_OXP_000 AND C_MAN_OXP_001 AND C_MAN_OXP_037		
Other PICS				
Initial condition		The simulated PHD and the PHG under test are in the Operating state.		
Test procedure		1. Make the PHG under test set the OperationalState attribute of an episodic scanner of the simulated PHD to 1. 2. The simulated PHD responds to the message with a "rors-cmip-confirmed-set". 3. The simulated PHD sends a confirmed event report of the episodic scanner (MDC_NOTI_UNBUF_SCAN_REPORT_MP_GROUPED) to the PHG under test: 4. The PHG under test responds with a "rors-confirmed-event-report": a. APDU Type ❑ field-length = 2 bytes ❑ field-value = 0xE7 0x00 (PrstApdu) b. invoke-id ❑ field-type = InvokeIDType ❑ field-length = 2 bytes ❑ field-value= The same as the one sent by the simulated PHD. c. obj-handle ❑ field-type = HANDLE ❑ field-length = 2 bytes ❑ field-value = 21 <Handle of the Episodic scanner> d. event-type (rors-confirmed-event-report) ❑ field-type = OID-Type ❑ field-length = 2 bytes ❑ field-value = 0x0D 0x27 (MDC_NOTI_UNBUF_SCAN_REPORT_MP_GROUPED)		
Pass/Fail criteria		The format of the received message must be the one specified.		
Notes				

TP Id		TP/PLT/PHG/EXP/DIM/BV-019		
TP label		PeriCfgScanner Class events. Buf-Scan-Report-Grouped		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	PeriCfgScanEvent 12;C	ObjAccessServ 2;M	PeriCfgScanEvent 27; C
Test purpose		Check that:		

	If a Periodic Configurable Scanner uses Buf-Scan-Report-Grouped Events to report updated data; and it reports data in confirmed mode, a PHG shall use a rors-cmip-confirmed-event-report operation to acknowledge the operation. [AND] If a PHG supports periodic scanners, it shall support all the events identified in Table 18 (Periodic configurable scanner object events).
Applicability	C_MAN_OXP_000 AND C_MAN_OXP_006
Other PICS	
Initial condition	The simulated PHD and the PHG under test are in the Operating state.
Test procedure	- Make the PHG under test set the OperationalState attribute of a periodic scanner of the simulated PHD to 1: - APDU Type - field-length = 2 bytes - field-value = 0xE7 0x00 (PrstApdu) - invoke-id - field-type = InvokeIDType - field-length = 2 bytes - field-value= The same as the one sent by the simulated PHD. - CHOICE - value = 0x01 0x05 (roiv-cmip-confirmed-set) - obj-handle - field-type = Scanner HANDLE - field-length = 2 bytes - field-value = 20 <Handle of the Periodic scanner> - Modification-list - modify-operator.count = 1 - modify-operator.length = 2 bytes - modify-operator.value = 0 (replace) - attribute.type = 0x09 0x53 (MDC_ATTR_OP_STAT) - attribute.value = 1 - The simulated PHD responds to the message with a "rors-cmip-confirmed-set". - The simulated PHD sends a confirmed event report of the periodic scanner (MDC_NOTI_BUF_SCAN_REPORT_GROUPED) to the PHG under test: - The PHG under test responds with a "rors-confirmed-event-report": - APDU Type - field-length = 2 bytes - field-value = 0xE7 0x00 (PrstApdu) - invoke-id - field-type = InvokeIDType - field-length = 2 bytes - field-value= The same as the one sent by the simulated PHD. - obj-handle - field-type = HANDLE - field-length = 2 bytes - field-value = 20<Handle of the Periodic scanner> - event-type (rors-confirmed-event-report)

	☐ field-type = OID-Type ☐ field-length =2 bytes ☐ field-value = 0x0D 0x2A (MDC_NOTI_BUF_SCAN_REPORT_GROUPED)
Pass/Fail criteria	The format of the received message must be the one specified.
Notes	

TP Id		TP/PLT/PHG/EXP/DIM/BV-022		
TP label		PeriCfgScanner Class events. Buf-Scan-Report-MP-Grouped		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	PeriCfgScanEvent 24;C	ObjAccessServ 2;M	PeriCfgScanEvent 27; C
Test purpose		Check that: If a Periodic Configurable Scanner uses Buf-Scan-Report-MP-Grouped Events to report updated data; and it reports data in confirmed mode, a PHG shall use a rors-cmip-confirmed-event-report operation to acknowledge the operation. [AND] If a PHG supports periodic scanners, it shall support all the events identified in Table 18 (Periodic configurable scanner object events).		
Applicability		C_MAN_OXP_000 AND C_MAN_OXP_006 AND C_MAN_OXP_037		
Other PICS				
Initial condition		The simulated PHD and the PHG under test are in the Operating state.		
Test procedure		1. Make the PHG under test set the OperationalState attribute of an episodic scanner of the simulated PHD to 1. 2. The simulated PHD responds to the message with a "rors-cmip-confirmed-set". 3. The simulated PHD sends a confirmed event report of the periodic scanner (MDC_NOTI_BUF_SCAN_REPORT_MP_GROUPED) to the PHG under test: 4. The PHG under test responds with a "rors-confirmed-event-report": a. APDU Type ☐ field-length = 2 bytes ☐ field-value = 0xE7 0x00 (PrstApdu) b. invoke-id ☐ field-type = InvokeIDType ☐ field-length = 2 bytes ☐ field-value= The same as the one sent by the simulated PHD. c. obj-handle ☐ field-type = HANDLE ☐ field-length = 2 bytes ☐ field-value =20 <Handle of the Periodic scanner> d. event-type (rors-confirmed-event-report) ☐ field-type = OID-Type ☐ field-length =2 bytes ☐ field-value = 0x0D 0x2D (MDC_NOTI_BUF_SCAN_REPORT_MP_GROUPED)		
Pass/Fail criteria		The format of the received message must be the one specified.		
Notes				

TP Id		TP/PLT/PHG/OSP/DIM/BV-024		
TP label		Information Model Extensibility rules 2		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	InfoExt 2;M		
Test purpose		Check that: An implementation of a PHG system shall process a message fully by skipping any unknown attributes (e.g. vendor specified attributes) and ignoring the assigned data values of such attributes, without protocol errors. The implementation may log the occurrence of such attributes as appropriate.		
Applicability		C_MAN_OSP_000		
Other PICS				
Initial condition		The simulated PHD and the PHG under test are in the Unassociated state.		
Test procedure		1. The simulated PHD sends an AARQ with an extended dev-config-id previously unknown to the PHG under test. 2. The PHG under test sends an AARE with an "accepted-unknown-config". 3. The simulated PHD sends a configuration event report whose first object has a unknown vendor attribute defined (attribute id 0xF0 0x01): a. 0xF0 0x01 ☐ value.length = 2 ☐ value = 0xFF 0xFF b. The rest of the configuration is the same as one of the PHG supported standard configurations. 4. The PHG answers the configuration event report and reaches the Operating state. 5. The simulated PHD sends a confirmed fixed event report (sending a known attribute). 6. The PHG sends a rors-cmip-confirmed-event-report for data sent in step 5. 7. The simulated PHD sends a confirmed Variable event report updating the value of the unknown attribute: a. obj-handle = 1 b. 0xF0 0x01 ☐ value.length = 2 ☐ value = 0xFF 0xFE 8. The PHG sends a rors-cmip-confirmed-event-report message for data sent in step 7. 9. The simulated PHD sends a confirmed fixed event report (sending a known attribute). 10. The PHG sends a rors-cmip-confirmed-event-report for data sent in step 9.		
Pass/Fail criteria		• The PHG shall ignore the private nomenclature code and moves to Operating state • In step 5 the response cannot be an abort message • The PHG shall ignore the data received Var Event Report, but without protocol violations, so it has to send a confirmation response for data sent in step 6 • In step 10 the response cannot be an abort message		
Notes				

TP Id		TP/PLT/PHG/OSP/DIM/BV-025		
TP label		Manager State Machine: Association Response Format		
Coverage	Spec	[ISO/IEEE 11073-20601-2015A] and [ISO/IEEE 11073-20601-2016C]		
	Testable items	ManagerStateMach 65; M	AssocResp 2;M	AssocResp 8; M
		AssocResp 9; M	AssocResp 10; M	AssocResp 11; M

	Spec	[b-ITU-T H.810 (2015)]		
	Testable items	General 4; M		
Test purpose	Check that: If aarq received while in Unassociated state, a PHG shall move to connected associating state [AND] The encoding-rules field contains the one and only one, DataApdu encoding rule shall be chosen by the PHG, if the result field is equal to accepted or accepted-unknown-config [AND] The dev-config-id field shall be manager-config-response in the response. [AND] The data-req-mode-capab field shall be zero in the response. [AND] The option-list field is not currently used by this standard. This field should be an empty list. [AND] The protocol-version field contains the version of the common data protocol chosen by the PHG if the result field is equal to accepted or accepted-unknown-config The nomenclature-version field contains the version of the nomenclature chosen by the PHG if the result field is equal to accepted or accepted-unknown-config. The functional-units field indicates the common functional units and optional features chosen by the PHG if the result field is equal to accepted or accepted-unknown-config. The system-type field contains the system type. The system-id field has the unique system ID of the PHG [AND] Continua client components shall support associations with Continua LAN service components where only the version 1 bit of the protocol-version is set in the PHDAssociationInformation structure in the AARQ. In that case, the Continua client components shall respond with the version 1 bit of the protocol version set in the PHDAssociationInformation structure in the AARE and shall follow the ISO/IEEE Std 11073-20601-2008 specification along with all corrections and clarifications included in the [ISO/IEEE Std 11073-20601-2015A]			
Applicability	C_MAN_OXP_000			
Other PICS				
Initial condition	The simulated PHD and the PHG under test are in the Unassociated state.			
Test procedure	- The simulated PHD sends an Association Request to the PHG under test: - dev-config-id - IF (C_MAN_OXP_016 OR C_MAN_OXP_018 OR C_MAN_OXP_019 OR C_MAN_OXP_020 OR C_MAN_OXP_024 OR C_MAN_OXP_025 OR C_MAN_OXP_026 OR C_MAN_OXP_027 OR C_MAN_OXP_029) THEN dev-config-id set to one of the supported standard configurations - IF (C_MAN_OXP_021 OR C_MAN_OXP_022 OR C_MAN_OXP_023 OR C_MAN_OXP_030) THEN dev-config-id set to an extended dev-config-id. - encoding rules=0xE0 0x00 - protocol-version - IF the PHG applies for Basic ECG certification only THEN protocol-version = 0x40 0x00 0x00 0x00 - ELSE protocol-version = 0x80 0x00 0x00 0x00 - nomenclature-version= 0x80 0x00 0x00 0x00 - functional-units = 0x00 0x00 0x00 0x00			