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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

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

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 5B: Glucose meter: Agent

Recommendation ITU-T H.845.2

ITU International Telecommunication Union

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Recommendation ITU-T H.845.2

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 5B: Glucose meter: Agent

Summary

Recommendation ITU-T H.845.2 is a transposition of Continua Test Tool DG2013, Test Suite Structure & Test Purposes, PAN-LAN-TAN Interface; Part 5B: Device Specializations. Agent (Glucose Meter) (Version 1.4, 2014-01-24), that was developed by the Continua Health Alliance. A number of versions of this specification existed before transposition.

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

History

Edition	Recommendation	Approval	Study Group	Unique ID*
1.0	ITU-T H.845.2	2015-01-13	16	11.1002/1000/12263
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* To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, http://handle.itu.int/11.1002/1000/11830-en.

FOREWORD

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/.

Table of Contents

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

Introduction

This Recommendation is a transposition of Continua Test Tool DG2013, Test Suite Structure & Test Purposes, PAN-LAN-TAN Interface; Part 5B: Device Specializations. Agent (Glucose meter) (Version 1.4, 2014-01-24), that was developed by the Continua Health Alliance. A number of versions of this specification existed before transposition and these can be found in the table below.

Version	Date	Revision history
1.2	2012-10-05	Initial release for Test Tool DG2011. This is the same version as "TSS&TP_1.5_PAN-LAN_PART_5B_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_5B_v1.2.doc" as a baseline and adds new features included in [b-CDG 2012]: New GM spec version Max APDU size for GM, BCA and ECG
1.4	2014-01-24	Initial release for Test Tool DG2013. This uses "TSS&TP_DG2012_PAN-LAN_PART_5B_v1.3.doc" as a baseline and adds new features included in [ITU-T H.810 (2015)]: • Adds glucose meter BLE • Adds BLE SSP support • Adds NFC new transport • Adds INR device specialization

Recommendation ITU-T H.845.2

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 5B: Glucose meter: Agent

1 Scope

The scope of this Recommendation[1] is to provide a test suite structure and the test purposes (TSS & TP) for the PAN/LAN/TAN interface based on the requirements defined in the Continua Design Guidelines (CDG) [ITU-T H.810 (2015)]. The objective of this test specification is to provide a high probability of air interface interoperability between different devices.

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

– **Part 1**: Optimized exchange protocol [ISO/IEEE 11073-20601A] Agent
– **Part 2**: Optimized exchange protocol [ISO/IEEE 11073-20601A] Manager
– **Part 3**: Continua design guidelines. Agent
– **Part 4**: Continua design guidelines. Manager
– **Part 5**: Device specializations. Agent. This document is divided in 12 subparts:
  - **Part 5A**: Weighing scales
  - **Part 5B**: Glucose meter
  - **Part 5C**: Pulse oximeter
  - **Part 5D**: Blood pressure monitor
  - **Part 5E**: Thermometer
  - **Part 5F**: Cardiovascular fitness and activity monitor
  - **Part 5G**: Strength fitness equipment
  - **Part 5H**: Independent living activity hub
  - **Part 5I**: Adherence monitor
  - **Part 5J**: Insulin pump (Future development)
  - **Part 5K**: Peak flow
  - **Part 5L**: Body composition analyser
  - **Part 5M**: Basic electrocardiograph
  - **Part 5N**: International normalized ratio monitor
– **Part 6**: Device specializations. Manager
– **Part 7**: Continua design guidelines. Agent BLE
– **Part 8**: Continua design guidelines. Manager BLE
– **Part 9**: Personal health devices transcoding white paper. Agent
– **Part 10**: Personal health devices transcoding white paper. Manager

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

2 References

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

[ITU-T H.810 (2015)] Recommendation ITU-T H.810 (2015), *Interoperability design guidelines for personal health systems*.

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

[IEEE 11073-10417] IEEE 11073-10417-2011, *Health informatics – Personal health device communication – Part 10417: Device specialization – Glucose meter*.
<http://standards.ieee.org/findstds/standard/11073-10417-2011.html>

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

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

NOTE – This is shorthand used to refer to the collection of device specialization standards that utilize [ISO/IEEE 11073-20601A], where xx can be any number from 01 to 99, inclusive.

3 Definitions

3.1 Terms defined elsewhere

This Recommendation uses the following terms defined elsewhere:

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

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

3.2 Terms defined in this Recommendation

None.

4 Abbreviations and acronyms

This Recommendation uses the following abbreviations and acronyms:

ATS Abstract Test Suite

DUT Device Under Test

CDG Continua Design Guidelines

GUI Graphical User Interface

INR International Normalized Ratio

IUT Implementation Under Test

MDS Medical Device System

NFC Near Field Communication

PAN Personal Area Network

PCT Protocol Conformance Testing

PCO Point of Control and Observation

PHD Personal Healthcare Device

PHDC Personal Healthcare Device Class

PHM Personal Health Manager

PICS Protocol Implementation Conformance Statement

PIXIT Protocol Implementation extra Information for Testing

SDP Service Discovery Protocol

SOAP Simple Object Access Protocol

SABTE Sleep Apnoea Breathing Therapy Equipment

TCWG Test and Certification Working Group

TP Test Purpose

TSS Test Suite Structure

USB Universal Serial Bus

WDM Windows Driver Model

5 Conventions

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

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

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

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

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

– MAY is equivalent to 'is permitted'.

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

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

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

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

CDG name	Transposed as	Version	Description	Designation
2016 plus errata	[ITU-T H.810 (2016)]	6.1	Release 2016 plus errata noting all ratified bugs [ITU-T H.810 (2016)].	–
2016	–	6.0	Release 2016 of the CDG including maintenance updates of the CDG 2015 and additional guidelines that cover new functionalities.	Iris
2015 plus errata	[ITU-T H.810 (2015)]	5.1	Release 2015 plus errata noting all ratified bugs [ITU-T H.810 (2015)].	–
2015	–	5.0	Release 2015 of the CDG including maintenance updates of the CDG 2013 and additional guidelines that cover new functionalities.	Genome
2013 plus errata	[b-ITU-T H.810 (2013)]	4.1	Release 2013 plus errata noting all ratified bugs [b-ITU-T H.810 (2013)].	–
2013	–	4.0	Release 2013 of the CDG including maintenance updates of the CDG 2012 and additional guidelines that cover new functionalities.	Endorphin
2012 plus errata	–	3.1	Release 2012 plus errata noting all ratified bugs [b-CDG 2012].	–
2012	–	3.0	Release 2012 of the CDG including maintenance updates of the CDG 2011 and additional guidelines that cover new functionalities.	Catalyst
2011 plus errata	–	2.1	CDG 2011 integrated with identified errata.	–
2011	–	2.0	Release 2011 of the CDG including maintenance updates of the CDG 2010 and additional guidelines that cover new functionalities [b-CDG 2011].	Adrenaline
2010 plus errata	–	1.6	CDG 2010 integrated with identified errata	–
2010	–	1.5	Release 2010 of the CDG with maintenance updates of the CDG Version 1 and additional guidelines that cover new functionalities [b-CDG 2010].	1.5
1.0	–	1.0	First released version of the CDG [b-CDG 1.0].	–

6 Test suite structure (TSS)

The test purposes (TPs) for the PAN/LAN/TAN interface have been divided into the main subgroups specified below. Annex A describes the TPs for subgroup 1.3.2: (shown in bold).

– Group 1: Agent (AG)
  - Group 1.1: Transport (TR)
    - Subgroup 1.1.1: Design guidelines: Common (DGC)
    - Subgroup 1.1.2: USB design guidelines (UDG)
    - Subgroup 1.1.3: Bluetooth design guidelines (BDG)
    - Subgroup 1.1.4: Pulse oximeter design guidelines (PODG)

- Subgroup 1.1.5: Cardiovascular design guidelines (CVDG)
- Subgroup 1.1.6: Activity hub design guidelines (HUBDG)
- Subgroup 1.1.7: ZigBee design guidelines (ZDG)
- Subgroup 1.1.8: Glucose meter design guidelines (GLDG)
- Subgroup 1.1.9: Bluetooth low energy design guidelines (BLEDG)
- Subgroup 1.1.10: Basic electrocardiograph design guidelines (ECGDG)
- Subgroup 1.1.11: NFC design guidelines (NDG)

• Group 1.2: Optimized exchange protocol (OXP)
- Subgroup 1.2.1: PHD domain information model (DIM)
- Subgroup 1.2.2: PHD service model (SER)
- Subgroup 1.2.3: PHD communication model (COM)

• Group 1.3: Devices class specializations (CLASS)
- Subgroup 1.3.1: Weighing scales (WEG)
- **Subgroup 1.3.2: Glucose meter (GL)**
- Subgroup 1.3.3: Pulse oximeter (PO)
- Subgroup 1.3.4: Blood pressure monitor (BPM)
- Subgroup 1.3.5: Thermometer (TH)
- Subgroup 1.3.6: Cardiovascular (CV)
- Subgroup 1.3.7: Strength (ST)
- Subgroup 1.3.8: Activity hub (HUB)
- Subgroup 1.3.9: Adherence monitor (AM)
- Subgroup 1.3.10: Insulin pump (IP) (Future development)
- Subgroup 1.3.11: Peak flow (PF)
- Subgroup 1.3.12: Body composition analyser (BCA)
- Subgroup 1.3.13: Basic electrocardiograph (ECG)
- Subgroup 1.3.14: International normalized ratio (INR)
- Subgroup 1.3.15: Sleep apnoea breathing therapy equipment (SABTE)

• Group 1.4: Personal health device transcoding whitepaper (PHDTW)
- Subgroup 1.4.1: Whitepaper general requirements (GEN)
- Subgroup 1.4.2: Whitepaper thermometer requirements (TH)
- Subgroup 1.4.3: Whitepaper blood pressure requirements (BPM)
- Subgroup 1.4.4: Whitepaper heart rate requirements (HR)
- Subgroup 1.4.5: Whitepaper glucose meter requirements (GL)
- Subgroup 1.4.6: Whitepaper weight scale requirements (WS)

– Group 2: Manager (MAN)

• Group 2.1: Transport (TR)
- Subgroup 2.1.1: Design guidelines: Common (DGC)
- Subgroup 2.1.2: USB design guidelines (UDG)
- Subgroup 2.1.3: Bluetooth design guidelines (BDG)
- Subgroup 2.1.4: Cardiovascular design guidelines (CVDG)
- Subgroup 2.1.5: Activity hub design guidelines (HUBDG)

- Subgroup 2.1.6: ZigBee design guidelines (ZDG)
- Subgroup 2.1.7: Bluetooth low energy design guidelines (BLEDG)
- Subgroup 2.1.8: NFC design guidelines (NDG)

- Group 2.2: 20601: Optimized exchange protocol (OXP)
  - Subgroup 2.2.1: General (GEN)
  - Subgroup 2.2.2: PHD domain information model (DIM)
  - Subgroup 2.2.3: PHD service model (SER)
  - Subgroup 2.2.4: PHD communication model (COM)
- Group 2.3: Devices class specializations (CLASS)
  - Subgroup 2.3.1: Weighing scales (WEG)
  - Subgroup 2.3.2: Glucose meter (GL)
  - Subgroup 2.3.3: Pulse oximeter (PO)
  - Subgroup 2.3.4: Blood pressure monitor (BPM)
  - Subgroup 2.3.5: Thermometer (TH)
  - Subgroup 2.3.6: Cardiovascular (CV)
  - Subgroup 2.3.7: Strength (ST)
  - Subgroup 2.3.8: Activity hub (HUB)
  - Subgroup 2.3.9: Adherence monitor (AM)
  - Subgroup 2.3.10: Insulin pump (IP) (Future development)
  - Subgroup 2.3.11: Peak flow (PF)
  - Subgroup 2.3.12: Body composition analyser (BCA)
  - Subgroup 2.3.13: Basic electrocardiograph (ECG)
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  - Subgroup 2.4.3: Whitepaper blood pressure measurement requirements (BPM)
  - Subgroup 2.4.4: Whitepaper heart rate requirements (HR)
  - Subgroup 2.4.5: Whitepaper glucose meter requirements (GL)
  - Subgroup 2.4.6: Whitepaper weight scale requirements (WS)

7 Electronic attachment

The protocol implementation conformance statements (PICS) and the protocol implementation extra information for testing (PIXIT) required for the implementation of 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
    - AG: PAN/LAN Agent
    - MAN: PAN/LAN Manager
  - <GR>: This identifies a group of test cases.
  - <SGR>: This identifies a subgroup of test cases.
  - <XX>: This identifies the type of testing
    - BV: Valid behaviour test
    - BI: Invalid behaviour test
  - <NNN>: This is a sequential number that identifies the test purpose.
- **TP label**: This is the TP's title.
- **Coverage**: This contains the specification reference and clause to be checked by the TP.
  - Spec: This indicates the earliest version of the specification from which the testable items to be checked by the TP were included.
  - Testable item: This contains testable items to be checked by the TP.
- **Test purpose**: This is a description of the requirements to be tested.
- **Applicability**: This contains the PICS items that define if the test case is applicable or not for a specific device. When a TP contains an "ALL" in this field it means that it applies to the device under test within that scope of the test (specialization, transport used, etc.).
- **Other PICS**: It contains additional PICS items (apart from the PICS specified in the Applicability row) which are used within the test case implementation and can modify the final verdict. When this row is empty, it means that only the PICS specified in the Applicability row are used within the test case implementation.
- **Initial condition**: This indicates the state to which the DUT needs to be moved at the beginning of TC execution.

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

A.2 Subgroup 1.3.2: Glucose meter (GL)

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/AG/CLASS/GL/BV-000_A</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Get MDS Object for Glucose meter specialization: Mandatory, Conditional and Optional Attributes.</td></tr>
<tr><td rowspan="3">Coverage</td><td>Spec</td><td colspan="3">[IEEE 11073-10417]</td></tr>
<tr><td rowspan="2">Testable items</td><td>MDSGL Atr 1; M</td><td>MDSGL Atr 2; M</td><td>MDSGL Atr 4; M</td></tr>
<tr><td>MDSGL Atr 5; M</td><td></td><td></td></tr>
<tr><td colspan="2">Test purpose</td><td colspan="3">Check that:
The MDS Object contains the attributes specified for a Glucose Meter Agent</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_000 AND C_AG_OXP_178</td></tr>
<tr><td colspan="2">Other PICS</td><td colspan="3">C_AG_GL_023, C_AG_GL_024, C_AG_GL_181</td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The simulated manager and the agent under test are in the operating state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated manager issues "roiv-cmip-get" command with the handle set to 0 (to request for MDS Object) and the attribute-id-list set to 0 to indicate all attributes.
2. The agent responds with a "rors-cmip-get" service message in which the attribute-list contains a list of all implemented attributes of the MDS Object:
MDS attributes:
a. Attribute System-Type must not be present.
b. Mandatory attribute System-Type-Spec_List
❑ attribute-id = MDC_ATTR_SYS_TYPE_SPEC_LIST
❑ attribute-type = TypeVerList
❑ attribute-value.length = 4 bytes for each configuration supported
❑ attribute-value = {MDC_DEV_SPEC_PROFILE_GLUCOSE , 2} must be found in the list
c. Mandatory attribute System-model
❑ attribute-id = MDC_ATTR_ID_MODEL (0x09 0x28)
❑ attribute-type = SystemModel
❑ atribute-value.length = <Variable>
❑ attribute-value =
• Manufacturer = Check against PIXIT I_AG_OXP_003
• Model = Check against PIXIT I_AG_OXP_004
d. Mandatory attribute Dev-Configuration-Id
❑ IF C_AG_GL_023 THEN attribute-value = 0x06A4 (1700)
❑ IF C_AG_GL_024 THEN attribute-value = 0x06A5 (1701)
❑ IF C_AG_OXP_181 THEN attribute-value = < between 0x4000 and 0x7FFF ></td></tr>
<tr><td colspan="2">Pass/Fail criteria</td><td colspan="3">All checked values are as specified in the test procedure.</td></tr>
<tr><td colspan="2">Notes</td><td colspan="3"></td></tr>
</table>

TP Id		TP/PLT/AG/CLASS/GL/BV-000_B		
TP label		MDS Configuration objects events for Glucose meter specialization.		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	MDSEvents 1; M		
Test purpose		Check that: Glucose Meter Agent 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_178		
Other PICS		C_AG_OXP_010, C_AG_GL_023, C_AG_GL_024, C_AG_GL_181		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager: a. APDU Type ❑ field- type = PrstApdu ❑ field-length =2 bytes ❑ field-value =0xE7 0x00 b. invoke-id ❑ field- type = InvokeIDType ❑ field-length =INT-U16 ❑ field- value =<Not relevant for this test> c. message ❑ field- type = roiv-cmip-confirmed-event-report ❑ field-length =two bytes ❑ field- value =0x01 0x01 (EventReportArgumentSimple) d. obj-handle (EventReportArgumentSimple) ❑ field- type = HANDLE ❑ field-length =INT-U16 e. event-time (EventReportArgumentSimple) ❑ field- type = Relative Time ❑ field-length =INT-U32 ❑ field-value = • IF NOT C_AG_OXP_010 THEN value = 0xFF 0xFF 0xFF 0xFF f. event-type (EventReportArgumentSimple) ❑ field- type = OID-Type ❑ field-length =INT-U16 ❑ field- value=0x0D 0x1C (MDC_NOTI_CONFIG) g. config-report-id (ConfigReport) ❑ field- type = ConfigId ❑ field-length = INT-U16		

	❑ field value = <It matches the tested configuration> • IF C_AG_GL_023 THEN attribute-value = 0x 06A4 (1700) • IF C_AG_GL_024 THEN attribute-value = 0x 06A5 (1701) • IF C_AG_OXP_181 THEN <between 0x40 0x00 and 0x7F 0xFF > for extended configuration. h. obj-class (ConfigReport → ConfigObjectList (ConfigObject)) ❑ field- type = OID-Type ❑ field-length = INT-U16 ❑ 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/AG/CLASS/GL/BV-000_C		
TP label		MDS objects events for Glucose meter specialization.		
Coverage	**Spec**	[IEEE 11073-10417]		
	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	PMStoreObj 4; M
Test purpose		Check that: Agent-initiated mode is supported for measurement data transmission and all types of event reports are used in confirmed mode [AND] The Agent sends the MDS-Dynamic-Data-Update-Fixed using a confirmed event report and it includes the event-info ScanReportInfoFixed [OR] The Agent sends the MDS-Dynamic-Data-Update-Var using a confirmed event report and it includes the event-info ScanReportInfoVar [OR] The Agent sends the MDS-Dynamic-Data-Update-MP-Fixed using a confirmed event report and it includes the event-info ScanReportInfoMPFixed [OR] The Agent sends the MDS-Dynamic-Data-Update-MP-Var using a confirmed event report and it includes the event-info ScanReportInfoMPVar		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND (C_AG_OXP_182 OR C_AG_OXP_183 OR C_AG_OXP_184 OR C_AG_OXP_189)		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take measurements for every supported object in the agent under test. 2. Wait to receive every event report and check: a. APDU Type ❑ field- type = Event Report		

	❑ field-length = 2 bytes ❑ field- value=0x01 0x01 (EventReportArgumentSimple, confirmed) This field identifies the type of message sent by the agent, for the confirmed event configuration, roiv-cmip-confirmed-event-report.
Pass/Fail criteria	Check that every received report is one of the following confirmed Data APDU • MDC_NOTI_SCAN_REPORT_FIXED • MDC_NOTI_SCAN_REPORT_MP_FIXED • MDC_NOTI_SCAN_REPORT_VAR • MDC_NOTI_SCAN_REPORT_MP_VAR
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-001		
TP label		Objects for Glucose meter specialization - Standard Configuration (1700 or 1701)		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	BloodGL 1; M	BloodGL 4; M	BloodGL 4b; M
		CtrlSol 1; M		
Test purpose		Check that: Only the Blood Glucose Numeric Object with Type MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD is supported by a Glucose Meter Agent for Standard Configuration 1700 (0x06A4). [AND] Blood Glucose Numeric Object with Type MDC_CONC_GLU_UNDETERMINED_PLASMA is supported by a Glucose Meter Agent for Standard Configuration 1701 (0x06A5). [AND] The Control Solution Numeric Object is supported by a Glucose Meter Agent for Standard Configuration 1701 (0x06A5).		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND (NOT_C_AG_OXP_181)		
Other PICS				
Initial condition		The simulated manager and the agent are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. Check that the field Dev-Config-Id is set to 0x06A4 (1700) OR 0x06A5 (1701), if it is not, the manager responds with a "unsupported-config" and waits for a new configuration. 5. Once the agent under test sends a standard configuration, check that: IF Dev-Config-Id = 0x06A4) THEN Attribute-List: a. attribute-value (ConfigReport → ConfigObjectList (ConfigObject) → Attribute List), this value depends on the attribute Type. The values we have to check are: ❑ Blood Glucose Object is present → MDC_PART_SCADA (0x00 0x02), MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD (0x4A 0x04)		

	IF Dev-Config-Id = 0x06A5) THEN Attribute-List: a. attribute-value (ConfigReport → ConfigObjectList (ConfigObject) → Attribute List), this value depends on the attribute Type. The values we have to check are: ❑ Blood Glucose Object is present → MDC_PART_SCADA (0x00 0x02), MDC_CONC_GLU_UNDETERMINED_PLASMA (0x72 0x70) ❑ Control solution Object is present → MDC_PART_SCADA (0x00 0x02), MDC_CONC_GLU_CONTROL (0x71 0xD0)
Pass/Fail criteria	All checked values are as specified in the test procedure and no other object listed.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-002		
TP label		Objects for Glucose meter specialization - Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	BloodGL 1; M	DevSenAn 3; R	BloodGL 28; M
Test purpose		Check that: The Blood Glucose Numeric Object is supported by a Glucose Meter Agent. [AND] HbA1c, Context Exercise, Context Medication, Context Carbohydrates Numeric or Control Solution Objects can be implemented by the vendor. [AND] Agent should support Device and sensor status annunciation object to transmit these occurrences. [AND] In case that a blood glucose measurement needs to be further associated with meal, sample location, and tester information, the additional Enumeration objects, i.e. Context Carbohydrates, Context Sample Location and Context Tester can be used.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_181		
Other PICS		C_AG_GL_001, C_AG_GL_002, C_AG_GL_003, C_AG_GL_004, C_AG_GL_005, C_AG_GL_007, C_AG_GL_008, C_AG_GL_009, C_AG_GL_010, C_AG_GL_011, C_AG_GL_012, C_AG_GL_013, C_AG_GL_014, C_AG_GL_015, C_AG_GL_016, C_AG_GL_017, C_AG_GL_018, C_AG_GL_019, C_AG_GL_021		
Initial condition		The simulated manager and the agent are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. Check that the field Dev-Config-Id is in the extended range; if it is not, the manager responds with a "unsupported-config" and waits for a new configuration. 5. Once the agent under test sends an extended configuration, check that: Attribute-List: a. atribute-value(ConfigReport → ConfigObjectList (ConfigObject)→Attribute List), this value depends on the attribute type. The values we have to check are:		

	❑ Blood Glucose Numeric Object is present → MDC_PART_SCADA (0x00 0x02), • IF C_AG_GL_014 THEN MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD (0x71 0xB8) • IF C_AG_GL_015 THEN MDC_CONC_GLU_CAPILLARY_PLASMA (0x71 0xBC) • IF C_AG_GL_016 THEN MDC_CONC_GLU_VENOUS_WHOLEBLOOD (0x71 0xC0) • IF C_AG_GL_017 THEN MDC_CONC_GLU_VENOUS_PLASMA (0x71 0xC4) • IF C_AG_GL_018 THEN MDC_CONC_GLU_ARTERIAL_WHOLEBLOOD (0x71 0xC8) • IF C_AG_GL_019 THEN MDC_CONC_GLU_ARTERIAL_PLASMA (0x71 0xCC) • IF C_AG_GL_012 THEN MDC_CONC_GLU_UNDETERMINED_WHOLEBLOOD (0x72 0x6C) • IF C_AG_GL_013 THEN MDC_CONC_GLU_UNDETERMINED_PLASMA (0x72 0x70) • IF C_AG_GL_021 THEN MDC_CONC_GLU_ISF (0x71 0xD4) ❑ Any of these objects may be present: • IF C_AG_GL_001 THEN Control Solution numeric Object is present → MDC_PART_SCADA (0x00 0x02), MDC_CONC_GLU_CONTROL (0x71 0xD0) • IF C_AG_GL_002 THEN HbA1c numeric Object is present → MDC_PART_SCADA (0x00 0x02), MDC_CONC_HBA1C (0x71 0xDC) • IF C_AG_GL_003 THEN Context Exercise numeric Object is present → MDC_PART_PHD_DM (0X00 0X80), MDC_CTXT_GLU_EXERCISE (0x71 0xE0) • IF C_AG_GL_004 THEN Context Medication numeric Object is present → MDC_PART_ PHD_DM (0x00 0x80), MDC_CTXT_MEDICATION (0x72 0x04) • IF C_AG_GL_005 THEN Context Carbohydrates numeric Object is present → MDC_PART_ PHD_DM (0x00 0x80), MDC_CTXT_GLU_CARB (0x71 0xE4) • IF C_AG_GL_007 THEN Device and Sensor annunciation status Enumeration Object is present → MDC_PART_ PHD_DM (0x00 0x80), MDC_GLU_METER_DEV_STATUS (0x71 0xD8) • IF C_AG_GL_008 THEN Context Meal enumeration Object is present → MDC_PART_ PHD_DM (0x00 0x80), MDC_CTXT_GLU_MEAL (0x72 0x48) • IF C_AG_GL_009 THEN Context Sample Location enumeration Object is present → MDC_PART_ PHD_DM (0x00 0x80), MDC_CTXT_GLU_SAMPLELOCATION (0x72 0x34) • IF C_AG_GL_010 THEN Context Tester enumeration Object is present → MDC_PART_ PHD_DM (0x00 0x80), MDC_CTXT_GLU_TESTER (0x72 0x5C) • IF C_AG_GL_011 THEN Context Health enumeration Object is present → MDC_PART_ PHD_DM (0x00 0x80), MDC_CTXT_GLU_HEALTH (0x72 0x1C)
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/AG/CLASS/GL/BV-004</td></tr>
<tr><td colspan="2">TP Label</td><td colspan="3">Blood Glucose Numeric Object - Standard Configuration (1700 or 1701)</td></tr>
<tr><td rowspan="6">Coverage</td><td>Spec</td><td colspan="3">[IEEE 11073-10417]</td></tr>
<tr><td rowspan="5">Testable items</td><td>BloodGL 2; M</td><td>BloodGL 4; M</td><td>BloodGL 6; M</td></tr>
<tr><td>BloodGL 8; M</td><td>BloodGL 10; M</td><td>BloodGL 12; C</td></tr>
<tr><td>BloodGL 14; R</td><td>BloodGL 18; R</td><td>BloodGL 20; M</td></tr>
<tr><td>BloodGL 22; C</td><td>BloodGL 24; R</td><td>BloodGL 26; R</td></tr>
<tr><td>MeasDatTx 6;M</td><td>BloodGL 31; M</td><td></td></tr>
<tr><td colspan="2">Test purpose</td><td colspan="3">Check that:
The Blood Glucose Numeric Object contains the attributes specified for Standard Configuration.</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_000 AND C_AG_OXP_178 AND (NOT C_AG_OXP_181)</td></tr>
<tr><td colspan="2">Other PICS</td><td colspan="3"></td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The simulated manager and the agent under are in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated manager receives an association request from the agent under test.
2. The simulated manager responds with a result = accepted-unknown-config. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager.
3. Check that the field Dev-Config-Id is set to 0x06A4 (1700) or Dev-Config-Id is set to 0x06A5 (1701); if it is not, the manager responds with a "unsupported-config" and waits for a new configuration.
4. Once the agent under test sends a Standard Configuration, check that Blood Glucose Object attributes are:
a. Mandatory attribute Handle
❑ attribute-id = MDC_ATTR_ID_HANDLE
❑ attribute-type = HANDLE
❑ attribute-value = 0x00 0x01
b. Mandatory attribute Type
❑ IF Dev-Config-Id = 0x06A4:
• attribute-id = MDC_ATTR_ID_TYPE
• attribute-type = TYPE
• attribute-value = MDC_PART_SCADA (0x00 0x02), MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD (0x71 0xB8).
❑ IF Dev-Config-Id = 0x06A5:
• attribute-id = MDC_ATTR_ID_TYPE
• attribute-type = TYPE
• attribute-value = MDC_PART_SCADA (0x00 0x02), MDC_CONC_GLU_UNDETERMINED_PLASMA (0x72 0x70).
c. Mandatory attribute Metric-Spec-Small
❑ attribute-id = MDC_ATTR_METRIC_SPEC_SMALL
❑ attribute-type = MetricSpecSmall (BITS-16)</td></tr>
</table>

	❑ attribute-value.length = 2 bytes ❑ attribute-value ≠ 0x00 0x00 • Bit 0 (mss-avail-intermittent(0)), must be set • Bit 1 (mss-avail-stored-data(1)), must be set • Bit 2 (mss-upd-aperiodic(2)), must be set • Bit 3 (mss-msmt-aperiodic(3)), 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 ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type(INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value= MDC_DIM_MILLI_G_PER_DL e. Mandatory attribute Attribute-Value-Map ❑ attribute-id = MDC_ATTR_ATRIBUTE_VAL_MAP ❑ attribute-type = AttrValMap (sequence of attribute-id(OID-Type) and attribute-length(INT-U16)) ❑ attribute-value.length=<variable> ❑ attribute-value= MDC_ATTR_NU_VAL_OBS_BASIC MDC_ATTR_TIME_STAMP_ABS f. No other attribute shall be present at configuration.
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-005		
TP label		Blood Glucose Numeric Object- Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	NumObj 3; C	NumObj 5; R	NumObj 6; R
		NumObj 7; R	NumObj 8; R	NumObj 9; R
		NumObj 12; R	NumObj 22; R	NumObj 23; R
		NumObj 24; R	BloodGL 5; M	BloodGL 7; M
		BloodGL 9; M	BloodGL 15; R	BloodGL 19; R
		BloodGL 25; R	BloodGL 27; R	NumObj 25; R
		NumObj 2;M		
Test purpose		Check that: The Blood Glucose Numeric Object contains the attributes specified for Extended Configuration.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_181		

Other PICS	C_AG_GL_012, C_AG_GL_013, C_AG_GL_014, C_AG_GL_015, C_AG_GL_016, C_AG_GL_017, C_AG_GL_018, C_AG_GL_019, C_AG_GL_021
Initial condition	The simulated manager and the agent under test are in the unassociated state.
Test procedure	1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 3. Check that the field Dev-Config-Id is set in the extended range; if it is not, the manager responds with a "unsupported-config" and waits for a new configuration. 4. Once the agent under test sends an Extended Configuration, check that Blood Glucose Object attributes are: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_SCADA (0x00 0x02), followed by one of the next: • IF C_AG_GL_014 THEN MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD (0x71 0xB8) • IF C_AG_GL_015 THENMDC_CONC_GLU_CAPILLARY_PLASMA (0x71 0xBC) • IF C_AG_GL_016 THEN MDC_CONC_GLU_VENOUS_WHOLEBLOOD (0x71 0xC0) • IF C_AG_GL_017 THEN MDC_CONC_GLU_VENOUS_PLASMA (0x71 0xC4) • IF C_AG_GL_018 THEN MDC_CONC_GLU_ARTERIAL_WHOLEBLOOD (0x71 0xC8) • IF C_AG_GL_019 THEN MDC_CONC_GLU_ARTERIAL_PLASMA (0x71 0xCC) • IF C_AG_GL_012 THEN MDC_CONC_GLU_UNDETERMINED_WHOLEBLOOD (0x72 0x6C) • IF C_AG_GL_013 THEN MDC_CONC_GLU_UNDETERMINED_PLASMA (0x72 0x70) • IF C_AG_GL_021 THEN MDC_CONC_GLU_ISF (0x71 0xD4) 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 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))

	• Bit 12 may be set (mss-cat-manual(12)) if the reading is entered manually 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. Conditional 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_MILLI_G_PER_DL OR MDC_DIM_MILLI_MOLE_PER_L j. IF Not recommended attribute Source-Handle-Reference is present ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes k. IF Not recommended attribute Relative-Time-Stamp is present ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL ❑ attribute-type = RelativeTime(INT-U32) ❑ attribute-value.length = 4 bytes l. IF Not recommended attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT type ❑ attribute-value.length = 4 bytes m. IF Not recommended Compound-Simple-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = SimpleNuObsValueCmp ❑ attribute-value.length =<variable>

	n. IF Not recommended attribute Compound-Basic-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_BASIC ❑ attribute-type = BasicNuObsValueCmp ❑ attribute-value.length = <variable> o. IF Not recommended attribute Compound-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_VAL_OBS ❑ attribute-type = NuObsValue ❑ attribute-value.length = <variable> p. Not recommended attribute Compound-Nu-Observed-Value ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = NuObsValueCmp ❑ attribute-value.length = <variable> q. IF Recommended attribute Accuracy is present ❑ attribute-id = MDC_ATTR_NU_ACCUR_MSMT ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-006		
TP label		HbA1c Numeric Object - Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	NumObj 3; C	NumObj 4; M	NumObj 5; R
		NumObj 6; R	NumObj 7; R	NumObj 8; R
		NumObj 9; R	NumObj 12; R	NumObj 16; O
		NumObj 17; O	NumObj 20; R	NumObj 22; R
		NumObj 23; R	NumObj 24; R	NumObj 25; R
		HbA1c 1; M	HbA1c 2; M	HbA1c 3; M
		HbA1c 4; M	HbA1c 5; M	NumObj 2; M
Test purpose		Check that: The HbA1c Numeric Object contains the attributes specified for Extended Configuration.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_181 AND C_AG_GL_002		
Other PICS		C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager.		

4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated manager must respond with an "unsupported-config" and wait for a new configuration.
5. Once the agent under test sends an extended configuration, check that HbA1c Object attributes are:
   a. Mandatory attribute Type
      - ❑ attribute-id = MDC_ATTR_ID_TYPE
      - ❑ attribute-type = TYPE
      - ❑ attribute-value = MDC_PART_SCADA (0x00 0x02), MDC_CONC_HBA1C (0x71 0xDC)
   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 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))
        - Bit 12 may be set (mss-cat-manual(12)) if the reading is entered manually
   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. Conditional attribute Metric-Id is present
      - ❑ attribute-id = MDC_ATTR_ID_PHYSIO
      - ❑ attribute-type = OID-Type (INT-U16)
      - ❑ attribute-value.length= 2 bytes
      - ❑ The [Metric-Id-List] attribute shall be used if a compound observed value is used, which does not incorporate the Metric-Id directly. The order of the Metric-Id-List shall correspond to the order of the elements in the compound observed value. Only one attribute of Metric-Id and Metric-Id-List shall be present.
   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)

- ❑ The [Metric-Id-List] attribute shall be used if a compound observed value is used, which does not incorporate the Metric-Id directly. The order of the Metric-Id-List shall correspond to the order of the elements in the compound observed value. Only one attribute of Metric-Id and Metric-Id-List shall be present.

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

j. IF Not recommended attribute Source-Handle-Reference is present
   - ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF
   - ❑ attribute-type = HANDLE (INT-U16)
   - ❑ attribute-value.length = 2 bytes

k. IF Agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Absolute-Time-Stamp
   - ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS
   - ❑ attribute-type = AbsoluteTime
   - ❑ attribute-value.length = 8 bytes

l. Optional attribute Relative-Time-Stamp
   - ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL
   - ❑ attribute-type = RelativeTime(INT-U32)
   - ❑ attribute-value.length = 4 bytes

m. Conditional attribute HiRes-Time-Stamp
   - ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL_HI_RES
   - ❑ attribute-type = HighResRelativeTime
   - ❑ attribute-value.length = OCTET STRING (SIZE(8))

n. IF Not recommended Compound-Simple-Nu-Observed-Value is present
   - ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP
   - ❑ attribute-type = SimpleNuObsValueCmp
   - ❑ attribute-value.length =<variable>

o. IF Agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Basic-Nu-Observed-Value
   - ❑ attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC
   - ❑ attribute-type = BasicNuObsValue
   - ❑ attribute-value.length = SFLOAT-Type (INT-U16)

p. IF Not recommended attribute Compound-Basic-Nu-Observed-Value is present
   - ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_BASIC
   - ❑ attribute-type = BasicNuObsValueCmp
   - ❑ attribute-value.length = <variable>

q. IF Not recommended attribute Compound-Nu-Observed-Value is present
   - ❑ attribute-id = MDC_ATTR_NU_VAL_OBS
   - ❑ attribute-type = NuObsValue

	❑ attribute-value.length = <variable> r. Not recommended attribute Compound-Nu-Observed-Value ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = NuObsValueCmp ❑ attribute-value.length = <variable> s. Recommended attribute Accuracy ❑ attribute-id = MDC_ATTR_NU_ACCUR_MSMT ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-007		
TP label		Context Exercise Numeric Object - Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	NumObj 3; C	NumObj 4; M	NumObj 5; R
		NumObj 6; R	NumObj 7; R	NumObj 8; R
		NumObj 9; R	NumObj 12; R	NumObj 16; O
		NumObj 17; O	NumObj 20; R	NumObj 22; R
		NumObj 23; R	NumObj 24; R	NumObj 25; R
		ContextEx 1; M	ContextEx 2; M	ContextEx 3; M
		ContextEx 4; M	ContextEx 5; M	NumObj 2; M
		ContextEx 6; M		
Test purpose		Check that: The Context Exercise Numeric Object contains the attributes specified for Extended Configuration.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_181 AND C_AG_GL_003		
Other PICS		C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated manager must respond with an "unsupported-config" and wait for a new configuration. 5. Once the agent under test sends an Extended Configuration, check that Context Exercise Object attributes are:		

a. Mandatory attribute Type

- ❑ attribute-id = MDC_ATTR_ID_TYPE
- ❑ attribute-type = TYPE
- ❑ attribute-value =MDC_PART_PHD_DM (0x00 0x02), MDC_CTXT_GLU_EXERCISE (0x71 0xE0)

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 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))
  - Bit 12 must be set (mss-cat-manual(12)) if the reading is entered manually

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. Conditional attribute Metric-Id is present

- ❑ attribute-id = MDC_ATTR_ID_PHYSIO
- ❑ attribute-type = OID-Type(INT-U16)
- ❑ attribute-value.length= 2 bytes
- ❑ The [Metric-Id-List] attribute shall be used if a compound observed value is used, which does not incorporate the Metric-Id directly. The order of the Metric-Id-List shall correspond to the order of the elements in the compound observed value. Only one attribute of Metric-Id and Metric-Id-List shall be present.

g. IF Not recommended attribute Metric-Id-List is present

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

	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 j. IF Not recommended attribute Source-Handle-Reference is present ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes k. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes l. Optional attribute Relative-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL ❑ attribute-type = RelativeTime (INT-U32) ❑ attribute-value.length = 4 bytes m. Conditional attribute HiRes-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL_HI_RES ❑ attribute-type = HighResRelativeTime ❑ attribute-value.length = OCTET STRING (SIZE(8)) n. Mandatory attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT type ❑ attribute-value.length = 4 bytes o. IF Not recommended Compound-Simple-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = SimpleNuObsValueCmp ❑ attribute-value.length = <variable> p. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Basic-Nu-Observed-Value ❑ attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC ❑ attribute-type = BasicNuObsValue ❑ attribute-value.length = SFLOAT-Type (INT-U16) ❑ attribute-value= value within the range:[0,100] q. IF Not recommended attribute Compound-Basic-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_BASIC ❑ attribute-type = BasicNuObsValueCmp ❑ attribute-value.length = <variable>

	r. IF Not recommended attribute Compound-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_VAL_OBS ❑ attribute-type = NuObsValue ❑ attribute-value.length = <variable> s. Not recommended attribute Compound-Nu-Observed-Value ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = NuObsValueCmp ❑ attribute-value.length = <variable> t. Recommended attribute Accuracy ❑ attribute-id = MDC_ATTR_NU_ACCUR_MSMT ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-008		
TP label		Context Medication Numeric Object - Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	NumObj 3; C	NumObj 4; M	NumObj 5; R
		NumObj 6; R	NumObj 8; R	NumObj 9; R
		NumObj 12; R	NumObj 16; O	NumObj 17; O
		NumObj 20; R	NumObj 22; R	NumObj 23; R
		NumObj 24; R	NumObj 25; R	ContextMed 1; M
		ContextMed 2; M	ContextMed 3; M	ContextMed 5; M
		ContextMed 6; M	NumObj 2; M	ContextMed 7; M
Test purpose		Check that: The Context Medication Numeric Object contains the attributes specified for Extended Configuration.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_181 AND C_AG_GL_004		
Other PICS		C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated manager must respond with an "unsupported-config" and wait for a new configuration.		

	5. Once the agent under test sends an Extended Configuration, check that Context Exercise 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_CTXT_MEDICATION (0x72 0x04) b. Not recommended Supplemental –Types Attribute ❑ attribute-id = MDC_ATTR_SUPPLEMENTAL_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 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)) • Bit 12 may be set (mss-cat-manual(12)) if the reading is entered manually 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. Not recommended attribute Measurement-Status ❑ attribute-id = MDC_ATTR_MSMT_STAT ❑ attribute-type = MeasurementStatus(BITS-16) ❑ attribute-value.length = 2 bytes f. Mandatory attribute Metric-Id ❑ attribute-id = MDC_ATTR_ID_PHYSIO ❑ attribute-type = OID-Type(INT-U16) ❑ attribute-value.length= 2 bytes ❑ attrbute-value = One of the following • MDC_CTXT_MEDICATION_RAPIDACTING (0x72 0x08) • MDC_CTXT_MEDICATION_SHORTACTING (0x72 0x0C) • MDC_CTXT_MEDICATION_INTERMEDIATEACTING (0x72 0x10) • MDC_CTXT_MEDICATION_LONGACTING (0x72 0x14) • MDC_CTXT_MEDICATION_PREMIX (0x72 0x18) g. 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 h. 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_MILLI_G OR MDC_DIM_MILLI_L i. IF Not recommended attribute Source-Handle-Reference is present ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes j. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes k. Optional attribute Relative-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL ❑ attribute-type = RelativeTime (INT-U32) ❑ attribute-value.length = 4 bytes l. Conditional attribute HiRes-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL_HI_RES ❑ attribute-type = HighResRelativeTime ❑ attribute-value.length = OCTET STRING (SIZE(8)) m. Not recommended attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT type ❑ attribute-value.length = 4 bytes n. IF Not recommended Compound-Simple-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = SimpleNuObsValueCmp ❑ attribute-value.length = <variable> o. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Basic-Nu-Observed-Value ❑ attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC ❑ attribute-type = BasicNuObsValue ❑ attribute-value.length = SFLOAT-Type (INT-U16) p. IF Not recommended attribute Compound-Basic-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_BASIC ❑ attribute-type = BasicNuObsValueCmp ❑ attribute-value.length = <variable> q. IF Not recommended attribute Compound-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_VAL_OBS ❑ attribute-type = NuObsValue ❑ attribute-value.length = <variable>

	r. Not recommended attribute Compound-Nu-Observed-Value ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = NuObsValueCmp ❑ attribute-value.length = <variable> s. Recommended attribute Accuracy ❑ attribute-id = MDC_ATTR_NU_ACCUR_MSMT ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-009		
TP label		Context Carbohydrates Numeric Object - Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	NumObj 3; C	NumObj 4; M	NumObj 5; R
		NumObj 6; R	NumObj 8; R	NumObj 9; R
		NumObj 12; R	NumObj 16; O	NumObj 17; O
		NumObj 20; R	NumObj 22; R	NumObj 23; R
		NumObj 24; R	NumObj 25; R	ContextCarb 1; M
		ContextCarb 2; M	ContextCarb 3; M	ContextCarb 4; M
		ContextCarb 5; M	NumObj 2; M	ContextCarb 6; M
Test purpose		Check that: The Context Carbohydrates Numeric Object contains the attributes specified for Extended Configuration.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_181 AND C_AG_GL_005		
Other PICS		C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated manager must respond with an "unsupported-config" and wait for a new configuration. 5. Once the agent under test sends an extended configuration, check that Context Carbohydrates 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_CTXT_GLU_CARB (0x71 0xE4)

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(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))
     - Bit 12 may be set (mss-cat-manual(12)) if the reading is entered manually
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. Not recommended attribute Measurement-Status
   - ❑ attribute-id = MDC_ATTR_MSMT_STAT
   - ❑ attribute-type = MeasurementStatus(BITS-16)
   - ❑ attribute-value.length = 2 bytes
f. Mandatory attribute Metric-Id
   - ❑ attribute-id = MDC_ATTR_ID_PHYSIO
   - ❑ attribute-type = OID-Type(INT-U16)
   - ❑ attribute-value.length= 2 bytes
   - ❑ attrbute-value = One of the following
     - MDC_CTXT_GLU_CARB_BREAKFAST (0x71 0xE8)
     - MDC_CTXT_GLU_CARB_LUNCH (0x71 0xEC)
     - MDC_CTXT_GLU_CARB_DINNER (0x71 0xF0)
     - MDC_CTXT_GLU_CARB_SNACK (0x71 0xF4)
     - MDC_CTXT_GLU_CARB_DRINK (0x71 0xF8)
     - MDC_CTXT_GLU_CARB_SUPPER (0x71 0xFC)
     - MDC_CTXT_GLU_CARB_BRUNCH (0x72 0x00)
g. 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

	h. 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_ G i. IF Not recommended attribute Source-Handle-Reference is present ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes j. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes k. Optional attribute Relative-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL ❑ attribute-type = RelativeTime (INT-U32) ❑ attribute-value.length = 4 bytes l. Conditional attribute HiRes-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL_HI_RES ❑ attribute-type = HighResRelativeTime ❑ attribute-value.length = OCTET STRING (SIZE(8)) m. Not recommended attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT type ❑ attribute-value.length = 4 bytes n. IF Not recommended Compound-Simple-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = SimpleNuObsValueCmp ❑ attribute-value.length = <variable> o. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Basic-Nu-Observed-Value ❑ attribute-id = MDC_ATTR_NU_VAL_OBS_BASIC ❑ attribute-type = BasicNuObsValue ❑ attribute-value.length = SFLOAT-Type (INT-U16) p. IF Not recommended attribute Compound-Basic-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_BASIC ❑ attribute-type = BasicNuObsValueCmp ❑ attribute-value.length = <variable> q. IF Not recommended attribute Compound-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_VAL_OBS ❑ attribute-type = NuObsValue ❑ attribute-value.length = <variable> r. IF Not recommended attribute Compound-Nu-Observed-Value is present

	❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = NuObsValueCmp ❑ attribute-value.length = <variable> s. Recommended attribute Accuracy ❑ attribute-id = MDC_ATTR_NU_ACCUR_MSMT ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-010		
TP label		Control Solution Numeric Object - Standard Configuration 1701		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	CtrlSol 2; M	CtrlSol 4; M	CtrlSol 5; M
		CtrlSol 6; M	CtrlSol 8; M	CtrlSol 10; M
		CtrlSol 12; M		
Test purpose		Check that: The Control Solution Numeric Object contains the attributes specified for Standard Configuration 0x06A5.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_GL_024 AND (NOT C_AG_OXP_181)		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 3. Check that the field Dev-Config-Id is set to 0x06A5 (1701); if it is not, the manager responds with a "unsupported-config" and waits for a new configuration. 4. Once the agent under test sends a standard configuration, check that Control Solution Object attributes are: a. Mandatory attribute Handle ❑ attribute-id = MDC_ATTR_ID_HANDLE ❑ attribute-type = HANDLE ❑ attribute-value = 0x00 0x02 b. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_SCADA (0x00 0x02), MDC_CONC_GLU_CONTROL (0x71 0xD0).		

	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 (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 ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type(INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute-value= MDC_DIM_MILLI_G_PER_DL e. Mandatory attribute Attribute-Value-Map ❑ attribute-id = MDC_ATTR_ATRIBUTE_VAL_MAP ❑ attribute-type = AttrValMap (sequence of attribute-id(OID-Type) and attribute-length(INT-U16)) ❑ attribute-value.length=<variable> ❑ attribute-value= MDC_ATTR_NU_VAL_OBS_BASIC MDC_ATTR_TIME_STAMP_ABS f. No other attribute shall be present at configuration.
Pass/Fail criteria	All checked values are specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-010_A		
TP label		Control Solution Numeric Object - Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	CtrlSol 4; M	CtrlSol 5; M	CtrlSol 7; M
Test purpose		Check that: The Control Solution Numeric Object contains the attributes specified for Extended Configuration.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_GL_001 AND C_AG_OXP_181		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager.		

3. Check that the field Dev-Config-Id is set in the extended range; if it is not, the manager responds with a "unsupported-config" and waits for a new configuration.
4. Once the agent under test sends an extended configuration, check that Control Solution Object attributes are:
   a. Mandatory attribute Type
      - ❑ attribute-id = MDC_ATTR_ID_TYPE
      - ❑ attribute-type = TYPE
      - ❑ attribute-value = MDC_PART_SCADA (0x00 0x02), MDC_CONC_GLU_CONTROL (0x71 0xD0).
   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 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
      - ❑ 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. Conditional 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_MILLI_G_PER_DL OR MDC_DIM_MILLI_MOLE_PER_L j. IF Not recommended attribute Source-Handle-Reference is present ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes k. IF Not recommended attribute Relative-Time-Stamp is present ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL ❑ attribute-type = RelativeTime(INT-U32) ❑ attribute-value.length = 4 bytes l. IF Not recommended attribute Measure-Active-Period ❑ attribute-id = MDC_ATTR_TIME_PD_MSMT_ACTIVE ❑ attribute-type = FLOAT type ❑ attribute-value.length = 4 bytes m. IF Not recommended Compound-Simple-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = SimpleNuObsValueCmp ❑ attribute-value.length =<variable> n. IF Not recommended attribute Compound-Basic-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_BASIC ❑ attribute-type = BasicNuObsValueCmp ❑ attribute-value.length = <variable> o. IF Not recommended attribute Compound-Nu-Observed-Value is present ❑ attribute-id = MDC_ATTR_NU_VAL_OBS ❑ attribute-type = NuObsValue ❑ attribute-value.length = <variable> p. Not recommended attribute Compound-Nu-Observed-Value ❑ attribute-id = MDC_ATTR_NU_CMPD_VAL_OBS_SIMP ❑ attribute-type = NuObsValueCmp ❑ attribute-value.length = <variable> q. IF Recommended attribute Accuracy is present ❑ attribute-id = MDC_ATTR_NU_ACCUR_MSMT ❑ attribute-type = FLOAT-Type (INT-U32) ❑ attribute-value.length = 4 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/AG/CLASS/GL/BV-011</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">Device and Sensor annunciation status Enumeration Object - Extended Configuration</td></tr>
<tr><td rowspan="10">Coverage</td><td>Spec</td><td colspan="3">[IEEE 11073-10417]</td></tr>
<tr><td rowspan="9">Testable items</td><td>EnumObj 3; R</td><td>DevSenAn 1; M</td><td>DevSenAn 5; M</td></tr>
<tr><td>DevSenAn 6; M</td><td>DevSenAn 7; O</td><td>DevSenAn 8; R</td></tr>
<tr><td>DevSenAn 11; R</td><td>DevSenAn 12; R</td><td>DevSenAn 13; R</td></tr>
<tr><td>DevSenAn 15; R</td><td>DevSenAn 21; O</td><td>DevSenAn 22; R</td></tr>
<tr><td>DevSenAn 23; R</td><td>DevSenAn 24; R</td><td>DevSenAn 25; R</td></tr>
<tr><td>DevSenAn 26; O</td><td>DevSenAn 28; O</td><td>DevSenAn 9; O</td></tr>
<tr><td>DevSenAn 10; R</td><td>EnumObj 2; R</td><td>EnumObj 4; R</td></tr>
<tr><td>EnumObj 5; R</td><td>EnumObj 19; O</td><td>DevSenAn 30; R</td></tr>
<tr><td colspan="2">Test purpose</td><td colspan="3">Check that:
Device and Sensor annunciation status Enumeration Object contains the attributes specified for Extended Configuration.</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_181 AND C_AG_GL_007</td></tr>
<tr><td colspan="2">Other PICS</td><td colspan="3"></td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The simulated manager and the agent under test are in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated manager receives an association request from the agent under test.
2. The simulated manager responds with a result = accepted-unknown-config
3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager.
4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated manager must respond with an "unsupported-config" and wait for a new configuration.
5. Once the agent under test sends an extended configuration, check that all Device and Sensor annunciation status Objects have:
a. Mandatory attribute Type
❑ attribute-id = MDC_ATTR_ID_TYPE
❑ attribute-type = TYPE
❑ attribute-value = MDC_PART_PHD_DM (0x00 0x80), MDC_GLU_METER_DEV_STATUS (0x71 0xD8)
b. IF Not recommended attribute Supplemental-Types is present
❑ attribute-id = MDC_ATTR_SUPPLEMENTAL_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</td></tr>
</table>

	• 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 ❑ 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. Optional attribute Measurement-Status ❑ 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 ❑ 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 ❑ attribute-id = MDC_ATTR_ID_PHYSIO_LIS ❑ attribute-type = MetricIdList ❑ attribute-value.length= <variable>(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. IF Not recommended attribute Unit-Code is present ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes j. IF Not recommended attribute Source-Handle-Reference is present ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes k. Optional attribute Enum-Observed-Value-Simple-OID ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIMP_OID ❑ attribute-type = OID-Type (INT-U16) ❑ attribute-value.length = 2 bytes l. IF Not recommended attribute Enum-Observed-Value-Simple-Bit-Str ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIMP_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes

	m. IF recommended attribute Enum-Observed-Value-Basic-Bit-Str is present ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR ❑ attribute-type = BITS-16 ❑ attribute-value.length = 2 bytes n. IF Not recommended attribute Enum-Observed-Value-Simple-Str is rpesent ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_STR ❑ attribute-type = EnumPrintableString ❑ attribute-value.length = <variable> o. IF Not recommended attribute Enum-Observed-Value is present ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS ❑ attribute-type = EnumObsValue ❑ attribute-value.length = <variable> p. Optional attribute Enum-Observed-Value-Partition ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_PART ❑ attribute-type = NomPartition(INT-U16) ❑ attribute-value.length = 2 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-012		
TP label		Context Meal Enumeration Object - Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	EnumObj 3; R	EnumObj 4; M	EnumObj 5 R
		EnumObj 6; R	EnumObj 7; R	EnumObj 8; R
		EnumObj 9; R	EnumObj 2; M	EnumObj 12; R
		EnumObj 16; O	EnumObj 17; O	EnumObj 20; O
		EnumObj 21; O	EnumObj 22; O	EnumObj 23; O
		EnumObj 24; O	ContextMeal 1; M	ContextMeal 2; M
		ContextMeal 3; M		
Test purpose		Check that: Context Meal Enumeration Object contains the attributes specified for Extended Configuration.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_181 AND C_AG_GL_008		
Other PICS		C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config		

	3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated manager must respond with an "unsupported-config" and wait for a new configuration. 5. Once the agent under test sends an extended configuration, check that all Context Meal Enumeration Objects have: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_DM (0x00 0x80), MDC_CTXT_GLU_MEAL (0X72 0X48) b. IF Not recommended attribute Supplemental-Types is present ❑ attribute-id = MDC_ATTR_SUPPLEMENTAL_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 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)) • Bit 12 may be set (mss-cat-manual(12)) 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 ❑ 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 is present ❑ attribute-id = MDC_ATTR_ID_PHYSIO_LIS ❑ attribute-type = MetricIdList ❑ attribute-value.length= <variable>(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. IF Not recommended attribute Unit-Code is present
   - ❑ attribute-id = MDC_ATTR_UNIT_CODE
   - ❑ attribute-type = OID-Type(INT-U16)
   - ❑ attribute-value.length = 2 bytes

j. IF Not recommended attribute Source-Handle-Reference is present
   - ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF
   - ❑ attribute-type = HANDLE (INT-U16)
   - ❑ attribute-value.length = 2 bytes

k. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Absolute-Time-Stamp
   - ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS
   - ❑ attribute-type = AbsoluteTime
   - ❑ attribute-value.length = 8 bytes

l. IF Optional attribute Relative-Time-Stamp is present
   - ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL
   - ❑ attribute-type = RelativeTime (INT-U32)
   - ❑ attribute-value.length = 4 bytes

m. IF Optional attribute HiRes-Time-Stamp is present
   - ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL_HI_RES
   - ❑ attribute-type = HighResRelativeTime
   - ❑ attribute-value.length = OCTET STRING (SIZE(8))

n. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store then mandatory attribute Enum-Observed-Value-Simple-OID
   - ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIMP_OID
   - ❑ attribute-type = OID-Type(INT-U16)
   - ❑ attribute-value.length = 2 bytes
   - ❑ attribute.value= One of the following nomenclature value will be used:
     - MDC_CTXT_GLU_MEAL_PREPRANDIAL (0x72 0x4C) OR
     - MDC_CTXT_GLU_MEAL_POSTPRANDIAL (0x72 0x50) OR
     - MDC_CTXT_GLU_MEAL_FASTING (0x72 0x54) OR MDC_CTXT_GLU_MEAL_BEDTIME (0x72 0x74) OR
     - MDC_CTXT_GLU_MEAL_CASUAL (0x72 0x58)

o. IF Optional attribute Enum-Observed-Value-Simple-Bit-Str is present
   - ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR
   - ❑ attribute-type = BITS-32
   - ❑ attribute-value.length = 4 bytes

p. IF Optional attribute Enum-Observed-Value-Basic-Bit-Str is present
   - ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR
   - ❑ attribute-type = BITS-16
   - ❑ attribute-value.length = 2 bytes

q. IF Optional attribute Enum-Observed-Value-Simple-Str is present

	❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_STR ❑ attribute-type = EnumPrintableString ❑ attribute-value.length= <variable> r. IF Optional attribute Enum-Observed-Value is present ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS ❑ attribute-type = EnumObsValue ❑ attribute-value.length = <variable> s. IF Optional attribute Enum-Observed-Value-Partition is present ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS_VAL_PART ❑ attribute-type = NomPartition (INT-U16) ❑ attribute-value.length = 2 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-013		
TP label		Context Sample Location Enumeration Object - Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	EnumObj 3; R	EnumObj 4; M	EnumObj 5 R
		EnumObj 6; R	EnumObj 7; R	EnumObj 8; R
		EnumObj 9; R	EnumObj 2; M	EnumObj 12; R
		EnumObj 16; O	EnumObj 17; O	EnumObj 20; O
		EnumObj 21; O	EnumObj 22; O	EnumObj 23; O
		EnumObj 24; O	ContxtSamLoc 1; M	ContxtSamLoc 2; M
		ContxtSamLoc 3; M		
Test purpose		Check that: Context Sample Location Enumeration Object contains the attributes specified for Extended Configuration.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_181 AND C_AG_GL_009		
Other PICS		C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated manager must respond with an "unsupported-config" and wait for a new configuration. 5. Once the agent under test sends an extended configuration, check that all Context Meal Enumeration Objects have:		

a. Mandatory attribute Type
   - ❑ attribute-id = MDC_ATTR_ID_TYPE
   - ❑ attribute-type = TYPE
   - ❑ attribute-value = MDC_PART_PHD_DM (0x00 0x80), MDC_CTXT_GLU_SAMPLELOCATION (0x72 0x34)

b. IF Not recommended attribute Supplemental-Types is present
   - ❑ attribute-id = MDC_ATTR_SUPPLEMENTAL_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 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))
     - Bit 12 may be set (mss-cat-manual(12))

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
   - ❑ attribute-value = Only one attribute of Metric-Id and Metric-Id-List shall be present.

g. IF Not recommended attribute Metric-Id-List is present
   - ❑ attribute-id = MDC_ATTR_ID_PHYSIO_LIS
   - ❑ attribute-type = MetricIdList
   - ❑ attribute-value.length= <variable>(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. IF Not recommended attribute Unit-Code is present
   - ❑ attribute-id = MDC_ATTR_UNIT_CODE

	❑ attribute-type = OID-Type(INT-U16) ❑ attribute-value.length = 2 bytes j. IF Not recommended attribute Source-Handle-Reference is present ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes k. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes l. IF Optional attribute Relative-Time-Stamp is present ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL ❑ attribute-type = RelativeTime (INT-U32) ❑ attribute-value.length = 4 bytes m. IF Optional attribute HiRes-Time-Stamp is present ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL_HI_RES ❑ attribute-type = HighResRelativeTime ❑ attribute-value.length = OCTET STRING (SIZE(8)) n. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store then mandatory attribute Enum-Observed-Value-Simple-OID ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_OID ❑ attribute-type = OID-Type(INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute.value= One of the following nomenclature value will be used: • MDC_CTXT_GLU_SAMPLE_LOCATION_FINGER (0x72 0x38) OR • MDC_CTXT_GLU_SAMPLE_LOCATION_AST (0x72 0x3C) OR • MDC_CTXT_GLU_SAMPLE_LOCATION_EARLOBE (0x72 0x40) OR • MDC_CTXT_GLU_SAMPLE_LOCATION_CTRLSOLUTION (0x72 0x44) o. IF Optional attribute Enum-Observed-Value-Simple-Bit-Str is present ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes p. IF Optional attribute Enum-Observed-Value-Basic-Bit-Str is present ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR ❑ attribute-type = BITS-16 ❑ attribute-value.length = 2 bytes q. IF Optional attribute Enum-Observed-Value-Simple-Str is present ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_STR ❑ attribute-type = EnumPrintableString ❑ attribute-value.length= <variable> r. IF Optional attribute Enum-Observed-Value is present ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS ❑ attribute-type = EnumObsValue

	❑ attribute-value.length = <variable> s. IF Optional attribute Enum-Observed-Value-Partition is present ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS_VAL_PART ❑ attribute-type = NomPartition (INT-U16) ❑ attribute-value.length = 2 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-014		
TP label		Context Tester Enumeration Object - Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	EnumObj 3; R	EnumObj 4; M	EnumObj 5 R
		EnumObj 6; R	EnumObj 7; R	EnumObj 8; R
		EnumObj 9; R	EnumObj 2; M	EnumObj 12; R
		EnumObj 16; O	EnumObj 17; O	EnumObj 20; O
		EnumObj 21; O	EnumObj 22; O	EnumObj 23; O
		EnumObj 24; O	ContextTester 1; M	ContextTester 2; M
		ContextTester 3; 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_178 AND C_AG_OXP_181 AND C_AG_GL_010		
Other PICS		C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated manager must respond with an "unsupported-config" and wait for a new configuration. 5. Once the agent under test sends an extended configuration, check that all Context Meal Enumeration Objects have: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_DM (0x00 0x80), MDC_CTXT_GLU_TESTER (0x72 0x5C)		

	b. IF Not recommended attribute Supplemental-Types is present ❑ attribute-id = MDC_ATTR_SUPPLEMENTAL_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 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)) • Bit 12 may be set (mss-cat-manual(12)) 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 ❑ attribute-value = Only one attribute of Metric-Id and Metric-Id-List shall be present. g. IF Not recommended attribute Metric-Id-List is present ❑ attribute-id = MDC_ATTR_ID_PHYSIO_LIS ❑ attribute-type = MetricIdList ❑ attribute-value.length= <variable>(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. IF Not recommended attribute Unit-Code is present ❑ attribute-id = MDC_ATTR_UNIT_CODE ❑ attribute-type = OID-Type(INT-U16) ❑ attribute-value.length = 2 bytes

	j. IF Not recommended attribute Source-Handle-Reference is present ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF ❑ attribute-type = HANDLE (INT-U16) ❑ attribute-value.length = 2 bytes k. IF Agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Absolute-Time-Stamp ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes l. IF Optional attribute Relative-Time-Stamp is present ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL ❑ attribute-type = RelativeTime (INT-U32) ❑ attribute-value.length = 4 bytes m. IF Optional attribute HiRes-Time-Stamp is present ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL_HI_RES ❑ attribute-type = HighResRelativeTime ❑ attribute-value.length = OCTET STRING (SIZE(8)) n. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store then mandatory attribute Enum-Observed-Value-Simple-OID ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_OID ❑ attribute-type = OID-Type(INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute.value= One of the following nomenclature value will be used: • MDC_CTXT_GLU_TESTER_SELF (0x72 0x60) OR • MDC_CTXT_GLU_TESTER_HCP (0x72 0x64) OR • MDC_CTXT_GLU_TESTER_LAB (0x72 0x68) o. IF Optional attribute Enum-Observed-Value-Simple-Bit-Str is present ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes p. IF Optional attribute Enum-Observed-Value-Basic-Bit-Str is present ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR ❑ attribute-type = BITS-16 ❑ attribute-value.length = 2 bytes q. IF Optional attribute Enum-Observed-Value-Simple-Str is present ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_STR ❑ attribute-type = EnumPrintableString ❑ attribute-value.length= <variable> r. IF Optional attribute Enum-Observed-Value is present ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS ❑ attribute-type = EnumObsValue ❑ attribute-value.length = <variable> s. IF Optional attribute Enum-Observed-Value-Partition is present ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS_VAL_PART

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

TP Id		TP/PLT/AG/CLASS/GL/BV-015		
TP label		Context Health Enumeration Object - Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	EnumObj 3; R	EnumObj 4; M	EnumObj 5 R
		EnumObj 6; R	EnumObj 7; R	EnumObj 8; R
		EnumObj 9; R	EnumObj 2; M	EnumObj 12; R
		EnumObj 16; O	EnumObj 17; O	EnumObj 20; O
		EnumObj 21; O	EnumObj 22; O	EnumObj 23; O
		EnumObj 24; O	ContextHealth 1; M	ContextHealth 2; M
		ContextHealth 3; M		
Test purpose		Check that: Context Health Enumeration Object contains the attributes specified for Extended Configuration.		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_181 AND C_AG_GL_011		
Other PICS		C_AG_OXP_041, C_AG_OXP_183, C_AG_OXP_189		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The simulated manager receives an association request from the agent under test. 2. The simulated manager responds with a result = accepted-unknown-config 3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager. 4. Check that the field Dev-Config-Id is in the extended range, if it is not, the simulated manager must respond with an "unsupported-config" and wait for a new configuration. 5. Once the agent under test sends an extended configuration, check that all Context Meal Enumeration Objects have: a. Mandatory attribute Type ❑ attribute-id = MDC_ATTR_ID_TYPE ❑ attribute-type = TYPE ❑ attribute-value = MDC_PART_PHD_DM (0x00 0x80), MDC_CTXT_GLU_HEALTH (0x72 0x5C) b. IF Not recommended attribute Supplemental-Types is present ❑ attribute-id = MDC_ATTR_SUPPLEMENTAL_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 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))
  - Bit 12 may be set (mss-cat-manual(12))

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
- ❑ attribute-value = Only one attribute of Metric-Id and Metric-Id-List shall be present.

g. IF Not recommended attribute Metric-Id-List is present

- ❑ attribute-id = MDC_ATTR_ID_PHYSIO_LIS
- ❑ attribute-type = MetricIdList
- ❑ attribute-value.length= <variable>(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. IF Not recommended attribute Unit-Code is present

- ❑ attribute-id = MDC_ATTR_UNIT_CODE
- ❑ attribute-type = OID-Type(INT-U16)
- ❑ attribute-value.length = 2 bytes

j. IF Not recommended attribute Source-Handle-Reference is present

- ❑ attribute-id = MDC_ATTR_SOURCE_HANDLE_REF
- ❑ attribute-type = HANDLE (INT-U16)
- ❑ attribute-value.length = 2 bytes

k. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store THEN Mandatory attribute Absolute-Time-Stamp

- ❑ attribute-id = MDC_ATTR_TIME_STAMP_ABS

	❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes l. IF Optional attribute Relative-Time-Stamp is present ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL ❑ attribute-type = RelativeTime (INT-U32) ❑ attribute-value.length = 4 bytes m. IF Optional attribute HiRes-Time-Stamp is present ❑ attribute-id = MDC_ATTR_TIME_STAMP_REL_HI_RES ❑ attribute-type = HighResRelativeTime ❑ attribute-value.length = OCTET STRING (SIZE(8)) n. IF the agent supports fixed or variable format MDS event report and it does not support PM-Store then mandatory attribute Enum-Observed-Value-Simple-OID ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_OID ❑ attribute-type = OID-Type(INT-U16) ❑ attribute-value.length = 2 bytes ❑ attribute.value= One of the following nomenclature value will be used: • MDC_CTXT_GLU_HEALTH_MINOR (0x72 0x20) OR • MDC_CTXT_GLU_HEALTH_MAJOR (0x72 0x24) OR • MDC_CTXT_GLU_HEALTH_MENSES (0x72 0x28) OR • MDC_CTXT_GLU_HEALTH_STRESS (0x72 0x2C) OR • MDC_CTXT_GLU_HEALTH_NONE (0x72 0x30) o. IF Optional attribute Enum-Observed-Value-Simple-Bit-Str is present ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_BIT_STR ❑ attribute-type = BITS-32 ❑ attribute-value.length = 4 bytes p. IF Optional attribute Enum-Observed-Value-Basic-Bit-Str is present ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR ❑ attribute-type = BITS-16 ❑ attribute-value.length = 2 bytes q. IF Optional attribute Enum-Observed-Value-Simple-Str is present ❑ attribute-id= MDC_ATTR_ENUM_OBS_VAL_SIM_STR ❑ attribute-type = EnumPrintableString ❑ attribute-value.length= <variable> r. IF Optional attribute Enum-Observed-Value is present ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS ❑ attribute-type = EnumObsValue ❑ attribute-value.length = <variable> s. IF Optional attribute Enum-Observed-Value-Partition is present ❑ attribute-id= MDC_ATTR_VAL_ENUM_OBS_VAL_PART ❑ attribute-type = NomPartition (INT-U16) ❑ attribute-value.length = 2 bytes
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

<table>
<tr><td colspan="2">TP Id</td><td colspan="3">TP/PLT/AG/CLASS/GL/BV-016</td></tr>
<tr><td colspan="2">TP label</td><td colspan="3">PM-Store Attributes for Extended Configuration</td></tr>
<tr><td rowspan="4">Coverage</td><td>Spec</td><td colspan="3">[IEEE 11073-10417]</td></tr>
<tr><td rowspan="3">Testable items</td><td>PMStrObjAtt 1; M</td><td>PMStrObjAtt 5; M</td><td>PMStrObjAtt 6; M</td></tr>
<tr><td>PMStrObjAtt 8; M</td><td>PMStrObjAtt 9; R</td><td>PMStrObjAtt 12; M</td></tr>
<tr><td></td><td></td><td></td></tr>
<tr><td colspan="2">Test purpose</td><td colspan="3">Check that:
PM-Store Object contains the attributes specified for Extended Configuration.</td></tr>
<tr><td colspan="2">Applicability</td><td colspan="3">C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_041 AND C_AG_OXP_181</td></tr>
<tr><td colspan="2">Other PICS</td><td colspan="3"></td></tr>
<tr><td colspan="2">Initial condition</td><td colspan="3">The simulated manager and the agent under test are in the unassociated state.</td></tr>
<tr><td colspan="2">Test procedure</td><td colspan="3">1. The simulated manager receives an association request from the agent under test.
2. The simulated manager responds with a result = accepted-unknown-config
3. The agent responds with a "Remote Operation Invoke | Confirmed Event Report" message with an MDC_NOTI_CONFIG event to send its configuration to the manager.
4. The handle for the PM-Store attribute must be:
a. Mandatory attribute Handle
❑ attribute-type = HANDLE
❑ attribute-value.length = 2 bytes
❑ attribute-value = must be unique and non-zero. Actual value may be specified by the device specialization.
5. The simulated manager 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 agent issues a GET response with the PM-Store attributes it supports:
a. Mandatory Store-Capacity-Count
❑ attribute-id = MDC_ATTR_METRIC_STORE_CAPAC_CNT
❑ attribute-type = INT-U32
❑ attribute-value.length = 4 bytes
❑ attribute-value = See relation with next attribute
b. Mandatory attribute Store-Usage-Count
❑ attribute-id = MDC_ATTR_METRIC_STORE_USAGE_CNT
❑ attribute-type = INT-U32
❑ attribute-value.length = 4 bytes
❑ attribute-value = consistent with actual number of segments present and always ≤ than Storage-Capacity-Count
c. Mandatory attribute PM-Store-Label
❑ attribute-id = MDC_ATTR_PM_STORE_LABEL_STRING
❑ attribute-type = OCTET STRING
❑ attribute-value.length = <Variable>
❑ attribute-value = Printable ASCII</td></tr>
</table>

	d. IF Not Recommended attribute Sample-Period is present ❑ attribute-id = MDC_ATTR_TIME_PD_SAMP ❑ attribute-type = RelativeTime ❑ attribute-value.length = 4 bytes ❑ 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/AG/CLASS/GL/BV-017		
TP label		PM Segment Object for Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	PMStoreObj 8; M	PMStoreObj 9; O	PMStoreObj 10; M
		PMStoreObj 11; O	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_178 AND C_AG_OXP_041 AND C_AG_OXP_181		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. The simulated manager 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 manager 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 agent issues a response with the PM-Segment attributes it supports: a. Mandatory attribute Segment-Label ❑ attribute-id = MDC_ATTR_PM_SEG_LABEL_STRING ❑ attribute-type = OCTET STRING ❑ attribute-value.length = consistent with value ❑ attribute-value = <printable ASCII> b. Mandatory attribute Segment-Start-Abs-Time ❑ attribute-id = MDC_ATTR_TIME_START_SEG ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes ❑ attribute-value = • century = • year ≤ 99 • month ≤ 12 • day ≤ 31 • hour ≤ 24		

	• minute ≤ 60 • second ≤ 60 • sec-fractions ≤ 100 c. Mandatory attribute Segment-End-Abs-Time ❑ attribute-id = MDC_ATTR_TIME_END_SEG ❑ attribute-type = AbsoluteTime ❑ attribute-value.length = 8 bytes ❑ attribute-value = • century = • year ≤ 99 • month ≤ 12 • day ≤ 31 • hour ≤ 24 • minute ≤ 60 • second ≤ 60 • sec-fractions ≤ 100 d. Mandatory attribute Segment-Usage-Count ❑ attribute-id = MDC_ATTR_SEG_USAGE_CNT ❑ attribute-type = INT-U32 ❑ attribute-value.length = 4 bytes ❑ attribute-value = <not relevant in this test> e. Mandatory attribute PM-Segment-Entry-Map ❑ SegmentEntryHeader.value = One of the next must be set: • seg-elem-hdr-absolute-time(0) • seg-elem-hdr-relative-time(1) • seg-elem-hdr-hires-relative-time(2) ❑ SegmEntryElem: < Record the fields for later comparison> 4. Repeat step 3 and 4 for every Segment.
Pass/Fail criteria	• 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 Common Glucose 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/AG/CLASS/GL/BV-017_A		
TP label		PM-Segment Object for Extended Configuration.MDS Event Reports		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable Items	PMStoreObj 5; M	PMStoreObj 6; M	PMStoreObj 7; M

Test purpose	Check that: Any configuration with a PM Store for persistent storage shall disable Agent initiated transmission and enable access to PM-Store transmissions
Applicability	C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_041 AND C_AG_OXP_181
Other PICS	
Initial condition	The simulated manager and the agent under test are in the operating state.
Test procedure	1. The simulated manager 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 manager 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 manager asks for a measurement. 4. Check event reports that are sent by the agent.
Pass/Fail criteria	In step 4, the agent shall not send the data with MDS event reports.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-018		
TP label		Communication Model: Association Procedure		
Coverage	**Spec**	[IEEE 11073-10417]		
	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; M		
Test purpose		Check that: The association procedure data exchange is correct		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178		
Other PICS		C_AG_OXP_002, C_AG_OXP_017		
Initial condition		The simulated manager and the agent under test are in the unassociated state.		
Test procedure		1. The agent sends a message to associate to the simulated manager, the expected fields sent by the Agent are: a. APDU Type ❑ field- type = AarqApdu ❑ field-length =2 bytes ❑ field-value =0xE2 0x00. b. assoc-version ❑ field- type = AssociationVersion ❑ field-length =BITS-32 ❑ field- value=0x80 0x00 0x00 0x00		

c. data-proto-id
   - ❑ field- type = DataProtoId(INT-U16)
   - ❑ field-length =2 bytes
   - ❑ field- value=0x50 0x79 (20601)

d. protocol-version
   - ❑ field- type = Protocol Version
   - ❑ field-length = 4 bytes
   - ❑ field- value=0x80 0x00 0x00 0x00

e. encoding rules
   - ❑ field- type = EncodingRules
   - ❑ field-length = 2 bytes
   - ❑ field- value=
     - Bit 0 must be set (support for MDER)
     - Bits 1 (XER) and 2 (PER) may be set
     - All other bits must be 0.

f. nomenclature version
   - ❑ field- type = NomenclatureVersion
   - ❑ field-length = 4 bytes
   - ❑ field- value=0x80 0x00 0x00 0x00
   - ❑ This value indicates version1 is supported (nom-version1(0) is set).

g. functional – units
   - ❑ field- type = FunctionalUnits
   - ❑ field-length = 4 bytes
     - Bit 0 must be 0.
     - Bits 1 and 2 may be set
     - The rest of the bits must not be set

h. System type
   - ❑ field- type = SystemType
   - ❑ field-length = 4 bytes
   - ❑ field- value = 0x00 0x80 0x00 0x00 (sys-type-agent)

i. System-Id
   - ❑ field- type = OCTET STRING
   - ❑ field-length = 8 bytes
   - ❑ field- value = 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX 0xXX (octet string length = 8 | UI-64 manufacturer and device)
   - ❑ This value will be System Id attribute of MDS Object.

j. dev-config-id
   - ❑ field- type = ConfigId(INT-U16)
   - ❑ field-length = 2 bytes
   - ❑ field- value =
     - 0x06 0xA4 OR 0x06 A5 for Standard Configuration.
     - <between 0x40 0x00 and 0x7F 0xFF > for Extended Configuration.

k. data-req-mode-flags (DataReqModeCapab)
   - ❑ field- type = DataReqModeFlags

	❑ field-length = 2 bytes • If the agent supports agent-initiated measurement transfer → Bit 15 is set (data-req-supp-init-agent(15)) • If the agent supports requesting objects based on the object handle → Bit 6 will be set (data-req-supp-scope-handle(6)). • If the agent supports single response → Bit 8 will be set (data-req-supp-mode-single-rsp(8)). • If the agent supports time unlimited data request →Bit 10 will be set (data-req-supp-mode-time-no-limit(10)). l. data-req-init-agent-count (DataReqModeCapab) ❑ field- type = INT-U8 ❑ field-length = 2 bytes ❑ field.value = 0x01 m. data-req-init-manager-count (DataReqModeCapab) ❑ field- type = INT-U8 ❑ field-length = 2 bytes ❑ field.value = 0x00
Pass/Fail criteria	All checked values are as specified in the test procedure.
Notes	

TP Id		TP/PLT/AG/CLASS/GL/BV-019		
TP label		PM Segment Object for Extended Configuration		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	PMStrObjMeth 1; M		
Test purpose		Check that: Glucose Meter supports the Clear-Segments method with Confirmed mode		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_OXP_041 AND C_AG_OXP_071		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state and the agent has at least one PM-Segment with data stored.		
Test procedure		1. Take measurements with the agent of a value that is stored on a PM-Segment. 2. The simulated manager 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 agent issues a GET response with the PM-Store attributes, record the values of the PMStoreCapab attribute. 4. The simulated manager shall send a Get-Segment-Info object action with segmSelection set to all-segments to check that there are no Segments in use. 5. The simulated manager sends a Clear-Segment to all segments: a. Data APDU ❑ Type = Invoke | Confirmed Action, ❑ HANDLE = obj-handle ❑ Action = MDC_ACT_SEG_CLEAR		

	❑ SegmSelection = all-segments 6. The agent under test operation response: a. Data APDU ❑ Type = Response | Confirmed Action, ❑ HANDLE = obj-handle ❑ Action = MDC_ACT_SEG_CLEAR 7. Delay 8. The simulated manager sends a request for the PM-Segment Data with SegmSelection = all-segments to obtain all the segments: a. Data APDU ❑ Type = Invoke | Confirmed Action, ❑ HANDLE = obj-handle ❑ Action = MDC_ACT_SEG_TRIG_XFER ❑ SegmSelection = <Instance number of the selected PM-Segment that contained data before the clear-segment action> 9. The agent issues an action response with the Data a. Data APDU ❑ Type = Response | Confirmed Action, ❑ HANDLE = obj-handle ❑ Action = MDC_ACT_SEG_TRIG_XFER ❑ TrigSegmXferRsp = • 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/AG/CLASS/GL/BV-020		
TP label		Config Changes Service. Contextual Attribute.		
Coverage	**Spec**	[ITU-T H.810 (2015)]		
	Testable items	Communication 8; M		
Test purpose		Check that: Service component reports configuration changes to future measurements only		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178 AND C_AG_GL_022		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Take some measurements with the agent under test. 2. Make a change to the contextual attribute Unit-Code for blood glucose. 3. The agent shall send an MDS event report indicating the new contextual attribute value. 4. Take some more measurements.		

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

TP Id		TP/PLT/AG/CLASS/GL/BV-021		
TP label		Operating State. Manager to Agent Maximum APDU Size		
Coverage	**Spec**	[ISO/IEEE 11073-20601A]		
	Testable items	CommonCharac 3; M		
	Spec	[IEEE 11073-10417]		
	Testable items	ComChar 2; M		
Test purpose		Check that: The total size of the response do not exceed of the maximum APDU size established by the specialization [AND] A glucose agent 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		
Applicability		C_AG_OXP_000 AND C_AG_OXP_178		
Other PICS		C_AG_OXP_041, C_AG_OXP_100		
Initial condition		The simulated manager and the agent are in the operating state.		
Test procedure		1. The simulated manager issues a "Remote Operation Invoke | Get" command with: a. Obj-handle set to 0 (to request for MDS object) b. attribute-id-list.count = 103 c. attribute-id-list: (MDC_ATTR_ID_MODEL, MDC_ATTR_SYS_ID, MDC_ATTR_DEV_CONFIG_ID) repeated 34 times followed by an additional MDC_ATTR_ID_MODEL 2. Check the response of the agent. 3. The simulated manager issues a "Remote Operation Invoke | Get" command with the handle set to 0 (to request for MDS object) and an empty attribute-id-list to indicate all attributes. 4. Check the response of the agent.		
Pass/Fail criteria		• In step 2, the agent under test may respond with a rors-cmip-get listing all the requested attributes, or with a roer message. If PICS C_AG_OXP_100 =TRUE and the agent does not respond with a rors-cmip-get message, it responds with a roer message or rorj(resource-limitation) message, a WARNING will appear. o If the response is a get response, the total size of the response cannot exceed the sum of the APDU sizes of the supported specializations (limited to an absolute limit of 64512 octets): ▪ Pulse oximeter -> 9216 octets ▪ Weighing scales -> 896 octets		

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

TP Id		TP/PLT/AG/CLASS/GL/BV-022		
TP label		Blood Glucose measurement above the capabilities of the device sensor		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	BloodGL 29; M		
Test purpose		Check that: In Standard Configuration 1701 (0x06A5), a Blood Glucose 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_178 AND C_AG_GL_024 AND (NOT_C_AG_OXP_181)		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Place a blood sample in the device sensor with a blood glucose level above the capabilities of the device sensor and acquire a measurement with the agent under test. 2. The test tool simulated manager waits to receive an event report from the agent under test. The event report shall contain the following value: a. Data APDU ❑ event-type = MDC_NOTI_SCAN_REPORT_FIXED (0x0D 0x1D) ❑ obj-handle = 1 (Blood glucose) ❑ obs-val-data = • Basic-Nu-Observed-Value = 0x07FE • Absolute-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 blood sample (or a simulated blood solution) with a blood glucose level above the capabilities of device sensor.

TP Id		TP/PLT/AG/CLASS/GL/BV-023		
TP label		Blood Glucose measurement below the capabilities of the device sensor		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	BloodGL 30; M		
Test purpose		Check that: In Standard Configuration 1701 (0x06A5), a Blood Glucose 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_178 AND C_AG_GL_024 AND (NOT_C_AG_OXP_181)		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Place a blood sample in the device sensor with a blood glucose level below the capabilities of the device sensor and acquire a measurement with the agent under test. 2. The test tool simulated manager waits to receive an event report from the agent under test. The event report shall contain the following value: a. Data APDU ❑ event-type = MDC_NOTI_SCAN_REPORT_FIXED (0x0D 0x1D) ❑ obj-handle = 1 (Blood glucose) ❑ obs-val-data = • Basic-Nu-Observed-Value = 0x0802 • Absolute-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 blood sample (or a simulated blood solution) with a blood glucose level below the capabilities of device sensor.		

TP Id		TP/PLT/AG/CLASS/GL/BV-024		
TP label		Control Solution measurement above the capabilities of the device sensor		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	CtrlSol 15; M		
Test purpose		Check that: In Standard Configuration 1701 (0x06A5), a Control Solution 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_178 AND C_AG_GL_024 AND (NOT_C_AG_OXP_181)		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		

Test procedure	1. Place a Control Solution sample in the device sensor with a blood glucose level above the capabilities of the device sensor and check it with the agent under test. 2. The test tool simulated manager waits to receive an event report from the agent under test. The event report shall contain the following value: a. Data APDU ❑ event-type = MDC_NOTI_SCAN_REPORT_FIXED (0x0D 0x1D) ❑ obj-handle = 2 (Control solution) ❑ obs-val-data = • Basic-Nu-Observed-Value = 0x07FE • Absolute-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 Solution with a blood glucose level above the capabilities of the device sensor.

TP Id		TP/PLT/AG/CLASS/GL/BV-025		
TP label		Control Solution measurement below the capabilities of the device sensor		
Coverage	**Spec**	[IEEE 11073-10417]		
	Testable items	CtrlSol 15; M		
Test purpose		Check that: In Standard Configuration 1701 (0x06A5), 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_178 AND C_AG_GL_024 AND (NOT_C_AG_OXP_181)		
Other PICS				
Initial condition		The simulated manager and the agent under test are in the operating state.		
Test procedure		1. Place a Control Solution sample in the device sensor with a blood glucose level above the capabilities of the device sensor and check it with the agent under test. 2. The test tool simulated manager waits to receive an event report from the agent under test. The event report shall contain the following value: a. Data APDU ❑ event-type = MDC_NOTI_SCAN_REPORT_FIXED (0x0D 0x1D) ❑ obj-handle = 2 (Control Solution) ❑ obs-val-data = • Basic-Nu-Observed-Value = 0x0802 • Absolute-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 Solution with a blood glucose level below the capabilities of the device sensor.		

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