ITU-T

H.850

TELECOMMUNICATION STANDARDIZATION SECTOR OF ITU (01/2015)

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 10: Transcoding for Bluetooth low energy (BLE): Manager

Recommendation ITU-T H.850



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Recommendation ITU-T H.850

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 10: Transcoding for Bluetooth low energy (BLE): Manager

Summary

Recommendation ITU-T H.850 is a transposition of Continua Test Tool DG2013, Test Suite Structure & Test Purposes, LP-PAN Interface; Part 10: PHD Transcoding Whitepaper. Manager (Version 1.2, 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.850	2015-01-13	16	11.1002/1000/12279

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

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Electronic attachment: 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, LP-PAN Interface; Part 10: PHD Transcoding Whitepaper. Manager (Version 1.2, 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
1.0	2012-10-05	Initial release
1.1	2013-05-24	Initial release for Test Tool DG2012. It uses "TSS&TP_DG2011_LP-PAN_PART_10_v1.0.doc" as a baseline and it adds new features included in Continua DG 2012 (BPM and HR profiles).
1.2	2014-01-24	Initial release for Test Tool DG2013. It uses "TSS&TP_DG2012_LP-PAN_PART_10_v1.1.doc" as a baseline and it adds new features included in Continua DG 2013: • Add glucose meter BLE • Add BLE SSP support • Add NFC new transport • Add INR device Specialization

Recommendation ITU-T H.850

Conformance of ITU-T H.810 personal health devices: PAN/LAN/TAN interface Part 10: Transcoding for Bluetooth low energy (BLE): Manager

1 Scope

The scope of this Recommendation¹ 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 specifications. The objective of this test specification is to provide a high probability of air interface interoperability between different devices.

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

- Part 1: Optimized Exchange Protocol [IEEE 11073-20601A] Agent
- Part 2: Optimized Exchange Protocol [IEEE 11073-20601A] Manager
- Part 3: Continua Design Guidelines. Agent
- Part 4: Continua Design Guidelines. Manager
- Part 5: Device Specializations. Agent. This document is divided into 14 subparts:
 - Part 5A: Weighing Scales
 - Part 5B: Glucose Meter
 - **Part 5C**: Pulse Oximeter
 - **Part 5D**: Blood Pressure Monitor
 - **Part 5E**: Thermometer
 - Part 5F: Cardiovascular Fitness and Activity Monitor
 - Part 5G: Strength Fitness Equipment
 - **Part 5H**: Independent Living Activity Hub
 - Part 5I: Adherence Monitor
 - Part 5J: Insulin Pump (Future development)
 - **Part 5K**: Peak Flow
 - **Part 5L**: Body Composition Analyser
 - Part 5M: Basic Electrocardiograph
 - Part 5N: International Normalized Ratio Monitor
- Part 6: Device Specializations. Manager
- Part 7: Continua Design Guidelines. Agent BLE
- Part 8: Continua Design Guidelines. Manager BLE
- Part 9: Personal Health Devices Transcoding White paper. Agent
- Part 10: Personal Health Devices Transcoding White paper. Manager

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

2 References

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

[ITU-T H.810] Recommendation ITU-T H.810 (2013), Interoperability design

guidelines for personal health systems.

[Bluetooth PHDT v1.4] Bluetooth SIG (2013), Personal Health Devices Transcoding White

Paper, v1.4.

https://www.bluetooth.org/DocMan/handlers/DownloadDoc.ashx?doc_id=294539

health device communication Part 20601: Application profile –

Optimized Exchange Protocol Amendment 1.

http://standards.ieee.org/findstds/standard/11073-20601a-2010.html

[IHE PCD TF 1] IHE PCD TF 1 (2012), IHE Patient Care Device Technical

Framework – Revision 2.0. Volume 1: Integration Profiles.

http://www.ihe.net/Technical_Framework/upload/IHE_PCD_TF_Rev2-0_Vol1_FT_2012-08-

16.pdf>

[IHE PCD TF 2] IHE PCD TF 2 (2012), IHE Patient Care Device Technical

Framework – Revision 2.0. Volume 2: Transactions.

http://www.ihe.net/Technical_Framework/upload/IHE_PCD_TF_Rev2-0_Vol2_FT_2012-08-

16.pdf>

[IHE PCD TF 3] IHE PCD TF 3 (2012), IHE Patient Care Device Technical

Framework – Revision 2.0. Volume 3: Semantic Content.

http://www.ihe.net/Technical_Framework/upload/IHE_PCD_TF_Rev2-0_Vol3_FT_2012-08-

16.pdf>

[ISO/IEEE 11073-104xx] ISO/IEEE 11073-104xx (in force), *Health informatics – Personal*

health device communication – Device specialization.

NOTE – Shorthand to refer to the collection of device specialization standards that utilize [b-ISO/IEEE 11073-20601], where xx can be any number from 01

to 99 inclusive.

3 Definitions

3.1 Terms defined elsewhere

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

CDG Continua Design Guidelines

DUT Device Under Test

GUI Graphical User Interface

INR International Normalized Ratio

IUT Implementation Under Test

LSB Least Significant Bit

MDS Medical Device System

MSB Most Significant Bit

NFC Near Field Communication

PAN Personal Area Network

PCO Point of Control and Observation

PCT Protocol Conformance Testing

PHD Personal Healthcare Device

PHDC Personal Healthcare Device Class

PHM Personal Health Manager

PICS Protocol Implementation Conformance Statement

PIXIT Protocol Implementation extra Information for Testing

RACP Record Access Control Point

SDP Service Discovery Protocol

SOAP Simple Object Access Protocol

TCRL Test Case Reference List

TCWG Test and Certification Working Group

TP Test Purposes

TSS Test Suite Structure

USB Universal Serial Bus

WDM Windows Driver Model

5 Conventions

In this text, the uppercase letter L is used as the symbol for litre.

Several of the test purposes in Annex A refer to "WAN PCD-01 messages"; these messages are specified in the Patient Care Device (PCD) Technical Framework defined in [IHE PCD TF 1], [IHE PCD TF 2] and [IHE PCD TF 3]. Similarly, the "IEEE 11073 Objects and Attributes" are defined in [ISO/IEEE 11073-104xx].

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

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

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

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

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

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

6 Test suite structure

The test purposes (TP) for the PAN/LAN/TAN interface have been divided into the groups and subgroups specified below. Annex A describes the TPs for Group 2.4 and its subgroups (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: 20601: Optimized exchange protocol (OXP)
 - Subgroup 1.2.1: PHD domain information model (DIM)
 - Subgroup 1.2.2: PHD service model (SER)
 - Subgroup 1.2.3: PHD communication model (COM)
 - Group 1.3: Devices class specializations (CLASS)
 - Subgroup 1.3.1: Weighing scales (WEG)
 - Subgroup 1.3.2: Glucose meter (GL)
 - Subgroup 1.3.3: Pulse oximeter (PO)
 - Subgroup 1.3.4: Blood pressure monitor (BPM)
 - O Subgroup 1.3.5: Thermometer (TH)
 - Subgroup 1.3.6: Cardiovascular (CV)
 - Subgroup 1.3.7: Strength (ST)
 - O Subgroup 1.3.8: Activity hub (HUB)
 - Subgroup 1.3.9: Adherence monitor (AM)
 - Subgroup 1.3.10: Insulin pump (IP) (future development)
 - Subgroup 1.3.11: Peak flow (PF)
 - Subgroup 1.3.12: Body composition analyser (BCA)
 - Subgroup 1.3.13: Basic electrocardiograph (ECG)
 - Subgroup 1.3.14: International normalized ratio (INR)
 - Group 1.4: Personal health device transcoding (PHDTW)
 - Subgroup 1.4.1: General Requirements (GEN)
 - Subgroup 1.4.2: Thermometer Requirements (TH)
 - Subgroup 1.4.3: Blood Pressure Requirements (BPM)
 - O Subgroup 1.4.4: Heart Rate Requirements (HR)
 - Subgroup 1.4.5: Glucose Meter Requirements (GL)

- Group 2: Manager (MAN)
 - Group 2.1: Transport (TR)
 - Subgroup 2.1.1: Design guidelines: Common (DGC)
 - Subgroup 2.1.2: USB design guidelines (UDG)
 - Subgroup 2.1.3: Bluetooth design guidelines (BDG)
 - Subgroup 2.1.4: Cardiovascular design guidelines (CVDG)
 - Subgroup 2.1.5: Activity hub design guidelines (HUBDG)
 - Subgroup 2.1.6: ZigBee design guidelines (ZDG)
 - Subgroup 2.1.7: Bluetooth low energy design guidelines (BLEDG)
 - Subgroup 2.1.8: NFC design guidelines (NDG)
 - Group 2.2: 20601: Optimized exchange protocol (OXP)
 - Subgroup 2.2.1: General (GEN)
 - Subgroup 2.2.2: PHD domain information model (DIM)
 - Subgroup 2.2.3: PHD service model (SER)
 - Subgroup 2.2.4: PHD communication model (COM)
 - Group 2.3: Devices class specializations (CLASS)
 - Subgroup 2.3.1: Weighing scales (WEG)
 - Subgroup 2.3.2: Glucose meter (GL)
 - Subgroup 2.3.3: Pulse oximeter (PO)
 - Subgroup 2.3.4: Blood pressure monitor (BPM)
 - Subgroup 2.3.5: Thermometer (TH)
 - Subgroup 2.3.6: Cardiovascular (CV)
 - Subgroup 2.3.7: Strength (ST)
 - Subgroup 2.3.8: Activity hub (HUB)
 - Subgroup 2.3.9: Adherence monitor (AM)
 - Subgroup 2.3.10: Insulin pump (IP) (future development)
 - Subgroup 2.3.11: Peak flow (PF)
 - Subgroup 2.3.12: Body composition analyser (BCA)
 - Subgroup 2.3.13: Basic electrocardiograph (ECG)
 - Subgroup 2.3.14: International normalized ratio (INR)
 - Group 2.4: Personal health device transcoding Whitepaper (PHDTW)
 - **Subgroup 2.4.1**: General Requirements (GEN)
 - **Subgroup 2.4.2**: Thermometer Requirements (TH)
 - **Subgroup 2.4.3**: Blood Pressure Requirements (BPM)
 - Subgroup 2.4.4: Heart Rate Requirements (HR)
 - Subgroup 2.4.5: Glucose Meter Requirements (GL)

7 Electronic attachment

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

In the electronic attachment, letters "C" and "I" in the column labelled "Mandatory" are used to distinguish between "PICS" and "PIXIT" respectively during testing. If the cell is empty, the corresponding PICS is "independent". If the field contains a "C", the corresponding PICS is dependent on other PICS, and the logical expression is detailed in the "SCR_Expression" field. The SCR 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 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/TAN agent
 - MAN: PAN/LAN/TAN 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 a test purpose.
- **TP label**: This is the TP's title.
- **Coverage**: This contains the specification reference and clause to be checked by the TP.
 - Spec: This indicates the earliest version of the specification from which the testable items to be checked by the TP were included.
 - Testable item: This contains testable items to be checked by the TP
- **Test purpose**: This is a description of the requirements to be tested.
- **Applicability**: This contains the PICS items that define if the test case is applicable or not for a specific device. When a TP contains an "ALL" in this field it means that it applies to the device under test within that scope of the test (specialization, transport used, etc).
- **Initial condition**: This indicates the state to which the DUT needs to be moved at the beginning of TC execution.
- **Test procedure**: This describes the steps to be followed in order to execute the test case
- **Pass/Fail criteria**: This provides criteria to decide whether the DUT passes or fails the test case.

A.2 Subgroup 2.4.1 – Whitepaper General requirements (GEN)

TP ld		TP/LP-PAN/MAN/PHDTW/GEN/BV-000			
TP label		Whitepaper. MDS Object - Handle Attribute			
Coverage Spec		[b-Bluetooth PHDT v1.3]			
	Testable items	Common MDS 1; O			
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002			
Initial condit	tion	The manager under test and the simulated agent are in the standby state.			
Test proced	ure	 The simulated agent is configured with a profile (device specialization) supported by the manager under test; it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 			
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 			
		When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.			
		4. Check in Manager transcoder output for the MDS object – Handle attribute			
Pass/Fail cri	iteria	In step 4, the MDS object – Handle attribute is not present; however, if it is present, its value is 0.			
Notes		Possible values in typical points of observation after transcoder output are:			
		a) IEEE 11073 Objects and Attributes			
		Handle attribute is not present, or if it is present then:			
		□ Object: MDS object			
		☐ Attribute-id: MDC_ATTR_ID_HANDLE (2337)			
		☐ Attribute-type: INT-U16			
		☐ Attribute-value: 0			
		b) WAN PCD-01 message			
		PCD-01 message does not include segments with a Handle attribute value.			

TP Id		TP/LP-PAN/MAN/PHDTW/GEN/BV-001		
TP label		Whitepaper. MDS Object - System-Model Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testabl	Common MDS 2; M	String Conv 1; M	String Conv 2; M
	e items	MDS Conv 1; M	MDS Conv 2; M	MDS Conv 3; M
Applicabili	ty	C_MAN_BLE_000 AND C_MA	AN_BLE_002	
Initial cond	lition	The manager under test and the	ne simulated agent are in the sta	andby state.
Test proce	dure		nfigured with a profile (device s s a measurement ready to be se	
		The simulated agent implinate interest for this test case and the simulated agent implies the simulated agent in the simul	ements several BLE characteris are:	tics. The characteristics of
		a. Manufacturer name s	string (0x2A29)	
		Format: utf8s		
		Value: AT4wire	eless (string char, odd length)	
		b. Model number string	(0x2A24)	
		Format: utf8s		
		Value: Mod.12	(string char, even length)	
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		4. When the pairing has been completed (connection state), force the manager under test to read the Manufacturer name string and Model number string characteristics.		
		5. The simulated agent sends the measurement to the manager under test.		
Check in manager transcoder output for the MDS object – System-Model a		- System-Model attribute.		
Pass/Fail c	Pass/Fail criteria In step 6, the MDS object – System-Model attribute is present, its value matches with Manufacturer name string and Model number string characteristics values, and chara strings have even lengths (i.e., transcoder appends padding byte 0x00 to odd lengths)		stics values, and character	
Notes		Possible values in typical poin	ts of observation after transcode	er output are:
		a) IEEE 11073 Objects and	Attributes	
		System-Model attribute is pres	sent:	
		□ Object: MDS object		
		☐ Attribute-id: MDC_AT	TR_ID_MODEL (2344)	
		(OCTET STRING)}. (ENCE {manufacturer (OCTET S OCTET STRING is restricted to ven length (padding with 0x00 ch	printable ASCII characters
		☐ Attribute-value:		
			wireless (string char) or 00 0C 4 hat 0x00 0x0C is the string leng	
		ii. model-number: Mc 0x00 0x06 is the st	d.12 (string char) or 00 06 4d 6 ring length]	f 64 2e 31 32 (hex) [Note that
		b) WAN PCD-01 message		
		PCD-01 message includes two (check OBX-5 in both segmen	o segments like these with a Systs):	stem-Model attribute value
		OBX ? ST 531969^MDC_ID_N	MODEL_NUMBER^MDC 1.0.0.a	AT4wireless R
		OBX ? ST 531970^MDC_ID_N	MODEL_MANUFACTURER^MD	C 1.0.0.b Mod.12 R

TP Id		TP/LP-PAN/MAN/PHDTW/GEN/	BV-002		
TP label		Whitepaper. MDS Object - System-Id Attribute			
Coverage	Spec	[b-Bluetooth PHDT v1.3]	[b-Bluetooth PHDT v1.3]		
	Testabl e items	Common MDS 3; M	MDS Conv 4; M	MDS Conv 5; M	
Applicabili	ty	C_MAN_BLE_000 AND C_MAN	_BLE_002		
Initial cond	dition	The manager under test and the	simulated agent are in the standb	by state.	
Test proce	dure	 The simulated agent is configured with a profile (device specialization) supported by the manager under test; it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 			
		The simulated agent implem interest for this test case is:	nents several BLE characteristics.	The characteristic of	
		a. System ID (0x2A23)			
		Format: uint40, u	int24 (64 bits)		
		Value: 11 22 33 4			
		The manager under test init simulated agent and it starts	ates a discovery process (scanning a pairing process with the simula	ng state). It discovers the ated agent (initiating state).	
		When the pairing has been to read System ID character	completed (connection state), for cristics.	ce the manager under test	
		5. The simulated agent sends	the measurement to the manager	under test.	
		-	er output for the MDS object – Sy		
Pass/Fail o	riteria	In step 6, the MDS object – Syst System ID characteristic value.	em-Id attribute is present and its v	value matches the BLE	
Notes		Possible values in typical points of observation after transcoder output are:			
		a) IEEE 11073 Objects and Attributes			
		System-Id attribute is present:			
		□ Object: MDS object			
		□ Attribute-id: MDC_ATTR_SYS_ID (2436)			
		□ Attribute-type: OCTET STRING restricted to EUI-64			
		☐ Attribute-value: 11 22 33 44 AA BB CC DD (hex)			
		b) WAN PCD-01 message			
			s a Thermometer profile then the em-Id attribute value (check OBX		
		OBX ? 528392^MDC_DEV_SPE AABBCCDD^EUI-64	EC_PROFILE_TEMP^MDC 1	X 1122334455	
			s a Blood pressure profile then th the System-Id attribute value (che		
		OBX ? 528391^MDC_DEV_SPEC_PROFILE_BP^MDC 1 X 1122334455 AABBCCDD^EUI-64			
		If the simulated agent implements a Heart rate profile then the PCD-01 message includes a segment like this with the System-Id attribute value (check OBX-18):			
		OBX ? 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC 1 X 1122334455 AABBCCDD^EUI-64			
		If the simulated agent implements a Glucose profile then the PCD-01 message includes a segment like this with the System-Id attribute value (check OBX-18):			
		OBX ? 528384^MDC_DEV_SPE AABBCCDD^EUI-64	EC_PROFILE_GLUCOSE^MDC 1	X 1122334455	

TP ld	TP/LP-PAN/MAN/PHDTW/GEN/BV-003
TP label	Whitepaper. MDS Object - Production-Specification Attribute
Coverage Spec	[b-Bluetooth PHDT v1.3]
Testal	
items	MDS Conv 6; M MDS Conv 7; M
Applicability	C_MAN_BLE_000 AND C_MAN_BLE_002
Initial condition	The manager under test and the simulated agent are in the standby state.
Test procedure	 The simulated agent is configured with a profile (device specialization) supported by the manage under test; it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are: Serial number string (0x2A25) Format: utf8s Value: SN 2468 (string char, odd length) Hardware revision string (0x2A27) Format: utf8s Value: HW 13579 (string char, even length)
	 c. Software revision string (0x2A28) Format: utf8s Value: SW new-vers (string char, odd length) d. Firmware revision string (0x2A26) Format: utf8s Value: FW v1.23 (string char, even length) 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), force the manager under test to read the Serial number string, Hardware revision string, Software revision string and Firmware revision string characteristics. 5. The simulated agent sends the measurement to the manager under test. 6. Check in manager transcoder output for the MDS object – Production-Specification attribute
Pass/Fail criteria	In step 6, the MDS object – Production-Specification attribute is present, its value matches with the BLE Serial number string, Hardware revision string, Software revision string and Firmware revision string characteristics values, and character strings have even lengths (i.e., transcoder appends padding byte 0x00 to odd length strings).
Notes	Possible values in typical points of observation after transcoder output are:
Notes	a) IEEE 11073 Objects and Attributes Production-Specification attribute is present: Object: MDS object Attribute-id: MDC_ATTR_ID_PROD_SPECN (2349) Attribute-id: MDC_ATTR_ID_PROD_SPECN (2349) Attribute-id: MDC_ATTR_ID_PROD_SPECN (2349) Attribute-type: SEQUENCE OF [{spec-type (INT-U16), component-id (PrivateOid), prod-specond (OCTET STRING)}, {}]. OCTET STRING is restricted to printable ASCII characters (0x20 0x7E) and even length (padding with 0x00 character) Attribute-value: (note that elements order may be different) i. Element: • spec-type: 1 (dec) • component-id: 0 (dec) • prod-spec: SN 2468 (string char) or 00 08 53 4E 20 32 34 36 38 00 (hex) [Note that 0x00 0x08 is the string length] ii. Element: • spec-type: 3 (dec) • component-id: 0 (dec) • prod-spec: HW 13579 (string char) or 00 08 48 57 20 31 33 35 37 39 (hex) [Note that 0x00 0x08 is the string length] iii. Element: • spec-type: 4 (dec) • component-id: 0 (dec) • prod-spec: SW new-vers (string char) or 00 0C 53 57 20 6E 65 77 2D 76 65 72 73 00 (hex) [Note that 0x00 0x0C is the string length] iv. Element: • spec-type: 5 (dec) • component-id: 0 (dec) • prod-spec: FW v1.23 (string char) or 00 08 46 57 20 76 31 2E 32 33 (hex) [Note that 0x00 0x08 is the string length] b) WAN PCD-01 message PCD-01 message PCD-01 message PCD-01 message includes four segments like these with Production-Specification attribute value (check OBX-5 in four segments): OBX[?]ST[531972^MDC_ID_PROD_SPEC_SERIAL^MDC[1.0.0.a]SN 2468

TP ld		TP/LP-PAN/MAN/	PHDTW/GEN/F	BV-004		
TP label		Whitepaper. MDS Object - Date-and-Time Attribute				
Coverage	Spec	[b-Bluetooth PHD	Γ v1.3]			
	Testable	Common MDS 6;	М	Date-Time Conv 2; M	Date-Time Conv 3; M	
	items	Date-Time Conv 4	,	Date-Time Conv 5; M	MDS Conv 8; M	
Applicability		C_MAN_BLE_000 C_MAN_BLE_007		_BLE_002 AND (C_MAN_BL	.E_001 OR C_MAN_BLE_003 OR	
Initial conditi	on	The manager und	er test and the	simulated agent are in the st	andby state.	
Test procedure		under test; it discoverable	has a measure).	ement ready to be sent and it	specialization) supported by the manager is in the advertising state (it is stics. The characteristic of interest for this	
		test case is: a. Date Tii	ne (0x2A08)			
			April 8th, 2012,	19:45:05		
		i. Fie	eld: Year			
		•	Format: uin	t16		
		•	Value: 2012	2		
		ii. Fie	eld: Month			
		•	Format: uin	t8		
			Value: 4			
		III. FIE	eld: Day	40		
			Format: uin	I8		
		Value: 8 iv. Field: Hours				
		17. 116	Format: uin	t8		
		v. Field: Minutes				
		Format: uint8				
		Value: 45				
		vi. Field: Seconds				
		Format: uint8				
		•	Value: 5			
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated				
		agent and it starts a pairing process with the simulated agent (initiating state).4. When the pairing has been completed (connection state), force the manager under test to read the Date Time characteristic.				
		 The simulated agent sends the measurement to the manager under test. 				
		6. Check in manager transcoder output for the MDS object – Date-and-Time attribute				
Pass/Fail crit	Pass/Fail criteria			and-Time attribute is preser etion of seconds is set to 0.	t, its value matches with Date-and-Time	
Notes		Possible values in	typical points	of observation after transcod	er output are:	
		a) IEEE 11073	Objects and Att	tributes		
		Date-and-Time at		nt:		
			MDS object	'D TIME ADO (0400)		
			_	R_TIME_ABS (2439)	(INT-U8), month (INT-U8), day (INT-U8),	
		hour (IN	IT-U8), minute	, , ,	sec-fractions (INT-U8)} (BCD encoding)	
		☐ Attribute				
			century: 20 (he	, , ,		
			year: 12 (hex) (, ,		
			month: 04 (hex day: 08 (hex) o	, , ,		
			day: 08 (nex) d hour: 19 (hex)	, ,		
			minute: 45 (hex)	` '		
			second: 05 (he	, , ,		
				00 (hex) or 0 (dec)		
		b) WAN PCD-0				
		PCD-01 message	includes a seg 5^MDC_ATTR_	ment like this with a Type att _TIME_ABS^MDC 1.0.0.a 20	*	

TP ld		TP/LP-PAN/MAN/PHDTW/GEN/BV-006		
TP label	Whitepaper. MDS Object - Battery-Level Attribute			
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable	Common MDS 12; M		
	items			
Applicability	,	C_MAN_BLE_000 AND C_MAN_BLE_002		
Initial condit	tion	The manager under test and the simulated agent are in the standby state.		
Test proced	ure	The simulated agent is configured with a profile (device specialization) supported by the manager under test; it has a measurement ready to be sent and it is in the advertising state (it is discoverable).		
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		a. Battery level (0x2A19)		
		Format: uint8		
		Value: 75		
simulated agent and it starts a pairing process with the simulated agent (initiat		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		4. When the pairing has been completed (connection state), force the manager under test to read the Battery level characteristic.		
5. The simul		5. The simulated agent sends the measurement to the manager under test.		
6. Check in manager transcoder output for the MDS object – Battery-Level attribution		6. Check in manager transcoder output for the MDS object – Battery-Level attribute.		
Pass/Fail cri	iteria	In step 6, the MDS object – Battery-Level attribute is present and its value matches with the BLE Battery-Level characteristic value.		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		Battery-Level attribute is present:		
		□ Object: MDS object		
		□ Attribute-id: MDC_ATTR_VAL_BATT_CHARGE (2460)		
		☐ Attribute-type: INT-U16		
		☐ Attribute-value: 75		
		b) WAN PCD-01 message		
		PCD-01 message includes a segment like this with a Battery-Level attribute value (check OBX-5):		
		OBX ? NM 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC 1.0.0.a 75 262688^MDC_DIM_PERCENT^MDC R [current_date_time]		

A.3 Subgroup 2.4.2 – Whitepaper Thermometer requirements (TH)

TP Id		TP/LP-PAN/MAN/PHDTW/TH/BV-000		
TP label		Whitepaper. Thermometer MDS Object - System-Type Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable items	TH Specific MDS 1; M		
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002		
Initial condit	tion	The manager under test and the simulated agent are in the standby state.		
Test proced	ure	 The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 		
		2. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		3. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
		4. Check in manager transcoder output for the MDS object – System-Type attribute.		
Pass/Fail cri	iteria	In step 4, the MDS object – System-Type attribute is not present.		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		System-Type attribute is not present:		
		□ Object: MDS object		
		☐ Attribute-id: MDC_ATTR_SYS_TYPE (2438)		
		☐ Attribute-type: TYPE		
		☐ Attribute-value: <not present=""></not>		
		b) WAN PCD-01 message		
		PCD-01 message does not include segments with a System-Type attribute value (67974^MDC_ATTR_SYS_TYPE^MDC).		

TP Id		TP/LP-PAN/MAN/PHDTW/TH/BV-001		
TP label		Whitepaper. Thermometer MDS Object - Dev-Configuration-Id Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable items	TH Specific MDS 2; M		
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002		
Initial condit	tion	The manager under test and the simulated agent are in the standby state		
Test proced	ure	 The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 		
		2. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state)		
		3. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
		Check in manager transcoder output for the MDS object – Dev-Configuration-Id attribute		
Pass/Fail cri	iteria	In step 4, the MDS object – Dev-Configuration-Id attribute is present and its value is inside the range 0x4000 - 0x7FFF.		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		Dev-Configuration-Id attribute is present:		
		□ Object: MDS object		
		□ Attribute-id: MDC_ATTR_DEV_CONFIG_ID (2628)		
		☐ Attribute-type: INT-U16		
		 Attribute-value: Any value inside the range 16384 - 32767 (dec) or 0x4000 – 0x7FFF (hex) 		
		b) WAN PCD-01 message		
		According to [ITU-T H.810] (CDG 2013), the Dev-Configuration-Id shall not be transmitted in the PCD-01 message; therefore it is not possible to check this attribute.		

TP ld		TP/LP-PAN/MAN/PHDTW/TH/BV-002		
TP label		Whitepaper. Thermometer MDS Object - System-Type-Spec-List Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable items	Common MDS 15; M TH Specific MDS 3; M		
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002		
Initial condit	ion	The manager under test and the simulated agent are in the standby state		
Test proced	ure	 The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 		
		The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		3. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
		Check in manager transcoder output for the MDS object – System-Type-Spec-List attribute		
Pass/Fail cri	teria	In step 4, the MDS object – System-Type-Spec-List attribute is present and its value is (MDC_DEV_SPEC_PROFILE_TEMP, Version 1).		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		System-Type-Spec-List attribute is present:		
		□ Object: MDS object		
		□ Attribute-id: MDC_ATTR_SYS_TYPE_SPEC_LIST (2650)		
		☐ Attribute-type: SEQUENCE OF [{type (INT-U16), version (INT-U16)}]		
		☐ Attribute-value:		
		 type: MDC_DEV_SPEC_PROFILE_TEMP or 4104 (dec) or 10 08 (hex) 		
		 version: 1 (dec) or 00 01 (hex) 		
		b) WAN PCD-01 message		
		PCD-01 message includes a segment like this with a System-Type-Spec-List attribute value (check OBX-5):		
		OBX ? NM 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC 1.0.0.a		
		528392^MDC_DEV_SPEC_PROFILE_TEMP^MDC R		

TP Id		TP/LP-PAN/MAN/PHDTW/TH/BV-003		
TP label		Whitepaper. MDS Object - Reg-	-Cert-Data-List Attribute	
Coverag	Coverag Spec [b-Bluetooth PHDT v1.3]			
е	Testabl e items	Common MDS 14; M	Regulatory Conv 1; M	
Applicabili	ty	C_MAN_BLE_000 AND C_MAN	N_BLE_001 AND C_MAN_BLE	_002
Initial cond	dition	The manager under test and the	e simulated agent are in the sta	ndby state.
Test procedure		The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).		
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		a. IEEE 11073-20601 [IE (0x2A2A)	EE 11073-20601A] Regulatory	Certification Data List
		Format: reg-cert-data-list (opaque structure)		
		• Value: 00 02 00 (hex)	12 02 01 00 08 04 00 00 01 00	02 80 08 02 02 00 02 80 00
		i. Element:		
		• auth-bo	ody-and-struc-type:	
		- auth	n-body: 02 (hex) auth-body-con	tinua(2)
		- auth	n-body-struc-type: 01 (hex). con	tinua-version-struct(1)

ı	, ·	
	auth-body-data:	
	- major-IG-version: 04 (hex)	
	- minor-IG-version: 00 (hex)	
	- certified-devices: 80 08 (hex). BLE Thermometer	
	ii. Element:	
	auth-body-and-struc-type:	
	- auth-body: 02 (hex). auth-body-continua(2)	
	 auth-body-struc-type: 02 (hex). continua-reg-struct(2) 	
	auth-body-data:	
	- regulation-bit-field: 80 00 (hex). Unregulated device	
	3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent.	
	4. When the pairing has been completed (connection state), force the manager under test to read the IEEE 11073-20601 Regulatory Certification Data List characteristic.	
	5. The simulated agent sends the measurement to the manager under test.	
	6. Check in manager transcoder output for the MDS object – Reg-Cert-Data-List attribute	
Pass/Fail criteria	In step 6, the MDS object – Reg-Cert-Data-List attribute is present and its value matches with the IEEE 11073-20601 Regulatory Certification Data List characteristic value.	
Notes	Possible values in typical points of observation after transcoder output are:	
	a) IEEE 11073 Objects and Attributes	
	Reg-Cert-Data-List attribute is present:	
	□ Object: MDS object	
	□ Attribute-id: MDC_ATTR_REG_CERT_DATA_LIST (2635)	
	☐ Attribute-type: SEQUENCE OF [{auth-body-and-struc-type, auth-body-data}, {}]	
	Attribute-value: 00 02 00 12 02 01 00 08 04 00 00 01 00 02 80 08 02 02 00 02 80 00 (hex) [Note that 0x00 0x02 is the number of elements in the sequence and 0x00 0x12 is the length of the sequence]	
	i. Reg-Cert-Data Element:	
	auth-body-and-struc-type:	
	- auth-body: 02 (hex) auth-body-continua(2)	
	- auth-body-struc-type: 01 (hex). continua-version-struct(1)	
	auth-body-data:	
	- major-IG-version: 04 (hex)	
	- minor-IG-version: 00 (hex)	
	- certified-devices: 80 08 (hex). BLE Thermometer	
	ii. Reg-Cert-Data Element:	
	 auth-body-and-struc-type: 	
	- auth-body: 02 (hex). auth-body-continua(2)	
	- auth-body-struc-type: 02 (hex). continua-reg-struct(2)	
	auth-body-data:	
	- regulation-bit-field: 80 00 (hex). Unregulated device	
	b) WAN PCD-01 message	
	PCD-01 message includes five segments like these with Reg-Cert-Data-List attribute value (check OBX-5 in five segments):	
	OBX ? CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.a	
	2^auth-body-continua R	
	OBX ? ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.a.x 4.0 R	
	OBX ? NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.a.y 32776 R	
	OBX ? CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.b	
	2^auth-body-continua R	
	OBX ? CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.b.z 1^unregulated-device(0) R	

TP ld		TD/I P.PAN/MAN/PHDTW/TH/RV.004		
TP label		TP/LP-PAN/MAN/PHDTW/TH/BV-004 Whitepaper. Thermometer Body Temperature Object - Handle Attribute		
Coverage	Snoc	[b-Bluetooth PHDT v1.3]		
Coverage	Spec Testable	TH Numeric 1; O		
Applicability	items	C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002		
		The manager under test and the simulated agent are in the standby state.		
Test procedure		The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).		
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		a. Temperature measurement (0x2A1C)		
		i. Field: Flags		
		Format: 8 bit		
		 Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included 		
		ii. Field: Temperature Measurement Value (Celsius)		
		Format: FLOAT		
		Value: Not relevant		
		iii. Field: Temperature Measurement Value (Fahrenheit)		
		This field is not included		
		iv. Field: Time Stamp		
		Format: Date and Time		
		Value: Not relevant		
		v. Field: Temperature Type		
		This field is not included		
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
		Check in manager transcoder output for the Body temperature object – Handle attribute		
Pass/Fail criteria In step 5, the Body temperature object – Handle attribute is not present; however, present then its value is different to 0.		In step 5, the Body temperature object – Handle attribute is not present; however, if it is present then its value is different to 0.		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		Handle attribute is not present, or if it is present then:		
		□ Object: Body temperature numeric object		
		☐ Attribute-id: MDC_ATTR_ID_HANDLE (2337)		
		☐ Attribute-type: INT-U16		
		☐ Attribute-value: Any value other than 0		
		b) WAN PCD-01 message		
		PCD-01 message does not include segments with a Handle attribute value.		

TP ld		TP/LP-PAN/MAN/PHDTW/	TH/BV-005		
TP label		Whitepaper. Body Temperature Object - Type and Metric-Id Attributes 1			
Coverage	Spec	[b-Bluetooth PHDT v1.3]	, , , , , , , , , , , , , , , , , , , ,		
	Testable items	TH Numeric 2; M	TH Numeric 3; M	TH Numeric 4; M	
Applicability	у	C_MAN_BLE_000 AND C	MAN_BLE_001 AND C_MAN	I_BLE_002	
Initial condi		The manager under test and the simulated agent are in the standby state.			
Test procedure		has a measurement rediscoverable).	eady to be sent and it is in the	ter profile (device specialization); it advertising state (it is cteristics. The characteristics of	
		i. Field: Flags	surement (0x2A1C) 8 bit 1000 0010 (MSB → LSB). Temerature Measurement Value (CFLOAT) Not relevant reture Measurement Value (Factorial of the Included teamp) Date and Time Not relevant reture Type does not included (0x2A1D): This characteristic st initiates a discovery process starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pairing process with the Included (0x2A1D): This characteristic starts a pai	ahrenheit) is not present s (scanning state). It discovers the	
			nscoder output for the Body te	mperature object – Type and	
Pass/Fail cr	iteria	In step 5, the Body tempera {MDC_PART_SCADA, MD	-		
		In step 5, the Body tempera MDC_TEMP_BODY.	ature object – Metric-Id attribu	ite is present and its value is	
Notes		a) IEEE 11073 Objects a Type attribute is present: Object: Body temp Attribute-id: MDC Attribute-type: SE Attribute-value: partition: M code: MDC Metric-Id attribute is preser Object: Body temp Attribute-id: MDC Attribute-id: MDC Attribute-value: M b) WAN PCD-01 messag	perature object _ATTR_ID_TYPE (2351) QUENCE {partition (INT-U16) IDC_PART_SCADA or 2 (dec c_TEMP_BODY or 19292 (dec nt: perature object _ATTR_ID_PHYSIO (2347) -U16 DC_TEMP_BODY or 19292 (dec e	o, code (INT-U16)}) or 00 02 (hex) c) or 4B 4C (hex)	
		OBX ? NM 150364^MDC_1	FEMP_BODY^MDC 1.0.0.a 35 FEMP_BODY^MDC 1.0.0.a 35 FIND	5.6	

TP Idb TP Iabe Spec DeBluetooth PHOT VT.3 TH Numeric 3: M	TD.		TD// D DAN/MAN/DUDT/	W/TLUDY 000	
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Interes Applicability C. MAN BLE. 000 AND C. MAN BLE. 001 AND C. MAN BLE. 002 Intial condition The manager under test and the simulated agent are in the standby state. The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are: a. Temperature measurement (tx2A1C) i. Filect: Flags • Format: 8 bit • Value: 0000 0110 (MSB. → LSB). Temperature Type field is included ii. Filect. Temperature Measurement Value (Celsius) • Format: FLOAT • Value: Not relevant iii. Filect. Temperature Measurement Value (Fahrenheit) • This field is not included iv. Filect. Time Stamp • Format: Bate and Time • Value: Not relevant • Filect. Temperature Type • Format: 8 bit • Value: Several value are checked in this test case b. Temperature type (tx2A1D): This characteristic is not present. 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the simulated agent and it starts a pairing process with the simulated agent sends the measurement to the manager under test with the filed Temperature Type set to Armpit (0x01). 5. Check in manager transcoder output for the Body temperature object – Type and Metric-Id attributes. 6. The simulated agent sends the measurement to the manager under test with filed Temperature object – Type and Metric-Id attributes. 7. Check in manager transcoder output for the Body temperature object – Type and Metric-Id attributes. 8. The simulated agent sends the measurement to the manager under test with filed Temperature object – Type and Metric-Id attributes. 9. Check in manager transcoder output for the Body temperature object – Type and Metric-Id attributes. 9. Check in manager transcoder out	Coverage			TH Numeric 2: M	TH Numeric 4: M
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			Temperature Type s	et to Tympanum (ear drum) (0	0x09).
Metric-Id attributes.				anscoder output for the Body	temperature object – Type and
			Metric-Id attributes.		

In step 5, the Body temperature object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_TEMP_BODY}, and the Body temperature object – Metric-Id Pass/Fail criteria attribute is present and its value is MDC_TEMP_AXILLA. In step 7, the Body temperature object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_TEMP_BODY}, and the Body temperature object – Metric-Id attribute is present and its value is MDC_TEMP_BODY. In step 9, the Body temperature object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_TEMP_BODY} and Body temperature object - Metric-Id attribute is present and its value is MDC_TEMP_EAR In step 11, the Body temperature object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_TEMP_BODY}, and the Body temperature object - Metric-Id attribute is present and its value is MDC_TEMP_FINGER. In step 13, the Body temperature object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_TEMP_BODY}, and the Body temperature object - Metric-Id attribute is present and its value is MDC_TEMP_GIT. In step 15, the Body temperature object – Type attribute is present and its value is {MDC PART SCADA, MDC TEMP BODY}, and the Body temperature object - Metric-Id attribute is present and its value is MDC_TEMP_ORAL. In step 17, the Body temperature object – Type attribute is present and its value is $\{ MDC_PART_SCADA, \ MDC_TEMP_BODY \}, \ and \ the \ Body \ temperature \ object-Metric-Id$ attribute is present and its value is MDC_TEMP_RECT. In step 19, the Body temperature object – Type attribute is present and its value is {MDC PART SCADA, MDC TEMP BODY}, and the Body temperature object - Metric-Id attribute is present and its value is MDC_TEMP_TOE. In step 21, the Body temperature object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_TEMP_BODY}, and the Body temperature object – Metric-Id attribute is present and its value is MDC_TEMP_TYMP. **Notes** In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: partition: MDC PART SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC TEMP AXILLA or 57380 (dec) or E0 24 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX|?|NM|188452^MDC TEMP AXILLA^MDC|1.0.0.a|35.6| 268192^MDC_DIM_DEGC^MDC||||R|||[current_date_time] In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC ATTR ID TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC TEMP BODY or 19292 (dec) or 4B 4C (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX|?|NM|150364^MDC_TEMP_BODY^MDC|1.0.0.a|35.7| 268192^MDC_DIM_DEGC^MDC|||||R|||20120716145210+0000 In step 9, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351)

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Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
       Attribute-value:

    partition: MDC PART SCADA or 2 (dec) or 00 02 (hex)

            • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex)
Metric-Id attribute is present:
    □ Object: Body temperature object
       Attribute-id: MDC_ATTR_ID_PHYSIO (2347)
       Attribute-type: code (INT-U16)
       Attribute-value: code: MDC_TEMP_EAR or 57356 (dec) or E0 0C (hex)
   WAN PCD-01 message
PCD-01 message includes a segment like this with a Type attribute value (check OBX-3):
OBX|?|NM|188428^MDC TEMP EAR^MDC|1.0.0.a|35.9|
268192^MDC_DIM_DEGC^MDC||||R|||20120716145310+0000
In step 11, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Type attribute is present:
       Object: Body temperature object
    ☐ Attribute-id: MDC_ATTR_ID_TYPE (2351)
       Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
            • partition: MDC PART SCADA or 2 (dec) or 00 02 (hex)

    code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex)

Metric-Id attribute is present:
        Object: Body temperature object
        Attribute-id: MDC ATTR ID PHYSIO (2347)
    Attribute-type: code (INT-U16)
    Attribute-value: code: MDC_TEMP_FINGER or 57360 (dec) or E0 10 (hex)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with a Type attribute value (check OBX-3):
OBX|?|NM|188432^MDC_TEMP_FINGER^MDC|1.0.0.a|36.1|
268192^MDC_DIM_DEGC^MDC||||R|||20120716145410+0000
In step 13, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Type attribute is present:
       Object: Body temperature object
    Attribute-id: MDC_ATTR_ID_TYPE (2351)
        Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
        Attribute-value:
            • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex)
            • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex)
Metric-Id attribute is present:
        Object: Body temperature object
        Attribute-id: MDC_ATTR_ID_PHYSIO (2347)
    Attribute-type: code (INT-U16)
        Attribute-value: code: MDC TEMP GIT or 57384 (dec) or E0 28 (hex)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with a Type attribute value (check OBX-3):
OBX|?|NM|188456^MDC_TEMP_GIT^MDC|1.0.0.a|36.3|
268192^MDC_DIM_DEGC^MDC|||||R|||20120716145510+0000
In step 15, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Type attribute is present:
    □ Object: Body temperature object
    □ Attribute-id: MDC ATTR ID TYPE (2351)
    Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}

☐ Attribute-value:

            • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex)

    code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex)

Metric-Id attribute is present:
        Object: Body temperature object
        Attribute-id: MDC_ATTR_ID_PHYSIO (2347)
        Attribute-type: code (INT-U16)
        Attribute-value: code: MDC_TEMP_ORAL or 57352 (dec) or E0 08 (hex)
   WAN PCD-01 message
PCD-01 message includes a segment like this with a Type attribute value (check OBX-3):
OBX|?|NM|188424^MDC_TEMP_ORAL^MDC|1.0.0.a|36.5|
268192^MDC_DIM_DEGC^MDC|||||R|||20120716145610+0000
In step 17, possible values in typical points of observation after transcoder output are:
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Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-value: Partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) Code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-ld attribute is present: Object: Body temperature object Attribute-value: code: MDC_TEMP_BODY or 19292 (dec) or E0 04 (hex) Metric-ld attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX[X]INMI]88420/MDC_TEMP_RECT-MDC[1].0.a]63.71 288192*MDC_DIM_DEGC*MDC[] 20120716145710+0000 In step 19, possible values in hybrical points of observation after transcoder output are: Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-id: MDC_ATTR_ID_TYPE (2361) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: Partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) Code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-ld attribute is present: Object: Body temperature object Attribute-value: code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-ld attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) Diplect: Body temperature object Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) DESTINATION of the properature object Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) DESTINATION of the properature object Attribute-value: code: MDC_TEMP_TOP of the partition of observation after transcoder output are: Diplect: Body temperature object Attribute-value: code: MDC_TEMP_TOP of 19292 (dec) or 4B 4C (hex) Metric-ld: MDC_ATTR_ID_TYPE (2351) Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) Diplect: Body temperature object Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 7	a) IEEE 11073 Objects and Attributes
Object: Body temperature object Attribute-vide: MDC_ATTR_ID_TVPE (2351) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-value: code: MDC_TEMP_BCDY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute-vide: Code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) Matribute-value: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX[NIM]188420/MDC_TEMP_RECT-MDC]1.0.0.a]36.7] 268192*MDC_DIM_DEGC*MDC] 20120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-vide: MDC_ATTR_ID_TYPE (2351) Attribute-vide: MDC_ATTR_ID_TYPE (2351) Attribute-vide: MDC_ATTR_ID_TYPE (2361) Attribute-vide: present: Object: Body temperature object Attribute-vide: present: Object: Body temperature object Attribute-vide: present: Object: Body temperature object Attribute-vide: Code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute-id MDC_ATTR_ID_TYPSIO (2347) Attribute-vialue: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX[NIM]188449/MDC_TEMP_TOE*MDC]1.0.a]36.9] 268192*MDC_DIM_DEGC*MDC]	
Attribute-lid: MDC_ATTR_ID_TYPE (2351) Attribute-lype: SEQUENCE (partition (INT-U16), code (INT-U16)) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute-lid: MDC_PART_SCADA (2347) Attribute-lid: MDC_ATTR_ID_PHYSIO (2347) Attribute-lid: MDC_ATTR_ID_PHYSIO (2347) Attribute-lid: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) MAN PCD-01 message PCD-01 message Includes a segment like this with a Type attribute value (check OBX-3): OBX[NIM]188420/MDC_IBM_RECTMOC[1].0.a (a)3.7] 268192*MDC_DIM_DEGC*MDC] R 20120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE_11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-lid: MDC_ATTR_ID_TYPE (2351) Attribute-lid: MDC_ATTR_ID_TYPE (2351) Attribute-lid: MDC_ATTR_ID_TYPE (2351) Attribute-lid: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) ocde: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-lid: MDC_ATTR_ID_PHYSIO (2347) Attribute-lype: Code (INT-U16) Attribute-lype: Sequence (INT-U16) Attribute-lype: Code (I	
attribute-value: a partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) b partition: MDC_PART_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) b) WAN PCD-01 message PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 188420^MDC_TEMP_RECT^MDC 1.0.0.a 36.7 268192^MDC_DIM_DEGC^MDC II R 20120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 188448^MDC_TEMP_TOE-MDC[1.0.0.a]36.9 268192^MDC_DIM_DEGC^MDC	
Attribute-value: - partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) - code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: - Object: Body temperature object - Attribute-vide: MDC_ATTR_ID_PHYSIO (2347) - Attribute-vide: Code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) - MAN PCD-01 message - PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): - OBJX[?]NM188420/MDC_TEMP_RECT*MDC[1.0.a]36.7] - 288192*MDC_DIM_DEGC*MDC[]][[R][[2020716145710+0000] - In step 19, possible values in typical points of observation after transcoder output are: - a) IEEE 11073 Objects and Attributes - Type attribute is present: - Object: Body temperature object - Attribute-value: - Partition: MDC_ATTR_ID_TYPE (2351) - Attribute-value: - Partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) - code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) - code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) - Code: MDC_TEMP_BODY or 19292 (dec) or 60 02 (hex) - Code: MDC_TEMP_BODY or 19292 (dec) or 60 02 (hex) - Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) - Mattribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) - Code: MDC_TEMP_BODY or 19292 (dec) or 80 20 (hex) - Code: MDC_TEMP_BODY or 19292 (dec) or 80 20 (hex) - Code: MDC_TEMP_TOE or 57376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 57376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 57376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 57376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 57376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 67376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 67376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 67376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 67376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 67376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 67376 (dec) or 60 20 (hex) - Code: MDC_TEMP_TOE or 67376 (dec) or 67 4B 4C (hex) - Code: MDC_TEMP_TOE or 67376 (dec) or 67 4B 4C (hex) - Code: MDC_TEMP_TOE or 67476 (dec) or 67 4B 4C (hex) - Code: MDC_TEMP_TOE or 67476 (dec)	· · ·
partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX[Y]NM]188420/MDC_TEMP_RECT*MDC[1.0.0.a]36.7] 268192*MDC_DIM_DEGC*MDC[III]RII]20120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-yeve: SEQUENCE (partition (INT-U16), code (INT-U16)) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-yeve: code (INT-U16) Attribute-byeve: code (INT-U16) BANYNM 188448*MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX Y NM 188448*MDC_TEMP_TOE*MDC[1].0.a]36.9] 288192*MDC_DIM_DEGC*MDC[II]IIII][120120716145810+0000 In step 21, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2361) Attribute-id: MDC_ATTR_ID_TYPE (2361	
code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-type: code (INT-U16) Attribute-type: code (INT-U16) Attribute-walue: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) b) WAN PCD-01 message PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBXI/NMI/18442/0MDC_TEMP_RECTMOD(1.0.0.a)36.7] 268192^MDC_DIM_DEGC^MDC	
Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX(?)NMI188420^MDC_TEMP_RECT^MDC[I_1.0.o.a]36.7] 268192^MDC_DIM_DEGC^MDC[I] RI 20120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-value: Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) b) WAN PCD-01 message PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX(?)NMI188448^MDC_TEMP_TOE-MDC[J_0.0.a]36.9] 268192^MDC_DIM_DEGC^MDC[I] R 21020716148810+0000 In step 21, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) Attribute-id: MDC_ATTR_ID_TOE-MDC[I] Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) - partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) - code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351)	
Object: Body temperature object Attribute-type: code (INT-U16) Attribute-type: code (INT-U16) Attribute-value: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX[?]NMI188420^MDC_TEMP_RECT^MDC[1.0.a.i]6.7] 268192^MDC_DIM_DEGC^MDC]	
Attribute-vize: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) Attribute-value: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ?INMI188420*MDC_TEMP_RECT*MDC I_0.0.a 36.7 268192*MDC_DIM_DEGG*MDC IIIRI IIR]120120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-vipe: SEQUENCE (partition (INT-U16), code (INT-U16)) Attribute-vipe: SEQUENCE (partition (INT-U16), code (INT-U16)) Attribute-vipe: SEQUENCE (partition (INT-U16), code (INT-U16)) Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-id: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-ld attribute is present: Object: Body temperature object Attribute-vipe: code (INT-U16) 268192*MDC_DIM_DEGC*MDC_IIIIRI 20120716145810+0000 In step 21, possible values in typical points of observation after transcoder output are: Attribute-vipe: SEQUENCE (partition (INT-U16), code (INT-U16)) Attribute-vipe: Code (INT-U16) Attrib	
□ Attribute-value: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX/?INMI/B8420^MDC_TEMP_RECT^MDC[1.0.0.a]36.7] 268192^MDC_DIM_DEGG^MDC[R 20120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: □ Object: Body temperature object □ Attribute-vicid MDC_ATTR_ID_TYPE (2351) □ Attribute-vialue: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: □ Object: Body temperature object □ Attribute-value: • partition: MDC_ATTR_ID_PHYSIO (2347) □ Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX/? NMI/B8484^MDC_TEMP_TOE^MDC[1.0.0.a]36.9] 268192^MDC_DIM_DEGC^MDC[R 20120716145810+0000 In step 21, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: □ Object: Body temperature object □ Attribute-value: • partition: MDC_ATTR_ID_TYPE (2351) □ Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute-id: MDC_ATTR_ID_TYPE (2351) □ Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 4B 4C (hex) Metrio-Id attribute is present: □ Object: Body temperature object □ Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 4B 4C (hex) Metrio-Id attribute-id: MDC_ATTR_ID_TYPE (2351) □ Attribute-value: • partition: MDC_PART_SCADA or 10 (dec) or 4B 78 (hex) Metrio-Id attribute-id: MDC_ATTR_ID_PHYSIO (2347) □ Attribute-value: code: MDC_TEMP_TYMP^MDC[1.0.0.a]37.1 Object: Body temperature object □ Attribute-value: Object: Body temperature object □ Attribute-value: Object: Body temperature object □ Attribute-v	
□ Attribute-value: code: MDC_TEMP_RECT or 57348 (dec) or E0 04 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 188420^MDC_TEMP_RECT^MDC 1.0.0.a 36.7 268192^MDC_DIM_DEGG^MDC III I 20120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: □ Object: Body temperature object □ Attribute-id: MDC_ATTR_ID_TYPE (2351) □ Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: □ Object: Body temperature object □ Attribute-value: • partition: MDC_ATTR_ID_TYPE (2351) □ Attribute-value: • partition: MDC_ATTR_ID_TYPE (2351) □ Attribute-value: • partition: MDC_ATTR_ID_TYPE (2361) □ Attribute-value: • partition: MDC_ATTR_ID_TYPE (2361) □ Attribute-value: • partition: MDC_ATTR_ID_PHYSIO (2347) □ Attribute-value: • partition: MDC_ATTR_ID_PHYSIO (2347) □ Attribute-value: Object: Body temperature object □ Attribute-value: Object: Body TyMP-MDC[1.0.0.a]37.1	
b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 188420^MDC_TEMP_RECT^MDC 1.0.0.a 36.7 268192^MDC_DIM_DEGC^MDC	
PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 188420^MDC_TEMP_RECT^MDC 1.0.a 36.7 268192^MDC_DIM_DEGC^MDC R 20120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-iv MDC_ATTR_ID_TYPE (2351) Attribute-iv MDC_ATTR_ID_TYPE (2351) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 188448^MDC_TEMP_TOE*MDC 1.0.a 36.9 268192^MDC_DIM_DEGC^MDC R 20120716145810+0000 In step 21, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 78 (hex) MAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392*MDC_TEMP_TYMP*MDC 1.0.0.a 37.1	
OBX ? NM 188420^MDC_TEMP_RECT^MDC 1.0.0.a 36.7 268192^MDC_DIM_DEGC^MDC R 20120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present:	
268192/MDC_DIM_DEGC-MDC[R 20120716145710+0000 In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-vpe: SEQUENCE (partition (INT-U16), code (INT-U16)) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NMI188448/MDC_TEMP_TOE/MDC[1.0.0.a]36.9] 268192/MDC_DIM_DEGC/MDC[II] R 20120716145810+0000 In step 21, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-id: MDC_ATTR_ID_TYPE (2361) Attribute-id: MDC_ATTR_ID_TYPE (2361) Attribute-id: MDC_ATTR_ID_TYPE (2361) Attribute-id: MDC_ATTR_ID_TYPE (2361) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_TEMP_TYMP^MDC[1.0.0.a]37.1	
In step 19, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object	
a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE (partition (INT-U16), code (INT-U16)) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-ye: code (INT-U16) Attribute-value: code: MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) WAN PCD-01 message PCD-01 message pcd-MDC[II.0.0.a]36.9 268192*MDC_DIM_DEGC*MDC[IIIIR][I20120716145810+0000 In step 21, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX[PINM]150392*MDC_TEMP_TYMPPMDC]1.0.0.a]37.1	
Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-value: code (INT-U16) Attribute-value: code (INT-U16) Attribute-value: code (INT-U16) Attribute-value: code (INT-U16) Attribute-value: code MDC_TEMP_TOE or 57376 (dec) or E0 20 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX(? NM 188448/MDC_TEMP_TOE/MDC[1.0.0.a]36.9] 268192/MDC_DIM_DEGC/MDC[R 21027016145810+0000 In step 21, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Body temperature object Attribute-value: • partition: MDC_ATTR_ID_TYPE (2351) Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-value: Object: Body temperature object Attribute-value: Attribute-value: Object: Body temperature object Attribute-value: Office (INT-U16) Attribute-value: Ode: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) b) WAN PCD-01 message PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX(? NM 150392/MDC_TEMP_TYMPMDC[1.0.a]37.1	
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Type attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1	In step 21, possible values in typical points of observation after transcoder output are:
 □ Object: Body temperature object □ Attribute-id: MDC_ATTR_ID_TYPE (2351) □ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} □ Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: □ Object: Body temperature object □ Attribute-id: MDC_ATTR_ID_PHYSIO (2347) □ Attribute-type: code (INT-U16) □ Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1 	a) IEEE 11073 Objects and Attributes
 Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1 	Type attribute is present:
 Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1 	□ Object: Body temperature object
 □ Attribute-value: partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1 	□ Attribute-id: MDC_ATTR_ID_TYPE (2351)
 partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1 	☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
 code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1 	☐ Attribute-value:
 code: MDC_TEMP_BODY or 19292 (dec) or 4B 4C (hex) Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1 	 partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex)
Metric-Id attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1	
 □ Object: Body temperature object □ Attribute-id: MDC_ATTR_ID_PHYSIO (2347) □ Attribute-type: code (INT-U16) □ Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1 	
 □ Attribute-id: MDC_ATTR_ID_PHYSIO (2347) □ Attribute-type: code (INT-U16) □ Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1 	
 □ Attribute-type: code (INT-U16) □ Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1 	
□ Attribute-value: code: MDC_TEMP_TYMP or 19320 (dec) or 4B 78 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1	
b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1	
PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1	
OBX ? NM 150392^MDC_TEMP_TYMP^MDC 1.0.0.a 37.1	

TP Id		TP/LP-PAN/MAN/PHDTW	//TH/BV-007		
TP label		Whitepaper. Body Temperature Object - Type and Metric-Id Attributes 3			
Coverage	Spec	[b-Bluetooth PHDT v1.3]			
•	Testable items	TH Numeric 2; M	TH Numeric 3; M	TH Numeric 4; M	
Applicability	у	C_MAN_BLE_000 AND C	_MAN_BLE_001 AND C_MA	N_BLE_002	
Initial condi	tion	The manager under test a	and the simulated agent are in	the standby state.	
Test proced	lure	has a measurement in discoverable). 2. The simulated agent interest for this test can be a supported in the can be a supp	ready to be sent and it is in the implements several BLE char	neter profile (device specialization); it e advertising state (it is racteristics. The characteristics of	
		ii. Field: Temp • Format • Value: iii. Field: Temp	0000 0010 (MSB → LSB). Te erature Measurement Value (t: FLOAT Not relevant erature Measurement Value (eld is not included		
		 Formation Value: V. Field: Temporation This field b. Temperature typout Type: 8 	t: Date and Time Not relevant erature Type eld is not included e (0x2A1D)		
		3. The manager under t simulated agent and state).4. When the pairing has to read the Temperat5. The simulated agent	est initiates a discovery proce it starts a pairing process with been completed (connection ure type characteristic. sends the measurement to th	ess (scanning state). It discovers the in the simulated agent (initiating state), force the manager under test temperature object – Type and	
Pass/Fail cr	iteria	{MDC_PART_SCADA, MI	rature object – Type attribute DC_TEMP_BODY}, and the E value is MDC_TEMP_AXILL	Body temperature object – Metric-Id	
Notes		Possible values in typical a) IEEE 11073 Objects are Type attribute is present: Object: Body tent Attribute-id: MDC Attribute-type: SI Attribute-value: partition: code: MD Metric-Id attribute is present Object: Body tent Attribute-id: MDC Attribute-type: code	points of observation after tra and Attributes perature object C_ATTR_ID_TYPE (2351) EQUENCE {partition (INT-U16) MDC_PART_SCADA or 2 (de C_TEMP_BODY or 19292 (dent: perature object C_ATTR_ID_PHYSIO (2347) ode (INT-U16) code: MDC_TEMP_AXILLA or	nscoder output are: 6), code (INT-U16)} ec) or 00 02 (hex) ec) or 4B 4C (hex)	
		PCD-01 message include OBX ? NM 188452^MDC_	•		

TP ld		TP/LP-PAN/MAN/PHDTW/TH/BV-008		
TP label				
	Snoo	Whitepaper. Body Temperature Object - Metric-Spec-Small Attribute 1 [b-Bluetooth PHDT v1.3]		
Coverage	Spec			
	Testable items	TH Numeric 5; M TH Numeric 6; M		
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002		
Initial condit	ion	The manager under test and the simulated agent are in the standby state.		
Test procedure		 The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 		
		2. The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are:		
		a. Temperature measurement (0x2A1C)		
		i. Field: Flags		
		Format: 8 bit		
		 Value: 0000 0010 (MSB → LSB). Temperature Measurement Value in units of Celsius, Time Stamp field is included and Temperature Type field is not included 		
		ii. Field: Temperature Measurement Value (Celsius)		
		Format: FLOAT		
		Value: Not relevant		
		iii. Field: Temperature Measurement Value (Fahrenheit)		
		This field is not included		
		iv. Field: Time Stamp		
		Format: Date and Time		
		Value: Not relevant		
		v. Field: Temperature Type		
		This field is not included		
		b. Measurement interval (0x2A21): This characteristic is not present.		
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 		
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
		Check in manager transcoder output for the Body temperature object – Metric-Spec-Small attribute.		
Pass/Fail cri	teria	In step 5, the Body temperature object – Metric-Spec-Small attribute is present and its value is 0xF040.		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		Metric-Spec-Small attribute is present:		
		□ Object: Body temperature object		
		□ Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)		
		□ Attribute-type: BITS-16		
		Attribute-value: F0 40 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9) set to TRUE and remaining BITS set to FALSE		
		b) WAN PCD-01 message		
		PCD-01 message does not include segments with a Metric-Spec-Small attribute value.		

TP ld		TP/LP-PAN/MAN/PHDTW/TH/BV-009			
TP label		Whitepaper. Body Temperature Object - Metric-Spec-Small Attribute 2			
Coverage	Spec	[b-Bluetooth PHDT v1.3]			
Testable		TH Numeric 5; M TH Numeric 6; M			
	items	TTT Numeric 6, W			
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002			
Initial condit	tion	The manager under test and the simulated agent are in the standby state.			
Test procedure		1. The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).			
		2. The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are:			
		a. Temperature measurement (0x2A1C)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included 			
		ii. Field: Temperature Measurement Value (Celsius)			
		Format: FLOAT			
		Value: Not relevant			
		iii. Field: Temperature Measurement Value (Fahrenheit)			
		This field is not included			
		iv. Field: Time Stamp			
		Format: Date and Time			
		Value: Not relevant			
		v. Field: Temperature Type			
		This field is not included			
		b. Measurement interval (0x2A21)			
		Format: uint16			
		Value: 0			
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).			
		4. When the pairing has been completed (connection state), force the manager under test to read the Measurement interval characteristic.			
		5. The simulated agent sends the measurement to the manager under test.			
		Check in manager transcoder output for the Body temperature object – Metric-Spec-Small attribute.			
Pass/Fail criteria In step 6, the Body temperature object – Metric-Spec-Small attribute is present value is 0xF040.		In step 6, the Body temperature object – Metric-Spec-Small attribute is present and its value is 0xF040.			
Notes		Possible values in typical points of observation after transcoder output are:			
		a) IEEE 11073 Objects and Attributes			
		Metric-Spec-Small attribute is present:			
		□ Object: Body temperature object			
		□ Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)			
		□ Attribute-type: BITS-16			
		Attribute-value: F0 40 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9) set to TRUE and remaining BITS set to FALSE			
		b) WAN PCD-01 message			
		PCD-01 message does not include segments with a Metric-Spec-Small attribute value.			

TP Id		TP/LP-PAN/MAN/PHDTW/TH/BV-010			
TP label		Whitepaper. Body Temperature Object - Metric-Spec-Small Attribute 3			
Coverage Spec		[b-Bluetooth PHDT v1.3]			
Ooverage	Testable	TH Numeric 5; M TH Numeric 6; M			
	items	TTTTAITIETE O, W			
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002			
Initial condi	tion	The manager under test and the simulated agent are in the standby state.			
Test proced	ure	1. The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).			
		2. The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are:			
		a. Temperature measurement (0x2A1C)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included 			
		ii. Field: Temperature Measurement Value (Celsius)			
		Format: FLOAT			
		Value: Not relevant			
		iii. Field: Temperature Measurement Value (Fahrenheit)			
		This field is not included			
		iv. Field: Time Stamp			
		Format: Date and Time			
		Value: Not relevant			
		v. Field: Temperature Type			
		This field is not included			
		b. Measurement interval (0x2A21)			
		Format: uint16			
		 Value: 30 			
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).			
		4. When the pairing has been completed (connection state), force the manager under test to read the Measurement interval characteristic.			
		5. The simulated agent sends the measurement to the manager under test.			
		Check in manager transcoder output for the Body temperature object – Metric-Spec-Small attribute.			
Pass/Fail criteria		In step 6, the Body temperature object – Metric-Spec-Small attribute is present and its value is 0x4040.			
Notes		Possible values in typical points of observation after transcoder output are:			
		a) IEEE 11073 Objects and Attributes			
		Metric-Spec-Small attribute is present:			
		□ Object: Body temperature object			
		□ Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)			
		□ Attribute-type: BITS-16			
		 Attribute-value: 40 40 (hex) or BITS mss-avail-stored-data(1), mss-acc-agent-initiated(9) set to TRUE and remaining BITS set to FALSE 			
		b) WAN PCD-01 message			
		PCD-01 message does not include segments with a Metric-Spec-Small attribute value.			

TDIA		TOUR DAMMANUSURTAUTIVE VOA
TP Id TP label		TP/LP-PAN/MAN/PHDTW/TH/BV-011 Whitepaper. Body Temperature Object - Unit-Code Attribute
Coverage	Spec	[b-Bluetooth PHDT v1.3]
	Testable	TH Numeric 7; M TH Numeric 8; M
	items	
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002
Initial condition		
	ion	The manager under test and the simulated agent are in the standby state. 1. The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Temperature measurement (0x2A1C) 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value: a. Temperature measurement (0x2A1C) i. Field: Flags • Format: 8 bit • Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included ii. Field: Temperature Measurement Value (Celsius) • Format: FLOAT • Value: 35.6 iii. Field: Temperature Measurement Value (Fahrenheit) • This field is not included iv. Field: Time Stamp • Format: Date and Time • Value: Not relevant v. Field: Temperature Type • This field is not included 5. Check in manager transcoder output for the Body temperature object – Unit-Code attribute. 6. The simulated agent sends the measurement to the manager under test with the following value: a. Temperature measurement (0x2A1C) i. Field: Flags • Format: 8 bit • Value: 0000 0011 (MSB → LSB). Temperature measurement value in units of Fahrenheit, Time Stamp field is included and Temperature Type field is not included ii. Field: Temperature Measurement Value (Fahrenheit) • Format: FLOAT • Value: 98.1 iv. Field: Time Stamp
Pass/Fail cri	teria	Format: Date and Time Value: Not relevant V. Field: Temperature Type This field is not included Check in manager transcoder output for the Body temperature object – Unit-Code attribute. In step 5, the Body temperature object – Unit-Code attribute is present and its value is MDC_DIM_DEGC. In step 7, the Body temperature object – Unit-Code attribute is present and its value is MDC_DIM_FAHR.
Notes		In step 5, possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_DEGC or 6048 (dec) or 17 A0 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Unit-Code attribute value (check OBX-6): OBX ? NM 150364^MDC_TEMP_BODY^MDC 1.0.0.a 35.6 268192^MDC_DIM_DEGC^MDC R [current_date_time] In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Body temperature object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-value: MDC_DIM_FAHR or 4416 (dec) or 11 40 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Unit-Code attribute value (check OBX-6): OBX ? NM 150364^MDC_TEMP_BODY^MDC 1.0.0.a 98.1

TP Id		TP/LP-PAN/MAN/PHDTW/TH/BV-012
TP label		Whitepaper. Body Temperature Object - Absolute-Time-Stamp Attribute
		[b-Bluetooth PHDT v1.3]
_	Spec Testable	TH Numeric 10; M Date-Time Conv 2; M Date-Time Conv 3; M
	items	Date-Time Conv 4; M Date-Time Conv 5; M
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002
Initial condition		The manager under test and the simulated agent are in the standby state.
Test procedure	e	 The simulated agent is configured with a Thermometer profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Temperature measurement (0x2A1C) The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value: Temperature measurement (0x2A1C) Field: Flags Format: 8 bit Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included Field: Temperature Measurement Value (Celsius) Format: FLOAT Value: 36.2 Field: Temperature Measurement Value (Fahrenheit) This field is not included Field: Time Stamp Format: Date and Time Value: August 2nd, 2012, 10:39:27 Field: Temperature Type This field is not included
Pass/Fail criteria		Check in manager transcoder output for the Body temperature object – Absolute-Time-Stamp attribute. In step 5, the Body temperature object – Absolute-Time-Stamp attribute is present, its value matches with the Time Stamp field of the Temperature measurement characteristic and the fraction of seconds is set to 0.
Notes		fraction of seconds is set to 0. Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Absolute-Time-Stamp attribute is present: □ Object: Body temperature object □ Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448) □ Attribute-type: SEQUENCE {century (INT-U8), year (INT-U8), month (INT-U8), day (INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)} (BCD encoding) □ Attribute-value: • century: 20 (hex) or 32 (dec) • year: 12 (hex) or 18 (dec) • month: 08 (hex) or 8 (dec) • day: 02 (hex) or 2 (dec) • hour: 10 (hex) or 16 (dec) • minute: 39 (hex) or 57 (dec) • second: 27 (hex) or 39 (dec) • second: 27 (hex) or 39 (dec) • sec-fractions: 00 (hex) or 0 (dec) b) WAN PCD-01 message PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value (check OBX-14): OBX ? NM 150364^MDC_TEMP_BODY^MDC 1.0.0.a 36.2 268192^MDC_DIM_DEGC^MDC R 20120802103927+0000

TP ld		TP/LP-PAN/MAN/PHDTW/TH/BV-013		
TP label		Whitepaper. Body Temperature Object - Simple-Nu-Observed-Value Attribute 1		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable items	TH Numeric 11; M Float Type 1; C		
Applicability	<i>'</i>	C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002		
Initial condition		The manager under test and the simulated agent are in the standby state.		
Test procedure		 The simulated agent is configured with a Thermometer profile (device specialization); if has a measurement ready to be sent and it is in the advertising state (it is discoverable). 		
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		a. Temperature measurement (0x2A1C)		
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value:		
		a. Temperature measurement (0x2A1C)		
		i. Field: Flags		
		Format: 8 bit		
		 Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included 		
		ii. Field: Temperature Measurement Value (Celsius)		
		Format: FLOAT		
		• Value: 35.6		
		iii. Field: Temperature Measurement Value (Fahrenheit)		
		This field is not included		
		iv. Field: Time Stamp		
		Format: Date and Time		
		Value: Not relevant		
		v. Field: Temperature Type		
		This field is not included		
		5. Check in manager transcoder output for the Body temperature object – Simple-Nu-Observed-Value attribute.		
		6. The simulated agent sends the measurement to the manager under test with the following value:		
		a. Temperature measurement (0x2A1C)		
		i. Field: Flags		
		Format: 8 bit		
		 Value: 0000 0011 (MSB → LSB). Temperature measurement value in units of Fahrenheit, Time Stamp field is included and Temperature Type field is not included 		
		ii. Field: Temperature Measurement Value (Celsius)		
		This field is not included		

1	
	iii. Field: Temperature Measurement Value (Fahrenheit)
	Format: FLOAT
	• Value: 98.2
	iv. Field: Time Stamp
	Format: Date and Time
	Value: Not relevant
	v. Field: Temperature Type
	This field is not included
	7. Check in manager transcoder output for the Body temperature object – Simple-Nu-Observed-Value attribute.
Pass/Fail criteria	In step 5, the Body temperature object – Simple-Nu-Observed-Value attribute is present and its value matches with the Temperature Measurement Value (Celsius) field of the Temperature measurement characteristic (35.6).
	In step 7, the Body temperature object – Simple-Nu-Observed-Value attribute is present and its value matches with the Temperature Measurement Value (Fahrenheit) field of the Temperature measurement characteristic (98.2).
Notes	Possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Simple-Nu-Observed-Value attribute is present:
	□ Object: Body temperature object
	☐ Attribute-id: MDC_ATTR_NU_VAL_OBS_SIMP (2646)
	☐ Attribute-type: FLOAT
	Attribute-value: FB 36 52 40 (hex) or FC 05 6E A0 (hex) or FD 00 8B 10 (hex) or FE 00 0D E8 (hex) or FF 00 01 64 (hex) or 35.6 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with a Simple-Nu-Observed-Value attribute value (check OBX-5):
	OBX ? NM 150364^MDC_TEMP_BODY^MDC 1.0.0.a 35.6 268192^MDC_DIM_DEGC^MDC R [current_date_time]
	In step 7, possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Simple-Nu-Observed-Value attribute is present:
	□ Object: Body temperature object
	☐ Attribute-id: MDC_ATTR_NU_VAL_OBS_SIMP (2646)
	☐ Attribute-type: FLOAT
	Attribute-value: FB 95 D7 60 (hex) or FC 0E FB F0 (hex) or FD 01 7F 98 (hex) or FE 00 26 5C (hex) or FF 00 03 D6 (hex) or 98.2 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with a Simple-Nu-Observed-Value attribute value (check OBX-5):
	OBX ? NM 150364^MDC_TEMP_BODY^MDC 1.0.0.a 98.2 266560^MDC_DIM_FAHR^MDC R 20120802105712+0000

TDI		TD/LD DAN/MAN/DLIDTA/TLI/DV/ 04.4				
TP ld TP label		TP/LP-PAN/MAN/PHDTW/TH/BV-014				
	Snoo	Whitepaper. Body Temperature Object - Simple-Nu-Observed-Value Attribute 2				
Coverage	Spec	[b-Bluetooth PHDT v1.3]				
	Testable items	TH Numeric 11; M Float Type 1; C Float Type 2; M				
Applicability	у	C_MAN_BLE_000 AND C_MAN_BLE_001 AND C_MAN_BLE_002				
Initial condi	nitial condition The manager under test and the simulated agent are in the standby state.					
Test procedure		 The simulated agent is configured with a Thermometer profile (device specialization); has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: 				
		 a. Temperature measurement (0x2A1C) 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value: 				
		 b. Temperature measurement (0x2A1C) i. Field: Flags • Format: 8 bit • Value: 0000 0010 (MSB → LSB). Temperature measurement value in 				
		units of Celsius, Time Stamp field is included and Temperature Type field is not included ii. Field: Temperature Measurement Value (Celsius)				
		Format: FLOAT				
		Value: 35.6				
		iii. Field: Time Stamp				
		Format: Date and Time				
		Value: Not relevant iv. Field: Temperature Type				
		This field is not included				
		 Check in manager transcoder output for the Body temperature object – Simple-Nu- Observed-Value attribute. 				
		6. The simulated agent sends the measurement to the manager under test with the				
		following value: a. Temperature measurement (0x2A1C) i. Field: Flags				
		Format: 8 bit				
		 Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included 				
		ii. Field: Temperature Measurement Value (Celsius)Format: FLOAT				
		 Value: 00 7F FF FF (hex). Special value: NaN iii. Field: Time Stamp 				
		Format: Date and Time				
		Value: Not relevant				
		iv. Field: Temperature TypeThis field is not included				
		7. Check in manager transcoder output for the Body temperature object – Simple-Nu- Observed-Value attribute.				
		8. The simulated agent sends the measurement to the manager under test with the following value:				
		a. Temperature measurement (0x2A1C)i. Field: Flags				
		Format: 8 bit				

- Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included
- ii. Field: Temperature Measurement Value (Celsius)
 - Format: FLOAT
 - Value: 00 08 00 00 (hex). Special value: NRes
- iii. Field: Time Stamp
 - Format: Date and Time
 - Value: Not relevant
- iv. Field: Temperature Type
 - · This field is not included
- Check in manager transcoder output for the Body temperature object Simple-Nu-Observed-Value attribute.
- 10. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Temperature measurement (0x2A1C)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included
 - ii. Field: Temperature Measurement Value (Celsius)
 - Format: FLOAT
 - Value: 00 07 FF FE (hex). Special value: +INFINITY
 - iii. Field: Time Stamp
 - · Format: Date and Time
 - · Value: Not relevant
 - iv. Field: Temperature Type
 - · This field is not included
- Check in manager transcoder output for the Body temperature object Simple-Nu-Observed-Value attribute.
- 12. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Temperature measurement (0x2A1C)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included
 - ii. Field: Temperature Measurement Value (Celsius)
 - Format: FLOAT
 - Value: 00 08 00 02 (hex). Special value: -INFINITY
 - iii. Field: Time Stamp
 - Format: Date and Time
 - Value: Not relevant
 - iv. Field: Temperature Type
 - This field is not included
- 13. Check in manager transcoder output for the Body temperature object Simple-Nu-Observed-Value attribute.

Pass/Fail criteria

In step 5, the Body temperature object – Simple-Nu-Observed-Value attribute is present and its value is 35.6.

In step 7, the Body temperature object – Simple-Nu-Observed-Value attribute is present and its value is 0x007FFFFF.

In step 9, the Body temperature object – Simple-Nu-Observed-Value attribute is present and its value is 0x00800000.

In step 11, the Body temperature object – Simple-Nu-Observed-Value attribute is present and its value is 0x007FFFFE.

In step 13, the Body temperature object – Simple-Nu-Observed-Value attribute is present and its value is 0x00800002.

Notes

In step 5, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Simple-Nu-Observed-Value attribute is present:

- Object: Body temperature object
- □ Attribute-id: MDC_ATTR_NU_VAL_OBS_SIMP (2646)
- □ Attribute-type: FLOAT
- Attribute-value: FB 36 52 40 (hex) or FC 05 6E A0 (hex) or FD 00 8B 10 (hex) or FE 00 0D E8 (hex) or FF 00 01 64 (hex)
- b) WAN PCD-01 message

PCD-01 message includes a segment like this with a Simple-Nu-Observed-Value attribute value (check OBX-5):

OBX|?|NM|150364^MDC_TEMP_BODY^MDC|1.0.0.a|35.6|

268192^MDC_DIM_DEGC^MDC||||R|||[current_date_time]

In step 7, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Simple-Nu-Observed-Value attribute is present:

- □ Object: Body temperature object
- ☐ Attribute-id: MDC_ATTR_NU_VAL_OBS_SIMP (2646)
- ☐ Attribute-type: FLOAT
- Attribute-value: 00 7F FF FF (hex) or NaN (note that is not allowed a decimal value)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute value (150364^MDC_TEMP_BODY^MDC) because it has a special value and these values are not included in the PCD-01 message.

In step 9, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Simple-Nu-Observed-Value attribute is present:

- □ Object: Body temperature object
- □ Attribute-id: MDC_ATTR_NU_VAL_OBS_SIMP (2646)
- □ Attribute-type: FLOAT
- Attribute-value: 00 08 00 00 (hex) or NRes (note that a decimal value is not allowed)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute value (150364^MDC_TEMP_BODY^MDC) because it has a special value and these values are not included in the PCD-01 message.

In step 11, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Simple-Nu-Observed-Value attribute is present:

- □ Object: Body temperature object
- □ Attribute-id: MDC_ATTR_NU_VAL_OBS_SIMP (2646)
- ☐ Attribute-type: FLOAT
- Attribute-value: 00 7F FF FE (hex) or +INFINITY (note that a decimal value is not allowed)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute value (150364^MDC_TEMP_BODY^MDC) because it has a special value and these values are not included in the PCD-01 message.

In step 13, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Simple-Nu-Observed-Value attribute is present:

- □ Object: Body temperature object
- Attribute-id: MDC_ATTR_NU_VAL_OBS_SIMP (2646)
- □ Attribute-type: FLOAT
- □ Attribute-value: 00 08 00 02 (hex) or -INFINITY (note that a decimal value is not allowed)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute value (150364^MDC_TEMP_BODY^MDC) because it has a special value and these values are not included in the PCD-01 message.

TP ld		TP/LP-PAN/MAN/PHDTW/TH/BV-015		
TP label		Whitepaper. Temperature measurement value		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
oo ro. ago	Testable	Float Type 1; C Date-Time Conv 1; M TH Numeric 10; M		
	items	TH Numeric 11; M		
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_001		
		The simulated agent is configured with a Thermometer profile (device specialization): it		
Initial condit Test procedu		has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Temperature measurement (0x2A1C) The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value: a. Temperature measurement (0x2A1C) i. Field: Flags • Format: 8 bit • Value: 0000 0010 (MSB → LSB). Temperature measurement value in units of Celsius, Time Stamp field is included and Temperature Type field is not included ii. Field: Temperature Measurement Value (Celsius) • Format: FLOAT • Value: 35.8 iii. Field: Temperature Measurement Value (Fahrenheit) • This field is not included iv. Field: Time Stamp • Format: Date and Time • Value: August 2nd, 2012, 11:08:25 v. Field: Temperature Type • This field is not included Check that the manager accepts the measurement and decodes its value properly (temperature measurement value, temperature units and time stamp). The simulated agent sends the measurement to the manager under test with the following value: b. Temperature measurement (0x2A1C) i. Field: Flags • Format: 8 bit • Value: 0000 0011 (MSB → LSB). Temperature measurement value in units of Fahrenheit, Time Stamp field is included and Temperature Type field is not included ii. Field: Temperature Measurement Value (Fahrenheit) • Format: Bit • Value: 0000 0011 (MSB → LSB). Temperature measurement value in units of Fahrenheit, Time Stamp field is included and Temperature Type field is not included iii. Field: Temperature Measurement Value (Fahrenheit) • Format: FLOAT • Value: 98.2 iv. Field: Temperature Measurement Value (Fahrenheit) • Format: Date and Time • Value: August 2nd, 2012, 11:09:05 v. Field: Temperature		
		7. Check that the manager accepts the measurement and decodes its value properly (temperature measurement value, temperature units and time stamp)		
Pass/Fail cri	teria	(temperature measurement value, temperature units and time stamp). In step 5, the manager under test shows the following temperature measurement 35.8 °C		
i assii ali Uli	wila	with the time stamp '2012-08-02 11:08:25'.		
		In step 7, the manager under test shows the following temperature measurement 97.9F		
		with the time stamp '2012-08-02 11:09:05'.		
Notes		with the time stamp 2012-00-02 11.03.00.		
140162				

A.4 Subgroup 2.4.3 – Whitepaper Blood pressure requirements (BP)

TP ld	0 1	TP/LP-PAN/MAN/PHDTW/BPM/BV-000		
TP label	1	Whitepaper. Blood Pressure MDS Object - System-Type Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable items	BPM Specific MDS 1; M		
Applicability	,	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003		
Initial condi	tion	The manager under test and the simulated agent are in the standby state		
Test proced	ure	1. The simulated agent is configured with a Blood pressure profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).		
		2. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		3. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
4. Check in manager transcoder output for the MDS object – System-Type attrib		4. Check in manager transcoder output for the MDS object – System-Type attribute.		
Pass/Fail cr	iteria	In step 4, the MDS object – System-Type attribute is not present.		
Notes				
		a) IEEE 11073 Objects and Attributes		
		System-Type attribute is not present:		
		□ Object: MDS object		
		☐ Attribute-id: MDC_ATTR_SYS_TYPE (2438)		
		☐ Attribute-type: TYPE		
		☐ Attribute-value: <not present=""></not>		
		b) WAN PCD-01 message		
		PCD-01 message does not include segments with a System-Type attribute value (67974^MDC_ATTR_SYS_TYPE^MDC).		

TP Id		TP/LP-PAN/MAN/PHDTW/BPM/BV-001		
TP label		Whitepaper. Blood Pressure MDS Object - Dev-Configuration-Id Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable items	BPM Specific MDS 2; M		
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003		
Initial condi	tion	The manager under test and the simulated agent are in the standby state.		
Test procedure		 The simulated agent is configured with a Blood pressure profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The manager under test initiates a discovery process (scanning state). It discovers the 		
		simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		3. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
 Check in manager transcoder output for the MDS object – Dev-Configuration attribute. 				
Pass/Fail cr	iteria	In step 4, the MDS object – Dev-Configuration-Id attribute is present and its value is inside the range 0x4000 - 0x7FFF.		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		Dev-Configuration-Id attribute is present:		
		□ Object: MDS object		
		☐ Attribute-id: MDC_ATTR_DEV_CONFIG_ID (2628)		
		☐ Attribute-type: INT-U16		
		 Attribute-value: Any value inside the range 16384 - 32767 (dec) or 0x4000 – 0x7FFF (hex) 		
		b) WAN PCD-01 message		
According to [ITU-T H.810] (CDG 2013), the Dev-Configuration-Id shall not be in the PCD-01 message; therefore it is not possible to check this attribute.		According to [ITU-T H.810] (CDG 2013), the Dev-Configuration-Id shall not be transmitted in the PCD-01 message; therefore it is not possible to check this attribute.		

TP ld		TP/LP-PAN/MAN/PHDT	W/BPM/BV-002	
TP label		Whitepaper. Blood Pressure MDS Object - System-Type-Spec-List Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]	[b-Bluetooth PHDT v1.3]	
	Testable items	Common MDS 15; M	BPM Specific MDS 3; M	
Applicability	/	C_MAN_BLE_000 AND	C_MAN_BLE_002 AND C_MAN_BI	_E_003
Initial condi	tion	The manager under test	and the simulated agent are in the	standby state.
Test proced	ure	 The simulated agent is configured with a Blood pressure profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 		
		2. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		3. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
		Check in manager transcoder output for the MDS object – System-Type-Spec-List attribute.		
Pass/Fail cri	iteria	In step 4, the MDS object – System-Type-Spec-List attribute is present and its value is (MDC_DEV_SPEC_PROFILE_BP, Version 1).		
Notes Possil		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		System-Type-Spec-List attribute is present:		
		□ Object: MDS object		
		□ Attribute-id: MDC_ATTR_SYS_TYPE_SPEC_LIST (2650)		
		□ Attribute-type: SEQUENCE OF [{type (INT-U16), version (INT-U16)}]		
		☐ Attribute-value:		
		 type: MDC_DEV_SPEC_PROFILE_BP or 4103 (dec) or 10 07 (hex) 		
		 version: 1 (dec) or 00 01 (hex) 		
		b) WAN PCD-01 message		
		PCD-01 message includes a segment like this with a System-Type-Spec-List attribute value (check OBX-5):		
		OBX ? NM 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC 1.0.0.a		
		528391^MDC_DEV_SP	EC_PROFILE_BP ^MDC R	

TP Id		TP/LP-PAN/MAN/PHDTW/BPM/BV-003		
TP label		Whitepaper. Blood Pressure MDS Object - Reg-Cert-Data-List Attribute		
Coverage Spec		[b-Bluetooth PHDT v1.3]		
	Testable	Common MDS 14; M Regulatory Conv 1; M		
items		O MAN DIE 000 AND O MAN DIE 000		
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003		
Initial condition Test procedure		 The manager under test and the simulated agent are in the standby state. The simulated agent is configured with a Blood pressure profile (device specialization) supported by the manager under test; it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this 		
		test case is: a. IEEE 11073-20601 Regulatory Certification Data List (0x2A2A)		
		Format: reg-cert-data-list (opaque structure)		
		Value: 00 02 00 12 02 01 00 08 04 00 00 01 00 02 80 07 02 02 00 02 80 00 (hex) i. Element:		
		auth-body-and-struc-type:		
		- auth-body: 02 (hex) auth-body-continua(2)		
		- auth-body-struc-type: 01 (hex). continua-version-struct(1)		
		• auth-body-data:		
		- major-IG-version: 04 (hex)		
		- minor-IG-version: 00 (hex)		
		- certified-devices: 80 07 (hex). BLE Blood Pressure		
		ii. Element:		
		auth-body-and-struc-type:		
		- auth-body: 02 (hex). auth-body-continua(2)		
		 auth-body-struc-type: 02 (hex). continua-reg-struct(2) auth-body-data: 		
		auti-body-data. regulation-bit-field: 80 00 (hex). Unregulated device		
		The manager under test initiates a discovery process (scanning state). It discovers the simulated		
		agent and it starts a pairing process with simulated agent.		
		4. When the pairing has been completed (connection state), force the manager under test to read the		
		IEEE 11073-20601 Regulatory Certification Data List characteristic.		
		5. The simulated agent sends the measurement to the manager under test.		
		Check in manager transcoder output for the MDS object – Reg-Cert-Data-List attribute.		
Pass/Fail cr	iteria	In step 6, the MDS object – Reg-Cert-Data-List attribute is present and its value matches with the IEEE		
Notes		11073-20601 Regulatory Certification Data List characteristic value. Possible values in typical points of observation after transcoder output are:		
Notes		a) IEEE 11073 Objects and Attributes		
		Reg-Cert-Data-List attribute is present:		
		☐ Object: MDS object		
		☐ Attribute-id: MDC_ATTR_REG_CERT_DATA_LIST (2635)		
		□ Attribute-type: SEQUENCE OF [{auth-body-and-struc-type, auth-body-data}, {}] □ Attribute-value: 00 02 00 12 02 01 00 08 04 00 00 01 00 02 80 07 02 02 00 02 80 00 (hex) [Note that 0x00 0x02 is the number of elements in the sequence and 0x00 12 is the length of		
		the sequence] i. Reg-Cert-Data Element:		
		auth-body-and-struc-type:		
		- auth-body: 02 (hex) auth-body-continua(2)		
		- auth-body-struc-type: 01 (hex). continua-version-struct(1)		
		auth-body-data:		
		- major-IG-version: 04 (hex)		
		- minor-IG-version: 00 (hex)		
		- certified-devices: 80 07 (hex). BLE Blood Pressure		
		ii. Reg-Cert-Data Element:		
		auth-body-and-struc-type: auth-body-and-struc-type:		
		auth-body: 02 (hex). auth-body-continua(2)auth-body-struc-type: 02 (hex). continua-reg-struct(2)		
		auth-body-strac-type: 02 (flex): continua-reg-stract(2) auth-body-data:		
		- regulation-bit-field: 80 00 (hex). Unregulated device		
		b) WAN PCD-01 message		
		PCD-01 message includes five segments like these with Reg-Cert-Data-List attribute value (check OBX-5 in five segments):		
		OBX ? CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.a 2^auth-body-continua R OBX ? ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.a.x 4.0 R		
		OBX ? NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC		
		1.0.0.a.y 32775 R OBX ? CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.b 2^auth-body-continua R OBX ? CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC		
		1.0.0.b.z 1^unregulated-device(0) R		

TP Id		TP/LP-PAN/MAN/PHDTW/BPM/BV-004
		Whitepaper. Systolic/Diastolic/Map Compound Numeric Object - Handle Attribute
Coverage	Spec	[b-Bluetooth PHDT v1.3]
	Testable	BP Numeric 1; O
items		
Applicability	i	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003
Initial condit	ion	The manager under test and the simulated agent are in the standby state.
Test proced	ure	1. The simulated agent is configured with a Blood pressure profile (device specialization);
		it has a measurement ready to be sent and it is in the advertising state (it is
		discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of
		interest for this test case is:
		a. Blood pressure measurement (0x2A35)
		i. Field: Flags ◆ Format: 8 bit
		 Value: 0000 0010 (MSB → LSB). Blood pressure measurement value in
		units of mmHg and Time Stamp fields are included, Pulse Rate, User ID
		and measurement Status fields are not included
		ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg)
		Format: SFLOAT
		Value: Not relevant
		iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg)
		Format: SFLOAT
		Value: Not relevant
		iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial
		Pressure (mmHg)
		Format: SFLOAT
		Value: Not relevant
		v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa)
		This field is not included Field Black Brackers Management Course and Malace Bracketic (LBs)
		vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa)
		This field is not included Field Blood Brossyrs Massyrsment Compayed Value Mass Arterial This field Blood Brossyrs Massyrsment Compayed Value Mass Arterial
		vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa)
		This field is not included
		viii. Field: Time Stamp
		Format: Date and Time
		Value: Not relevant
		ix. Field: Pulse Rate
		This field is not included
		x. Field: User ID
		This field is not included
		xi. Field: Measurement Status
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the
		simulated agent and it starts a pairing process with the simulated agent (initiating
		state). 4. When the pairing has been completed (connection state), the simulated agent sends
		the measurement to the manager under test.
		5. Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric
		object – Handle attribute.
Pass/Fail cri	teria	In step 5, the Systolic/Diastolic/Map compound numeric object – Handle attribute is not
		present; however, if it is present then its value is different to 0.
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Handle attribute is not present, or if it is present then:
		Object: Systolic/Diastolic/Map compound numeric object
		□ Attribute-id: MDC_ATTR_ID_HANDLE (2337) □ Attribute type: INT LI16
		Attribute-type: INT-U16Attribute-value: Any value other than 0
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Handle attribute value.
<u> </u>		1 · 1 · · · · · · · · · · · · · · · · ·

TP Id		TP/LP-PAN/MAN/PHDTW/BPM/BV-005		
TP label		Whitepaper. Systolic/Diastolic/Map Compound Numeric Object - Type Attribute		
Coverage Spec		[b-Bluetooth PHDT v1.3]		
Testabl		BP Numeric 2; M		
	e items	DF Numeric 2, W		
Applicabili		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003		
Initial cond		The manager under test and the simulated agent are in the standby state.		
Test proce		 The simulated agent is configured with a Blood pressure profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 		
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		a. Blood pressure measurement (0x2A35) i. Field: Flags		
		• Format: 8 bit		
		 Value: 0000 0010 (MSB → LSB). Blood pressure measurement value in units of mmHg and Time Stamp fields are included, Pulse Rate, User ID and measurement Status fields are not included 		
		ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg) • Format: SFLOAT		
		Value: Not relevant		
		 iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg) Format: SFLOAT 		
		Value: Not relevant iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure		
		(mmHg) • Format: SFLOAT		
		 Value: Not relevant v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa) This field is not included 		
		vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa) • This field is not included		
		vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa)		
		This field is not included viii. Field: Time Stamp		
		Format: Date and TimeValue: Not relevant		
		ix. Field: Pulse Rate		
		 This field is not included x. Field: User ID 		
		This field is not included		
		xi. Field: Measurement Status		
		This field is not included		
		 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the simulated agent sends the 		
measurement to the manager under test. 5. Check in manager transcoder output for the Systolic/Diastolic/Map compounds.		measurement to the manager under test.		
Pass/Fail c	riteria	In step 5, the Systolic/Diastolic/Map compound numeric object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_PRESS_BLD_NONINV}.		
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes		
		Type attribute is present:		
		Object: Systolic/Diastolic/Map compound numeric object Attribute-id: MDC_ATTR_ID_TYPE (2351)		
		 Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: 		
		 Attribute-value. partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) 		
		code: MDC_PRESS_BLD_NONINV or 18948 (dec) or 4A 04 (hex) WAN PCD-01 message		
		PCD-01 message includes a segment like this with a Type attribute (check OBX-3): OBX ? 150020^MDC_PRESS_BLD_NONINV^MDC 1.0.a X [current_date_time].		

TP Id	Id TP/LP-PAN/MAN/PHDTW/BPM/BV-006		
TP label	Whitepaper. Systolic/Diastolic/Map Compound Numeric Object - Metric-Spec-Small		
	Attribute		
Coverage Spec	[b-Bluetooth PHDT v1.3]		
Testabl			
items	S. Hamono O, IVI		
Applicability C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003			
Initial condition	The manager under test and the simulated agent are in the standby state.		
Test procedure	 The simulated agent is configured with a Blood pressure profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Blood pressure measurement (0x2A35) Field: Flags Format: 8 bit 		
	 Value: 0000 0010 (MSB → LSB). Blood pressure measurement value in units of mmHg and Time Stamp fields are included, Pulse Rate, User ID and measurement Status fields are not included ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg) Format: SFLOAT 		
	 Value: Not relevant iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg) Format: SFLOAT Value: Not relevant 		
	 iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (mmHg) Format: SFLOAT 		
	 Value: Not relevant Field: Blood Pressure Measurement Compound Value – Systolic (kPa) This field is not included 		
	 vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa) This field is not included vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial 		
	Pressure (kPa) • This field is not included		
	viii. Field: Time Stamp		
	Format: Date and Time		
	Value: Not relevant Six Field: Pulse Rate		
	ix. Field: Pulse Rate		
	This field is not included x. Field: User ID		
	This field is not included		
	xi. Field: Measurement Status		
	This field is not included		
	3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
	4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
Page/Egil aritaria	Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object – Metric-Spec-Small attribute. In stan 5, the Systolic/Diastolic/Map compound numeric object. Metric Spec Small		
Pass/Fail criteria	In step 5, the Systolic/Diastolic/Map compound numeric object – Metric-Spec-Small attribute is present and its value is {0xF040} (mss-avail-intermittent mss-avail-stored-data mss-upd-aperiodic mss-msmt-aperiodic mss-acc-agent-initiated).		
Notes	Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Spec-Small attribute is present:		
	Object: Systolic/Diastolic/Map compound numeric objectAttribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)		
	 Attribute-type: BITS-16 Attribute-value: F0 40 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9) set to TRUE and remaining BITS set to FALSE 		
	b) WAN PCD-01 message PCD-01 message does not include segments with a Metric-Spec-Small attribute value.		

TP Id		TP/LP-PAN/MAN/PHDTW/BPM/BV-007		
TP label		Whitepaper. Systolic/Diastolic/Map Compound Numeric Object - Metric-Structure-Small		
		Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable	BP Numeric 4; M		
	items	,		
Applicability	,	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003		
Applicability Initial condition Test procedure		The manager under test and the simulated agent are in the standby state.		
		viii. Field: Time Stamp		
the measurement to the manager under test.		the measurement to the manager under test. 5. Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object – Metric-Structure-Small attribute.		
Pass/Fail cri	iteria	In step 5, the Systolic/Diastolic/Map compound numeric object – Metric-Structure-Small attribute is present and its value is {0x03, 0x03} (ms-struct-compound-fix, 3).		
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Spec-Small attribute is present: Object: Systolic/Diastolic/Map compound numeric object Attribute-id: MDC_ATTR_METRIC_STRUCT_SMALL (2675) Attribute-type: SEQUENCE {ms-struct (INT-U8), ms-comp-no (INT-U8)} Attribute-value: ms-struct Element: 03 (hex), ms-struct-compound-fix(3) ms-comp-no Element: 03 (hex)		
		b) WAN PCD-01 message PCD-01 message does not include segments with a Metric-Structure-Small attribute value.		

TP ld		TP/LP-PAN/MAN/PHDTW/BPM/BV-008		
TP label		Whitepaper. Systolic/Diastolic/Map Compound Numeric Object - Metric-Id-List Attribute		
Coverage Spec		[b-Bluetooth PHDT v1.3]		
Coverage	Testable	BP Numeric 5; M		
	items	Dr Numenc 5, W		
Applicability	V	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003		
Initial condi		The manager under test and the simulated agent are in the standby state.		
Pass/Fail criteria		 The manager under test and the simulated agent are in the standby state. The simulated agent is configured with a Blood pressure profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Blood pressure measurement (0x2A35) Field: Flags Format: 8 bit Value: 0000 0010 (MSB → LSB). Blood pressure measurement value in units of mmHg and Time Stamp fields are included, Pulse Rate, User ID and measurement Status fields are not included Field: Blood Pressure Measurement Compound Value – Systolic (mmHg) Format: SFLOAT Value: Not relevant Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg) Format: SFLOAT Value: Not relevant Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (mmHg) Format: SFLOAT Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (mmHg) Format: SFLOAT 		
		Value: Not relevant V. Field: Blood Pressure Measurement Compound Value – Systolic (kPa) • This field is not included vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa) • This field is not included vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa) • This field is not included viii. Field: Time Stamp • Format: Date and Time • Value: Not relevant ix. Field: Pulse Rate • This field is not included x. Field: User ID • This field is not included xi. Field: Measurement Status • This field is not included 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test. 5. Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object – Metric-Id-List attribute.		
		In step 5, the Systolic/Diastolic/Map compound numeric object – Metric-Id-List attribute is present and its value is {MDC_PRESS_BLD_NONINV_SYS, MDC_PRESS_BLD_NONINV_DIA, MDC_PRESS_BLD_NONINV_MEAN}.		
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Id-List attribute is present: Object: Systolic/Diastolic/Map compound numeric object Attribute-id: MDC_ATTR_ID_PHYSIO_LIST (2678) Attribute-type: SEQUENCE OF [{OID-Type(INT-U16)}] Attribute-value: 00 03 00 06 4A 05 4A 06 4A 07 (hex) [Note that 0x00 0x03 is the number of elements in the sequence and 0x00 06 is the length of the sequence] i. First Element: 4A 05 (hex) or 18949 (dec) ii. Second Element: 4A 06 (hex) or 18950 (dec) iii. Third Element: 4A 07 (hex) or 18951 (dec) b) WAN PCD-01 message PCD-01 message includes three segments like these with a Metric-Id-List attribute values (check OBX-3 in three segments): OBX[?]NM[150021^MDC_PRESS_BLD_NONINV_SYS^MDC 1.0.a.x 100 266016^MDC_DIM_MMHG^MDC R OBX[?]NM[150022^MDC_PRESS_BLD_NONINV_DIA^MDC 1.0.a.y 70 266016^MDC_DIM_MMHG^MDC R OBX[?]NM[150023^MDC_PRESS_BLD_NONINV_MEAN^MDC 1.0.a.z 80		

TP ld		TD/LD DAN/MAN/DHDTM/PD/DV 000			
TP label		TP/LP-PAN/MAN/PHDTW/BP/BV-009			
		Whitepaper. Systolic/Diastolic/Map Compound Numeric Object - Unit-Code Attribute			
Coverage Sp		[b-Bluetooth PHDT v1.3]			
_	stable ms	BP Numeric 6; M BP Numeric 7; M			
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003			
Initial condition	n	The manager under test and the simulated agent are in the standby state			
Test procedure		1. The simulated agent is configured with a profile (device specialization) supported by the manager under test; it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Blood pressure measurement (0x2A35) 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value: a. Blood pressure measurement (0x2A35) i. Field: Flags • Format: 8 bit • Value: 0000 0010 (MSB → LSB). Blood pressure measurement value in units of mmHg and Time Stamp fields are included, Pulse Rate, User ID and measurement Status fields are not included iii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg) • Format: SFLOAT • Value: 100.0 iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg) • Format: SFLOAT • Value: 70.0 iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (mmHg) • Format: SFLOAT • Value: 80.0 v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa) • This field is not included vii. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa) • This field is not included vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa) • This field is not included vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa) • This field is not included vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa) • This field is not included vii. Field: Blood Pressure Measurement Compound Value – Systolic (kPa) • This field is not included ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg) • This field is not in			

	iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (mmHg) • This field is not included v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa) • Format: SFLOAT • Value: 13.33 vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa) • Format: SFLOAT • Value: 9.33 vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa) • Format: SFLOAT • Value: 10.67 viii. Field: Time Stamp • Format: Date and Time • Value: Not relevant ix. Field: Pulse Rate • This field is not included x. Field: User ID • This field is not included xi. Field: Measurement Status • This field is not included	
	 Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object – Unit-Code attribute. 	
Pass/Fail criteria	In step 5, the Systolic/Diastolic/Map compound numeric object – Unit-Code attribute is present and its value is MDC_DIM_MMHG. In step 7, the Systolic/Diastolic/Map compound numeric object – Unit-Code attribute is present and its value is MDC_DIM_KILO_PASCAL.	
Notes	and its value is MDC_DIM_MMHG. In step 7, the Systolic/Diastolic/Map compound numeric object – Unit-Code attribute is present	

TP Id		TP/LP-PAN/MAN/PHDTW/BPM/BV-010			
TP label		Whitepaper. Systolic/Diastolic/Map Compound Numeric Object - Absolute-Time-Stamp Attribute			
Coverag	Spec	[b-Bluetooth PHDT v1.3]			
е	Testabl	BP Numeric 9; M Date-Time Conv 2; M Date-Time Conv 3; M			
e items		Date-Time Conv 4; M Date-Time Conv 5; M			
Applicabil		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003			
Initial cond		The manager under test and the simulated agent are in the standby state.			
Test proce	edure	 The simulated agent is configured with a profile (device specialization) supported by the manager under test; it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Blood pessure measurement (0x2A35) 			
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state) When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value: Blood pressure measurement (0x2A35) Field: Flags Format: 8 bit Value: 0000 0010 (MSB → LSB). Blood pressure measurement value in units of 			
		mmHg and Time Stamp fields are included, Pulse Rate, User ID and measurement Status fields are not included ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg) • Format: SFLOAT • Value: 100.0			
		iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg) • Format: SFLOAT • Value: 70.0 iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (mmHg)			
		Format: SFLOATValue: 80.0			
		v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa) • This field is not included vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa)			
		 This field is not included vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa) This field is not included 			
		viii. Field: Time Stamp • Format: Date and Time			
		 Value: August 2nd, 2012, 10:39:27 ix. Field: Pulse Rate This field is not included 			
		x. Field: User ID This field is not included			
		xi. Field: Measurement Status • This field is not included			
Pass/Fail (ritoria	Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object – Absolute-Time-Stamp attribute In step 5, the Systolic/Diastolic/Map compound numeric object – Absolute-Time-Stamp			
	Ji NGI IQ	attribute is present, its value matches with the Time Stamp field of the Blood pressure measurement characteristic and the fraction of seconds is set to 0.			
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Absolute-Time-Stamp attribute is present: Object: Systolic/Diastolic/Map compound numeric object Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448) Attribute-type: SEQUENCE {century (INT-U8), year (INT-U8), month (INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)} (BCD encoding) Attribute-value:			
		 century: 20 (hex) or 32 (dec) year: 12 (hex) or 18 (dec) month: 08 (hex) or 8 (dec) day: 02 (hex) or 2 (dec) hour: 10 (hex) or 16 (dec) minute: 39 (hex) or 57 (dec) second: 27 (hex) or 39 (dec) sec-fractions: 00 (hex) or 0 (dec) 			
		b) WAN PCD-01 message PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value (check OBX-14) OBX ? 150020^MDC_PRESS_BLD_NONINV^MDC 1.0.a X 20120802103927+0000			

TP Id		TP/LP-PAN/MAN/PHDTW/BPM	/BV-011		
TP label		Whitepaper. Systolic/Diastolic/Map Compound Numeric Object - Compound-Basic-Nu-Observed-Value Attribute 1			
Coverag	Spec	[b-Bluetooth PHDT v1.3]			
е	Testabl e items	BP Numeric 10; M	Short Float Type 1; C		
Applicabili	ty	C_MAN_BLE_000 AND C_MAN	N_BLE_002 AND C_MAN_BLE_003		
Initial cond	dition	The manager under test and the	e simulated agent are in the standby state.		
Test procedure			figured with a profile (device specialization) supported by the a measurement ready to be sent and it is in the advertising		
		interest for this test case is			
		Blood pressure measu			
		simulated agent and it start	tiates a discovery process (scanning state). It discovers the is a pairing process with the simulated agent (initiating state).		
		measurement to the manage	completed (connection state), the simulated agent sends the ger under test with the following value:		
		a. Blood pressure measu	rement (0x2A35)		
		i. Field: Flags			
		Format: 8 bit			
		units of mml	0010 (MSB → LSB). Blood pressure measurement value in Ig and Time Stamp fields are included, Pulse Rate, User ID ement Status fields are not included		
		ii. Field: Blood Press	ure Measurement Compound Value – Systolic (mmHg)		
		Format: SFL	OAT		
		• Value: 100.0			
		iii. Field: Blood Press	ure Measurement Compound Value - Diastolic (mmHg)		
		Format: SFL	OAT		
		• Value: 70.0			
		(mmHg)	ure Measurement Compound Value – Mean Arterial Pressure		
		Format: SFL	OAT		
		• Value: 80.0			
			ure Measurement Compound Value – Systolic (kPa)		
		This field is r			
			ure Measurement Compound Value – Diastolic (kPa)		
		This field is r			
		(kPa)	ure Measurement Compound Value – Mean Arterial Pressure		
		• This field is r			
		viii. Field: Time Stamp			
		Format: Date			
		Value: Not re	elevant		
		ix. Field: Pulse Rate	sak isah, dad		
		This field is r Field Hear ID.	not included		
		x. Field: User ID	sat isaludad		
		This field is r Yi Field: Measurement Yi Field: Measurement			
		xi. Field: Measureme			
		This field is r	iot included		

- 5. Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object Compound-Basic-Nu-Observed-Value attribute.
- 6. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Blood pressure measurement (0x2A35)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0000 0011 (MSB → LSB). Blood pressure measurement value in units of kPa, Time Stamp field is included and Pulse Rate, User ID and measurement Status fields are not included
 - ii. Field: Blood Pressure Measurement Compound Value Systolic (mmHg)
 - · This field is not included
 - iii. Field: Blood Pressure Measurement Compound Value Diastolic (mmHg)
 - · This field is not included
 - Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (mmHq)
 - · This field is not included
 - v. Field: Blood Pressure Measurement Compound Value Systolic (kPa)
 - Format: SFLOAT
 - Value: 13.33
 - vi. Field: Blood Pressure Measurement Compound Value Diastolic (kPa)
 - Format: SFLOAT
 - Value: 9.33
 - vii. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (kPa)
 - viii. Format: SFLOAT
 - Value: 10.67
 - ix. Field: Time Stamp
 - Format: Date and Time
 - Value: Not relevant
 - x. Field: Pulse Rate
 - · This field is not included
 - xi. Field: User ID
 - · This field is not included
 - xii. Field: Measurement Status
 - · This field is not included
- Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object – Compound-Basic-Nu-Observed-Value attribute.

Pass/Fail criteria

In step 5, the Systolic/Diastolic/Map compound numeric object – Compound-Basic-Nu-Observed-Value attribute is present and its value matches with the blood pressure measurement value (mmHg) fields of the Blood pressure measurement characteristic (Systolic: 100.0, Diastolic:70.0, MAP: 80.0).

In step 7, the Systolic/Diastolic/Map compound numeric object – Compound-Basic-Nu-Observed-Value attribute is present and its value matches with the blood pressure measurement value (kPa) fields of the Blood pressure measurement characteristic (Systolic: 13.33, Diastolic:9.33, MAP: 10.67).

Notes

Possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Compound-Basic-Nu-Observed-Value attribute is present:

- □ Object: Systolic/Diastolic/Map compound numeric object
- ☐ Attribute-id: MDC_ATTR_NU_CMPD_VAL_OBS_BASIC (2677)
- Attribute-type: SEQUENCE OF [{SFLOAT}]
- □ Attribute-value: 00 03 00 06 xx xx yy yy zz zz (hex), where 'xx xx' is the Systolic value, 'yy yy' is the Diastolic value and 'zz zz' is the MAP value [Note that 0x00 0x03 is the number of elements in the sequence and 0x00 06 is the length of the sequence]
 - Systolic: F3 E8 (hex) or 00 64 (hex) or 10 0A (hex) or 20 01 (hex) or 100.0 (dec)
 - Diastolic: F2 BC (hex) or 00 46 (hex) or 10 07 (hex) or 70.0 (dec)
 - MAP: F3 20 (hex) or 00 50 (hex) or 10 08 (hex) or 80.0 (dec)

b) WAN PCD-01 message

PCD-01 message includes three segments like these with a Simple-Nu-Observed-Value attribute value (check OBX-5):

OBX|?|NM|150021^MDC_PRESS_BLD_NONINV_SYS^MDC|1.0.a.x|100|

266016^MDC_DIM_MMHG^MDC|||||R|||[current_date_time]

OBX|?|NM|150022^MDC_PRESS_BLD_NONINV_DIA^MDC|1.0.a.y|70|

266016^MDC_DIM_MMHG^MDC|||||R|||[current_date_time]

OBX|?|NM|150023^MDC_PRESS_BLD_NONINV_MEAN^MDC|1.0.a.z|80|

266016^MDC_DIM_MMHG^MDC|||||R|||[current_date_time]

Note that "||[current_date_time]" is optional at the end of each segment because the date and time can be specified in the parent segment

(OBX|?||150020^MDC_PRESS_BLD_NONINV^MDC|1.0.a||||||X|||[current_date_time])

In step 7, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Simple-Nu-Observed-Value attribute is present:

- □ Object: Systolic/Diastolic/Map compound numeric object
- ☐ Attribute-id: MDC_ATTR_NU_CMPD_VAL_OBS_BASIC (2677)
- Attribute-type: SEQUENCE OF [{SFLOAT}]
- Attribute-value: 00 03 00 06 E5 35 E3 A5 E4 2B (hex) [Note that 0x00 0x03 is the number of elements in the sequence and 0x00 06 is the length of the sequence]
 - Systolic: E5 35 (hex) or 13.33 (dec)
 - Diastolic: E3 A5 (hex) 9.33 (dec)
 - MAP: E4 2B (hex) 10.67 (dec)

b) WAN PCD-01 message

PCD-01 message includes three segments like these with a Simple-Nu-Observed-Value attribute value (check OBX-5):

OBX|?|NM|150021^MDC_PRESS_BLD_NONINV_SYS^MDC|1.0.a.x|13.33|

265987^MDC_DIM_KILO_PASCAL^MDC|||||R|||[current_date_time]

OBX|?|NM|150022^MDC_PRESS_BLD_NONINV_DIA^MDC|1.0.a.y|9.33|

265987^MDC_DIM_KILO_PASCAL^MDC||||R|||[current_date_time]

OBX|?|NM|150023^MDC_PRESS_BLD_NONINV_MEAN^MDC|1.0.a.z|10.67|

265987^MDC_DIM_KILO_PASCAL^MDC|||||R|||[current_date_time]

Note that "|||[current_date_time]" is optional at the end of each segment because the date and time can be specified in the parent

segment(OBX|?||150020^MDC_PRESS_BLD_NONINV^MDC|1.0.a||||||X|||[current_date_time 1)

TP ld		TP/LP-PAN	/MAN/PHDTW/BPI	M/BV-012	
TP label	1	Whitepaper. Systolic/Diastolic/Map Compound Numeric Object - Compound-Basic-Nu-Observed-Value Attribute 2			
Coverag	Spec	[b-Bluetooth PHDT v1.3]			
е	Testabl e items	BP Numerio	: 10; M	Short Float Type 1; C	Short Float Type 2; M
Applicabili	ity	C_MAN_BL	E_000 AND C_MA	N_BLE_002 AND C_MAN_BLE	_003
Initial cond	dition	The manage	er under test and th	ne simulated agent are in the sta	ndby state.
Test procedure		manage		nfigured with a profile (device sp a measurement ready to be se	
		interest	for this test case is		ics. The characteristic of
			ood pressure meas		
		simulat	ed agent and it sta	nitiates a discovery process (sca rts a pairing process with the sin	nulated agent (initiating state).
		measu	rement to the mana	n completed (connection state), ager under test with the following	
			ood pressure meas	urement (0x2A35)	
		i.	Field: Flags		
			Format: 8 b		
			units of mm	0 0010 (MSB → LSB). Blood pre Hg and Time Stamp fields are in rement Status fields are not inclu	cluded, Pulse Rate, User ID
		ii.	Field: Blood Pres	sure Measurement Compound \	/alue – Systolic (mmHg)
			 Format: SFI 	LOAT	
			 Value: 100. 	0	
		iii.	Field: Blood Pres	sure Measurement Compound \	/alue – Diastolic (mmHg)
			Format: SFI	LOAT	
			 Value: 70.0 		
		iv.	Field: Blood Pres (mmHg)	sure Measurement Compound \	/alue – Mean Arterial Pressure
			Format: SFI	LOAT	
			 Value: 80.0 		
		V.	Field: Blood Pres	sure Measurement Compound \	/alue – Systolic (kPa)
			 This field is 	not included	
		vi.	Field: Blood Pres	sure Measurement Compound \	/alue – Diastolic (kPa)
				not included	
		vii.	(kPa)	sure Measurement Compound \	/alue – Mean Arterial Pressure
				not included	
		viii.	Field: Time Stam		
			Format: Dat		
			Value: Not i		
		ix.	Field: Pulse Rate		
				not included	
		X.	Field: User ID		
			This field is		
		Xi.	Field: Measureme		
		E Charles		not included	olio/Mon compound
				der output for the Systolic/Diast -Nu-Observed-Value attribute.	olic/iviap compound numeric

- The simulated agent sends the measurement to the manager under test with the following value:
 - a. Blood pressure measurement (0x2A35)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0000 0010 (MSB → LSB). Blood pressure measurement value in units of mmHg and Time Stamp fields are included, Pulse Rate, User ID and measurement Status fields are not included
 - ii. Field: Blood Pressure Measurement Compound Value Systolic (mmHg)
 - Format: SFLOAT
 - Value: 07 FF (hex). Special value: NaN
 - iii. Field: Blood Pressure Measurement Compound Value Diastolic (mmHg)
 - Format: SFLOAT
 - Value: 07 FF (hex). Special value: NaN
 - iv. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (mmHg)
 - Format: SFLOAT
 - Value: 07 FF (hex). Special value: NaN
 - v. Field: Blood Pressure Measurement Compound Value Systolic (kPa)
 - · This field is not included
 - vi. Field: Blood Pressure Measurement Compound Value Diastolic (kPa)
 - This field is not included
 - vii. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (kPa)
 - · This field is not included
 - viii. Field: Time Stamp
 - Format: Date and Time
 - Value: Not relevant
 - ix. Field: Pulse Rate
 - · This field is not included
 - x. Field: User ID
 - This field is not included
 - xi. Field: Measurement Status
 - · This field is not included
- Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object – Compound-Basic-Nu-Observed-Value attribute.
- 8. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Blood pressure measurement (0x2A35)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0000 0010 (MSB → LSB). Blood pressure measurement value in units of mmHg and Time Stamp fields are included, Pulse Rate, User ID and measurement Status fields are not included
 - ii. Field: Blood Pressure Measurement Compound Value Systolic (mmHg)
 - Format: SFLOAT
 - Value: 08 00 (hex). Special value: NRes
 - iii. Field: Blood Pressure Measurement Compound Value Diastolic (mmHg)
 - Format: SFLOAT
 - Value: 08 00 (hex). Special value: NRes
 - iv. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (mmHg)

- Format: SFLOAT
- Value: 08 00 (hex). Special value: NRes
- v. Field: Blood Pressure Measurement Compound Value Systolic (kPa)
 - This field is not included
- vi. Field: Blood Pressure Measurement Compound Value Diastolic (kPa)
 - This field is not included
- vii. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (kPa)
 - · This field is not included
- viii. Field: Time Stamp
 - Format: Date and Time
 - Value: Not relevant
- ix. Field: Pulse Rate
 - This field is not included
- x. Field: User ID
 - · This field is not included
- xi. Field: Measurement Status
 - · This field is not included
- Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object – Compound-Basic-Nu-Observed-Value attribute.
- 10. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Blood pressure measurement (0x2A35)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0000 0010 (MSB → LSB). Blood pressure measurement value in units of mmHg and Time Stamp fields are included, Pulse Rate, User ID and measurement Status fields are not included
 - ii. Field: Blood Pressure Measurement Compound Value Systolic (mmHg)
 - Format: SFLOAT
 - Value: 07 FE (hex). Special value: +INFINITY
 - iii. Field: Blood Pressure Measurement Compound Value Diastolic (mmHg)
 - Format: SFLOAT
 - Value: 07 FE (hex). Special value: +INFINITY
 - iv. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (mmHg)
 - Format: SFLOAT
 - Value: 07 FE (hex). Special value: +INFINITY
 - v. Field: Blood Pressure Measurement Compound Value Systolic (kPa)
 - This field is not included
 - vi. Field: Blood Pressure Measurement Compound Value Diastolic (kPa)
 - · This field is not included
 - vii. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (kPa)
 - · This field is not included
 - viii. Field: Time Stamp
 - · Format: Date and Time
 - · Value: Not relevant
 - ix. Field: Pulse Rate
 - · This field is not included
 - x. Field: User ID

- This field is not included
- xi. Field: Measurement Status
 - This field is not included
- 11. Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object Compound-Basic-Nu-Observed-Value attribute.
- 12. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Blood pressure measurement (0x2A35)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0000 0010 (MSB → LSB). Blood pressure measurement value in units of mmHg and Time Stamp fields are included, Pulse Rate, User ID and measurement Status fields are not included
 - ii. Field: Blood Pressure Measurement Compound Value Systolic (mmHg)
 - Format: SFLOAT
 - Value: 08 02 (hex). Special value: -INFINITY
 - iii. Field: Blood Pressure Measurement Compound Value Diastolic (mmHg)
 - Format: SFLOAT
 - Value: 08 02 (hex). Special value: -INFINITY
 - iv. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (mmHg)
 - Format: SFLOAT
 - Value: 08 02 (hex). Special value: -INFINITY
 - v. Field: Blood Pressure Measurement Compound Value Systolic (kPa)
 - · This field is not included
 - vi. Field: Blood Pressure Measurement Compound Value Diastolic (kPa)
 - This field is not included
 - vii. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (kPa)
 - · This field is not included
 - viii. Field: Time Stamp
 - Format: Date and Time
 - · Value: Not relevant
 - ix. Field: Pulse Rate
 - · This field is not included
 - x. Field: User ID
 - · This field is not included
 - xi. Field: Measurement Status
 - · This field is not included
- 13. Check in manager transcoder output for the Systolic/Diastolic/Map compound numeric object Compound-Basic-Nu-Observed-Value attribute.

Pass/Fail criteria

In step 5, the Systolic/Diastolic/Map compound numeric object – Compound-Basic-Nu-Observed-Value attribute is present and its value is 100.0 for Systolic, 70.0 for Diastolic and 80.0 for MAP.

In step 7, the Systolic/Diastolic/Map compound numeric object – Compound-Basic-Nu-Observed-Value attribute is present and its value is 0x07FF for Systolic, Diastolic and MAP.

In step 9, the Systolic/Diastolic/Map compound numeric object – Compound-Basic-Nu-Observed-Value attribute is present and its value is 0x0800 for Systolic, Diastolic and MAP.

In step 11, the Systolic/Diastolic/Map compound numeric object – Compound-Basic-Nu-Observed-Value attribute is present and its value is 0x07FE for Systolic, Diastolic and MAP.

In step 13, the Systolic/Diastolic/Map compound numeric object – Compound-Basic-Nu-Observed-Value attribute is present and its value is 0x0802 for Systolic, Diastolic and MAP.

Notes

In step 5, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Compound-Basic-Nu-Observed-Value attribute is present:

- Systolic/Diastolic/Map compound numeric object
- Attribute-id: MDC_ATTR_NU_CMPD_VAL_OBS_BASIC (2677)
- Attribute-type: SEQUENCE OF [{SFLOAT}]
- □ Attribute-value: 00 03 00 06 xx xx yy yy zz zz (hex), where 'xx xx' is the Systolic value, 'yy yy' is the Diastolic value and 'zz zz' is the MAP value [Note that 0x00 0x03 is the number of elements in the sequence and 0x00 06 is the length of the sequence]
 - Systolic: F3 E8 (hex) or 00 64 (hex) or 10 0A (hex) or 20 01 (hex) or 100.0 (dec)
 - Diastolic: F2 BC (hex) or 00 46 (hex) or 10 07 (hex) or 70.0 (dec)
 - MAP: F3 20 (hex) or 00 50 (hex) or 10 08 (hex) or 80.0 (dec)
- b) WAN PCD-01 message

PCD-01 message includes a segment like this with a Simple-Nu-Observed-Value attribute value (check OBX-5):

OBX|?|NM|150021^MDC_PRESS_BLD_NONINV_SYS^MDC|1.0.a.x|100|

266016^MDC_DIM_MMHG^MDC|||||R|||[current_date_time]

OBX|?|NM|150022^MDC_PRESS_BLD_NONINV_DIA^MDC|1.0.a.y|70|

266016^MDC_DIM_MMHG^MDC|||||R|||[current_date_time]

OBX|?|NM|150023^MDC_PRESS_BLD_NONINV_MEAN^MDC|1.0.a.z|80|

266016^MDC_DIM_MMHG^MDC|||||R|||[current_date_time]

Note that "|||[current_date_time]" is optional at the end of each segment because the date and time can be specified in the parent segment

(OBX|?||150020^MDC_PRESS_BLD_NONINV^MDC|1.0.a||||||X|||[current_date_time])

In step 7, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Compound-Basic-Nu-Observed-Value attribute is present:

- Systolic/Diastolic/Map compound numeric object
- Attribute-id: MDC_ATTR_NU_CMPD_VAL_OBS_BASIC (2677)
- Attribute-type: SEQUENCE OF [{SFLOAT}]
- Attribute-value: 00 03 00 06 07 FF 07 FF 07 FF (hex) [Note that 0x00 0x03 is the number of elements in the sequence and 0x00 06 is the length of the sequence]
 - Systolic: 07 FF (hex) or NaN (note that is not allowed a decimal value)
 - Diastolic: 07 FF (hex) or NaN (note that is not allowed a decimal value)
 - MAP: 07 FF (hex) or NaN (note that is not allowed a decimal value)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute value (150021^MDC_PRESS_BLD_NONINV_SYS^MDC,

150022^MDC_PRESS_BLD_NONINV_DIA^MDC and

150023^MDC_PRESS_BLD_NONINV_MEAN) because they have a special value and these values are not included in the PCD-01 message.

In step 9, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Compound-Basic-Nu-Observed-Value attribute is present:

- Systolic/Diastolic/Map compound numeric object
- ☐ Attribute-id: MDC_ATTR_NU_CMPD_VAL_OBS_BASIC (2677)
- Attribute-type: SEQUENCE OF [{SFLOAT}]
- Attribute-value: 00 03 00 06 08 00 08 00 08 00(hex) [Note that 0x00 0x03 is the number of elements in the sequence and 0x00 06 is the length of the sequence]
 - Systolic: 08 00 (hex) or NRes (note that a decimal value is not allowed)
 - Diastolic: 08 00 (hex) or NRes (note that a decimal value is not allowed)
 - MAP: 08 00 (hex) or NRes (note that a decimal value is not allowed)

b) WAN PCD-01 message

PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute value (150021^MDC_PRESS_BLD_NONINV_SYS^MDC,

150022^MDC_PRESS_BLD_NONINV_DIA^MDC and

150023^MDC_PRESS_BLD_NONINV_MEAN) because they have a special value and these values are not included in the PCD-01 message.

In step 11, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Compound-Basic-Nu-Observed-Value attribute is present:

- Systolic/Diastolic/Map compound numeric object
- Attribute-id: MDC ATTR NU CMPD VAL OBS BASIC (2677)
- Attribute-type: SEQUENCE OF [{SFLOAT}]
- Attribute-value: 00 03 00 06 07 FE 07 FE 07 FE (hex) [Note that 0x00 0x03 is the number of elements in the sequence and 0x00 06 is the length of the sequence]
 - Systolic: 07 FE (hex) or +INFINITY (note that a decimal value is not allowed)
 - Diastolic: 07 FE (hex) or +INFINITY (note that a decimal value is not allowed)
 - MAP: 07 FE (hex) or +INFINITY (note that a decimal value is not allowed)

b) WAN PCD-01 message

PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute value (150021^MDC PRESS BLD NONINV SYS^MDC.

150022^MDC_PRESS_BLD_NONINV_DIA^MDC and

150023^MDC_PRESS_BLD_NONINV_MEAN) because they have a special value and these values are not included in the PCD-01 message.

In step 13, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Compound-Basic-Nu-Observed-Value attribute is present:

- □ Systolic/Diastolic/Map compound numeric object
- ☐ Attribute-id: MDC_ATTR_NU_CMPD_VAL_OBS_BASIC (2677)
- Attribute-type: SEQUENCE OF [{SFLOAT}]
- Attribute-value: 00 03 00 06 08 02 08 02 08 02 (hex) [Note that 0x00 0x03 is the number of elements in the sequence and 0x00 06 is the length of the sequence]
 - Systolic: 08 02 (hex) or -INFINITY (note that a decimal value is not allowed)
 - Diastolic: 08 02 (hex) or -INFINITY (note that a decimal value is not allowed)
 - MAP: 08 02 (hex) or -INFINITY (note that a decimal value is not allowed)

b) WAN PCD-01 message

PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute value (150021^MDC PRESS BLD NONINV SYS^MDC.

150022^MDC_PRESS_BLD_NONINV_DIA^MDC and

150023^MDC_PRESS_BLD_NONINV_MEAN) because they have a special value and these values are not included in the PCD-01 message.

TP ld		TP/LP-PAI	N/MAN/PHDTW/BP	M/BV-013	
TP label		Whitepaper. Systolic/Diastolic/Map Compound Numeric Object - Blood Pressure measurement value			
Coverage	Spec	[b-Bluetoot	th PHDT v1.3]		
	Testable	Short Float	t Type 1; C	Date-Time Conv 1; M	BP Numeric 9; M
	items	BP Numeri	ic 10; M		
Applicability	y	C_MAN_BLE_000 AND C_MAN_BLE_003			
Initial condi	tion	The manaç	ger under test and t	he simulated agent are in the	standby state.
Test proced	ure	the ma		t has a measurement ready to	e specialization) supported by be sent and it is in the
			mulated agent impl st for this test case	ements several BLE characte is:	eristics. The characteristic of
		a. B	lood pressure meas	surement (0x2A35)	
			ated agent and it sta	nitiates a discovery process (arts a pairing process with the	scanning state). It discovers the simulated agent (initiating
				en completed (connection state manager under test with the fo	te), the simulated agent sends ollowing value:
		a. B	lood pressure meas	surement (0x2A35)	
		i.	Field: Flags		
			Format: 8 b	pit	
			units of mn		pressure measurement value in re included, Pulse Rate, User ID ncluded
		ii.	Field: Blood Press	ure Measurement Compound	d Value – Systolic (mmHg)
			Format: SF	LOAT	
			 Value: 100 	.0	
		iii.	Field: Blood Press	sure Measurement Compound	d Value – Diastolic (mmHg)
			Format: SF	LOAT	
			 Value: 70.0)	
		iv.	Field: Blood Press (mmHg)	ure Measurement Compound	d Value – Mean Arterial Pressure
			 Format: SF 	LOAT	
			 Value: 80.0 		
		V.	Field: Blood Press	sure Measurement Compound	d Value – Systolic (kPa)
				s not included	
		vi.		sure Measurement Compound	d Value – Diastolic (kPa)
				not included	
		VII.	(kPa)	·	d Value – Mean Arterial Pressure
				s not included	
		VIII.	Field: Time Stamp		
			Format: Da		
				ust 2nd, 2012, 11:08:25	
		IX.	Field: Pulse Rate	المساهما عمس	
				s not included	
		X.	Field: User ID	and broken I	
			 This field is 	not included	

xi. Field: Measurement Status · This field is not included Check that the manager accepts the measurement and decodes its value properly (measurement values, units and time stamp). The simulated agent sends the measurement to the manager under test with the following value: a. Blood pressure measurement (0x2A35) i. Field: Flags • Format: 8 bit Value: 0000 0011 (MSB → LSB). Blood pressure measurement value in units of kPa and Time Stamp fields are included, Pulse Rate, User ID and measurement Status fields are not included ii. Field: Blood Pressure Measurement Compound Value - Systolic (mmHg) · This field is not included iii. Field: Blood Pressure Measurement Compound Value - Diastolic (mmHg) This field is not included iv. Field: Blood Pressure Measurement Compound Value - Mean Arterial Pressure (mmHa) · This field is not included v. Field: Blood Pressure Measurement Compound Value - Systolic (kPa) Format: SFLOAT Value: 13.33 vi. Field: Blood Pressure Measurement Compound Value - Diastolic (kPa) Format: SFLOAT Value: 9.33 vii. Field: Blood Pressure Measurement Compound Value - Mean Arterial Pressure (kPa) Format: SFLOAT Value: 10.67 viii. Field: Time Stamp · Format: Date and Time Value: August 2nd, 2012, 11:09:05 ix. Field: Pulse Rate · This field is not included x. Field: User ID This field is not included xi. Field: Measurement Status This field is not included Check that the manager under test accepts the measurement and decodes its value properly (measurement values, units and time stamp) Pass/Fail criteria In step 5, the manager under test shows the following measurement: 100.0 mmHg for Systolic, 70.0 mmHg for Diastolic and 80.0 mmHg for MAP, with the time stamp '2012-08-02 11:08:25'. In step 7, the manager under test shows the following measurement 13.33 kPa for Systolic, 9.33 kPa for Diastolic and 10.67 kPa for MAP, with the time stamp '2012-08-02 11:09:05'. **Notes**

TP Id		TP/LP-PAN/MAN/PHDTW/BPM/BV-014
TP label		Whitepaper. Pulse Rate Object - Handle Attribute
Coverage	Spec	[b-Bluetooth PHDT v1.3]
	Testable	PR Numeric 1; O
	items	
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003 AND
Initial condit	tion	C_MAN_BLE_005 The manager under test and the simulated agent are in the standby state.
Test proced		The simulated agent is configured with a Blood pressure profile (device specialization);
. состр. сост	0	it has a measurement ready to be sent and it is in the advertising state (it is
		discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of
		interest for this test case is: a. Blood pressure measurement (0x2A35)
		i. Field: Flags
		• Format: 8 bit
		 Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in
		units of mmHg, Time Stamp and Pulse Rate fields are included, User ID
		and measurement Status fields are not included
		ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg)
		Format: SFLOATValue: Not relevant
		iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg)
		Format: SFLOAT
		Value: Not relevant
		iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial
		Pressure (mmHg)
		Format: SFLOAT
		Value: Not relevant Field: Blood Proceure Measurement Compound Value Systelia (kPa)
		 v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa) This field is not included
		vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa)
		This field is not included
		vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial
		Pressure (kPa)
		This field is not included His Field: Time Stamp
		viii. Field: Time Stamp • Format: Date and Time
		Value: Not relevant
		ix. Field: Pulse Rate
		Format: SFLOAT
		Value: Not relevant
		x. Field: User ID
		This field is not included xi. Field: Measurement Status
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the
		simulated agent and it starts a pairing process with the simulated agent (initiating
		state).
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.
		In step 5, the Pulse rate object – Handle attribute is not present; however, if it is present
	then its value is different to 0.	
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes Handle attribute is not present, or if it is present then:
		Object: Pulse rate object
		Attribute-id: MDC_ATTR_ID_HANDLE (2337)
		□ Attribute-type: INT-U16
		☐ Attribute-value: Any value other than 0
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Handle attribute value.

TP ld		TP/LP-PAN/MAN/PHDTW/BPM/BV-015			
TP label		Whitepaper. Pulse Rate Object - Type Attribute			
Coverage	Spec	[b-Bluetooth PHDT v1.3]			
Coverage	Testable	PR Numeric 2; M			
	items	Trivianiono 2, W			
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003 AND			
		C_MAN_BLE_005			
Initial condit	ion	The manager under test and the simulated agent are in the standby state.			
Test procedu	ure	1. The simulated agent is configured with a Blood pressure profile (device specialization);			
-		it has a measurement ready to be sent and it is in the advertising state (it is			
		discoverable).			
		2. The simulated agent implements several BLE characteristics. The characteristic of			
		interest for this test case is:			
		a. Blood pressure measurement (0x2A35)			
		i. Field: Flags			
		• Format: 8 bit			
		Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in			
		units of mmHg, Time Stamp and Pulse Rate fields are included, User ID			
		and measurement Status fields are not included ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg)			
		Format: SFLOAT			
		Value: Not relevant			
		iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg)			
		Format: SFLOAT			
		Value: Not relevant			
		iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial			
		Pressure (mmHg)			
		Format: SFLOAT			
		Value: Not relevant			
		v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa)			
		 This field is not included 			
		vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa)			
		This field is not included			
		vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial			
		Pressure (kPa)			
		This field is not included viii. Field: Time Stamp			
		Format: Date and Time			
		Value: Not relevant			
		ix. Field: Pulse Rate			
		Format: SFLOAT			
		Value: Not relevant			
		x. Field: User ID			
		This field is not included			
		xi. Field: Measurement Status			
		This field is not included			
		3. The manager under test initiates a discovery process (scanning state). It discovers the			
		simulated agent and it starts a pairing process with the simulated agent (initiating state).			
		4. When the pairing has been completed (connection state), the simulated agent sends			
		the measurement to the manager under test.			
		Check in manager transcoder output for the Pulse rate object – Type attribute.			
Pass/Fail cri	teria	In step 5, the Pulse rate object – Type attribute is present and its value is			
{MDC_PART_SCADA, MDC_PULS_RATE_NON_INV}					
Notes		Possible values in typical points of observation after transcoder output are:			
		a) IEEE 11073 Objects and Attributes			
		Type attribute is present: Object: Pulse rate object			
		Object: Pulse rate objectAttribute-id: MDC_ATTR_ID_TYPE (2351)			
		Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}			
		Attribute-value:			
		 partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) 			
		 code: MDC_PULS_RATE_NON_INV or 18474 (dec) or 48 2A (hex) 			
		b) WAN PCD-01 message			
		PCD-01 message includes a segment like this with a Type attribute value (check OBX-3):			
		OBX ? NM 49546^MDC_PULS_RATE_NON_INV^MDC 1.0.0.a 110			
		264864^MDC_DIM_BEAT_PER_MIN^MDC R [current_date_time]			

TP ld		TP/LP-PAN/MAN/PHDTW/BPM/BV-016
TP label		Whitepaper. Pulse Rate Object - Metric-Spec-Small Attribute
Coverage	Spec	[b-Bluetooth PHDT v1.3]
	Testable	PR Numeric 3; M
Applicability	items	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003 AND
Applicability	,	C_MAN_BLE_005
Initial condi	tion	The manager under test and the simulated agent are in the standby state.
Test proced		1. The simulated agent is configured with a Blood pressure profile (device specialization);
		it has a measurement ready to be sent and it is in the advertising state (it is
		discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:
		a. Blood pressure measurement (0x2A35)
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in
		units of mmHg, Time Stamp and Pulse Rate fields are included, User ID
		and measurement Status fields are not included ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg)
		Format: SFLOAT
		Value: Not relevant
		iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg)
		Format: SFLOAT
		Value: Not relevant
		iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (mmHg)
		Format: SFLOAT
		Value: Not relevant
		v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa)
		This field is not included
		vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa)
		This field is not included This field Broad Broad Advance Advanc
		vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa)
		This field is not included
		viii. Field: Time Stamp
		Format: Date and Time
		Value: Not relevant
		ix. Field: Pulse Rate
		Format: SFLOAT
		 Value: Not relevant x. Field: User ID
		This field is not included
		xi. Field: Measurement Status
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the
		simulated agent and it starts a pairing process with the simulated agent (initiating
		state).4. When the pairing has been completed (connection state), the simulated agent sends
		the measurement to the manager under test.
		5. Check in manager transcoder output for the Pulse rate object – Metric-Spec-Small
Dees /Fr ''	ltaule.	attribute.
		In step 4, the Pulse rate object – Metric-Spec-Small attribute is present and its value is {0xF040} (mss-avail-intermittent mss-avail-stored-data mss-upd-aperiodic mss-msmt-
		aperiodic mss-acc-agent-initiated).
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Metric-Spec-Small attribute is present:
		Object: Pulse rate object Attribute id: MDC ATTR METRIC SPEC SMALL (2630)
		Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)Attribute-type: BITS-16
		Attribute-type: B173-10 Attribute-value: F0 40 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-
		data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9)
		set to TRUE and remaining BITS set to FALSE
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Metric-Spec-Small attribute value.

TP Id		TP/LP-PAN/MAN/PHDTW/BPM/BV-017		
TP label	Cnos	Whitepaper. Pulse Rate Object - Unit-Code Attribute		
Coverage	Spec Testable	[b-Bluetooth PHDT v1.3] PR Numeric 4; M		
Applicability	items	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003 AND		
Дриоцынц	•	C_MAN_BLE_005		
Initial condi	tion	The manager under test and the simulated agent are in the standby state.		
Test proced	ure	1. The simulated agent is configured with a Blood pressure profile (device specialization);		
		it has a measurement ready to be sent and it is in the advertising state (it is		
		discoverable).The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		a. Blood pressure measurement (0x2A35)		
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating		
		state).4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value:		
		a. Blood pressure measurement (0x2A35)i. Field: Flags		
		• Format: 8 bit		
		 Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in units of mmHg, Time Stamp field and Pulse Rate field are included, User ID and measurement Status fields are not included 		
		ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg)		
		Format: SFLOAT		
		Value: Not relevant Field: Plead Pressure Measurement Compound Value - Digetalia (mmHg)		
		iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg) • Format: SFLOAT		
		Value: Not relevant		
		iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial		
		Pressure (mmHg)		
		Format: SFLOAT		
		 Value: Not relevant v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa) 		
		This field is not included		
		vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa)		
		This field is not included		
		vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial		
		Pressure (kPa) This field is not included		
		viii. Field: Time Stamp		
		Format: Date and Time		
		Value: Not relevant		
		ix. Field: Pulse Rate		
		• Format: SFLOAT		
		Value: 110.0 X. Field: User ID		
		This field is not included		
		xi. Field: Measurement Status		
		This field is not included		
Dago/Ecil col	itorio	5. Check in manager transcoder output for the Pulse rate object – Unit-Code attribute.		
		In step 5, the Pulse rate object – Unit-Code attribute is present and its value is MDC_DIM_BEAT_PER_MIN.		
Notes		In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes		
		Unit-Code attribute is present:		
		Object: Pulse rate objectAttribute-id: MDC_ATTR_UNIT_CODE (2454)		
		Attribute-id. MDC_ATTR_ONTT_CODE (2454) Attribute-type: INT-U16		
		☐ Attribute-value: MDC_DIM_BEAT_PER_MIN or 2720 (dec) or 0A A0 (hex)		
		b) WAN PCD-01 message		
		PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-		
		6): OBX ? NM 149546^ MDC_PULS_RATE_NON_INV ^MDC 1.0.0.a 110		
		264864^MDC_DIM_BEAT_PER_MIN^MDC R [current_date_time]		

TP Id		TP/LP-PAN/MAN/PHDTW/BP		2
TP label Coverage	Spec	[b-Bluetooth PHDT v1.3]	ct - Absolute-Time-Stamp Attribute	-
Coverage	Testable	PR Numeric 6; M	Date-Time Conv 2; M	Date-Time Conv 3; M
		Date-Time Conv 4; M	Date-Time Conv 5; M	Date-Time Conv 3, IVI
Applicability	items			003 AND C MAN BLE 005
	ion			
Applicability Initial condition Test procedure		The manager under test and to the simulated agent is comeasurement ready to book 2. The simulated agent imported test case is: a. Blood pressure measurement agent and it starts a pair 4. When the pairing has be measurement to the mara a. Blood pressure measurement ii. Field: Flags • Format: • Value: N iii. Field: Blood Pressuremat: • Value: N iv. Field: Blood Pressuremat: • Value: N v. Field: Blood Pressuremat: • This field: Vii. Field: Blood Pressuremat: • This field: Viii. Field: Time Staremat: • Format:	e sent and it is in the advertising a lements several BLE characteristics. It is assurement (0x2A35) initiates a discovery process (scaing process with the simulated agen completed (connection state), hager under test with the following assurement (0x2A35). 8 bit 000 0110 (MSB → LSB). Blood prime Stamp and Pulse Rate fields are not include ressure Measurement Compound SFLOAT of relevant ressure Measurement Compound SFLOAT of relevant ressure Measurement Compound SFLOAT of relevant ressure Measurement Compound dis not included	ndby state. profile (device specialization); it has a state (it is discoverable). profile (device specialization); it has a state (it is discoverable). profile (device specialization); it has a state (it is discoverable). Inning state). It discovers the simulated ent (initiating state). The simulated agent sends the parallel profile. The same measurement value in units of a reconstruction in the state of the sta
		ix. Field: Pulse Ri Format: Value: 1 x. Field: User ID This field xi. Field: Measure This field 5. Check in manager transc	ate SFLOAT 10.0 d is not included ement Status d is not included coder output for the SystolicPulse	rate object – Absolute-Time-Stamp
Pass/Fail crit	eria	Time Stamp field of the Blood to 0.	pressure measurement character	e is present, its value matches with the ristic and the fraction of seconds is set
Notes		a) IEEE 11073 Objects and Absolute-Time-Stamp attribute Object: Pulse rate of Attribute-id: MDC_A Attribute-type: SEQ hour (INT-U8), minual Attribute-value:	e is present: bject TTR_TIME_STAMP_ABS (2448) UENCE {century (INT-U8), year (ute (INT-U8), second (INT-U8), se (hex) or 32 (dec) x) or 18 (dec)	
		second: 27 sec-fraction WAN PCD-01 message PCD-01 message includes a second	ex) or 16 (dec) (hex) or 57 (dec) (hex) or 39 (dec) s: 00 (hex) or 0 (dec) segment like this with Absolute-Ti	me-Stamp attribute value (check OBX-
			ILS_RATE_NON_INV	

TP ld		TP/LP-PAN/MAN/PHDTW/BPM/BV-019
TP label		Whitepaper. Pulse Rate Object - Basic-Nu-Observed-Value Attribute 1
Coverage Spec		[b-Bluetooth PHDT v1.3]
Ooverage	Testable	PR Numeric 7; M Short Float Type 1; C
	items	Onorthout type 1, e
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003 AND C_MAN_BLE_005
Initial condit	ion	The manager under test and the simulated agent are in the standby state.
Test proced		The simulated agent is configured with a Blood pressure profile (device specialization); it has a
		measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:
		a. Blood Pressure Measurment (0x2A35)
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value:
		Blood pressure measurement (0x2A35)
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in units of mmHg, Time Stamp and Pulse Rate fields are included, User ID and measurement Status fields are not included
		ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg) • Format: SFLOAT
		Value: Not relevant
		iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg)
		Format: SFLOAT
		Value: Not relevant
		iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (mmHg)
		Format: SFLOAT
		Value: Not relevant
		 v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa) This field is not included
		vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa) • This field is not included
		vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa)
		This field is not included viii. Field: Time Stamp
		Format: Date and Time
		Value: Not relevant
		ix. Field: Pulse Rate
		Format: SFLOAT
		• Value: 110.0
		x. Field: User ID
		This field is not included
		xi. Field: Measurement Status
		This field is not included - Cheek the extract of the manager transporter for the Pulse rate chiest. Regio Ny Observed Volve.
		 Check the output of the manager transcoder for the Pulse rate object – Basic-Nu-Observed-Value attribute.
value r		In step 5, the Heart rate object – Basic-Nu-Observed-Value attribute is present and its value matches with the Blood Pressure Measurement – Heart Rate Value (bpm) field of the Blood pressure measurement characteristic (110).
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Basic-Nu-Observed-Value attribute is present:
		□ Object: Pulse rate object
		Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
		Attribute-type: SFLOAT
		Attribute-value: F4 4C (hex) or 00 6E (hex) or 01 0B (hex) or 110 (dec)
		b) WAN PCD-01 message
		PCD-01 message includes a segment like this with a Basic-Nu-Observed-Value attribute value (check OBX-5):
		Value (Check OBA-5). OBX ? NM 149546^ MDC_PULS_RATE_NON_INV ^MDC 1.0.0.a 110
		264864^MDC_DIM_BEAT_PER_MIN^MDC R [current_date_time]

TP Id TP/LP-PAN/MAN/PHDTW/BPM/BV-020		
TP Id TP label		
Coverage Spec		Whitepaper. Pulse Rate Object - Basic-Nu-Observed-Value Attribute 2 [b-Bluetooth PHDT v1.3]
Coverage	Testable	PR Numeric 7; M Short Float Type 1; C Short Float Type 2; M
	items	Short Float Type 1, C Short Float Type 2, W
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_003 AND
		C_;;MAN_BLE_005
Initial condition		The manager under test and the simulated agent are in the standby state.
Test procedure		The simulated agent is configured with a Blood pressure profile (device specialization);
root procedure		it has a measurement ready to be sent and it is in the advertising state (it is
		discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of
		interest for this test case is:
		Blood pressure measurement (0x2A35)
		3. The manager under test initiates a discovery process (scanning state). It discovers the
		simulated agent and it starts a pairing process with the simulated agent (initiating
		state).
		4. When the pairing has been completed (connection state), the simulated agent sends
		the measurement to the manager under test with the following value:
		a. Blood pressure measurement (0x2A35)
		i. Field: Flags
		• Format: 8 bit
		 Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in
		units of mmHg, Time Stamp and Pulse Rate fields are included, User ID
		and measurement Status fields are not included
		 ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg) Format: SFLOAT
		Value: Not relevant
		iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg)
		Format: SFLOAT
		Value: Not relevant
		iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial
		Pressure (mmHg)
		Format: SFLOAT
		Value: Not relevant
		v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa)
		This field is not included
		vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa)
		This field is not included
		vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial
		Pressure (kPa)
		This field is not included
		viii. Field: Time Stamp
		Format: Date and Time
		Value: Not relevant
		ix. Field: Pulse Rate
		Format: SFLOAT
		• Value: 110.0
		x. Field: User ID
		This field is not included This field Management Office.
		xi. Field: Measurement Status This field is not included
		5. Check in manager transcoder output for the Pulse rate object – Basic-Nu-Observed-Value attribute.
		6. The simulated agent sends the measurement to the manager under test with the
		following value:
		a. Blood pressure measurement (0x2A35)
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in
		units of mmHg, Time Stamp and Pulse Rate fields are included, User ID
		and measurement Status fields are not included
		ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg)
		Format: SFLOAT
		Value: Not relevant
		iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg)
		Format: SFLOAT

- Value: Not relevant
- iv. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (mmHq)
 - Format: SFLOAT
 - · Value: Not relevant
- v. Field: Blood Pressure Measurement Compound Value Systolic (kPa)
 - · This field is not included
- vi. Field: Blood Pressure Measurement Compound Value Diastolic (kPa)
 - This field is not included
- vii. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (kPa)
 - · This field is not included
- viii. Field: Time Stamp
 - · Format: Date and Time
 - · Value: Not relevant
- ix. Field: Pulse Rate
 - Format: SFLOAT
 - Value: 07 FF (hex). Special value: NaN
- x. Field: User ID
 - · This field is not included
- xi. Field: Measurement Status
 - · This field is not included
- Check in manager transcoder output for the Pulse rate object Basic-Nu-Observed-Value attribute.
- 8. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Blood pressure measurement (0x2A35)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in units of mmHg, Time Stamp and Pulse Rate fields are included, User ID and measurement Status fields are not included
 - ii. Field: Blood Pressure Measurement Compound Value Systolic (mmHg)
 - Format: SFLOAT
 - Value: Not relevant
 - iii. Field: Blood Pressure Measurement Compound Value Diastolic (mmHg)
 - Format: SFLOAT
 - Value: Not relevant
 - iv. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (mmHg)
 - Format: SFLOAT
 - Value: Not relevant
 - v. Field: Blood Pressure Measurement Compound Value Systolic (kPa)
 - · This field is not included
 - vi. Field: Blood Pressure Measurement Compound Value Diastolic (kPa)
 - This field is not included
 - vii. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (kPa)
 - · This field is not included
 - viii. Field: Time Stamp
 - Format: Date and Time
 - Value: Not relevant
 - ix. Field: Pulse Rate
 - Format: SFLOAT
 - Value: 08 00 (hex). Special value: NRes
 - x. Field: User ID
 - This field is not included
 - xi. Field: Measurement Status
 - This field is not included
- Check in manager transcoder output for the Pulse rate object Basic-Nu-Observed-Value attribute.
- 10. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Blood pressure measurement (0x2A35)
 - i. Field: Flags
 - Format: 8 bit

- Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in units of mmHg, Time Stamp and Pulse Rate fields are included, User ID and measurement Status fields are not included
- ii. Field: Blood Pressure Measurement Compound Value Systolic (mmHg)
 - Format: SFLOAT
 - Value: Not relevant
- iii. Field: Blood Pressure Measurement Compound Value Diastolic (mmHg)
 - Format: SFLOAT
 - Value: Not relevant
- iv. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (mmHg)
 - Format: SFLOAT
 - Value: Not relevant
- v. Field: Blood Pressure Measurement Compound Value Systolic (kPa)
 - · This field is not included
- vi. Field: Blood Pressure Measurement Compound Value Diastolic (kPa)
 - This field is not included
- vii. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (kPa)
 - This field is not included
- viii. Field: Time Stamp
 - · Format: Date and Time
 - Value: Not relevant
- ix. Field: Pulse Rate
 - Format: SFLOAT
 - Value: 07 FE (hex). Special value: +INFINITY
- x. Field: User ID
 - · This field is not included
- xi. Field: Measurement Status
 - · This field is not included
- Check in manager transcoder output for the Pulse rate object Basic-Nu-Observed-Value attribute.
- 12. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Blood pressure measurement (0x2A35)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in units of mmHg, Time Stamp and Pulse Rate fields are included, User ID and measurement Status fields are not included
 - ii. Field: Blood Pressure Measurement Compound Value Systolic (mmHg)
 - Format: SFLOAT
 - Value: Not relevant
 - iii. Field: Blood Pressure Measurement Compound Value Diastolic (mmHg)
 - Format: SFLOAT
 - Value: Not relevant
 - iv. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (mmHg)
 - Format: SFLOAT
 - Value: Not relevant
 - v. Field: Blood Pressure Measurement Compound Value Systolic (kPa)
 - · This field is not included
 - vi. Field: Blood Pressure Measurement Compound Value Diastolic (kPa)
 - This field is not included
 - vii. Field: Blood Pressure Measurement Compound Value Mean Arterial Pressure (kPa)
 - · This field is not included
 - viii. Field: Time Stamp
 - Format: Date and Time
 - Value: Not relevant
 - ix. Field: Pulse Rate
 - Format: SFLOAT
 - Value: 08 02 (hex). Special value: -INFINITY
 - x. Field: User ID
 - · This field is not included
 - xi. Field: Measurement Status
 - This field is not included

	13. Check in manager transcoder output for the Pulse rate object – Basic-Nu-Observed-Value attribute.
Pass/Fail criteria	In step 5, the Pulse rate object – Basic-Nu-Observed-Value attribute is present and its value is 110.
	In step 7, the Pulse rate object – Basic-Nu-Observed-Value attribute is present and its value is 0x07FF.
	In step 9, the Pulse rate object – Basic -Nu-Observed-Value attribute is present and its value is 0x0800.
	In step 11, the Pulse rate object – Basic -Nu-Observed-Value attribute is present and its value is 0x07FE.
	In step 13, the Pulse rate object – Basic -Nu-Observed-Value attribute is present and its value is 0x0802.
Notes	In step 5, possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes Basic-Nu-Observed-Value attribute is present:
	Object: Pulse rate object
	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)Attribute-type: SFLOAT
	Attribute-value: F4 4C (hex) or 00 6E (hex) or 01 0B (hex) or 110 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with a Simple-Nu-Observed-Value attribute value (check OBX-5):
	OBX ? NM 149546^ MDC_PULS_RATE_NON_INV ^MDC 1.0.0.a 110
	264864^MDC_DIM_BEAT_PER_MIN^MDC R [current_date_time]
	In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
	Basic-Nu-Observed-Value attribute is present:
	□ Object: Pulse rate object
	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)Attribute-type: SFLOAT
	Attribute-value: 07 FF (hex) or NaN (note that a decimal value is not allowed)
	b) WAN PCD-01 message
	PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute value (149546^ MDC_PULS_RATE_NON_INV ^MDC) because it has a special value and
	these values are not included in the PCD-01 message.
	In step 9, possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes Basic-Nu-Observed-Value attribute is present:
	Dobject: Pulse rate object
	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
	□ Attribute-type: SFLOAT
	Attribute-value: 08 00 (hex) or NRes (note that a decimal value is not allowed)WAN PCD-01 message
	PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute value (149546^MDC_PULS_RATE_NON_INV^MDC) because it has a special value and
	these values are not included in the PCD-01 message.
	In step 11, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
	Basic-Nu-Observed-Value attribute is present:
	□ Object: Pulse rate object
	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)Attribute-type: SFLOAT
	☐ Attribute-type: SFEOAT ☐ Attribute-value: 07 FF (hex) or +INFINITY (note that a decimal value is not
	allowed)
	b) WAN PCD-01 message PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute
	value (149546^MDC_PULS_RATE_NON_INV^MDC) because it has a special value and
	these values are not included in the PCD-01 message.
	In step 13, possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes Basic-Nu-Observed-Value attribute is present:
	□ Object: Pulse rate object
	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
	Attribute-type: SFLOATAttribute-value: 08 02 (hex) or -INFINITY (note that a decimal value is not allowed
	b) WAN PCD-01 message
	PCD-01 message does not include segments with a Simple-Nu-Observed-Value attribute
	value (149546^MDC_PULS_RATE_NON_INV^MDC) because it has a special value and these values are not included in the PCD-01 message.

TP Id		TP/LP-PAN/MAN/PHDTW/BPM/BV-021
TP label		Whitepaper. Pulse Rate measurement value
	Брес	[b-Bluetooth PHDT v1.3]
	estable	Short Float Type 1; C Date-Time Conv 1; M PR Numeric 6; M
_	tems	PR Numeric 7; M
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_003 AND C_MAN_BLE_005
Initial condition	n	The manager under test and the simulated agent are in the standby state.
Test procedure		The simulated agent is configured with a Blood pressure profile (device specialization);
•		it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: (2.2.1.2.)
		a. Blood pressure measurement (0x2A35)
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value:
		a. Blood pressure measurement (0x2A35)
		i. Field: Flags
		Format: 8 bit Value: 0000 0110 (MSR -> LSR). Plead pressure management value in
		 Value: 0000 0110 (MSB → LSB). Blood pressure measurement value in units of mmHg, Time Stamp and Pulse Rate fields are included, User ID and measurement Status fields are not included
		ii. Field: Blood Pressure Measurement Compound Value – Systolic (mmHg)
		Format: SFLOAT
		Value: Not relevant
		iii. Field: Blood Pressure Measurement Compound Value – Diastolic (mmHg)
		Format: SFLOAT
		Value: Not relevant
		iv. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (mmHg)
		Format: SFLOAT
		Value: Not relevant
		 v. Field: Blood Pressure Measurement Compound Value – Systolic (kPa) This field is not included
		vi. Field: Blood Pressure Measurement Compound Value – Diastolic (kPa)
		This field is not included
		vii. Field: Blood Pressure Measurement Compound Value – Mean Arterial Pressure (kPa)
		This field is not included
		viii. Field: Time Stamp
		Format: Date and Time
		• Value: August 2nd, 2012, 10:39:27
		ix. Field: Pulse Rate
		Format: SFLOAT Value: 110.0
		Value: 110.0 x. Field: User ID
		This field is not included
		xi. Field: Measurement Status
		This field is not included
		 Check that the manager accepts the measurement and decodes its value properly (pulse rate measurement value, pulse rate units and time stamp.
Pass/Fail criter	ria	In step 5, the manager under test shows the following measurement Pulse Rate = 110 beats per minute (bpm) with the time stamp '2012-08-02 10:39:27'.
Notes		

A.5 Subgroup 2.4.4 – Whitepaper Heart-rate requirements (HR)

3.5 Subgroup 2.4.4 – Whitepaper Heart-rate requirements (IIX)		
TP Id		TP/LP-PAN/MAN/PHDTW/HR/BV-000
TP label		Whitepaper. Heart Rate MDS Object - System-Type Attribute
Coverage	Spec	[b-Bluetooth PHDT v1.3]
	Testable items	HR Specific MDS 1; M
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004
Initial condit	tion	The manager under test and the simulated agent are in the standby state.
Test proced	ure	 The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		3. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.
		4. Check in manager transcoder output for the MDS object – System-Type attribute.
Pass/Fail cri	iteria	In step 4, the MDS object – System-Type attribute is not present.
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
		System-Type attribute is not present:
		Object: MDS object
		Attribute-id: MDC_ATTR_SYS_TYPE (2438)
		Attribute-type: TYPE
		□ Attribute-value: <not present=""></not>
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a System-Type attribute value (67974^MDC_ATTR_SYS_TYPE^MDC).

TP Id		TP/LP-PAN/MAN/PHDTW/HR/BV-001		
TP label		Whitepaper. Heart Rate MDS Object - Dev-Configuration-Id Attribute		
Coverage Spec		[b-Bluetooth PHDT v1.3]		
	Testable items	HR Specific MDS 2; M		
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004		
Initial condit	tion	The manager under test and the simulated agent are in the standby state.		
Test proced	ure	The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The seminated agent is configured with a Heart rate profile (device specialization); it discoverable (it is discoverable).		
		The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
		 Check in manager transcoder output for the MDS object – Dev-Configuration-Id attribute. 		
Pass/Fail cri	iteria	In step 4, the MDS object – Dev-Configuration-Id attribute is present, its value is inside the range 0x4000 - 0x7FFF.		
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes		
		Dev-Configuration-Id attribute is present:		
		□ Object: MDS object		
		☐ Attribute-id: MDC_ATTR_DEV_CONFIG_ID (2628)		
		☐ Attribute-type: INT-U16		
		 Attribute-value: Any value inside the range 16384 - 32767 (dec) or 0x4000 – 0x7FFF (hex) 		
		b) WAN PCD-01 message		
		According to [ITU-T H.810] (CDG 2013), the Dev-Configuration-Id shall not be transmitted in the PCD-01 message; therefore it is not possible to check this attribute.		

TP ld		TP/LP-PAN/MAN/PHDTW/HR/BV-002	
TP label		Whitepaper. Heart Rate MDS Object - System-Type-Spec-List Attribute	
Coverage	Spec	[b-Bluetooth PHDT v1.3]	
	Testable items	Common MDS 15; M HR Specific MDS 3; M	
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004	
Initial condit	ion	The manager under test and the simulated agent are in the standby state	
Test procedu	ure	 The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 	
		2. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).	
		3. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.	
		Check in manager transcoder output for the MDS object – System-Type-Spec-List attribute.	
Pass/Fail criteria		In step 4, the MDS object – System-Type-Spec-List attribute is present, its value is (MDC_DEV_SPEC_PROFILE_ECG, Version 1), (MDC_DEV_SUB_SPEC_PROFILE_HR, Version 1).	
Notes		Possible values in typical points of observation after transcoder output are:	
		a) IEEE 11073 Objects and Attributes	
		System-Type-Spec-List attribute is present:	
		□ Object: MDS object	
		□ Attribute-id: MDC_ATTR_SYS_TYPE_SPEC_LIST (2650)	
		□ Attribute-type: SEQUENCE OF [{type (INT-U16), version (INT-U16)}]	
		□ Attribute-value:	
		 type: MDC_DEV_SPEC_PROFILE_ECG or 4102 (dec) or 10 06 (hex) 	
		 version: 1 (dec) or 00 01 (hex) 	
		 type: MDC_DEV_SUB_SPEC_PROFILE_HR or 4237 (dec) or 10 8D (hex) 	
		 version: 1 (dec) or 00 01 (hex) 	
		b) WAN PCD-01 message	
		PCD-01 message includes a segment like this with a System-Type-Spec-List attribute value (check OBX-5):	
		OBX ? NM 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC 1.0.0.a	
		528390^MDC_DEV_SPEC_PROFILE_ECG^MDC~	
		528525^MDC_DEV_SUB_SPEC_PROFILE_HR^MDC R	

TP Id		TP/LP-PAN/MAN/PHDTW/HR/BV-003
TP label		Whitepaper. Heart Rate MDS Object - Reg-Cert-Data-List Attribute
Coverage	Spec	[b-Bluetooth PHDT v1.3]
	Testable	Common MDS 14; M Regulatory Conv 1; M
Applicability		C MAN BLE 000 AND C MAN BLE 002 AND C MAN BLE 004
,		
Initial condition Test procedure		The manager under test and the simulated agent are in the standby state. 1. The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. IEEE 11073-20601 Regulatory Certification Data List (0x2A2A) • Format: reg-cert-data-list (opaque structure) • Value: 00 02 00 14 02 01 00 0A 04 00 00 02 00 04 80 06 80 8D 02 02 00 02 80 00 (hex) i. Element: • auth-body-and-struc-type: - auth-body-continua(2) - auth-body-data: - major-IG-version: 04 (hex) - certified-devices: 80 06 80 8D (hex). BLE ECG and BLE Heart Rate ii. Element: • auth-body-and-struc-type: - auth-body-continua(2) - auth-body-and-struc-type: - auth-body-continua(2) - auth-body-struc-type: - auth-body-continua(2) - auth-body-and-struc-type: - auth-body-continua(2) - auth-body-continua(2) - auth-body-continua(2) - auth-body-continua(2) - auth-body-data: - regulation-bit-field: 80 00 (hex). Unregulated device 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent.
Pass/Fail cr	iteria	 When the pairing has been completed (connection state), force the manager under test to read the IEEE 11073-20601 Regulatory Certification Data List characteristic. The simulated agent sends the measurement to the manager under test. Check in manager transcoder output for the MDS object – Reg-Cert-Data-List attribute. In step 6, the MDS object – Reg-Cert-Data-List attribute is present and its value matches with the IEEE
Notes		11073-20601 Regulatory Certification Data List characteristic value. Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes Reg-Cert-Data-List attribute is present: Object: MDS object Attribute-id: MDC_ATTR_REG_CERT_DATA_LIST (2635) Attribute-type: SEQUENCE OF [{auth-body-and-struc-type, auth-body-data}, {}] Attribute-value: 00 02 00 14 02 01 00 0A 04 00 00 20 00 48 00 68 08 D0 20 20 00 28 000 i. Reg-Cert-Data Element: • auth-body-and-struc-type: - auth-body-struc-type: 01 (hex). continua-version-struct(1) • auth-body-data: - major-IG-version: 04 (hex) - auth-body-and-struc-type: - auth-body-and-struc-type: - auth-body-and-struc-type: - auth-body-and-struc-type: - auth-body-otate Element: • auth-body-and-struc-type: - auth-body-otate Element: • auth-body-otate Sement: • auth-body-otate Element: • auth-body-data: - regulation-bit-field: 80 00 (hex). BLE ECG and BLE Heart Rate ii. Reg-Cert-Data Element: • auth-body-data: - regulation-bit-field: 80 00 (hex). Unregulated device b) WAN PCD-01 message PCD-01 message includes five segments like these with Reg-Cert-Data-List attribute value (check OBX-5 in four segments): OBX[?[CWE]68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.a 2^auth-body-continua R OBX[?INA 532352^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.a,y 32774-32909

TP ld		TP/LP-PAN/MAN/PHDTW/HR/BV-004
TP label		Whitepaper. Heart Rate MDS Object - Tick Resolution Attribute
Coverage	Spec	[b-Bluetooth PHDT v1.3]
Ooverage	Testable items	HR Specific MDS 5; M
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004 AND C_MAN_BLE_006
Initial condit	tion	The manager under test and the simulated agent are in the standby state.
Test proced	ure	 The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:
		a. Heart rate measurement (0x2A37)
		i. Field: Flags
		Format: 8 bit
		 Value: 0001 0000 (MSB → LSB). Heart rate measurement value in uint8 format and RR-Interval fields are present, Energy Expended field is not included
		ii. Field: Heart Rate Measurement Value (uint8)
		Format: uint8
		Value: Not relevant
		iii. Field: Heart Rate Measurement Value (uint16)
		This field is not included
		iv. Field: Energy Expended
		This field is not included
		v. Field: RR-Interval
		Format: List of uint16
		Value: Not relevant
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.
		5. Check in manager transcoder output for the MDS object – Tick Resolution attribute.
Pass/Fail cri	teria	In step 5, the MDS object – Tick Resolution attribute is present and its value is 1024 ticks per second.
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Tick Resolution attribute is present:
		□ Object: MDS object
		□ Attribute-id: MDC_ATTR_TICK_RES (2693)
		□ Attribute-type: FLOAT
		□ Attribute-value: 00 00 04 00 (hex) or FF 00 28 00 (hex) or FE 01 90 00 (hex) or FD 0F A0 00 (hex) or FC 9C 40 00 (hex) or 1024 (dec)
		b) WAN PCD-01 message
		OBX ? NM 68229^MDC_ATTR_TICK_RES^MDC 1.0.0.a 1024
		265842^MDC_DIM_PER_SEC^MDC R

TP ld		TP/LP-PAN/MAN/PHDTW/HR/BV-005
TP label		Whitepaper. Heart Rate Measurement Object - Handle Attribute
Coverage	Spec	[b-Bluetooth PHDT v1.3]
Ooverage	Testable items	HR Numeric 1; O
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004
Initial condit		The manager under test and the simulated agent are in the standby state.
Test procedu	ure	The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:
		a. Heart rate measurement (0x2A37)
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 0000 (MSB → LSB). Heart rate measurement value in uint8 format field is included, RR-Interval and Energy Expended fields are not included
		ii. Field: Heart Rate Measurement Value (uint8)
		Format: uint8
		Value: Not relevant
		iii. Field: Heart Rate Measurement Value (uint16)
		This field is not included
		iv. Field: Energy Expended
		This field is not included
		v. Field: RR-Interval
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.
		Check in manager transcoder output for the Heart rate measurement object – Handle attribute.
Pass/Fail cri	teria	In step 5, the Body temperature object – Handle attribute is not present; however, if it is present then its value is different to 0.
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Handle attribute is not present, or if it is present then:
		□ Object: Heart rate measurement object
		☐ Attribute-id: MDC_ATTR_ID_HANDLE (2337)
		☐ Attribute-type: INT-U16
		☐ Attribute-value: Any value other than 0
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Handle attribute value.

TP ld		TP/LP-PAN/MAN/PHDTW/HR/BV-006
TP label		Whitepaper. Heart Rate Measurement Object - Type Attribute
Coverage	Spec	[b-Bluetooth PHDT v1.3]
	Testable items	HR Numeric 2; M
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004
Initial condit	tion	The manager under test and the simulated agent are in the standby state.
Test proced	ure	 The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:
		a. Heart rate measurement (0x2A37)
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 0000 (MSB → LSB). Heart rate measurement value in uint8 format field is included, RR-Interval and Energy Expended fields are not included
		ii. Field: Heart Rate Measurement Value (uint8)
		Format: uint8
		Value: Not relevant
		iii. Field: Heart Rate Measurement Value (uint16)
		This field is not included
		iv. Field: Energy Expended
		This field is not included
		v. Field: RR-Interval
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.
		Check in manager transcoder output for the Heart rate measurement object – Type attribute.
Pass/Fail cri	iteria	In step 5, the Heart rate measurement object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_ECG_HEART_RATE_INSTANT}.
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Type attribute is present:
		□ Object: Heart rate measurement object
		□ Attribute-id: MDC_ATTR_ID_TYPE (2351)
		□ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
		□ Attribute-value:
		 partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex)
		• code: MDC_ECG_HEART_RATE_INSTANT or 21982 (dec) or 55 DE (hex)
		b) WAN PCD-01 message
		PCD-01 message includes a segment like this with a Type attribute value (check OBX-3):
		OBX ? NM 8410590^MDC_ECG_HEART_RATE_INSTANT^MDC 1.0.0.a 90
		264864^MDC_DIM_BEAT_PER_MIN^MDC R

TP ld		TP/LP-PAN/MAN/PHDTW/HR/BV-007
TP label		
	Snaa	Whitepaper. Heart Rate Measurement Object - Metric-Spec-Small Attribute
Coverage	Spec Testable items	[b-Bluetooth PHDT v1.3] HR Numeric 3; M
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004
Initial condit		The manager under test and the simulated agent are in the standby state.
Test proced		The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:
		a. Heart rate measurement (0x2A37)
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 0000 (MSB → LSB). Heart rate measurement value in uint8 format field is included, RR-Interval and Energy Expended fields are not included
		ii. Field: Heart Rate Measurement Value (uint8)
		Format: uint8
		Value: Not relevant
		iii. Field: Heart Rate Measurement Value (uint16)
		This field is not included
		iv. Field: Energy Expended
		This field is not included
		v. Field: RR-Interval
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.
		Check in manager transcoder output for the Heart rate measurement object – Metric- Spec-Small attribute.
Pass/Fail cri	teria	In step 5, the Heart rate measurement object – Metric-Spec-Small attribute is present and its value is {0x4040} (mss-avail-stored-data, mss-acc-agent-initiated).
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Metric-Spec-Small attribute is present:
		□ Object: Heart rate measurement object
		□ Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)
		☐ Attribute-type: BITS-16
		Attribute-value: 40 40 (hex) or BITS mss-avail-stored-data(1), mss-acc-agent-initiated(9) set to TRUE and remaining BITS set to FALSE
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Metric-Spec-Small attribute value.

TP Id		TP/LP-PAN/MAN/PHDTW/HR/BV-008
TP label Coverage Spec		Whitepaper. Heart Rate Measurement Object - Unit-Code Attribute
Coverage	Testable	[b-Bluetooth PHDT v1.3]
	items	HR Numeric 4; M
Annlicability		C MAN RIE 000 AND C MAN RIE 002 AND C MAN RIE 004
Applicability Initial condit Test procedu	ion	The manager under test and the simulated agent are in the standby state. 1. The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Heart rate measurement (0x2A37) 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value: a. Heart rate measurement (0x2A37) i. Field: Flags • Format: 8 bit • Value: 0000 0000 (MSB → LSB). Heart rate measurement value in uint8 format fies is included, Energy Expended and RR-Inteval fields are not included ii. Field: Heart Rate Measurement Value (uint8) • Format: uint8 • Value: 90 iii. Field: Heart Rate Measurement Value (uint16) • This field is not included iv. Field: Energy Expended • This field is not included 5. Check in manager transcoder output for the Heart rate measurement object – Unit-Code attribute. 6. The simulated agent sends the measurement to the manager under test with the following value: a. Heart rate measurement (0x2A37) i. Field: Flags • Format: 8 bit • Value: 0000 0001 (MSB → LSB). Heart rate measurement value in uint16 format field is included, Energy Expended and RR-Inteval fields are not included ii. Field: Heart Rate Measurement Value (uint8) • This field is not included iii. Field: Heart Rate Measurement Value (uint8) • This field is not included iii. Field: Heart Rate Measurement Value (uint8) • This field is not included iii. Field: Heart Rate Measurement Value (uint8)
		This field is not included V. Field: RR-Interval This field is not included
		 Check in manager transcoder output for the Heart rate measurement object – Unit-Code attribute.
Pass/Fail cri	teria	In step 5, the Heart rate measurement object – Unit-Code attribute is present and its value is
		MDC_DIM_BEAT_PER_MIN.
		In step 7, the Heart rate measurement object – Unit-Code attribute is present and its value is
Notes		MDC_DIM_BEAT_PER_MIN.
Notes		In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
		Unit-Code attribute is present:
		Object: Heart rate measurement object
		Attribute-id: MDC_ATTR_UNIT_CODE (2454)
		☐ Attribute-type: INT-U16
		Attribute-value: MDC_DIM_BEAT_PER_MIN or 2720 (dec) or 0A A0 (hex)
		b) WAN PCD-01 message
		PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 8410590^MDC_ECG_HEART_RATE_INSTANT^MDC 1.0.0.a 90 264864^MDC_DIM_BEAT_PER_MIN ^MDC R
		In step 7, possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Unit-Code attribute is present:
		Object: Heart rate measurement object
		Attribute-id: MDC_ATTR_UNIT_CODE (2454)
		☐ Attribute-type: INT-U16
		☐ Attribute-value: MDC_DIM_BEAT_PER_MIN or 2720 (dec) or 0A A0 (hex)
		b) WAN PCD-01 message
		PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 8410590^MDC_ECG_HEART_RATE_INSTANT^MDC 1.0.0.a 110 264864^MDC_DIM_BEAT_PER_MIN ^MDC R

TP ld		TP/LP-PAN/MAN/PHDTW/HR/BV-009
TP label		Whitepaper. Heart Rate Measurement Object - Simple-Nu-Observed-Value Attribute
Coverage	Spec	[b-Bluetooth PHDT v1.3]
o o roi ago	Testable	HR Numeric 6; M
	items	The redinate of the
Applicability	<u>'</u>	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004
Initial condit	ion	The manager under test and the simulated agent are in the standby state.
Test procedu	ure	 The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:
		a. Heart rate measurement (0x2A37)
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value:
		a. Heart rate measurement (0x2A37)
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 0000 (MSB → LSB). Heart Rate Measurement Value in uint8 format fied is included, Energy Expended and RR-Inteval fields are not included
		ii. Field: Heart Rate Measurement Value (uint8)
		Format: uint8
		Value: 90
		iii. Field: Heart Rate Measurement Value (uint16)
		This field is not included
		iv. Field: Energy Expended
		This field is not included
		v. Field: RR-Interval
		This field is not included
		 Check in manager transcoder output for the Heart rate measurement object – Simple- Nu-Observed-Value attribute.
		6. The simulated agent sends the measurement to the manager under test with the following value:
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 0001 (MSB → LSB). Heart rate measurement value in uint16 format fied is included, Energy Expended and RR-Inteval fields are not included
		ii. Field: Heart Rate Measurement Value (uint8)
		This field is not included
		iii. Field: Heart Rate Measurement Value (uint16)
		Format: uint16
		Value: 110

	iv. Field: Freezer Freezended	
	iv. Field: Energy Expended	
	This field is not included	
	v. Field: RR-Interval	
	This field is not included	
	7. Check in manager transcoder output for the Heart rate measurement object – Simple-Nu-Observed-Value attribute.	
Pass/Fail criteria	In step 5, the Heart rate measurement object – Simple-Nu-Observed-Value attribute is present and its value matches with the Heart Rate Measurement Value (INT-U8) field of the Heart rate measurement characteristic (90).	
	In step 7, the Heart rate measurement object – Simple-Nu-Observed-Value attribute is present and its value matches with the Heart Rate Measurement Value (INT-U16) field of the Heart rate measurement characteristic (110).	
Notes	Possible values in typical points of observation after transcoder output are:	
	a) IEEE 11073 Objects and Attributes	
	Simple-Nu-Observed-Value attribute is present:	
	□ Object: Heart rate measurement object	
	☐ Attribute-id: MDC_ATTR_NU_VAL_OBS_SIMP (2646)	
	☐ Attribute-type: FLOAT	
	Attribute-value: 00 00 00 5A (hex) or 90 (dec) [Note that exponent value for this FLOAT value must be 0]	
	b) WAN PCD-01 message	
	PCD-01 message includes a segment like this with a Simple-Nu-Observed-Value attribut value (check OBX-5):	
	OBX ? NM 8410590^MDC_ECG_HEART_RATE_INSTANT^MDC 1.0.0.a 90	
	264864^ MDC_DIM_BEAT_PER_MIN ^MDC R	
	In step 7, possible values in typical points of observation after transcoder output are:	
	a) IEEE 11073 Objects and Attributes	
	Simple-Nu-Observed-Value attribute is present:	
	□ Object: Heart rate measurement object	
	☐ Attribute-id: MDC_ATTR_NU_VAL_OBS_SIMP (2646)	
	☐ Attribute-type: FLOAT	
	☐ Attribute-value: 00 00 00 6E (hex) or 110 (dec) [Note that exponent value for this FLOAT value must be 0]	
	b) WAN PCD-01 message	
	PCD-01 message includes a segment like this with a Simple-Nu-Observed-Value attribute value (check OBX-5):	
	OBX ? NM 8410590^MDC_ECG_HEART_RATE_INSTANT^MDC 1.0.0.a 110	
	264864^ MDC_DIM_BEAT_PER_MIN ^MDC R	

TP Id TP/LP-PAN/MAN/PHDTW/HR/BV-010		TP/LP-PAN/MAN/PHDTW/HR/BV-010		
TP label		Whitepaper. RR-Interval Object - Handle Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable items	RR Numeric 1; O		
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004 AND C_MAN_BLE_006		
Initial condit	ion	The manager under test and the simulated agent are in the standby state		
Test proced	ure	The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).		
		The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		a. Heart rate measurement (0x2A37)		
		i. Field: Flags		
		Format: 8 bit		
		 Value: 0001 0000 (MSB → LSB). Heart rate measurement value in uint8 format and RR-Interval fields are included, Energy Expended field is not included 		
		ii. Field: Heart Rate Measurement Value (uint8)		
		Format: uint8		
		Value: Not relevant		
		iii. Field: Heart Rate Measurement Value (uint16)		
		This field is not included		
		iv. Field: Energy Expended		
		This field is not included		
		v. Field: RR-Interval		
		Format: List of uint16		
		Value: Not relevant		
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.		
		5. Check in manager transcoder output for the RR-Interval object – Handle attribute.		
Pass/Fail cri	In step 5, the RR-Interval object – Handle attribute is not present; however, if it is then its value is different to 0.			
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		Handle attribute is not present, or if it is present then:		
		□ Object: RR-Interval object		
		☐ Attribute-id: MDC_ATTR_ID_HANDLE (2337)		
		☐ Attribute-type: INT-U16		
		☐ Attribute-value: Any value other than 0		
		b) WAN PCD-01 message		
		PCD-01 message does not include segments with a Handle attribute value.		

TP Id		TP/LP-PAN/MAN/PHDTW/HR/BV-011			
TP label		Whitepaper. RR-Interval Object - Type Attribute			
Coverage	Spec	[b-Bluetooth PHDT v1.3]			
JUVETAYE	Testable				
	Testable RR Numeric 2; M items				
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004 AND C_MAN_BLE_006			
Initial condit	tion	The manager under test and the simulated agent are in the standby state.			
Test proced	ure	 The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 			
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:			
		a. Heart rate measurement (0x2A37)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 0001 0000 (MSB → LSB). Heart rate measurement value in uint8 format and RR-Interval fields are included, Energy Expended field is not included 			
		ii. Field: Heart Rate Measurement Value (uint8)			
		Format: uint8			
		Value: Not relevant			
		iii. Field: Heart Rate Measurement Value (uint8)			
		This field is not included			
		iv. Field: Energy Expended			
		This field is not included			
		v. Field: RR-Interval			
		Format: List of uint16			
		Value: Not relevant			
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).			
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.			
		5. Check in manager transcoder output for the RR-Interval object – Type attribute.			
Pass/Fail cri	iteria	In step 5, the RR-Interval object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_ECG_TIME_PD_RR_GL}.			
Notes		Possible values in typical points of observation after transcoder output are:			
		a) IEEE 11073 Objects and Attributes			
		Type attribute is present:			
		□ Object: RR-Interval object			
		□ Attribute-id: MDC_ATTR_ID_TYPE (2351)			
		☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}			
		□ Attribute-value:			
		 partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) 			
		 code: MDC_ECG_TIME_PD_RR_GL or 16168 (dec) or 3F 28 (hex) 			
		b) WAN PCD-01 message			
		PCD-01 message includes two segments like these with a Type attribute value (check OBX-3):			
		OBX ? NM 147240^MDC_ECG_TIME_PD_RR_GL^MDC 1.0.0.a			
		600268992^MDC_DIM_TICK^MDC R			
		OBX ? NM 147240^MDC_ECG_TIME_PD_RR_GL^MDC 1.0.0.b			
		900268992^MDC_DIM_TICK^MDC R			

TP ld		TP/LP-PAN/MAN/PHDTW/HR/BV-012			
TP label					
	Snoo	Whitepaper. RR-Interval Object - Metric-Spec-Small Attribute			
Coverage	Spec Testable	[b-Bluetooth PHDT v1.3] RR Numeric 3; M			
	items	RR Numeric 5, W			
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004 AND C_MAN_BLE_006			
Initial condit	tion	The manager under test and the simulated agent are in the standby state.			
Test proced	ure	 The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 			
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:			
		a. Heart rate measurement (0x2A37)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 0001 0000 (MSB → LSB). Heart rate measurement value in uint8 format and RR-Interval fields are included, Energy Expended field is not included 			
		ii. Field: Heart Rate Measurement Value (uint8)			
		Format: uint8			
		Value: Not relevant			
		iii. Field: Heart Rate Measurement Value (uint16)			
		This field is not included			
		iv. Field: Energy Expended			
		This field is not included			
		v. Field: RR-Interval			
		Format: List of uint16			
		Value: Not relevant			
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).			
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test.			
		Check in manager transcoder output for the RR-Interval object – Metric-Spec-Small attribute.			
Pass/Fail cri	iteria	In step 5, the RR-Interval object – Metric-Spec-Small attribute is present and its value is {0x5440} (mss-avail-stored-data, mss-acc-agent-initiated, mss-msmt-btb-metric, mss-ms aperiodic).			
Notes		Possible values in typical points of observation after transcoder output are:			
		a) IEEE 11073 Objects and Attributes			
		Metric-Spec-Small attribute is present:			
		□ Object: RR-Interval object			
		□ Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)			
		☐ Attribute-type: BITS-16			
		Attribute-value: 54 40 (hex) or BITS mss-avail-stored-data(1), mss-msmt-aperiodic (3), mss-msmt-btb-metric (5), mss-acc-agent-initiated(9) set to TRUE and remaining BITS set to FALSE			
		b) WAN PCD-01 message			
		PCD-01 message does not include segments with a Metric-Spec-Small attribute value.			

TP Id		TP/LP-PAN/MAN/PHDTW/HR/BV-013		
TP label		Whitepaper. RR-Interval Object - Unit-Code Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable items	RR Numeric 5; M		
Applicability C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_004 AND C_MAN_BLE_006				
Initial condi	tion	The manager under test and the simulated agent are in the standby state.		
Test proced	ure	 The simulated agent is configured with a Heart rate profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 		
		The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		a. Heart rate measurement (0x2A37)		
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value:		
		i. Heart rate measurement (0x2A37)		
		i. Field: Flags		
		Format: 8 bit		
		 Value: 0001 0000 (MSB → LSB). Heart rate measurement value in uint8 format and RR-Interval fields are included, Energy Expended field is not included 		
		ii. Field: Heart Rate Measurement Value (uint8)		
		Format: uint8		
		Value: Not relevant		
		iii. Field: Heart Rate Measurement Value (uint16)		
		This field is not included		
		iv. Field: Energy Expended		
		This field is not included		
		v. Field: RR-Interval		
		Format: List of uint16		
		Value: Not relevant		
		Check in manager transcoder output for the RR-Interval object – Unit-Code attribute.		
Pass/Fail cr	iteria	In step 5, the RR-Interval object – Unit-Code attribute is present and its value is MDC_DIM_TICK.		
Notes		In step 5, possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		Unit-Code attribute is present:		
		□ Object: RR Interval object		
		☐ Attribute-id: MDC_ATTR_UNIT_CODE (2454)		
		☐ Attribute-type: INT-U16		
		☐ Attribute-value: MDC_DIM_TICK or 6848 (dec) or 1A C0 (hex)		
		b) WAN PCD-01 message		
		PCD-01 message includes two segments like these with Unit-Code attribute value (check OBX-6):		
		OBX ? NM 147240^ MDC_ECG_TIME_PD_RR_GL^MDC 1.0.0.a 600		
		268992^ MDC_DIM_TICK ^MDC R		
		OBX ? NM 147240^ MDC_ECG_TIME_PD_RR_GL^MDC 1.0.0.b 900		
		268992^ MDC_DIM_TICK ^MDC R		

TP ld		TP/LP-PAN/MAN/PHDTW/HR/BV-014		
TP label		Whitepaper. RR-Interval Object -Simple-Nu-Observed-Value Attribute		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable	RR Numeric 6; M		
	items			
Applicability				
Initial condi	tion	The manager under test and the simulated agent are in the standby state.		
Test proced	ure	1. The simulated agent is configured with a profile (device specialization) supported by the manager under test; it has a measurement ready to be sent and it is in the advertising state (it is discoverable).		
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		 a. Heart rate measurement (0x2A37) 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 		
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value: a. Heart rate measurement (0x2A37)		
		i. Field: Flags		
		• Format: 8 bit		
		 Value: 0001 0000 (MSB → LSB). Heart rate measurement value in uint8 format and RR-Interval fields are included, Energy Expended field is not included 		
		ii. Field: Heart Rate Measurement Value (uint8)		
		Format: uint8		
		Value: Not relevant		
		iii. Field: Heart Rate Measurement Value (uint16)		
		This field is not included		
		iv. Field: Energy Expended		
		This field is not included		
		v. Field: RR-Interval		
		• Format: List of uint16		
		 Value: {600, 900} Check in manager transcoder output for the RR-Interval object – Compound-Simple-Nu-Observed-Value attribute. 		
Pass/Fail criteria In step 5, the RR-Interval object – Simple-Nu-		In step 5, the RR-Interval object – Simple-Nu-Observed-Value attribute is present and its value matches with RR-Interval field of Heart rate measurement {600, 900}.		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		Simple-Nu-Observed-Value attribute is present two times:		
		□ Object: RR-Interval object		
		□ Attribute-id: MDC_ATTR_NU_ VAL_OBS_SIMP (2646)		
		□ Attribute-type: FLOAT		
		□ Attribute-value:		
		• First occurrence: 00 00 02 58 (hex) or FF 00 17 70 (hex) or FE 00 EA 60 (hex) or FD 09 27 C0 (hex) or FC 5B 8D 80 (hex) or 600 (dec)		
		 Second occurrence: 00 00 03 84 (hex) or FF 00 23 28 (hex) or FE 01 5F 90 (hex) or FD 0D BB A0 (hex) or FC 89 54 40 (hex) or 900 (dec) b) WAN PCD-01 message 		
		PCD-01 message includes a segment like this with a Simple-Nu-Observed-Value attribute value (check OBX-5):		
		OBX ? NM 147240^MDC_ECG_TIME_PD_RR_GL^MDC 1.0.0.a 600 268992^MDC_DIM_TICK ^MDC R		
		OBX ? NM 147240^MDC_ECG_TIME_PD_RR_GL^MDC 1.0.0.b 900 268992^ MDC_DIM_TICK ^MDC R		

TP Id		TP/LP-PAN/MAN/PHDTW/HR/BV-015		
TP label		Whitepaper. Heart Rate measurement value		
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable	HR Numeric 6; M		
	items			
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_004		
Initial condit	ion	The manager under test and the simulated agent are in the standby state.		
Test procedure		 The simulated agent is configured with a profile (device specialization) supported by the manager under test; it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of 		
		interest for this test case is: a. Heart rate measurement (0x2A37)		
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		 4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value: a. Heart rate measurement (0x2A37) i. Field: Flags 		
		Format: 8 bit		
		 Value: 0000 0000 (MSB → LSB). Heart rate measurement value in uint8 format fied is included, Energy Expended and RR-Inteval fields are not included 		
		ii. Field: Heart Rate Measurement Value (uint8)Format: uint8		
		Value: 90		
		iii. Field: Heart Rate Measurement Value (uint16)This field is not included		
		iv. Field: Energy Expended This field is not included		
		v. Field: RR-Interval		
		 This field is not included Check that the manager accepts the measurement and decodes its value properly 		
		(pulse rate measurement).The simulated agent sends the measurement to the manager under test with the		
		following value: i. Field: Flags		
		Format: 8 bit		
		 Value: 0000 0001 (MSB → LSB). Heart rate measurement value in uint16 format is included, Energy Expended and RR-Inteval fields are not included 		
		ii. Field: Heart Rate Measurement Value (uint8) • This field is not included		
		iii. Field: Heart Rate Measurement Value (uint16)		
		Format: uint16		
		• Value: 110		
		iv. Field: Energy Expended		
		This field is not included		
		v. Field: RR-Interval		
		This field is not included		
		Check that the manager accepts the measurement and decodes its value properly (pulse rate measurement).		
Pass/Fail cri	teria	In step 5, the manager under test shows the following measurement Heart Rate = 90 beats per minute (bpm).		
		In step 7, the manager under test shows the following measurement Heart Rate = 110 beats per minute (bpm).		
Notes				

TP ld		TP/LP-PAN/MAN/PHDTW/HR/BV-016		
TP label	P label Whitepaper. RR-Interval measurement value			
Coverage	Spec	[b-Bluetooth PHDT v1.3]		
	Testable items	RR Numeric 6; M		
Applicability	,	C_MAN_BLE_000 AND C_MAN_BLE_004 AND C_MAN_BLE_006		
Initial condit	ion	The manager under test and the simulated agent are in the standby state.		
Test procedu	ure	 The simulated agent is configured with a profile (device specialization) supported by the manager under test; it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 		
		The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		a. Heart rate measurement (0x2A37)		
		The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value:		
		a. Heart rate measurement (0x2A37)		
		i. Field: Flags		
		Format: 8 bit		
		 Value: 0001 0000 (MSB → LSB). Heart rate measurement value in uint8 format and RR-Interval fields are present, Energy Expended field is not included 		
		ii. Field: Heart Rate Measurement Value (uint8)		
		Format: uint8		
		Value: Not relevant		
		iii. Field: Heart Rate Measurement Value (uint16)		
		This field is not included		
		iv. Field: Energy Expended		
		This field is not included		
		v. Field: RR-Interval		
		Format: List of uint16		
		• Value: {600, 900}		
		Check that the manager accepts the measurement and decodes its value properly (RR-Interval measurement value).		
Pass/Fail cri	teria	In step 5, the manager under test shows the following measurements:		
		 Measurement #1: RR-Interval = 586 ms or 600 ticks (1 tick = 1/1024 s) 		
		 Measurement #2: RR-Interval = 879 ms or 900 ticks (1 tick = 1/1024 s) 		
Notes				

A.6 Subgroup 2.4.5 – Whitepaper Glucose requirements (GL)

TP Id TP/LP-PAN/MAN/PHDTW/GL/BV-000		TP/LP-PAN/MAN/PHDTW/GL/BV-000		
TP label		Whitepaper. Glucosemeter MDS Object - System-Type Attribute		
		[Bluetooth PHDT v1.4]		
Ooverage	Testable	GL Specific MDS 1; M		
	items	GE Specific MDS 1, W		
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007		
Initial condi		The manager under test and the simulated agent are in the standby state.		
Test proced				
rest proced	ure	1. The simulated agent is configured with a Glucose profile (device specialization); it has		
		a measurement ready to be sent and it is in the advertising state (it is discoverable).		
		2. The manager under test initiates a discovery process (scanning state). It discovers the		
		simulated agent and it starts a pairing process with the simulated agent (initiating		
		state).		
		3. When the pairing has been completed (connection state), the manager under test		
		requests the simulated agent to report stored records by performing a writing operation		
		in the Record Access Control Point (RACP) and the simulated agent sends the		
measurement to the manager under test.				
		4. Check in manager transcoder output for the MDS object – System-Type attribute.		
Pass/Fail cr	iteria	In step 4, the MDS object – System-Type attribute is not present.		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		System-Type attribute is not present:		
		□ Object: MDS object		
		☐ Attribute-id: MDC_ATTR_SYS_TYPE (2438)		
		☐ Attribute-type: TYPE		
		□ Attribute-value: <not present=""></not>		
		b) WAN PCD-01 message		
		PCD-01 message does not include segments with a System-Type attribute value		
		(67974^MDC_ATTR_SYS_TYPE^MDC).		

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-001		
		/hitepaper. Glucosemeter MDS Object - Dev-Configuration-Id Attribute		
Coverage				
	Testable	GL Specific MDS 2; M		
	items			
Applicability	y	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007		
Initial condit	tion	The manager under test and the simulated agent are in the standby state.		
Test proced	ure	 The simulated agent is configured with a Glucosemeter profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test. Check in manager transcoder output for the MDS object – Dev-Configuration-Id attribute. 		
		In step 4, the MDS object – Dev-Configuration-Id attribute is present and its value is inside the range 0x4000 - 0x7FFF.		
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Dev-Configuration-Id attribute is present: □ Object: MDS object □ Attribute-id: MDC_ATTR_DEV_CONFIG_ID (2628) □ Attribute-type: INT-U16 □ Attribute-value: Any value inside the range 16384 - 32767 (dec) or 0x4000 - 0x7FFF (hex) b) WAN PCD-01 message According to [ITU-T H.810] (CDG 2013), the Dev-Configuration-Id shall not be transmitted in the PCD-01 message; therefore it is not possible to check this attribute.		

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-002		
TP label		Whitepaper. Glucosemeter MDS Object - System-Type-Spec-List Attribute		
Coverage	Spec	[Bluetooth PHDT v1.4]		
	Testable items	Common MDS 15; M GL Specific MDS 3; M		
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007		
Initial condit	tion	The manager under test and the simulated agent are in the standby state.		
Test proced	ure	 The simulated agent is configured with a Glucosemeter profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 		
		2. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
		3. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test.		
	4. Check in manager transcoder output for the MDS object – System-Type-Spec attribute.			
Pass/Fail cri	iteria	In step 4, the MDS object – System-Type-Spec-List attribute is present and its value is (MDC_DEV_SPEC_PROFILE_GLUCOSE, Version 2).		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		System-Type-Spec-List attribute is present:		
		□ Object: MDS object		
		☐ Attribute-id: MDC_ATTR_SYS_TYPE_SPEC_LIST (2650)		
		□ Attribute-type: SEQUENCE OF [{type (INT-U16), version (INT-U16)}]		
		☐ Attribute-value:		
		 type: MDC_DEV_SPEC_PROFILE_GLUCOSE or 4113 (dec) or 10 11 (hex) 		
		 version: 2 (dec) or 00 02 (hex) 		
		b) WAN PCD-01 message		
PCD-01 message includes a segment like this with a System-Type-Spec-List at (check OBX-5):		PCD-01 message includes a segment like this with a System-Type-Spec-List attribute value (check OBX-5):		
		OBX ? NM 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC 1.0.0.a		
		528401^MDC_DEV_SPEC_PROFILE_GLUCOSE^MDC R		

TP Id	TP/LP-PAN/MAN/PHDTW/	
TP label		r MDS Object - Reg-Cert-Data-List Attribute
Coverag Spec	[Bluetooth PHDT v1.4]	
e Testable items	Common MDS 14; M	Regulatory Conv 1; M
Applicability	C_MAN_BLE_000 AND C	_MAN_BLE_002 AND C_MAN_BLE_007
nitial condition		
The manager under test and the simulated agent are in the standby state. 1. The simulated agent is configured with a Glucosemeter profile (device specialization); i measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of intertest case is: a. IEEE 11073-20601 Regulatory Certification Data List (0x2A2A) • Format: reg-cert-data-list (opaque structure) • Value: 00 02 00 12 02 01 00 08 04 00 00 01 00 02 80 11 02 02 00 02 80 00 i. Element: • auth-body-and-struc-type: - auth-body-struc-type: 01 (hex). continua-version-struct(1) • auth-body-data: - major-IG-version: 04 (hex) - minor-IG-version: 00 (hex) - certified-devices: 80 11 (hex). BLE Glucosemeter ii. Element: • auth-body-and-struc-type: - auth-body-struc-type: 02 (hex). continua-reg-struct(2) - auth-body-struc-type: 02 (hex). continua-reg-struct(2) - auth-body-data: - regulation-bit-field: 80 00 (hex). Unregulated device 3. The manager under test initiates a discovery process (scanning state). It discovers the agent and it starts a pairing process with the simulated agent. 4. When the pairing has been completed (connection state), force the manager under test the IEEE 11073-20601 Regulatory Certification Data List characteristic. 5. The manager under test requests the simulated agent to report stored records writing a operation in Record Access Control Point (RACP) and simulated agents tends the measurement in the send agent and it starts and period agent to report stored records writing a operation in Record Access Control Point (RACP) and simulated agents tends the measurement in the send agent and it starts and a period agent to report stored records writing a operation in Record Access Control Point (RACP) and simulated agent sends the measurement in the send agent and it starts and a period agent to report stored records writing a operation in Record Access Control Point (RACP) and simulated agent sends the measurement in th		onfigured with a Glucosemeter profile (device specialization); it has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the advertising state (it is discoverable). It has a be sent and it is in the sent and it is discoverable). It discovers the simulated ing process with the simulated agent. It discovers the simulated agent are completed (connection state), force the manager under test to read a degulatory Certification Data List characteristic. It is discoverable. It discovers the simulated agent are completed (connection state), force the manager under test to read a degulatory Certification Data List characteristic. It is discoverable.
Pass/Fail criteria	to the manager under test. 6. Check in manager transcoder output for the MDS object – Reg-Cert-Data-List attribute. In step 6, the MDS object – Reg-Cert-Data-List attribute is present and its value matches with the IEEE 11073-20601 Regulatory Certification Data List characteristic value.	
Notes	Possible values in typical poin a) IEEE 11073 Objects and Reg-Cert-Data-List attribute is Object: MDS object Attribute-id: MDC_A Attribute-value: 00 ([Note that 0x00 0x0 of the sequence] i. Reg-Cert auth-bod auth-bod mino certif ii. Reg-Cert auth-bod auth-bod regul b) WAN PCD-01 message PCD-01 message PCD-01 message includes fiv. OBX-5 in five segments): OBX ? CWE 68218^MDC_RECOBX ? ST 532352^MDC_RECOBX ? NA 532353^MDC_RECOBX * NA 53235^MDC_RECOBX * NA 53235^MDC_RECOBX * NA 53235^MDC_RE	ats of observation after transcoder output are: Attributes Attrib

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-004			
TP label		Whitepaper. Glucosemeter Blood Glucose Object - Handle Attribute			
Coverage	Spec	[Bluetooth PHDT v1.4]			
	Testable	GL Numeric 1; O			
items					
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007			
Initial condit	ion	The manager under test and the simulated agent are in the standby state			
Test procedure		 The simulated agent is configured with a Glucosemeter profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Glucose measurement (0x2A18) Field: Flags Format: 8 bit Value: 0000 0010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included, Time Offset and Sensor Status Annunciation fields are not included Field: Sequence number Format: uint16 			
		 Value: Not relevant iii. Field: Base Time Format: Date and Time Value: Not relevant iv. Field: Time Offset This field is not included V. Field: Glucose Concentration - units of kg/L Format: SFLOAT Value: Not relevant vi. Field: Glucose Concentration - units of mol/L This field is not included 			
		vii. Field: Type • Format: nibble • Value: Not relevant viii. Field: Sample Location • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • This field is not included			
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state) When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test. Check in manager transcoder output for the Blood glucose object – Handle attribute. 			
Pass/Fail criteria In step 5, the Blood glucose object – Handle attribute is not present; howeve then its value is different to 0.					
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Handle attribute is not present, or if it is present then: Object: Blood glucose numeric object Attribute-id: MDC_ATTR_ID_HANDLE (2337) Attribute-type: INT-U16 Attribute-value: Any value other than 0 WAN PCD-01 message			
		PCD-01 message does not include segments with a Handle attribute value.			

TP Id		TP/I P.PAN/MAN/PHDTW/GL/RV-005				
TP label		TP/LP-PAN/MAN/PHDTW/GL/BV-005 Whitepaper. Glucosemeter Blood Glucose Object - Type Attribute				
	Coverag Spec [Bluetooth PHDT v1.4]					
e Testable GL Numeric 2; M						
	items	OZ Tranisho Z, M				
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007				
Initial con	dition	The manager under test and the simulated agent are in the standby state.				
Test procedure		1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).				
		The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are:				
		a. Glucose measurement (0x2A18)				
		i. Field: Flags				
		Format: 8 bit				
		 Value: 0000 0010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included, Time Offset and Sensor Status Annunciation fields are not included 				
		ii. Field: Sequence number				
		Format: uint16				
		Value: Not relevant				
		iii. Field: Base Time				
		Format: Date and Time				
		Value: Not relevant				
		iv. Field: Time Offset				
		This field is not included				
		v. Field: Glucose Concentration - units of kg/L				
		Format: SFLOAT				
		Value: Not relevant				
		vi. Field: Glucose Concentration - units of mol/L				
		This field is not included				
		vii. Field: Type				
		Format: nibble				
		 Value: Several values are checked in this test case 				
		viii. Field: Sample Location				
		Format: nibble				
		Value: Not relevant				
		ix. Field: Sensor Status Annunciation				
		This field is not included				
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).				
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with the field Type set to Capillary Whole blood (0x01).				
		5. Check in manager transcoder output for the Blood glucose object – Type.				
		6. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with field Type set to Capillary Plasma (0x02).				
		7. Check in manager transcoder output for the Blood glucose object – Type.				

- The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with field Type set to Venous Whole blood (0x03).
- 9. Check in manager transcoder output for the Blood glucose object Type.
- 10. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with field Type set to Venous Plasma (0x04).
- 11. Check in manager transcoder output for the Blood glucose object Type.
- 12. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with field Type set to Arterial Whole blood (0x05).
- 13. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the Check in manager transcoder output for the Blood glucose object Type.
- 14. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with field Type set to Arterial Plasma (0x06).
- 15. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the Check in manager transcoder output for the Blood glucose object Type.
- 16. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with field Type set to Undetermined Whole blood (0x07).
- 17. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the Check in manager transcoder output for the Blood glucose object – Type.
- 18. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with field Type set to Undetermined Plasma (0x08).
- 19. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the Check in manager transcoder output for the Blood glucose object – Type.
- 20. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with field Type set to Interstitial Fluid (ISF) (0x09).
- 21. Check in manager transcoder output for the Blood glucose object Type.
- 22. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with field Type set to Control Solution (0x0A).
- 23. Check in manager transcoder output for the Blood glucose object Type.

Pass/Fail criteria

In step 5, the Blood glucose object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD}.

In step 7, the Blood glucose object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_GLU_CAPILLARY_PLASMA}.

In step 9, the Blood glucose object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_GLU_VENOUS_WHOLEBLOOD}.

In step 11, the Blood glucose object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_GLU_VENOUS_PLASMA}.

In step 13, the Blood glucose object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_GLU_ARTERIAL_WHOLEBLOOD}.

In step 15, the Blood glucose object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_GLU_ARTERIAL_PLASMA}.

In step 17, the Blood glucose object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_GLU_UNDETERMINED_WHOLEBLOOD}. In step 19, the Blood glucose object - Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_GLU_UNDETERMINED_PLASMA}. In step 21, the Blood glucose object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_GLU_ISF}. In step 23, the Blood glucose object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_GLU_CONTROL}. **Notes** In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Blood glucose object □ Attribute-id: MDC_ATTR_ID_TYPE (2351) ☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) code: MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD or 29112 (dec) or 71 B8 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX|?|NM|160184^MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD^MDC|1.0.0.a|160| 264274^MDC_DIM_MILLI_G_PER_DL^MDC|||||R|||[current_date_time] In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Blood glucose object ☐ Attribute-id: MDC_ATTR_ID_TYPE (2351) ☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) code: MDC_CONC_GLU_CAPILLARY_PLASMA or 29116 (dec) or 71 BC (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX|?|NM|160188^MDC_CONC_GLU_CAPILLARY_PLASMA^MDC|1.0.0.a|160| 264274^MDC_DIM_MILLI_G_PER_DL^MDC|||||R|||[current_date_time] In step 9, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Blood glucose object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) code: MDC_CONC_GLU_VENOUS_WHOLEBLOOD or 29120 (dec) or 71 C0 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX|?|NM|160192^MDC_CONC_GLU_VENOUS_WHOLEBLOOD^MDC|1.0.0.a|160| 264274^MDC_DIM_MILLI_G_PER_DL^MDC||||R|||[current_date_time] In step 11, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes

Type attribute is present:

Object: Blood glucose object □ Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) code: MDC CONC GLU VENOUS PLASMA or 29124 (dec) or 71 C4 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBXI?INMI160196^MDC CONC GLU VENOUS PLASMA^MDCI1.0.0.al160I 264274^MDC_DIM_MILLI_G_PER_DL^MDC||||R|||[current_date_time] In step 13, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Blood glucose object □ Attribute-id: MDC_ATTR_ID_TYPE (2351) ☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} □ Attribute-value: partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_CONC_GLU_ARTERIAL_WHOLEBLOOD or 29128 (dec) or 71 C8 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX|?|NM|160200^MDC_CONC_GLU_ARTERIAL_WHOLEBLOOD^MDC|1.0.0.a|160| 264274^MDC_DIM_MILLI_G_PER_DL^MDC||||R|||[current_date_time] In step 15, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Blood glucose object □ Attribute-id: MDC_ATTR_ID_TYPE (2351) ☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} ■ Attribute-value: partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_CONC_GLU_ARTERIAL_PLASMA or 29132 (dec) or 71 CC (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBXI?|NM|160204^CONC GLU ARTERIAL PLASMA^MDC|1.0.0.a|160| 264274^MDC_DIM_MILLI_G_PER_DL^MDC|||||R|||[current_date_time] In step 17, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: □ Object: Blood glucose object □ Attribute-id: MDC_ATTR_ID_TYPE (2351) □ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: partition: MDC PART SCADA or 2 (dec) or 00 02 (hex) code: MDC_CONC_GLU_UNDETERMINED_WHOLEBLOOD or 29292 (dec) or 72 6C (hex) b) WAN PCD-01 message

PCD-01 message includes a segment like this with a Type attribute value (check OBX-3):

OBX|?|NM|160364^MDC_CONC_GLU_UNDETERMINED_WHOLEBLOOD^MDC| 1.0.0.a|160|264274^MDC_DIM_MILLI_G_PER_DL^MDC||||R|||[current_date_time]

In step 19, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Type attribute is present:

- Object: Blood glucose object
- □ Attribute-id: MDC_ATTR_ID_TYPE (2351)
- ☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
- Attribute-value:
 - partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex)
 - code: MDC_CONC_GLU_UNDETERMINED_PLASMA or 29296 (dec) or 72 70 (hex)

b) WAN PCD-01 message

PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX|?|NM|160368^MDC_CONC_GLU_UNDETERMINED_PLASMA^MDC|1.0.0.a|160| 264274^MDC_DIM_MILLI_G_PER_DL^MDC|||||R|||[current_date_time]

In step 21, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Type attribute is present:

- □ Object: Blood glucose object
- ☐ Attribute-id: MDC_ATTR_ID_TYPE (2351)
- ☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
- ☐ Attribute-value:
 - partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex)
 - code: MDC_CONC_GLU_ISF or 29140 (dec) or 71 D4 (hex)

b) WAN PCD-01 message

PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX|?|NM|160212^MDC_CONC_GLU_ISF^MDC|1.0.0.a|160| 264274^MDC_DIM_MILLI_G_PER_DL^MDC|||||R|||[current_date_time]

In step 23, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Type attribute is present:

- □ Object: Blood glucose object
- □ Attribute-id: MDC_ATTR_ID_TYPE (2351)
- ☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
- Attribute-value:
 - partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex)
 - code: MDC_CONC_GLU_CONTROL or 29136 (dec) or 71 D0 (hex)
- b) WAN PCD-01 message

PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX|?|NM|160208^MDC_CONC_GLU_CONTROL^MDC|1.0.0.a|160| 264274^MDC_DIM_MILLI_G_PER_DL^MDC|||||R|||[current_date_time]

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-006		
TP label		Whitepaper. Glucosemeter Blood Glucose Object - Metric-Spec-Small Attribute		
Coverage Spec		[Bluetooth PHDT v1.4]		
Testable items		GL Numeric 3; M		
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007		
Initial condition		The manager under test and the simulated agent are in the standby state		
Test proced		 The manager under test and the simulated agent are in the standby state The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Glucose measurement (0x2A18) Field: Flags Format: 8 bit Value: 0000 0010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included, Time Offset and Sensor Status Annunciation fields are not included Field: Sequence number Format: uint16 Value: Not relevant Field: Base Time Format: Date and Time Value: Not relevant 		
		iv. Field: Time Offset • This field is not included v. Field: Glucose Concentration - units of kg/L • Format: SFLOAT • Value: Not relevant vi. Field: Glucose Concentration - units of mol/L • This field is not included vii. Field: Type • Format: nibble • Value: Not relevant viii. Field: Sample Location • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • This field is not included 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test. 5. Check in manager transcoder output for the Blood glucose numeric object – Metric-Spec-Small attribute.		
Pass/Fail cri	iteria	In step 5, the Blood glucose numeric object – Metric-Spec-Small attribute is present and its value is {0xF040} (mss-avail-intermittent mss-avail-stored-data mss-upd-aperiodic mss-msmt-aperiodic mss-acc-agent-initiated).		
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Spec-Small attribute is present: □ Object: Blood glucose numeric object □ Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630) □ Attribute-type: BITS-16 □ Attribute-value: F0 40 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9) set to TRUE and remaining BITS set to FALSE b) WAN PCD-01 message PCD-01 message does not include segments with a Metric-Spec-Small attribute value.		

TP Id	TP Id TP/LP-PAN/MAN/PHDTW/GL/BV-007				
TP label		Whitepaper. Glucosemeter Blood Glucose Object - Unit-Code Attribute			
Coverag Spec		[Bluetooth PHDT v1.4]			
е	Testabl	GL Numeric 4; M			
	e items				
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007			
Initial cond		The manager under test and the simulated agent are in the standby state.			
Test proce	aure	1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).			
		 The simulated agent implements several BLE characteristics. The characteristic of 			
		interest for this test case is:			
		a. Glucose measurement (0x2A18)			
		3. The manager under test initiates a discovery process (scanning state). It discovers the			
		simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test			
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record			
		Access Control Point (RACP) and the simulated agent sends the measurement to the			
		manager under test with the following value:			
		a. Glucose measurement (0x2A18)			
		i. Field: Flags			
		• Format: 8 bit			
		 Value: 0000 0010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included, Time Offset and Sensor 			
		Status Annunciation fields are not included			
		ii. Field: Sequence number			
		Format: uint16			
		• Value: Not relevant			
		iii. Field: Base Time			
		 Format: Date and Time Value: Not relevant 			
		iv. Field: Time Offset			
		This field is not included			
		v. Field: Glucose Concentration - units of kg/L			
		Format: SFLOAT Also also assistante			
		Value: Not relevant Vi. Field: Glucose Concentration - units of mol/L			
		This field is not included			
		vii. Field: Type			
		Format: nibble			
		Value: Undetermined Plasma (0x08)			
		viii. Field: Sample Location			
		Format: nibble Value: Not relevant.			
		Value: Not relevant ix. Field: Sensor Status Annunciation			
		This field is not included			
		5. Check in manager transcoder output for the Blood glucose object – Unit-Code attribute.			
		6. The manager under test requests the simulated agent to report stored records writing an			
		operation in Record Access Control Point (RACP) and the simulated agent sends the			
		measurement to the manager under test with the following value: a. Glucose measurement (0x2A18)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 0000 0110 (MSB → LSB). Glucose concentration in units of mol/L, 			
		Type and Sample Location fields are included, Time Offset and Sensor			
		Status Annunciation fields are not included ii. Field: Sequence number			
		Format: uint16			
		Value: Not relevant			
1		iii. Field: Base Time			
		Format: Date and Time			
		Value: Not relevant Field: Time Offert			
		iv. Field: Time Offset This field is not included			
		I his field is not included v. Field: Glucose Concentration - units of kg/L			
		This field is not included			
		vi. Field: Glucose Concentration - units of mol/L			
		Format: SFLOAT			

1			
	Value: Not relevant		
	vii. Field: Type		
	Format: nibble		
	 Value: Undetermined Plasma (0x08) 		
	viii. Field: Sample Location		
	Format: nibble		
	Value: Not relevant		
	ix. Field: Sensor Status Annunciation		
	This field is not included		
	7. Check in manager transcoder output for the Blood glucose object – Unit-Code attribute.		
Pass/Fail criteria	In step 5, the Blood glucose object – Unit-Code attribute is present and its value is		
i deen an ernena	MDC_DIM_MILLI_G_PER_DL.		
	In step 7, the Blood glucose object – Unit-Code attribute is present and its value is		
	MDC_DIM_MILLI_MOLE_PER_L.		
Notes	In step 5, possible values in typical points of observation after transcoder output are:		
110100	a) IEEE 11073 Objects and Attributes		
	Unit-Code attribute is present:		
	Object: Blood glucose object		
	☐ Attribute-id: MDC_ATTR_UNIT_CODE (2454)		
	☐ Attribute-type: INT-U16		
	☐ Attribute-value: MDC_DIM_MILLI_G_PER_DL or 2130 (dec) or 08 52 (hex)		
	b) WAN PCD-01 message		
	PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6):		
	OBX ? NM 160368^MDC_CONC_GLU_UNDETERMINED_PLASMA^MDC 1.0.0.a 160		
	264274^MDC_DIM_MILLI_G_PER_DL ^MDC R [current_date_time]		
	In step 7, possible values in typical points of observation after transcoder output are:		
	a) IEEE 11073 Objects and Attributes		
	Unit-Code attribute is present:		
	Object: Blood glucose object		
	Attribute-id: MDC_ATTR_UNIT_CODE (2454)Attribute-type: INT-U16		
	Attribute-type: INT-016 Attribute-value: MDC_DIM_MILLI_MOLE_PER_L or 4722 (dec) or 12 72 (hex)		
	PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 160368^MDC_CONC_GLU_UNDETERMINED_PLASMA^MDC 1.0.0.a 9		
	266866^MDC_DIM_MILLI_MOLE_PER_L^MDC R [current_date_time]		

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-008			
TP label		Whitepaper. Glucosemeter Blood Glucose Object - Absolute-Time-Stamp Attribute			
Coverag Spec		[Bluetooth PHDT v1.4]			
е	Testabl	GL Numeric 5; M D	ate-Time Conv 2; M	Date-Time Conv 3; M	
e items			ate-Time Conv 5; M		
Applicability Initial condition Test procedure		The manager under test and the simulated agent are in the standby state. 1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Glucose measurement (0x2A18) 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with the following value: a. Glucose measurement (0x2A18) i. Field: Flags • Format: 8 bit • Value: 00000011 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location and Time Offset fields are included, Sensor Status Annunciation field is not included ii. Field: Sequence number • Format: uint16 • Value: Not relevant iii. Field: Base Time • Format: Date and Time • Value: August 2nd, 2012, 10:59:27 iv. Field: Time Offset • Format: sint16 • Value: 120 minutes v. Field: Glucose Concentration - units of kg/L • Format: SFLOAT • Value: Not relevant vi. Field: Glucose Concentration - units of mol/L • This field is not included			
Pass/Fail criteria		In step 5, the Blood glucose object matches with the Base Time field	ant Annunciation ncluded tput for the Blood glucose object ct – Absolute-Time-Stamp att		
Notes		seconds which is set to 0. Possible values in typical points of obs	servation after transcoder output	are:	
Notes		a) IEEE 11073 Objects and Attribute Absolute-Time-Stamp attribute is pres Object: Blood glucose object Attribute-id: MDC_ATTR_TI Attribute-type: SEQUENCE	es ent: tt ME_STAMP_ABS (2448) {century (INT-U8), year (INT-U8), second (INT-U8), sec-fracti 32 (dec) (dec) 3 (dec) dec) dec) (dec) 89 (dec) 39 (dec) ex) or 0 (dec) : like this with Absolute-Time-Sta	amp attribute value (check OBX-14):	

TDIA		TD// D DAN/MAN/DHDT/A//CL/DV 000			
TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-009			
		Whitepaper. Glucosemeter Blood Glucose Object - Basic-Nu-Observed-Value Attribute 1			
Coverag e	Spec	[Bluetooth PHDT v1.4]			
Testabl G		GL Numeric 6; M Short Float Type 1; C			
Applicabili	ity	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007			
Initial cond	dition	The manager under test and the simulated agent are in the standby state.			
Test proce	edure	1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).			
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:			
		a. Glucose measurement (0x2A18)			
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).			
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with the following value:			
		a. Glucose measurement (0x2A18)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 00000010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included, Time Offset and Sensor Status Annunciation fields are not included 			
		ii. Field: Sequence number			
		Format: uint16			
		Value: Not relevant			
		iii. Field: Base Time			
		i. Format: Date and Time			
		Value: Not relevant			
		iv. Field: Time Offset			
		This field is not included			
		v. Field: Glucose Concentration - units of kg/L			
		Format: SFLOAT			
		 Value: 0.0016 kg/L (160 mg/dL) 			
		vi. Field: Glucose Concentration - units of mol/L			
		This field is not included			
		vii. Field: Type			
		Format: nibble			
		Value: Undetermined Plasma (0x08)			
		viii. Field: Sample Location			
		Format: nibble			
		Value: Not relevant			
		ix. Field: Sensor Status Annunciation			
		This field is not included			
		5. Check in manager transcoder output for the Blood glucose object– Basic-Nu-Observed-Value attribute.			
		6. The manager under test requests the simulated agent to report stored records writing an			
		operation in Record Access Control Point (RACP) and the simulated agent sends the			
		measurement to the manager under test with the following value: a. Glucose measurement (0x2A18)			
		i. Field: Flags			
		• Format: 8 bit			
		- I omac o oc			

1				
	 Value: 00000110 (MSB → LSB). Glucose concentration units of mol/L, 			
	Type and Sample Location fields are included, Time Offset and Sensor Status Annunciation fields are not included			
	ii. Field: Sequence number			
	Format: uint16			
	Value: Not relevant			
	iii. Field: Base Time			
	Format: Date and Time			
	Value: Not relevant			
	iv. Field: Time Offset			
	This field is not included			
	v. Field: Glucose Concentration - units of kg/L			
	This field is not included			
	vi. Field: Glucose Concentration - units of mol/L			
	Format: SFLOAT			
	 Value: Value: 0.009 mol/L (9 mmol/L) 			
	vii. Field: Type			
	Format: nibble			
	Value: Undetermined Plasma (0x08)			
	viii. Field: Sample Location			
	Format: nibble			
	Value: Not relevant			
	ix. Field: Sensor Status Annunciation			
	This field is not included			
	Check in manager transcoder output for the Blood glucose object – Basic-Nu-Observed-			
	Value attribute.			
Pass/Fail criteria	In step 5, the Blood glucose object – Basic-Nu-Observed-Value attribute is present and its value matches with the Glucose measurement value (kg/L) field of the Glucose measurement characteristic: 0.0016 kg/L (160 mg/dL).			
	In step 7, the Blood glucose object – Basic-Nu-Observed-Value attribute is present and its value matches with the Glucose Measurement Value (mol/L) field of the Glucose Measurement characteristic: 0.009 mol/L (9 mmol/L).			
Notes	Possible values in typical points of observation after transcoder output are:			
	a) IEEE 11073 Objects and Attributes			
	Basic-Nu-Observed-Value attribute is present:			
	Object: Blood glucose object			
	☐ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)			
	□ Attribute-type: SFLOAT			
	☐ Attribute-value: F6 40 (hex) or 160 (dec)			
	b) WAN PCD-01 message			
	PCD-01 message includes a segment like this with a Basic-Nu-Observed-Value attribute value			
	(check OBX-5):			
	OBX ? NM 160368^MDC_CONC_GLU_UNDETERMINED_PLASMA^MDC 1.0.0.a 160.0 264274^MDC_DIM_MILLI_G_PER_DL ^MDC R [current_date_time]			
	In step 7, possible values in typical points of observation after transcoder output are:			
	a) IEEE 11073 Objects and Attributes			
	Basic-Nu-Observed-Value attribute is present:			
	Object: Blood glucose object			
	☐ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)			
	☐ Attribute-type: SFLOAT			
	☐ Attribute-value: E3 84 (hex) or 9 (dec)			
	b) WAN PCD-01 message			
	PCD-01 message includes a segment like this with a Basic -Nu-Observed-Value attribute value (check OBX-5):			
	OBX ? NM 160368^MDC_CONC_GLU_UNDETERMINED_PLASMA^MDC 1.0.0.a 9.0 266866^MDC_DIM_MILLI_MOLE_PER_L^MDC R [current_date_time]			

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-010				
TP label		Whitepaper. Glucosemeter Blood Glucose Object - Basic-Nu-Observed-Value Attribute 2				
Coverag	Spec	[Bluetooth PHDT v1.4]				
е	Testabl e items	GL Numeric 6; M	Short Float Type 1; C	Short Float Type 2; M		
Applicability		C_MAN_BLE_000 AND C_MAN	_BLE_002 AND C_MAN_BLE_0	07		
Initial cond	dition	The manager under test and the	simulated agent are in the stand	by state.		
Test procedure		 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 				
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:				
		a. Glucose measurement (0x2A18)				
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).				
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with the following value:				
		a. Glucose measurement (0x2A18)				
		i. Field: Flags				
		Format: 8 bit				
		 Value: 00000010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included, Time Offset and Sensor Status Annunciation fields are not included 				
		ii. Field: Sequence number				
		Format: uint16				
		Value: Not relevant				
		iii. Field: Base Time				
		Format: Date and Time				
		Value: Not relevant iv. Field: Time Offset				
		This field is not a second to the second term of the second term	ot included			
		v. Field: Glucose Co	oncentration - units of kg/L			
		Format: SFL0	DAT			
		• Value: 0.0016	8 kg/L (160 mg/dL)			
		vi. Field: Glucose Concentration - units of mol/L				
		This field is not a second to the second term of the second term	ot included			
		vii. Field: Type				
		Format: nibble				
			ermined Plasma (0x08)			
		viii. Field: Sample Lo				
		Format: nibble				
		Value: Not re				
		ix. Field: Sensor Sta				
		This field is not a second to the second term of the second term of the second term of the second term of the second terms of the second term				
		Check in manager transcod Value attribute.	er output for the Blood glucose of	bject – Basic-Nu-Observed-		

- 6. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with the following value:
 - a. Glucose measurement (0x2A18)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 00000010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included, Time Offset and Sensor Status Annunciation fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - Value: Not relevant
 - iii. Field: Base Time
 - Format: Date and Time
 - Value: Not relevant
 - iv. Field: Time Offset
 - · This field is not included
 - v. Field: Glucose Concentration units of kg/L
 - Format: SFLOAT
 - Value: 07 FF(hex). Special value: NaN
 - vi. Field: Glucose Concentration units of mol/L
 - · This field is not included
 - vii. Field: Type
 - · Format: nibble
 - Value: Undetermined Plasma (0x08)
 - viii. Field: Sample Location
 - · Format: nibble
 - · Value: Not relevant
 - ix. Field: Sensor Status Annunciation
 - This field is not included
- 7. Check in manager transcoder output for the Blood glucose object Basic-Nu-Observed-Value attribute.
- 8. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with the following value:
 - a. Glucose measurement (0x2A18)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 00000010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included, Time Offset and Sensor Status Annunciation fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - · Value: Not relevant
 - iii. Field: Base Time
 - Format: Date and Time
 - · Value: Not relevant
 - iv. Field: Time Offset
 - · This field is not included

- v. Field: Glucose Concentration units of kg/
 - Format: SFLOAT
 - Value: 00 80 (hex). Special value: NRes
- vi. Field: Glucose Concentration units of mol/L
 - · This field is not included
- vii. Field: Type
 - Format: nibble
 - Value: Undetermined Plasma (0x08)
- viii. Field: Sample Location
 - Format: nibble
 - Value: Not relevant
- ix. Field: Sensor Status Annunciation
 - · This field is not included
- Check in manager transcoder output for the Blood glucose object Basic-Nu-Observed-Value attribute.
- 10. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with the following value:
 - a. Glucose measurement (0x2A18)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 00000010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included, Time Offset and Sensor Status Annunciation fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - Value: Not relevant
 - iii. Field: Base Time
 - · Format: Date and Time
 - Value: Not relevant
 - iv. Field: Time Offset
 - · This field is not included
 - v. Field: Glucose Concentration units of kg/L
 - Format: SFLOAT
 - Value: 07 FE (hex). Special value: +INFINITY
 - vi. Field: Glucose Concentration units of mol/L
 - · This field is not included
 - vii. Field: Type
 - Format: nibble
 - Value: Undetermined Plasma (0x08)
 - viii. Field: Sample Location
 - Format: nibble
 - · Value: Not relevant
 - ix. Field: Sensor Status Annunciation
 - This field is not included
- 11. Check in manager transcoder output for the Blood glucose object Basic-Nu-Observed-Value attribute.

12. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with the following value: Glucose measurement (0x2A18) i. Field: Flags Format: 8 bit Value: 00000010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included. Time Offset and Sensor Status Annunciation fields are not included ii. Field: Sequence number Format: uint16 Value: Not relevant iii. Field: Base Time Format: Date and Time · Value: Not relevant iv. Field: Time Offset · This field is not included v. Field: Glucose Concentration - units of kg/L Format: SFLOAT • Value: 08 02 (hex). Special value: -INFINITY vi. Field: Glucose Concentration - units of mol/L · This field is not included vii. Field: Type · Format: nibble Value: Undetermined Plasma (0x08) viii. Field: Sample Location Format: nibble Value: Not relevant ix. Field: Sensor Status Annunciation · This field is not included 13. Check in manager transcoder output for the Blood glucose object - Basic-Nu-Observed-Value attribute. Pass/Fail criteria In step 5, the Blood glucose object - Basic-Nu-Observed-Value attribute is present and its value is 0.0016 kg/L (160 mg/dL). In step 7, the Blood glucose object - Basic -Nu-Observed-Value attribute is present and its value is 0x07FF. In step 9, the Blood glucose object - Basic -Nu-Observed-Value attribute is present and its value is 0x0800. In step 11, the Blood glucose object - Basic -Nu-Observed-Value attribute is present and its value is 0x07FE. In step 13, the Blood glucose object - Basic -Nu-Observed-Value attribute is present and its value is 0x0802. **Notes** In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Basic-Nu-Observed-Value attribute is present: □ Object: Blood glucose object Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636) Attribute-type: SFLOAT Attribute-value: F6 40 (hex) or 160 (dec) WAN PCD-01 message

PCD-01 message includes a segment like this with a Basic-Nu-Observed-Value attribute value (check OBX-5):

OBX|?|NM|160368^MDC_CONC_GLU_UNDETERMINED_PLASMA^MDC|1.0.0.a|160.0| 264274^MDC_DIM_MILLI_G_PER_DL ^MDC||||R|||[current_date_time]

In step 7, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Basic -Nu-Observed-Value attribute is present:

- □ Object: Blood glucose object
- ☐ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
- Attribute-type: SFLOAT
- Attribute-value: 07 FF(hex) or NaN (note that is not allowed a decimal value)

b) WAN PCD-01 message

PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute value (160368^MDC_CONC_GLU_UNDETERMINED_PLASMA^MDC) because it has a special value and these values are not included in the PCD-01 message.

In step 9, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Basic -Nu-Observed-Value attribute is present:

- Object: Blood glucose object
- □ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
- Attribute-type: SFLOAT
- ☐ Attribute-value: 08 00 (hex) or NRes (note that a decimal value is not allowed)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute value (160368^MDC_CONC_GLU_UNDETERMINED_PLASMA^MDC) because it has a special value and these values are not included in the PCD-01 message.

In step 11, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Basic -Nu-Observed-Value attribute is present:

- □ Object: Blood glucose object
- ☐ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
- Attribute-type: SFLOAT
- ☐ Attribute-value: 07 FE (hex) or +INFINITY (note that a decimal value is not allowed)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute value (160368^MDC_CONC_GLU_UNDETERMINED_PLASMA^MDC) because it has a special value and these values are not included in the PCD-01 message.

In step 13, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Basic -Nu-Observed-Value attribute is present:

- □ Object: Blood glucose object
- □ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
- □ Attribute-type: SFLOAT
- ☐ Attribute-value: 08 02 (hex) or -INFINITY (note that a decimal value is not allowed)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute value (160368^MDC_CONC_GLU_UNDETERMINED_PLASMA^MDC) because it has a special value and these values are not included in the PCD-01 message.

TP ld		TP/LP	P-PAN/M	AN/PHDTW/GL/	/BV-011	
TP label		Whitepaper. Glucosemeter measurement value				
Coverage	Spec	[Bluet	ooth PHI	DT v1.4]		
	Testable	GL Nu	umeric 5;	M	GL Numeric 6; M	Short Float Type 1; C
	items	Date-	Time Co	nv 1; M		
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_007				
Initial condit	ion	The manager under test and the simulated agent are in the standby state.				
Test procedu	ıre		1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).			
		The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:				
		а	. Gluco	se measureme	nt (0x2A18)	
		s			nitiates a discovery process (sourts a pairing process with the s	
		re A	equests t	he simulated agontrol Point (RA	n completed (connection state) gent to report stored records wri CP) and the simulated agent so he following value:	iting an operation in Record
		а	. Gluco	se measureme	nt (0x2A18)	
			i.	Field: Flags		
				• Format: 8 b	pit	
				Type and S	00010 (MSB \rightarrow LSB). Glucose sample Location fields are included unciation fields are not included	ded, Time Offset and Sensor
			ii.	Field: Sequence	e number	
				Format: uin	t16	
				• Value: Not	relevant	
			iii.	Field: Base Tin	ne	
				Format: Da	te and Time	
				Value: Aug	ust 2nd, 2012, 11:08:25	
			iv.	Field: Time Off	set	
				• This field is	not included	
			V.	Field: Glucose	Concentration - units of kg/L	
				Format: SF	LOAT	
				• Value: 0.00	16 kg/L (160 mg/dL)	
			vi.	Field: Glucose	Concentration - units of mol/L	
				• This field is	not included	
			vii.	Field: Type		
				Format: nib	ble	
				• Value: Not	relevant	
			viii.	Field: Sample I	Location	
				Format: nib	ble	
				Value: Not	relevant	
			ix.	Field: Sensor S	Status Annunciation	
				This field is	not included	

Check that the manager under test accepts the measurement and decodes its value properly (glucose measurement value, glucose units and base time). The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends the measurement to the manager under test with the following value: Glucose measurement (0x2A18) i. Field: Flags • Format: 8 bit Value: 00000111 (MSB → LSB). Glucose concentration in units of mol/L Type and Sample Location and Time Offset fields are included, Sensor Status Annunciation field is not included ii. Field: Sequence number • Format: uint16 · Value: Not relevant iii. Field: Base Time · Format: Date and Time Value: August 2nd, 2012, 11:09:05 iv. Field: Time Offset Format: sint16 Value: 120 minutes v. Field: Glucose Concentration - units of kg/L · This field is not included vi. Field: Glucose Concentration - units of mol/L Format: SFLOAT Value: Value: 0.009 mol/L (9 mmol/L) vii. Field: Type Format: nibble Value: Undetermined Plasma (0x08) viii. Field: Sample Location Format: nibble Value: Not relevant ix. Field: Sensor Status Annunciation This field is not included Check that the manager under test accepts the measurement and decodes its value properly (glucose measurement value, glucose units and base time) Pass/Fail criteria In step 5, the manager under test shows the following glucose measurement 160.0 mg/dL with the time stamp '2012-08-02 11:08:25'. In step 7, the manager under test shows the following glucose measurement 9.0 mmol/L with the time stamp '2012-08-02 13:09:05'. **Notes**

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-012			
TP label		Whitepaper. Glucosemeter HbA1c Object - Handle Attribute			
Coverage	Spec	[Bluetooth PHDT v1.4]			
_	Testable items	GL Numeric 7; O			
Applicability	7	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_008			
Initial condit	ion	The manager under test and the simulated agent are in the standby state.			
		1. The simulated agent is configured with a Glucosemeter profile (device specialization);			
Test procedure		 The simulated agent is configured with a Glucosemeter profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Glucose measurement context (0x2A34) Field: Flags Format: 8 bit Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and Extended Flags fields are not included Field: Sequence number Format: uint16 Value: Not relevant Field: Extended Flags This field is not included V. Field: Carbohydrate ID This field is not included Field: Carbohydrate ID This field is not included Field: Meal This field is not included Field: Health This field is not included Viii. Field: Exercise Duration This field is not included Field: Exercise Intensity This field is not included Xi Field: Medication ID This field is not included Xii. Field: Medication This field is not included Xiii. Field: HbA1c 			
		Format: SFLOAT			
		 Value: Not relevant The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 			
		 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. 5. Check in manager transcoder output for the HbA1c object – Handle attribute. 			
Pass/Fail criteria In step 5, the HbA1c object – Handle attribute is not present; however		In step 5, the HbA1c object – Handle attribute is not present; however, if it is present then its value is different to 0.			
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Handle attribute is not present, or if it is present then: Object: HbA1c numeric object Attribute-id: MDC_ATTR_ID_HANDLE (2337) Attribute-type: INT-U16 Attribute-value: Any value other than 0 WAN PCD-01 message			
		PCD-01 message does not include segments with a Handle attribute value.			

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-013			
TP label		Whitepaper. Glucosemeter HbA1c Object - Type Attribute			
Coverage	Spec	[Bluetooth PHDT v1.4]			
	Testable	GL Numeric 8; M			
	items				
Applicability	•	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_008			
Initial condit	ion	The manager under test and the simulated agent are in the standby state.			
Test proced	ure	 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are: 			
		 a. Glucose measurement context (0x2A34) i. Field: Flags Format: 8 bit Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and Extended Flags fields are not included ii. Field: Sequence number Format: uint16 Value: Not relevant iii. Field: Extended Flags This field is not included iv. Field: Carbohydrate ID This field is not included v. Field: Carbohydrate This field is not included vi. Field: Meal This field is not included vii. Field: Tester 			
		 This field is not included viii. Field: Health This field is not included ix. Field: Exercise Duration This field is not included x. Field: Exercise Intensity This field is not included xi. Field: Medication ID This field is not included xii. Field: Medication This field is not included xiii. Field: HbA1c Format: SFLOAT Value: Not relevant 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. 5. Check in manager transcoder output for the HbA1c object - Type attribute.			
Pass/Fail cri	teria	In step 5, the HbA1c object – Type attribute is present and its value is {MDC_PART_SCADA, MDC_CONC_HBA1C}.			
Notes		In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: HbA1c object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: • partition: MDC_PART_SCADA or 2 (dec) or 00 02 (hex) • code: MDC_CONC_HBA1C or 29148 (dec) or 71 DC (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3):			
		OBX ? NM 160220^MDC_CONC_HBA1C^MDC 1.0.0.a 5.1 262688^MDC_DIM_PERCENT^MDC R [current_date_time]			

1 12 14		TP/LP-PAN/MAN/PHDTW/GL/BV-014
TP ld TP label		Whitepaper. Glucosemeter HbA1c Object - Metric-Spec-Small Attribute
Coverage	Spec	[Bluetooth PHDT v1.4]
Ooverage	Testable	GL Numeric 8a; M
	items	GE Numeric oa, M
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
••	•	C_MAN_BLE_008
Initial condi	tion	The manager under test and the simulated agent are in the standby state.
Test procedure 1.		measurement ready to be sent and it is in the advertising state (it is discoverable).
		 Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and Extended Flags fields are not included ii. Field: Sequence number Format: uint16 Value: Not relevant iii. Field: Extended Flags This field is not included iv. Field: Carbohydrate ID This field is not included v. Field: Carbohydrate This field is not included vi. Field: Meal This field is not included viii. Field: Tester This field is not included viii. Field: Health This field is not included ix. Field: Exercise Duration This field is not included x. Field: Exercise Intensity This field is not included xi. Field: Medication ID This field is not included xii. Field: Medication This field is not included xiii. Field: Medication This field is not included xiii. Field: Medication This field is not included xiii. Field: HebA1c
Pass/Fail cr	iteria	 Value: Not relevant The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. Check in manager transcoder output for the HbA1c numeric object – Metric-Spec-Small attribute. In step 5, the HbA1c numeric object – Metric-Spec-Small attribute is present and its value is {0xF048} (mss-avail-intermittent mss-avail-stored-data mss-upd-aperiodic mss-msmt-
		aperiodic mss-acc-agent-initiated mss-cat-manual).
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Spec-Small attribute is present: Object: HbA1c numeric object Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630) Attribute-type: BITS-16 Attribute-value: F0 48 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9), mss-cat-manual(12) set to TRUE and remaining BITS set to FALSE b) WAN PCD-01 message PCD-01 message does not include segments with a Metric-Spec-Small attribute value.

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-015			
TP label		Whitepaper. Glucosemeter HbA1c Object - Unit-Code Attribute			
Coverage	Spec	[Bluetooth PHDT v1.4]			
Ooverage	Testable	GL Numeric 9; M			
	items	SE Numerio 5, W			
Applicability	,	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND			
		C_MAN_BLE_008			
Initial condit	ion	The manager under test and the simulated agent are in the standby state.			
Test proced	ure	1. The simulated agent is configured with a Glucose profile (device specialization); it has a			
		measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this			
		test case is:			
		a. Glucose measurement context (0x2A34)			
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated			
		 agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test requests the 			
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point			
		(RACP) and the simulated agent sends a Glucose measurement followed by the Glucose			
		measurement context to the manager under test. The measurement of interest for this test case			
		is:			
		a. Glucose measurement context (0x2A34) i. Field: Flags			
		• Format: 8 bit			
		 Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, 			
		Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity,			
		Medication ID, Medication Value and Extended Flags fields are not included ii. Field: Sequence number			
		Format: uint16			
		Value: Not relevant			
		iii. Field: Extended Flags			
		This field is not included			
		iv. Field: Carbohydrate ID			
		This field is not included V. Field: Carbohydrate			
		This field is not included			
		vi. Field: Meal			
		This field is not included			
		vii. Field: Tester • This field is not included			
		viii. Field: Health			
		This field is not included			
		ix. Field: Exercise Duration			
		This field is not included Field Eversing Intensity			
		x. Field: Exercise Intensity This field is not included			
		xi. Field: Medication ID			
		This field is not included			
		xii. Field: Medication			
		This field is not included xiii. Field: HbA1c			
		Format: SFLOAT			
		Value: Not relevant			
		5. Check in manager transcoder output for the HbA1c object – Unit-Code attribute.			
Pass/Fail cri	teria	In step 5, the HbA1c object – Unit-Code attribute is present and its value is			
Notes		MDC_DIM_PERCENT.			
Notes		In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes			
		Unit-Code attribute is present:			
		Object: HbA1c object			
		Attribute-id: MDC_ATTR_UNIT_CODE (2454)			
		□ Attribute-type: INT-U16			
		☐ Attribute-value: MDC_DIM_PERCENT or 544 (dec) or 02 20 (hex)			
		b) WAN PCD-01 message			
		PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-			
		6):			
		OBX ? NM 160220^MDC_CONC_HBA1C^MDC 1.0.0.a 5.1			
		262688^MDC_DIM_PERCENT^MDC R [current_date_time]			

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-016				
TP label		Whitepaper. Glucosemeter HbA1c Object - Absolute-Time-Stamp Attribute				
Coverage	Spec	[Bluetooth PHDT v1.4]				
-	Testable	GL Numeric 10; M	Date-Time Conv 2; M	Date-Time Conv 3; M		
items		Date-Time Conv 4; M	Date-Time Conv 5; M			
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_008				
Initial condi	tion	The manager under test and the	ne simulated agent are in the	standby state.		
Test procedure		The simulated agent is co a measurement ready to be	nfigured with a Glucose profil be sent and it is in the advertis	e (device specialization); it has sing state (it is discoverable).		
		interest for this test case a		ristics. The characteristics of		
		a. Glucose measuremer	,			
		b. Glucose measuremer				
			nitiates a discovery process (s rts a pairing process with the	scanning state). It discovers the simulated agent (initiating		
		requests the simulated ag Access Control Point (RA	CP) and the simulated agent in neasurement context to the m	vriting an operation in Record sends a Glucose measurement		
		a. Glucose measuremer	nt (0x2A18)			
		i. Field: Flags				
		Format: 8 b				
		Type and S	ample Location and Time Off	e concentration in units of kg/L set fields are included. Sensor and Context Information follow		
		ii. Field: Sequenc	e number			
		Format: uin	t16			
		Value: Not i	relevant			
		iii. Field: Base Tim	ne			
		Format: Da	te and Time			
		Value: Augi	ust 2nd, 2012, 10:59:27			
		iv. Field: Time Offs				
		Format: single-				
		Value: 120	-			
			Concentration - units of kg/L			
		Format: SF	•			
		Value: Not in the second				
			Concentration - units of mol/L			
			not included	•		
		vii. Field: Type	not included			
		7.	not included			
		This field is				
		viii. Field: Sample L				
			not included			
		ix. Field: Sensor S				
		This field is				
		b. Glucose measuremer	nt context (0x2A34)			
		i. Field: Flags				
		Format: 8 b				
		Carbohydra and Exercis		field is included and ester-Health, Exercise Duration edication Value and Extended		

I	
	ii. Field: Sequence number
	Format: uint16
	Value: Not relevant
	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	xi. Field: Medication ID
	This field is not included
	xii. Field: Medication
	This field is not included
	xiii. Field: HbA1c
	Format: SFLOAT
	Value: Not relevant
	 Check in manager transcoder output for the HbA1c object – Absolute-Time-Stamp attribute.
Pass/Fail criteria	In step 5, the HbA1c object – Absolute-Time-Stamp attribute is present, its value matches with the Time Stamp field in conjunction with the Time Offset field of the Glucose measurement characteristic and the fraction of seconds is set to 0.
Notes	Possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Absolute-Time-Stamp attribute is present:
	☐ Object: HbA1c object
	☐ Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448)
	Attribute-type: SEQUENCE {century (INT-U8), year (INT-U8), month (INT-U8), day (INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)} (BCD encoding)
	□ Attribute-value:
	 century: 20 (hex) or 32 (dec)
	 year: 12 (hex) or 18 (dec)
	 month: 08 (hex) or 8 (dec)
	 day: 02 (hex) or 2 (dec)
	 hour: 12 (hex) or 18 (dec)
	• minute: 59 (hex) or 89 (dec)
	• second: 27 (hex) or 39 (dec)
	sec-fractions: 00 (hex) or 0 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value (check OBX-14):
	OBX ? NM 160220^MDC_CONC_HBA1C^MDC 1.0.0.a 5.1 262688^MDC_DIM_PERCENT^MDC R 20120802125927+0000

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-017			
TP label		Whitepaper. Glucosemeter HbA1c Object - Basic-Nu-Observed-Value Attribute 1			
	Spec	[Bluetooth PHDT v1.4]			
	Testable	GL Numeric 11; M Short Float Type 1; C			
	items	GENERAL SALVIPPON, G			
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND			
111		C_MAN_BLE_008			
Initial condition	on	The manager under test and the simulated agent are in the standby state.			
Test procedu	re	The simulated agent is configured with a Glucose profile (device specialization); it has a			
-		measurement ready to be sent and it is in the advertising state (it is discoverable).			
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this			
		test case is: a. Glucose measurement context (0x2A34)			
		The manager under test initiates a discovery process (scanning state). It discovers the simulated			
		agent and it starts a pairing process with the simulated agent (initiating state).			
		4. When the pairing has been completed (connection state), the manager under test requests the			
		simulated agent to report stored records writing an operation in Record Access Control Point			
		(RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case			
		is:			
		a. Glucose measurement context (0x2A34)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, 			
		Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and Extended Flags fields are not included			
		ii. Field: Sequence number			
		• Format: uint16			
		Value: Not relevant			
		iii. Field: Extended Flags			
		This field is not included			
		iv. Field: Carbohydrate ID			
		This field is not included V. Field: Carbohydrate			
		This field is not included			
		vi. Field: Meal			
		This field is not included			
		vii. Field: Tester			
		This field is not included This field is not included			
		viii. Field: Health This field is not included			
		ix. Field: Exercise Duration			
		This field is not included			
		x. Field: Exercise Intensity			
		This field is not included			
		xi. Field: Medication ID			
		This field is not included xii. Field: Medication			
		This field is not included			
		xiii. Field: HbA1c			
		Format: SFLOAT			
		• Value: 5.1 %			
· · ·		5. Check in manager transcoder output for the HbA1c object– Basic-Nu-Observed-Value attribute.			
Pass/Fail crite	eria	In step 5, the HbA1c object – Basic-Nu-Observed-Value attribute is present and its value			
Notes		matches with the HbA1c Value field of Glucose measurement context characteristic: 5.1 %.			
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes			
		a) IEEE 11073 Objects and Attributes Basic-Nu-Observed-Value attribute is present:			
		Object: HbA1c object			
		Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)			
		Attribute-type: SFLOAT			
		Attribute-value: F0 33 (hex) or E1 FE (hex) or 5.1 (dec)			
		b) WAN PCD-01 message			
		PCD-01 message includes a segment like this with a Basic-Nu-Observed-Value attribute			
		value (check OBX-5):			
		OBX ? NM 160220^MDC_CONC_HBA1C^MDC 1.0.0.a 5.1			
		262688^MDC_DIM_PERCENT^MDC R [current_date_time]			

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-018			
TP label		Whitepaper. Glucosemeter HbA1c Object - Basic-Nu-Observed-Value Attribute 2			
Coverage	Spec	[Bluetooth PHDT v1.4]			
Coverage	Testable items	GL Numeric 11; M Short Float Type 1; C Short Float Type 2; M			
Applicability	•	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_008			
Initial condit	ion	The manager under test and the simulated agent are in the standby state.			
Test proced	ure	The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).			
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:			
		a. Glucose measurement context (0x2A34)			
		3. The manager under test initiates a discovery process (scanning state). It discovers simulated agent and it starts a pairing process with the simulated agent (initiating state).	the		
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurem followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case is:			
		a. Glucose measurement context (0x2A34)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Durat and Exercise Intensity, Medication ID, Medication Value and Extended Flags fields are not included 			
		ii. Field: Sequence number			
		Format: uint16			
		Value: Not relevant			
		iii. Field: Extended Flags			
		This field is not included			
		iv. Field: Carbohydrate ID			
		This field is not included			
		v. Field: Carbohydrate			
		This field is not included			
		vi. Field: Meal			
		This field is not included			
		vii. Field: Tester			
		This field is not included			
		viii. Field: Health			
		This field is not included			
		ix. Field: Exercise Duration			
		This field is not included			
		x. Field: Exercise Intensity			
		This field is not included			

- xi. Field: Medication ID
 - · This field is not included
- xii. Field: Medication
 - · This field is not included
- xiii. Field: HbA1c
 - Format: SFLOAT
 - Value: 5.1 %
- Check in manager transcoder output for the HbA1c object Basic-Nu-Observed-Value attribute.
- 6. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case is:
 - Glucose measurement context (0x2A34)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and Extended Flags fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - Value: Not relevant
 - iii. Field: Extended Flags
 - · This field is not included
 - iv. Field: Carbohydrate ID
 - · This field is not included
 - v. Field: Carbohydrate
 - · This field is not included
 - vi. Field: Meal
 - · This field is not included
 - vii. Field: Tester
 - · This field is not included
 - viii. Field: Health
 - This field is not included
 - ix. Field: Exercise Duration
 - This field is not included
 - x. Field: Exercise Intensity
 - · This field is not included
 - xi. Field: Medication ID
 - · This field is not included
 - xii. Field: Medication
 - · This field is not included
 - xiii. Field: HbA1c
 - Format: SFLOAT
 - Value: 07 FF(hex). Special value: NaN

- Check in manager transcoder output for the HbA1c object Basic-Nu-Observed-Value attribute.
- 8. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case is:
 - a. Glucose measurement context (0x2A34)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and Extended Flags fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - · Value: Not relevant
 - iii. Field: Extended Flags
 - · This field is not included
 - iv. Field: Carbohydrate ID
 - · This field is not included
 - v. Field: Carbohydrate
 - · This field is not included
 - vi. Field: Meal
 - This field is not included
 - vii. Field: Tester
 - This field is not included
 - viii. Field: Health
 - · This field is not included
 - ix. Field: Exercise Duration
 - · This field is not included
 - x. Field: Exercise Intensity
 - · This field is not included
 - xi. Field: Medication ID
 - This field is not included
 - xii. Field: Medication
 - This field is not included
 - xiii. Field: HbA1c
 - Format: SFLOAT
 - Value: 00 80 (hex). Special value: NRes
- Check in manager transcoder output for the HbA1c object Basic-Nu-Observed-Value attribute.
- 10. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case is:
 - a. Glucose measurement context (0x2A34)
 - i. Field: Flags

- Format: 8 bit
- Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and Extended Flags fields are not included
- ii. Field: Sequence number
 - Format: uint16
 - Value: Not relevant
- iii. Field: Extended Flags
 - · This field is not included
- iv. Field: Carbohydrate ID
 - · This field is not included
- v. Field: Carbohydrate
 - This field is not included
- vi. Field: Meal
 - This field is not included
- vii. Field: Tester
 - · This field is not included
- viii. Field: Health
 - · This field is not included
- ix. Field: Exercise Duration
 - · This field is not included
- x. Field: Exercise Intensity
 - This field is not included
- xi. Field: Medication ID
 - · This field is not included
- xii. Field: Medication
 - · This field is not included
- xiii. Field: HbA1c
 - Format: SFLOAT
 - Value: 07 FE (hex). Special value: +INFINITY
- Check in manager transcoder output for the HbA1c object Basic-Nu-Observed-Value attribute.
- 12. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case is:
 - a. Glucose measurement context (0x2A34)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and Extended Flags fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - Value: Not relevant

	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	xi. Field: Medication ID
	This field is not included
	xii. Field: Medication
	This field is not included
	xiii. Field: HbA1c
	Format: SFLOAT
	Value: 08 02 (hex). Special value: -INFINITY
	13. Check in manager transcoder output for the HbA1c object – Basic-Nu-Observed-Value attribute.
Pass/Fail criteria	In step 5, the HbA1c object – Basic-Nu-Observed-Value attribute is present and its value is 5.1 %.
	In step 7, the HbA1c object – Basic -Nu-Observed-Value attribute is present and its value is 0x07FF.
	In step 9, the HbA1c object – Basic -Nu-Observed-Value attribute is present and its value is 0x0800.
	In step 11, the HbA1c object – Basic -Nu-Observed-Value attribute is present and its value is 0x07FE.
	In step 13, the HbA1c object – Basic -Nu-Observed-Value attribute is present and its value is 0x0802.
Notes	In step 5, possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Basic-Nu-Observed-Value attribute is present:
	□ Object: HbA1c object
	☐ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
	□ Attribute-type: SFLOAT
	☐ Attribute-value: F0 33 (hex) or E1 FE (hex) or 5.1 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with a Basic-Nu-Observed-Value attribute
	value (check OBX-5):

OBX|?|NM|160220^MDC_CONC_HBA1C^MDC |1.0.0.a|5.1| 262688^MDC_DIM_PERCENT^MDC|||||R|||[current_date_time]

In step 7, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Basic -Nu-Observed-Value attribute is present:

- □ Object: HbA1c object
- □ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
- ☐ Attribute-type: SFLOAT
- Attribute-value: 07 FF(hex) or NaN (note that is not allowed a decimal value)

b) WAN PCD-01 message

PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute value (160220^MDC_CONC_HBA1C^MDC) because it has a special value and these values are not included in the PCD-01 message.

In step 9, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Basic -Nu-Observed-Value attribute is present:

- □ Object: HbA1c object
- □ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
- □ Attribute-type: SFLOAT
- Attribute-value: 08 00 (hex) or NRes (note that a decimal value is not allowed)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute value (160220^MDC_CONC_HBA1C^MDC) because it has a special value and these values are not included in the PCD-01 message.

In step 11, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Basic -Nu-Observed-Value attribute is present:

- Object: HbA1c object
- □ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
- □ Attribute-type: SFLOAT
- Attribute-value: 07 FE (hex) or +INFINITY (note that a decimal value is not allowed)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute value (160220^MDC_CONC_HBA1C^MDC) because it has a special value and these values are not included in the PCD-01 message.

In step 13, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Basic -Nu-Observed-Value attribute is present:

- □ Object: HbA1c object
- □ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
- □ Attribute-type: SFLOAT
- ☐ Attribute-value: 08 02 (hex) or -INFINITY (note that a decimal value is not allowed)
- b) WAN PCD-01 message

PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute value (160220^MDC_CONC_HBA1C^MDC) because it has a special value and these values are not included in the PCD-01 message.

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-019				
TP label		Whitepaper. Glucosemeter HbA1c value				
Coverage	Spec	[Bluetooth PH				
	Testable	GL Numeric 1	-	GL Numeric 11; M	Short Float Type 1; C	
	items	Date-Time Co		<u> </u>	onor road type ty	
Applicability		C MAN BLE 000 AND C MAN BLE 007 AND C MAN BLE 008				
Initial condit				ne simulated agent are in the st	_ _	
Test procedu	ıre	1. The simul	ated agent is co	nfigured with a Glucose profile be sent and it is in the advertising	(device specialization); it has	
		2. The simul	•	ements several BLE characteris	,	
		a. Glucose measurement (0x2A18)				
				nt context (0x2A34)		
				nitiates a discovery process (sc	anning state). It discovers the	
				arts a pairing process with the si		
		requests of Access Confollowed by	the simulated agontrol Point (RA by the Glucose n	n completed (connection state) gent to report stored records wri CP) and the simulated agent seneasurement context to the master that the context to the context that the context to t	iting an operation in Record ends a Glucose measurement	
		a. Glucose measurement (0x2A18)				
		i. Field: Flags				
		Format: 8 bit				
			Type and S	10010 (MSB → LSB). Glucose (cample Location fields are include tus Annunciation field are not in follows	ded, Time Offset fields and	
		ii.	Field: Sequence	e number		
			Format: uin	t16		
			Value: Not	relevant		
		iii.	Field: Base Tin	ne		
			Format: Da	te and Time		
			Value: Aug	ust 2nd, 2012, 11:08:25		
		iv.	Field: Time Off	set		
			This field is	not included		
		V.	Field: Glucose	Concentration - units of kg/L		
			Format: SF	LOAT		
			Value: Not	relevant		
		vi.	Field: Glucose	Concentration - units of mol/L		
			This field is	not included		
		vii.	Field: Type			
			Format: nib	ble		
			Value: Not	relevant		
		viii.	Field: Sample I	Location		
			Format: nib	ble		
			Value: Not	relevant		

	ix. Field: Sensor Status Annunciation
	This field is not included
	b. Glucose measurement context (0x2A34)
	i. Field: Flags
	Format: 8 bit
	 Value: 0100 0000 (MSB → LSB). HbA1c field is included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and Extended Flags fields are not included
	ii. Field: Sequence number
	Format: uint16
	Value: Not relevant
	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	xi. Field: Medication ID
	This field is not included
	xii. Field: Medication
	This field is not included
	xiii. Field: HbA1c
	Format: SFLOAT
	• Value: 5.1 %
	 Check that the manager accepts the measurement and decodes its value properly (HbA1c value, HbA1c units and base time).
Pass/Fail criteria	In step 5, the manager under test shows the following HbA1c 5.1 % with the time stamp '2012-08-02 11:08:25'.
Notes	

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-020
TP label		Whitepaper. Glucosemeter Context Exercise Object - Handle Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
	Testable items	GL Numeric 12; O
Applicability		C MAN BLE 000 AND C MAN BLE 002 AND C MAN BLE 007 AND
		C_MAN_BLE_009
Initial condi		The manager under test and the simulated agent are in the standby state.
Test proced	ure	1. The simulated agent is configured with a Glucosemeter profile (device specialization);
Test proced	ure	it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Glucose measurement context (0x2A34) i. Field: Flags • Format: 8 bit • Value: 0000 1000 (MSB → LSB). Exercise Duration And Exercise Intensity fields are included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Medication ID, Medication Value and HbA1c fields are not included ii. Field: Sequence number • Format: uint16 • Value: Not relevant iii. Field: Extended Flags • This field is not included iv. Field: Carbohydrate ID • This field is not included v. Field: Carbohydrate • This field is not included vii. Field: Meal • This field is not included viii. Field: Tester • This field is not included viii. Field: Exercise Duration • Format: uint16 • Value: Not relevant x. Field: Exercise Intensity • Format: uint8 • Value: Not relevant xi. Field: Medication ID • This field is not included xiii. Field: Medication ID • This field is not included xiiii. Field: HbA1c • This field is not included 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating)
		state). 4. When the pairing has been completed (connection state), the manager under test
		requests the simulated agent to report stored records writing an operation in Record
		Access Control Point (RACP) and the simulated agent sends a Glucose measurement
		followed by the Glucose measurement context to the manager under test. 5. Check in manager transcoder output for the Context exercise object – Handle attribute.
Pass/Fail criteria		In step 5, the Context exercise object – Handle attribute is not present; however, if it is present then its value is different to 0.
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Handle attribute is not present, or if it is present then:
		 Object: Context exercise numeric object Attribute-id: MDC_ATTR_ID_HANDLE (2337)
		Attribute-id: MDC_ATTR_ID_HANDLE (2337) Attribute-type: INT-U16
		☐ Attribute-value: Any value other than 0
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Handle attribute value.

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-021
TP label		Whitepaper. Glucosemeter Context Exercise Object - Type Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
_	Testable	GL Numeric 13; M
	items	
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
		C_MAN_BLE_009
Initial condi		The manager under test and the simulated agent are in the standby state.
Test proced	ure	 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are:
		 a. Glucose measurement context (0x2A34) i. Field: Flags • Format: 8 bit • Value: 0000 1000 (MSB → LSB). Exercise Duration And Exercise Intensity fields are included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Medication ID, Medication Value and HbA1c fields are not included
		ii. Field: Sequence number • Format: uint16 • Value: Not relevant iii. Field: Extended Flags • This field is not included iv. Field: Carbohydrate ID • This field is not included v. Field: Carbohydrate • This field is not included vi. Field: Meal • This field is not included vii. Field: Tester
		 This field is not included viii. Field: Health This field is not included ix. Field: Exercise Duration
		 Format: uint16 Value: Not relevant x. Field: Exercise Intensity Format: uint8 Value: Not relevant xi. Field: Medication ID This field is not included xii. Field: Medication
		 This field is not included xiii. Field: HbA1c This field is not included The manager under test initiates a discovery process (scanning state). It discovers the simulated
		 agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. 5. Check in manager transcoder output for the Context exercise object – Type attribute.
Pass/Fail cr	iteria	In step 5, the Context exercise object – Type attribute is present and its value is { MDC_PART_PHD_DM MDC_CTXT_GLU_EXERCISE}.
Notes		In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Context exercise object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
		Attribute-value: • partition: MDC_PART_PHD_DM or 128 (dec) or 00 80 (hex) • code: MDC_CTXT_GLU_EXERCISE or 29152 (dec) or 71 E0 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 8417760^MDC_CTXT_GLU_EXERCISE^MDC 1.0.0.a 33 262688^MDC_DIM_PERCENT^MDC R [current_date_time]

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-022
TP label		Whitepaper. Glucosemeter Context Exercise Object - Metric-Spec-Small Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
0010190	Testable	GL Numeric 13a; M
	items	
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
		C_MAN_BLE_009
Initial condit	ion	The manager under test and the simulated agent are in the standby state.
Test proced	ure	1. The simulated agent is configured with a Glucose profile (device specialization); it has a
		measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:
		a. Glucose measurement context (0x2A34)
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 1000 (MSB → LSB). Exercise Duration And Exercise Intensity fields
		are included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Medication ID, Medication Value and HbA1c fields are not included
		ii. Field: Sequence number
		Format: uint16
		Value: Not relevant
		iii. Field: Extended Flags
		This field is not included
		iv. Field: Carbohydrate ID This field is not included
		v. Field: Carbohydrate
		This field is not included
		vi. Field: Meal
		• This field is not included
		vii. Field: Tester • This field is not included
		viii. Field: Health
		This field is not included
		ix. Field: Exercise Duration
		Format: uint16
		Value: Not relevant
		x. Field: Exercise Intensity • Format: uint8
		Value: Not relevant
		xi. Field: Medication ID
		This field is not included
		xii. Field: Medication
		This field is not included xiii. Field: HbA1c
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated
		agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the
		simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose
		measurement context to the manager under test.
		5. Check in manager transcoder output for the Context exercise numeric object – Metric-Spec-Small
Pass/Fail cri	toria	attribute.
rass/raii Cfi	lei id	In step 5, the Context exercise numeric object – Metric-Spec-Small attribute is present and its value is {0xF048} (mss-avail-intermittent mss-avail-stored-data mss-upd-aperiodic
		mss-msmt-aperiodic mss-acc-agent-initiated mss-cat-manual).
Notes		Possible values in typical points of observation after transcoder output are:
- 1		a) IEEE 11073 Objects and Attributes
		Metric-Spec-Small attribute is present:
		□ Object: Context exercise numeric object
		□ Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)
		□ Attribute-type: BITS-16
		Attribute-value: F0 48 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-
		data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9),
		mss-cat-manual(12) set to TRUE and remaining BITS set to FALSE
		b) WAN PCD-01 message PCD-01 message does not include segments with a Metric-Spec-Small attribute value
		PCD-01 message does not include segments with a Metric-Spec-Small attribute value.

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-023
TP label		Whitepaper. Glucosemeter Context Exercise Object - Unit-Code Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
	Testable	GL Numeric 14; M
	items	
Applicability		
Initial condit	ion	
Applicability Initial condit Test procedu	ion	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_009 The manager under test and the simulated agent are in the standby state. 1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Glucose measurement context (0x2A34) 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case is: a. Glucose measurement context (0x2A34) i. Field: Flags • Format: 8 bit • Value: 0000 1000 (MSB → LSB). Exercise Duration And Exercise Intensity fields are included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Medication ID, Medication Value and HbA1c fields are not included ii. Field: Sequence number • Format: unint6 • Value: Not relevant iii. Field: Extended Flags • This field is not included vi. Field: Carbohydrate • This field is not included vii. Field: Meal • This field is not included viii. Field: Exercise Duration • Format: uint16 • Value: Not relevant x. Field: Exercise Intensity • Format: uint18 • Value: Not relevant x. Field: Exercise Intensity • Format: uint8 • Value: Not relevant xi. Field: Medication ID • This field is not included xiii. Field: Medication • This field is not included xiii. Field: Medication • This field is not included xiii. Field: Medication ID • This field is not included
		This field is not included
		xiii. Field: HbA1c • This field is not included
		5. Check in manager transcoder output for the Context exercise object – Unit-Code attribute.
Pass/Fail criteria		In step 5, the Context exercise object – Unit-Code attribute is present and its value is MDC_DIM_PERCENT.
Notes		In step 5, possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Unit-Code attribute is present: Object: Context exercise object
		Attribute-id: MDC_ATTR_UNIT_CODE (2454)
		□ Attribute-type: INT-U16
		☐ Attribute-value: MDC_DIM_PERCENT or 544 (dec) or 02 20 (hex)
		b) WAN PCD-01 message
		PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-
		C).
		6): OBX ? NM 8417760^MDC_CTXT_GLU_EXERCISE^MDC 1.0.0.a 33

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-024				
TP label		Whitepaper. Glucosemeter Context Exercise Object - Absolute-Time-Stamp Attribute				
Coverage	Spec	[Bluetooth PHDT v1.4]				
_	Testable	GL Numeric 15; M Date-Time Conv 2; M Date-Time Conv 3; M				
	items	Date-Time Conv 4; M Date-Time Conv 5; M				
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_009				
Initial condit	tion	The manager under test and the simulated agent are in the standby state.				
Test proced	ure	1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).				
		2. The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are:				
		a. Glucose measurement (0x2A18)				
		b. Glucose measurement context (0x2A34)				
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 				
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case are:				
		a. Glucose measurement (0x2A18)				
		i. Field: Flags				
		Format: 8 bit				
		 Value: 00010011 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location and Time Offset fields are included. Sensor Status Annunciation field is not included and Context Information follows 				
		ii. Field: Sequence number				
		Format: uint16				
		Value: Not relevant				
		iii. Field: Base Time				
		Format: Date and Time				
		 Value: August 2nd, 2012, 10:59:27 				
		iv. Field: Time Offset				
		Format: sint16				
		Value: 120 minutes				
		v. Field: Glucose Concentration - units of kg/L				
		Format: SFLOAT				
		Value: Not relevant				
		vi. Field: Glucose Concentration - units of mol/L				
		This field is not included				
		vii. Field: Type				
		This field is not included				
		viii. Field: Sample Location				
		This field is not included				
		ix. Field: Sensor Status Annunciation				
		This field is not included				
		b. Glucose measurement context (0x2A34)				
		i. Field: Flags				
		Format: 8 bit				
		 Value: 0000 1000 (MSB → LSB). Exercise Duration And Exercise Intensity fields are included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Medication ID, Medication Value, Hb1Ac, and Extended Flags fields are not included 				

T	
	ii. Field: Sequence number
	Format: uint16
	Value: Not relevant
	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	Format: uint16
	Value: Not relevant
	x. Field: Exercise Intensity
	• Format: uint8
	Value: Not relevant
	xi. Field: Medication ID
	This field is not included
	xii. Field: Medication
	This field is not included
	xiii. Field: HbA1c
	This field is not included
	Check in manager transcoder output for the Context exercise object – Absolute-Time- Stamp attribute.
Pass/Fail criteria	In step 6, the Context exercise object – Absolute-Time-Stamp attribute is present, its value matches with the Time Stamp field in conjunction with the Time Offset field of the Glucose measurement characteristic and the fraction of seconds is set to 0.
Notes	Possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Absolute-Time-Stamp attribute is present:
	□ Object: Context exercise object
	□ Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448)
	Attribute-type: SEQUENCE {century (INT-U8), year (INT-U8), month (INT-U8), day (INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)} (BCD encoding)
	□ Attribute-value:
	 century: 20 (hex) or 32 (dec)
	• year: 12 (hex) or 18 (dec)
	month: 08 (hex) or 8 (dec)
	• day: 02 (hex) or 2 (dec)
	• hour: 12 (hex) or 18 (dec)
	• minute: 59 (hex) or 89 (dec)
	• second: 27 (hex) or 39 (dec)
	sec-fractions: 00 (hex) or 0 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value (check OBX-14):
	OBX ? NM 8417760^MDC_CTXT_GLU_EXERCISE^MDC 1.0.0.a 33 262688^MDC_DIM_PERCENT^MDC R 20120802125927+0000

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-025
TP label		Whitepaper. Glucosemeter Context Exercise Object - Measure-Active-Period Attribute
Coverage	Spec	[Bluetooth PHDT v1.4]
	Testable	GL Numeric 16; M
Applicability	items	C MANURIE 000 AND C MANURIE 002 AND C MANURIE 007 AND
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
Initial condi	tion	C_MAN_BLE_009
		The manager under test and the simulated agent are in the standby state.
Test proced	ure	 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Glucose measurement context (0x2A34) The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement of Glucose measurement context to the manager under test. The measurement of interest for this test case are:
		 Check in manager transcoder output for the Context exercise object – Measure-Active-Period attribute.
Pass/Fail criteria		In step 5, the Context exercise object – Measure-Active-Period attribute is present and its value is 666 seconds.
Notes		In step 5, possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Measure-Active-Period attribute is present:
		Object: Context exercise object Attribute-id: MDC ATTR TIME RD MSMT ACTIVE (2649)
		□ Attribute-id: MDC_ATTR_TIME_PD_MSMT_ACTIVE (2649) □ Attribute-type: FLOAT
		Attribute-type: FLOAT Attribute-type: FLOAT
		b) WAN PCD-01 message
		PCD-01 message includes two segments like these, one of them with a Measure-Active-Period attribute value (check OBX-5 in MDC_ATTR_TIME_PD_MSMT_ACTIVE segment): OBX ? NM 8417760^MDC_CTXT_GLU_EXERCISE^MDC 1.0.0.a 33
		262688^MDC_DIM_PERCENT^MDC R [current_date_time] OBX ? NM 68185^MDC_ATTR_TIME_PD_MSMT_ACTIVE^MDC 1.0.0.a.b 666.0 264320^MDC_DIM_SEC^MDC R [current_date_time]

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-026			
TP label		Whitepaper. Glucosemeter Context Exercise Object - Basic-Nu-Observed-Value Attribute			
Coverage Spec		[Bluetooth PHDT v1.4]			
	Testable	GL Numeric 17; M Short Float Type 1; C			
items					
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_009			
Initial condit	ion	The manager under test and the simulated agent are in the standby state.			
Test proced	ure	1. The simulated agent is configured with a Glucose profile (device specialization); it has a			
		 measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Glucose measurement context (0x2A34) The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 			
		4. When the pairing has been completed (connection state), the simulated agent sends the measurement to the manager under test with the following value: a. Glucose measurement context (0x2A34) i. Field: Flags • Format: 8 bit			
		 Value: 0000 1000 (MSB → LSB). Exercise Duration And Exercise Intensity fields are included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Medication ID, Medication Value and HbA1c fields are not included ii. Field: Sequence number Format: uint16 			
		Value: Not relevant iii. Field: Extended Flags			
		This field is not included			
		iv. Field: Carbohydrate ID			
		This field is not included V. Field: Carbohydrate			
		This field is not included			
		vi. Field: Meal			
		This field is not included			
		vii. Field: Tester			
		This field is not included viii. Field: Health			
		This field is not included			
		ix. Field: Exercise Duration			
		Format: uint16			
		Value: Not relevant			
		x. Field: Exercise Intensity • Format: uint8			
		Format: uint8Value: 33%			
		xi. Field: Medication ID			
		This field is not included			
		xii. Field: Medication			
		This field is not included xiii. Field: HbA1c			
		This field is not included			
		Check in manager transcoder output for the Context exercise object Basic-Nu-Observed-Value attribute.			
Pass/Fail criteria		In step 5, the Context exercise object – Basic-Nu-Observed-Value attribute is present and its value matches with the Exercise Intensity Value field of Glucose measurement context characteristic: 33%.			
Notes		Possible values in typical points of observation after transcoder output are:			
		a) IEEE 11073 Objects and Attributes			
		Basic-Nu-Observed-Value attribute is present:			
		Object: Context exercise object			
		Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)			
		☐ Attribute-type: SFLOAT ☐ Attribute-value: 33 (dec) or 00000021 (bey) [Note that exponent value for this			
		Attribute-value: 33 (dec) or 00000021 (hex) [Note that exponent value for this FLOAT value must be 0]			
		b) WAN PCD-01 message			
		PCD-01 message includes a segment like this with a Basic-Nu-Observed-Value attribute			
		value (check OBX-5):			
		OBX ? NM 8417760^MDC_CTXT_GLU_EXERCISE^MDC 1.0.0.a 33.0			
		262688^MDC_DIM_PERCENT^MDC R [current_date_time]			

TP ld		TP/LP-PAN/MA	N/PHDTW/GL/	/BV-027	
TP label		Whitepaper. Glucosemeter Context Exercise value			
Coverage	Spec		[Bluetooth PHDT v1.4]		
	Testable	GL Numeric 15	•	GL Numeric 17; M	Short Float Type 1; C
	items	Date-Time Cor			,
Applicability	,	C_MAN_BLE_	000 AND AND	C_MAN_BLE_007 AND C_MAN	N_BLE_009
Initial condit				ne simulated agent are in the st	
Test procedu	ure			nfigured with a Glucose profile be sent and it is in the advertisi	
			ated agent imple this test case i	ements several BLE characteris s:	stics. The characteristic of
		a. Gluco	se measureme	nt (0x2A18)	
		b. Gluco	se measureme	nt context (0x2A34)	
				nitiates a discovery process (sc arts a pairing process with the si	
		requests to Access Co followed b	ne simulated agontrol Point (RA y the Glucose n	n completed (connection state) gent to report stored records wri CP) and the simulated agent seneasurement context to the master that the context to the master that the context to the master than the context to the context that the cont	ting an operation in Record ends a Glucose measurement
		a. Glucose measurement (0x2A18)			
		i. Field: Flags			
			• Format: 8 b	pit	
			Type and S	10010 (MSB → LSB). Glucose (cample Location fields are include tus Annunciation field are not in follows	ded, Time Offset fields and
		ii.	Field: Sequenc	e number	
			Format: uin	t16	
			Value: Not	relevant	
		iii.	Field: Base Tin	ne	
			Format: Da	te and Time	
			Value: Aug	ust 2nd, 2012, 11:08:25	
		iv.	Field: Time Off	set	
			This field is	not included	
		V.	Field: Glucose	Concentration - units of kg/L	
			Format: SF	LOAT	
			Value: Not	relevant	
			Field: Glucose	Concentration - units of mol/L	
			 This field is 	not included	
		vii.	Field: Type		
			Format: nib	ble	
			• Value: Not	relevant	
		viii.	Field: Sample I	Location	
			Format: nib	ble	
			 Value: Not 	relevant	

	ix. Field: Sensor Status Annunciation
	This field is not included
	b. Glucose measurement context (0x2A34)
	i. Field: Flags
	Format: 8 bit
	Value: 0000 1000 (MSB → LSB). Exercise Duration And Exercise
	Intensity fields are included and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Medication ID, Medication Value and HbA1c fields are not included
	ii. Field: Sequence number
	Format: uint16
	Value: Not relevant
	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	Format: uint16
	Value: Not relevant
	x. Field: Exercise Intensity
	Format: uint8
	• Value: 33%
	xi. Field: Medication ID
	This field is not included
	xii. Field: Medication
	This field is not included
	xiii. Field: HbA1c
	This field is not included
	 Check that the manager accepts the measurement and decodes its value properly (Context exercise value, Context exercise units and base time).
Pass/Fail criteria	In step 5, the manager under test shows the following Context exercise 33 % with the time stamp '2012-08-02 11:08:25'.
Notes	

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-028
TP label		Whitepaper. Glucosemeter Context Medication Object - Handle Attribute
Coverage	Spec	[Bluetooth PHDT v1.4]
	Testable	GL Numeric 18; O
items		
Applicability	7	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
		C_MAN_BLE_010
Initial condit	ion	The manager under test and the simulated agent are in the standby state.
Test procedu	ure	1. The simulated agent is configured with a Glucosemeter profile (device specialization); it has a
		measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this
		test case is:
		a. Glucose measurement context (0x2A34)
		i. Field: Flags
		Format: 8 bit Value 0004 0000 (MSR > LSR) Medication ID and Medication in units of
		 Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of kilograms fields are included, and Carbohydrate ID, Carbohydrate, Meal, Tester-
		Health, Exercise Duration and Exercise Intensity and HbA1c fields are not
		included
		ii. Field: Sequence number
		• Format: uint16
		Value: Not relevant iii. Field: Extended Flags
		This field is not included
		iv. Field: Carbohydrate ID
		This field is not included
		v. Field: Carbohydrate
		This field is not included
		vi. Field: Meal This field is not included
		vii. Field: Tester
		This field is not included
		viii. Field: Health
		This field is not included
		ix. Field: Exercise Duration
		This field is not included X. Field: Exercise Intensity
		This field is not included
		xi. Field: Medication ID
		Format: uint8
		Value: Not relevant xii. Field: Medication - units of kilograms
		Format: SFLOAT
		Value: Not relevant
		xiii. Field: Medication - units of litres
		This field is not included
		xiv. Field: HbA1c
		 This field is not included The manager under test initiates a discovery process (scanning state). It discovers the simulated
		agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the
		simulated agent to report stored records writing an operation in Record Access Control Point
		(RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test.
		 Check in manager transcoder output for the Context exercise object – Handle attribute.
Pass/Fail cri	teria	In step 5, the Context medication object – Handle attribute is not present; however, if it is
		present then its value is different to 0.
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Handle attribute is not present, or if it is present then:
		Object: Context Medication numeric object
		Attribute-id: MDC_ATTR_ID_HANDLE (2337)
		☐ Attribute-type: INT-U16 ☐ Attribute-value: Any value other than 0
		Attribute-value: Any value other than 0WAN PCD-01 message
		PCD-01 message does not include segments with a Handle attribute value.
		TODEO THESSAGE GOES HOLIHOIGGE SEGMENTS WITH A HANDIE ALLIDULE VALUE.

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-029
TP label		Whitepaper. Glucosemeter Context Medication Object - Type Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
Ü	Testable	GL Numeric 19; M
	items	
Applicability	y	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_010
Initial condi	tion	The manager under test and the simulated agent are in the standby state.
Test proced		The simulated agent is configured with a Glucose profile (device specialization); it has a
rest proced	uic	measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are: a. Glucose measurement context (0x2A34)
		i. Field: Flags
		 Format: 8 bit Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of kilograms fields are included, and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity and HbA1c fields are not included
		ii. Field: Sequence number • Format: uint16
		 Value: Not relevant iii. Field: Extended Flags This field is not included
		iv. Field: Carbohydrate ID This field is not included This field is not included
		v. Field: CarbohydrateThis field is not included
		vi. Field: Meal This field is not included
		vii. Field: Tester This field is not included viii. Field: Health
		This field is not included ix. Field: Exercise Duration
		This field is not included X. Field: Exercise Intensity
		This field is not included xi. Field: Medication ID Torrect wints
		 Format: uint8 Value: Not relevant xii. Field: Medication - units of kilograms
		Format: SFLOATValue: Not relevant
		xiii. Field: Medication - units of litres This field is not included
		xiv. Field: HbA1c This field is not included
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point
		(RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test.
Pass/Fail cr	iteria	 Check in manager transcoder output for the Context medication object – Type attribute. In step 5, the Context medication object – Type attribute is present and its value is { MDC_PART_PHD_DM MDC_CTXT_MEDICATION}.
Notes		In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
		Type attribute is present: Object: Context exercise object
		☐ Attribute-id: MDC_ATTR_ID_TYPE (2351) ☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
		Attribute-type: OEQOENOE (partition (NV1-010)) Attribute-value: • partition: MDC_PART_PHD_DM or 128 (dec) or 00 80 (hex)
		code: MDC_CTXT_MEDICATION or 29188 (dec) or 72 04 (hex) WAN PCD-01 message
		PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 263890^MDC_DIM_MILLI_G^MDC R [current_date_time]

TD IA		TD// D DAN/MAN/DUDT/A//CI /DV/ 020
TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-030
TP label		Whitepaper. Glucosemeter Context Medication Object - Metric-Spec-Small Attribute
Coverage	Spec	[Bluetooth PHDT v1.4]
	Testable	GL Numeric 20; M
A m at 11 = - 1 *11*	items	O MANURIE GOO AND O MANURIE GOO AND O MANURIE GOT AND
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
Initial condition		C_MAN_BLE_010
Initial condition		The manager under test and the simulated agent are in the standby state.
Test procedure		The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		 The simulated agent implements several BLE characteristics. The characteristic of interest for this
		test case is:
		a. Glucose measurement context (0x2A34)
		i. Field: Flags
		Format: 8 bit
		Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of
		kilograms fields are included, and Carbohydrate ID, Carbohydrate, Meal, Tester- Health, Exercise Duration and Exercise Intensity and HbA1c fields are not
		included
		ii. Field: Sequence number
		Format: uint16
		Value: Not relevant
		iii. Field: Extended Flags
		This field is not included
		iv. Field: Carbohydrate ID
		This field is not included Field: Carbohydrate
		v. Field: Carbohydrate • This field is not included
		vi. Field: Meal
		This field is not included
		vii. Field: Tester
		This field is not included
		viii. Field: Health
		This field is not included
		ix. Field: Exercise Duration
		This field is not included x. Field: Exercise Intensity
		This field is not included
		xi. Field: Medication ID
		Format: uint8
		Value: Not relevant
		xii. Field: Medication - units of kilograms
		Format: SFLOAT
		Value: Not relevant Sidd Medication write of litrog
		xiii. Field: Medication - units of litres
		This field is not included xiv. Field: HbA1c
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated
		agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the
		simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose
		measurement context to the manager under test.
		5. Check in manager transcoder output for the Context Medication numeric object – Metric-Spec-
		Small attribute.
Pass/Fail cri	teria	In step 5, the Context Medication numeric object – Metric-Spec-Small attribute is present
		and its value is {0xF048} (mss-avail-intermittent mss-avail-stored-data mss-upd-aperiodic
		mss-msmt-aperiodic mss-acc-agent-initiated mss-cat-manual).
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Metric-Spec-Small attribute is present:
		□ Object: Context Medication numeric object
		□ Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)
		□ Attribute-type: BITS-16
		Attribute-value: F0 48 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-
		data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9),
		mss-cat-manual(12) set to TRUE and remaining BITS set to FALSE
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Metric-Spec-Small attribute value.

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-031
TP label		Whitepaper. Glucosemeter Context Medication Object - Metric-Id Attribute
Coverage	Spec	[Bluetooth PHDT v1.4]
	Testable items	GL Numeric 21; M
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_010
Initial condition		The manager under test and the simulated agent are in the standby state.
Test procedure		The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements accord BLE phase statistics. The characteristics of
		2. The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are:
		a. Glucose measurement context (0x2A34)
		i. Field: Flags
		Format: 8 bit
		 Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of kilograms fields are included, and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity and HbA1c fields are not included
		ii. Field: Sequence number
		Format: uint16
		Value: Not relevant
		iii. Field: Extended Flags
		This field is not included
		iv. Field: Carbohydrate ID
		This field is not included
		v. Field: Carbohydrate
		This field is not included
		vi. Field: Meal
		This field is not included
		vii. Field: Tester
		This field is not included
		viii. Field: Health
		This field is not included
		ix. Field: Exercise Duration
		This field is not included
		x. Field: Exercise Intensity
		This field is not included
		xi. Field: Medication ID
		Format: uint8
		Value: Several values are checked in this test case
		xii. Field: Medication - units of kilograms
		Format: SFLOAT
		Value: Not relevant
		xiii. Field: Medication - units of litres
		This field is not included
		xiv. Field: HbA1c
		This field is not included
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).

When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Medication ID field set to 0x01 = Rapid acting insulin) to the manager under test. Check in manager transcoder output for the Context Medication numeric object -Metric-Id attribute. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Medication ID field set to 0x02 =Short acting insulin) to the manager under test. 7. Check in manager transcoder output for the Context Medication numeric object -Metric-Id attribute. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Medication ID field set to 0x03 = Intermediate acting insulin) to the manager under test. Check in manager transcoder output for the Context Medication numeric object -Metric-Id attribute. 10. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Medication ID field set to 0x04 = Long acting insulin) to the manager under test. 11. Check in manager transcoder output for the Context Medication numeric object -Metric-Id attribute. 12. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Medication ID field set to 0x05 = Pre-mixed insulin) to the manager under test. 13. Check in manager transcoder output for the Context Medication numeric object -Metric-Id attribute. Pass/Fail criteria In step 5, the Context medication object – Metric-Id attribute is present and its value is MDC_CTXT_MEDICATION_RAPIDACTING. In step 7, the Context medication object - Metric-Id attribute is present and its value is MDC_CTXT_MEDICATION_SHORTACTING. In step 9, the Context medication object – Metric-Id attribute is present and its value is MDC_CTXT_MEDICATION_INTERMEDIATEACTING. In step 11, the Context medication object – Metric-Id attribute is present and its value is MDC_CTXT_MEDICATION_LONGACTING. In step 13, the Context medication object – Metric-Id attribute is present and its value is MDC CTXT MEDICATION PREMIX. **Notes** In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Id attribute is present: Object: Context medication object □ Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC CTXT MEDICATION RAPIDACTING or 29192 (dec) or 72 08 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-OBX|?|NM|8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC| 1.0.0.a|0.17|263890^MDC_DIM_MILLI_G^MDC|||||R||| [current_date_time] In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Id attribute is present: Object: Context medication object

Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC CTXT MEDICATION SHORTACTING or 29196 (dec) or 72 0C (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-OBX|?|NM|8417804^ MDC_CTXT_MEDICATION_SHORTACTING ^MDC| 1.0.0.a|0.18|263890^MDC_DIM_MILLI_G^MDC|||||R||| [current_date_time] In step 9, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Id attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) ☐ Attribute-type: code (INT-U16) Attribute-value: code: MDC_CTXT_MEDICATION_INTERMEDIATEACTING or 29200 (dec) or 72 10 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-OBX|?|NM|8417808^ MDC_CTXT_MEDICATION_INTERMEDIATEACTING ^MDC| 1.0.0.a|0.19|263890^MDC_DIM_MILLI_G^MDC|||||R||| [current_date_time] In step 11, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Id attribute is present: Object: Context medication object □ Attribute-id: MDC_ATTR_ID_PHYSIO (2347) ☐ Attribute-type: code (INT-U16) Attribute-value: code: MDC_CTXT_MEDICATION_LONGACTING or 29204 (dec) or 72 14 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-OBX|?|NM|8417812^ MDC_CTXT_MEDICATION_LONGACTING ^MDC| 1.0.0.a|0.20|263890^MDC_DIM_MILLI_G^MDC|||||R||| [current_date_time] In step 13, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Id attribute is present: □ Object: Context medication object ☐ Attribute-id: MDC_ATTR_ID_PHYSIO (2347) ☐ Attribute-type: code (INT-U16) Attribute-value: code: MDC_CTXT_MEDICATION_PREMIX or 29208 (dec) or 72 18 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-OBX|?|NM|8417816^ MDC_CTXT_MEDICATION_PREMIX ^MDC|

1.0.0.a|0.21263890^MDC_DIM_MILLI_G^MDC|||||R||| [current_date_time]

TDIA		TP/LP-PAN/MAN/PHDTW/GL/BV-032				
TP Id TP label						
	Snoc	Whitepaper. Glucosemeter Context Medication Object - Unit-Code Attribute [Bluetooth PHDT v1.4]				
Coverage	Spec Testable	GL Numeric 22; M				
	items	GL Numeric 22, M				
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND				
, ippiioability						
Initial condit	ion					
Test proced	ure					
Initial condit Test proced		 C_MAN_BLE_010 The manager under test and the simulated agent are in the standby state. 1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Glucose measurement context (0x2A34) 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test: a. Glucose measurement context (0x2A34) i. Field: Flags • Format: 8 bit • Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of kilograms fields are included, and Carbohydrate ID. Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity and HbA1c fields are not included ii. Field: Sequence number • Format: uint16 • Value: Not relevant iii. Field: Extended Flags • This field is not included iv. Field: Carbohydrate ID • This field is not included vi. Field: Exercise Duration • This field is not included vi. Field: Exercise Duration • This field is not included vi. Field: Exercise Duration • This field is not included xi. Field: Exercise Intensity • This field is not included xi. Field: Medication ID • Format: uint3 • Value: Not (Rapid action insulin) xii. Field: Medication - units of kilograms • Format: SFLOAT • Value: Not relevan				
		i. Field: Flags • Format: 8 bit				
		 Value: 0011 0000 (MSB → LSB). Medication ID and Medication in units 				
		of litres fields are included, and Carbohydrate ID, Carbohydrate, Meal,				

	Tester-Health, Exercise Duration and Exercise Intensity and HbA1c
	fields are not included
	ii. Field: Sequence number
	Format: uint16
	Value: Not relevant
	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	xi. Field: Medication ID
	• Format: uint8
	Value: 0x01 (Rapid action insulin)
	xii. Field: Medication - units of kilograms
	This field is not included This field Mediantian waits of litrogeness.
	xiii. Field: Medication - units of litres
	Format: SFLOAT Value Net relevant
	Value: Not relevant xiv. Field: HbA1c
	This field is not included
	7. Check in manager transcoder output for the Context medication object – Unit-Code
	attribute.
Pass/Fail criteria	In step 5, the Context medication object – Unit-Code attribute is present and its value is MDC_DIM_MILLI_G.
	In step 7, the Context medication object – Unit-Code attribute is present and its value is
	MDC_DIM_MILLI_L.
Notes	
Notes	In step 5, possible values in typical points of observation after transcoder output are:
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present:
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex)
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) WAN PCD-01 message
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6):
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 263890^MDC_DIM_MILLI_G^MDC R [current_date_time]
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: □ Object: Context medication object □ Attribute-id: MDC_ATTR_UNIT_CODE (2454) □ Attribute-type: INT-U16 □ Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 263890^MDC_DIM_MILLI_G^MDC R [current_date_time] In step 7, possible values in typical points of observation after transcoder output are:
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 263890^MDC_DIM_MILLI_G^MDC R [current_date_time] In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present:
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present:
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present:
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 263890^MDC_DIM_MILLI_G^MDC R [current_date_time] In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16
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Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 263890^MDC_DIM_MILLI_G^MDC R [current_date_time] In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-value: MDC_DIM_MILLI_L or 1618 (dec) or 06 52 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 263890^MDC_DIM_MILLI_G^MDC R [current_date_time] In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: Object: Context medication object Attribute-id: MDC_ATTR_UNIT_CODE (2454) Attribute-type: INT-U16 Attribute-value: MDC_DIM_MILLI_L or 1618 (dec) or 06 52 (hex) b) WAN PCD-01 message
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: □ Object: Context medication object □ Attribute-id: MDC_ATTR_UNIT_CODE (2454) □ Attribute-type: INT-U16 □ Attribute-value: MDC_DIM_MILLI_G or 1746 (dec) or 06 D2 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6): OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 263890^MDC_DIM_MILLI_G^MDC R [current_date_time] In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Unit-Code attribute is present: □ Object: Context medication object □ Attribute-id: MDC_ATTR_UNIT_CODE (2454) □ Attribute-id: MDC_ATTR_UNIT_CODE (2454) □ Attribute-value: MDC_DIM_MILLI_L or 1618 (dec) or 06 52 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-6):

TD.		TD// D DAN/MAN/DUDTA//OL/DV 000				
TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-033				
TP label		Whitepaper. Glucosemeter Context Medication Object - Absolute-Time-Stamp Attribute				
Coverage	Spec	[Bluetooth PHDT v1.4]				
	Testable	GL Numeric 23; M Date-Time Conv 2; M Date-Time Conv 3; M				
items		Date-Time Conv 4; M Date-Time Conv 5; M				
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_010				
Initial condit	tion	The manager under test and the simulated agent are in the standby state.				
Applicability Initial condit Test proced	tion	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_010				
		 Format: uint16 Value: Not relevant 				
		iii. Field: Extended Flags				
		D INVESTIGATION (01/2015) 1/4				

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	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	xi. Field: Medication ID
	• Format: uint8
	Value: 0x01 (Rapid action insulin)
	xii. Field: Medication - units of kilograms
	Format: SFLOAT
	Value: Not relevant
	xiii. Field: Medication - units of litres
	This field is not included
	xiv. Field: HbA1c
	This field is not included
	5. Check in manager transcoder output for the Context medication object – Absolute- Time-Stamp attribute.
Pass/Fail criteria	In step 6, the Context medication object – Absolute-Time-Stamp attribute is present, its value matches with the Time Stamp field in conjunction with the Time Offset field of the
Notes	Glucose measurement characteristic and the fraction of seconds is set to 0.
Notes	Possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes Absolute-Time-Stamp attribute is present:
	Object: Context medication object
	☐ Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448)
	Attribute-type: SEQUENCE (century (INT-U8), year (INT-U8), month (INT-U8), day (INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)} (BCD encoding)
	□ Attribute-value:
	• century: 20 (hex) or 32 (dec)
	 year: 12 (hex) or 18 (dec)
	• month: 08 (hex) or 8 (dec)
	• day: 02 (hex) or 2 (dec)
	• hour: 12 (hex) or 18 (dec)
	 minute: 59 (hex) or 89 (dec)
	• second: 27 (hex) or 39 (dec)
	sec-fractions: 00 (hex) or 0 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value
	(check OBX-14):
	OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 263890^MDC_DIM_MILLI_G^MDC R 20120802125927+0000

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-034					
TP label		Whitepaper. Glucosemeter Context Medication Object - Basic-Nu-Observed-Value Attribute 1					
Coverage	Spec	[Bluetooth PHDT v1.4]					
	Testable items	GL Numeric 24; M Short Float Type 1; C					
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_010					
Initial condi	tion	The manager under test and the simulated agent are in the standby state.					
Test proced	ure	The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).					
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:					
		a. Glucose measurement context (0x2A34)					
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).					
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case is:					
		a. Glucose measurement context (0x2A34)					
		i. Field: Flags					
		Format: 8 bit					
		 Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of kilograms fields are included, and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity and HbA1c fields are not included 					
		ii. Field: Sequence number					
		Format: uint16					
		Value: Not relevant					
		iii. Field: Extended Flags					
		This field is not included					
		iv. Field: Carbohydrate ID					
		This field is not included					
		v. Field: Carbohydrate					
		This field is not included					
		vi. Field: Meal					
		This field is not included					
		vii. Field: Tester					
		This field is not included					
		viii. Field: Health					
		This field is not included					
		ix. Field: Exercise Duration					
		This field is not included					
		x. Field: Exercise Intensity					
		This field is not included					

- xi. Field: Medication ID
 - Format: uint8
 - Value: 0x01 (Rapid action insulin)
- xii. Field: Medication units of kilograms
 - Format: SFLOAT
 - Value: 0.00000017 kg (0.17 mg)
- xiii. Field: Medication units of litres
 - This field is not included
- xiv. Field: HbA1c
 - · This field is not included
- Check in manager transcoder output for the Context medication object

 Basic-NuObserved-Value attribute.
- The simulated agent sends the measurement to the manager under test with the following value:
 - a. Glucose measurement context (0x2A34)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0011 0000 (MSB → LSB). Medication ID and Medication in units
 of litres fields are included, and Carbohydrate ID, Carbohydrate, Meal,
 Tester-Health, Exercise Duration and Exercise Intensity and HbA1c
 fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - · Value: Not relevant
 - iii. Field: Extended Flags
 - This field is not included
 - iv. Field: Carbohydrate ID
 - · This field is not included
 - v. Field: Carbohydrate
 - · This field is not included
 - vi. Field: Meal
 - · This field is not included
 - vii. Field: Tester
 - This field is not included
 - viii. Field: Health
 - This field is not included
 - ix. Field: Exercise Duration
 - This field is not included
 - x. Field: Exercise Intensity
 - This field is not included
 - xi. Field: Medication ID
 - Format: uint8
 - Value: 0x01 (Rapid action insulin)
 - xii. Field: Medication units of kilograms
 - This field is not included

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	xiii. Field: Medication - units of litres
	Format: SFLOAT
	 Value: 0.00005 litres (0.05 ml)
	xiv. Field: HbA1c
	This field is not included
	Check in manager transcoder output for the Context medication object Basic-Nu-Observed-Value attribute.
Pass/Fail criteria	In step 5, the Context medication object – Basic-Nu-Observed-Value attribute is present and its value matches with the Medication Value field of the Glucose measurement context characteristic: 0.17 mg.
	In step 7, the Context medication object – Basic-Nu-Observed-Value attribute is present and its value matches with the Medication Value field of the Glucose measurement context characteristic: 0.05 ml.
Notes	In step 5, possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Basic-Nu-Observed-Value attribute is present:
	□ Object: Context medication object
	□ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
	☐ Attribute-type: SFLOAT
	☐ Attribute-value: E0 11 (hex) or 0.17 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with a Basic-Nu-Observed-Value attribute value (check OBX-5):
	OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 263890^MDC_DIM_MILLI_G ^MDC R [current_date_time]
	In step 7, possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Basic-Nu-Observed-Value attribute is present:
	□ Object: Context medication object
	□ Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
	□ Attribute-type: SFLOAT
	☐ Attribute-value: E0 05 (hex) or 0.05 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with a Basic-Nu-Observed-Value attribute value (check OBX-5):
	OBX ? NM 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.05 263762^MDC_DIM_MILLI_L^MDC R [current_date_time]

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-035				
TP label		Whitepaper. Glucosemeter Context Medication Object - Basic-Nu-Observed-Value Attribute 2				
Coverage	Spec	[Bluetooth PHDT v1.4]				
	Testable items	GL Numeric 24; M Short Float Type 1; C Short Float Type 2; M				
Applicability	y	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_010				
Initial condi	tion	The manager under test and the simulated agent are in the standby state.				
Test proced	lure	 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 				
		The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:				
		a. Glucose measurement context (0x2A34)				
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).				
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measuremen followed by the Glucose measurement context to the manager under test:				
		a. Glucose measurement context (0x2A34)				
		i. Field: Flags				
		Format: 8 bit				
		 Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of kilograms fields are included, and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity and HbA1c fields are not included 				
		ii. Field: Sequence number				
		Format: uint16				
		Value: Not relevant				
		iii. Field: Extended Flags				
		This field is not included				
		iv. Field: Carbohydrate ID				
		This field is not included				
		v. Field: Carbohydrate				
		This field is not included				
		vi. Field: Meal				
		This field is not included				
		vii. Field: Tester				
		This field is not included				
		viii. Field: Health				
		This field is not included				
		ix. Field: Exercise Duration				
		This field is not included				
		x. Field: Exercise Intensity				
		This field is not included				

- xi. Field: Medication ID
 - Format: uint8
 - Value: 0x01 (Rapid action insulin)
- xii. Field: Medication units of kilograms
 - Format: SFLOAT
 - Value: 0.00000017 kg (0.17 mg)
- xiii. Field: Medication units of litres
 - This field is not included
- xiv. Field: HbA1c
 - · This field is not included
- Check in manager transcoder output for the Context medication object Basic-Nu-Observed-Value attribute.
- The simulated agent sends the measurement to the manager under test with the following value:
 - a. Glucose measurement context (0x2A34)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of kilograms fields are included, and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity and HbA1c fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - · Value: Not relevant
 - iii. Field: Extended Flags
 - · This field is not included
 - iv. Field: Carbohydrate ID
 - · This field is not included
 - v. Field: Carbohydrate
 - · This field is not included
 - vi. Field: Meal
 - · This field is not included
 - vii. Field: Tester
 - This field is not included
 - viii. Field: Health
 - This field is not included
 - ix. Field: Exercise Duration
 - This field is not included
 - x. Field: Exercise Intensity
 - This field is not included
 - xi. Field: Medication ID
 - Format: uint8
 - Value: 0x01 (Rapid action insulin)
 - xii. Field: Medication units of kilograms
 - Format: SFLOAT

- Value: 07 FF (hex). Special value: NaN
- xiii. Field: Medication units of litres
 - This field is not included
- xiv. Field: HbA1c
 - · This field is not included
- Check in manager transcoder output for the Context medication object Basic-Nu-Observed-Value attribute.
- 8. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Glucose measurement context (0x2A34)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of kilograms fields are included, and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity and HbA1c fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - Value: Not relevant
 - iii. Field: Extended Flags
 - · This field is not included
 - iv. Field: Carbohydrate ID
 - · This field is not included
 - v. Field: Carbohydrate
 - This field is not included
 - vi. Field: Meal
 - This field is not included
 - vii. Field: Tester
 - · This field is not included
 - viii. Field: Health
 - This field is not included
 - ix. Field: Exercise Duration
 - · This field is not included
 - x. Field: Exercise Intensity
 - · This field is not included
 - xi. Field: Medication ID
 - Format: uint8
 - Value: 0x01 (Rapid action insulin)
 - xii. Field: Medication units of kilograms
 - Format: SFLOAT
 - Value: 00 80 (hex). Special value: NRes
 - xiii. Field: Medication units of litres
 - · This field is not included
 - xiv. Field: HbA1c
 - This field is not included

- Check in manager transcoder output for the Context medication object Basic-Nu-Observed-Value attribute.
- 10. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Glucose measurement context (0x2A34)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units
 of kilograms fields are included, and Carbohydrate ID, Carbohydrate,
 Meal, Tester-Health, Exercise Duration and Exercise Intensity and
 HbA1c fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - · Value: Not relevant
 - iii. Field: Extended Flags
 - · This field is not included
 - iv. Field: Carbohydrate ID
 - · This field is not included
 - v. Field: Carbohydrate
 - · This field is not included
 - vi. Field: Meal
 - · This field is not included
 - vii. Field: Tester
 - · This field is not included
 - viii. Field: Health
 - This field is not included
 - ix. Field: Exercise Duration
 - This field is not included
 - x. Field: Exercise Intensity
 - This field is not included
 - xi. Field: Medication ID
 - Format: uint8
 - Value: 0x01 (Rapid action insulin)
 - xii. Field: Medication units of kilograms
 - Format: SFLOAT
 - Value: 07 FE (hex). Special value: +INFINITY
 - xiii. Field: Medication units of litres
 - · This field is not included
 - xiv. Field: HbA1c
 - · This field is not included
- Check in manager transcoder output for the Context medication object Basic-Nu-Observed-Value attribute.
- 12. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Glucose measurement context (0x2A34)
 - i. Field: Flags

- Format: 8 bit
- Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units
 of kilograms fields are included, and Carbohydrate ID, Carbohydrate,
 Meal, Tester-Health, Exercise Duration and Exercise Intensity and
 HbA1c fields are not included
- ii. Field: Sequence number
 - Format: uint16
 - Value: Not relevant
- iii. Field: Extended Flags
 - · This field is not included
- iv. Field: Carbohydrate ID
 - · This field is not included
- v. Field: Carbohydrate
 - · This field is not included
- vi. Field: Meal
 - This field is not included
- vii. Field: Tester
 - · This field is not included
- viii. Field: Health
 - · This field is not included
- ix. Field: Exercise Duration
 - · This field is not included
- x. Field: Exercise Intensity
 - This field is not included
- xv. Field: Medication ID
 - Format: uint8
 - Value: 0x01 (Rapid action insulin)
- xvi. Field: Medication units of kilograms
 - Format: SFLOAT
 - Value: 08 02 (hex). Special value: -INFINITY
- xvii. Field: Medication units of litres
 - · This field is not included
- xviii. Field: HbA1c
 - This field is not included
- 13. Check in manager transcoder output for the Context medication object Basic-Nu-Observed-Value attribute.

Pass/Fail criteria

In step 5, the Context medication object – Basic-Nu-Observed-Value attribute is present and its value is 0.17 mg.

In step 7, the Context medication object - Basic -Nu-Observed-Value attribute is present and its value is 0x07FF.

In step 9, the Context medication object – Basic -Nu-Observed-Value attribute is present and its value is 0x0800.

In step 11, the Context medication object – Basic -Nu-Observed-Value attribute is present and its value is 0x07FE.

In step 13, the Context medication object – Basic -Nu-Observed-Value attribute is present and its value is 0x0802.

Notes	In step	5,	possible values in typical points of observation after transcoder output are:
	a) IE	EEE	11073 Objects and Attributes
	Basic-	-Nu-	Observed-Value attribute is present:
		ב	Object: Context medication object
		-	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
		-	Attribute-type: SFLOAT
		ב	Attribute-value: E0 11 (hex) or 0.17 (dec)
	b) V	۷A۱	I PCD-01 message
	PCD-0 OBX-5		nessage includes a segment like this with a Basic-Nu-Observed-Value attribute value (check
			/I 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC 1.0.0.a 0.17 IDC_DIM_MILLI_G ^MDC R [current_date_time]
	In step	o 7,	possible values in typical points of observation after transcoder output are:
	a) IE	EEE	11073 Objects and Attributes
	Basic	-Nu	-Observed-Value attribute is present:
		-	Object: Context medication object
]	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
]	Attribute-type: SFLOAT
]	Attribute-value: 07 FF(hex) or NaN (note that is not allowed a decimal value)
	b) V	۷A۱	I PCD-01 message
	(84178	800	nessage does not include segments with a Basic -Nu-Observed-Value attribute value ^MDC_CTXT_MEDICATION_RAPIDACTING^MDC) because it has a special value and les are not included in the PCD-01 message.
	In step	o 9,	possible values in typical points of observation after transcoder output are:
	a) IE	EEE	11073 Objects and Attributes
	Basic	-Nu	-Observed-Value attribute is present:
		-	Object: Context medication object
		ב	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
		ב	Attribute-type: SFLOAT
		ב	Attribute-value: 08 00 (hex) or NRes (note that a decimal value is not allowed)
	b) V	۷A۱	I PCD-01 message
	(84178	800	nessage does not include segments with a Basic -Nu-Observed-Value attribute value ^MDC_CTXT_MEDICATION_RAPIDACTING^MDC) because it has a special value and les are not included in the PCD-01 message.
	In step	ว 11	, possible values in typical points of observation after transcoder output are:
	a) IE	EEE	11073 Objects and Attributes
	Basic	-Nu	-Observed-Value attribute is present:
		ב	Object: Context medication object
		ב	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
		ב	Attribute-type: SFLOAT
		ב	Attribute-value: 07 FE (hex) or +INFINITY (note that a decimal value is not allowed)
	b) V	۷A۱	I PCD-01 message
	(84178	800	nessage does not include segments with a Basic -Nu-Observed-Value attribute value 'MDC_CTXT_MEDICATION_RAPIDACTING^MDC) because it has a special value and use are not included in the PCD-01 message.
	In step	o 13	, possible values in typical points of observation after transcoder output are:
	a) IE	EEE	11073 Objects and Attributes
	Basic	-Nu	-Observed-Value attribute is present:
		ב	Object: Context medication object
		ב	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
		ב	Attribute-type: SFLOAT
		ב	Attribute-value: 08 02 (hex) or -INFINITY (note that a decimal value is not allowed)
	b) V	۷A۱	I PCD-01 message
	(84178	800	nessage does not include segments with a Basic -Nu-Observed-Value attribute value 'MDC_CTXT_MEDICATION_RAPIDACTING^MDC) because it has a special value and les are not included in the PCD-01 message.

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-036
TP label		Whitepaper. Glucosemeter Context Medication value
Coverage Spec		[Bluetooth PHDT v1.4]
Coverage	Testable	GL Numeric 23; M GL Numeric 24; M Short Float Type 1; C
	items	Date-Time Conv 1; M
Applicability	,	C_MAN_BLE_000 AND C_MAN_BLE_007 AND C_MAN_BLE_010
Initial condit		The manager under test and the simulated agent are in the standby state.
		, , , , , , , , , , , , , , , , , , ,
Test proced	ure	 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of
		interest for this test case is:
		a. Glucose measurement (0x2A18)b. Glucose measurement context (0x2A34)
		3. The manager under test initiates a discovery process (scanning state). It discovers the
		simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test:
		a. Glucose measurement (0x2A18)
		i. Field: Flags
		Format: 8 bit
		 Value: 00010010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location are included, Time Offset and Sensor Status Annunciation fields are not included and Context information follows
		ii. Field: Sequence number
		Format: uint16
		Value: Not relevant
		iii. Field: Base Time
		Format: Date and Time
		 Value: August 2nd, 2012, 11:08:25
		iv. Field: Time Offset
		This field is not included
		v. Field: Glucose Concentration - units of kg/L
		Format: SFLOAT
		Value: Not relevant
		vi. Field: Glucose Concentration - units of mol/L
		This field is not included
		vii. Field: Type
		Format: nibble
		Value: Not relevant
		viii. Field: Sample Location
		Format: nibble
		Value: Not relevant
		ix. Field: Sensor Status Annunciation
		This field is not included
		b. Glucose measurement context (0x2A34)
		i. Field: Flags
		• Format: 8 bit
		 Value: 0001 0000 (MSB → LSB). Medication ID and Medication in units of kilograms fields are included, and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity and
		HbA1c fields are not included
		ii. Field: Sequence number

- Format: uint16
- Value: Not relevant
- iii. Field: Extended Flags
 - · This field is not included
- iv. Field: Carbohydrate ID
 - This field is not included
- v. Field: Carbohydrate
 - · This field is not included
- vi. Field: Meal
 - This field is not included
- vii. Field: Tester
 - · This field is not included
- viii. Field: Health
 - · This field is not included
- ix. Field: Exercise Duration
 - · This field is not included
- x. Field: Exercise Intensity
 - · This field is not included
- xi. Field: Medication ID
 - Format: uint8
 - Value: 0x01 (Rapid action insulin)
- xii. Field: Medication units of kilograms
 - Format: SFLOAT
 - Value: 0.00000017 kg (0.17 mg)
- xiii. Field: Medication units of litres
 - · This field is not included
- xiv. Field: HbA1c
 - · This field is not included
- 5. Check that the manager accepts the measurement and decodes its value properly (Context Medication value, Context Medication units and base time).
- 6. The simulated agent sends the Glucose measurement followed by the Glucose measurement context to the manager under test with the following value:
 - a. Glucose measurement (0x2A18)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 00010010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location are included, Time Offset and Sensor Status Annunciation fields are not included and Context information follows
 - ii. Field: Sequence number
 - Format: uint16
 - Value: Not relevant
 - i. Field: Base Time
 - Format: Date and Time
 - Value: August 2nd, 2012, 11:09:05
 - ii. Field: Time Offset
 - · This field is not included
 - iii. Field: Glucose Concentration units of kg/L
 - Format: SFLOAT
 - Value: Not relevant
 - iv. Field: Glucose Concentration units of mol/L
 - · This field is not included
 - v. Field: Type
 - · This field is not included
 - vi. Field: Sample Location

	This field is not included
	vii. Field: Sensor Status Annunciation
	This field is not included
	b. Glucose measurement context (0x2A34)
	i. Field: Flags
	Format: 8 bit
	 Value: 0011 0000 (MSB → LSB). Medication ID and Medication in units of litres fields are included, and Carbohydrate ID, Carbohydrate, Meal, Tester-Health, Exercise Duration and Exercise Intensity and HbA1c fields are not included
	ii. Field: Sequence number
	Format: uint16
	Value: Not relevant
	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	xi. Field: Medication ID
	Format: uint8
	 Value: 0x01 (Rapid action insulin)
	xii. Field: Medication - units of kilograms
	This field is not included
	xiii. Field: Medication - units of litres
	Format: SFLOAT
	 Value: 0.00005 litres (0.05 ml)
	xiv. Field: HbA1c
	This field is not included
	7. Check that the manager accepts the measurement and decodes its value properly (Context Medication value, Context Medication units and base time).
Pass/Fail criteria	In step 5, the manager under test shows the following Context Medication 0.17 mg with the time stamp '2012-08-02 11:08:25'.
	In step 7, the manager under test shows the following Context Medication 0.05 ml with the time stamp '2012-08-02 11:09:05'.
Notes	

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-037
TP label		Whitepaper. Glucosemeter Context Carbohydrates Object - Handle Attribute
Coverage Spec		[Bluetooth PHDT v1.4] GL Numeric 25; O
	Testable items	GL Numeric 25, C
Applicability		C MAN BLE 000 AND C MAN BLE 002 AND C MAN BLE 007 AND
.,		C_MAN_BLE_011
Initial condit	tion	The manager under test and the simulated agent are in the standby state.
Test proced	ure	1. The simulated agent is configured with a Glucosemeter profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is
		discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Glucose measurement context (0x2A34) i. Field: Flags • Format: 8 bit
		 Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included ii. Field: Sequence number Format: uint16
		Value: Not relevant
		iii. Field: Extended Flags
		This field is not included Field Carbohydrate ID.
		iv. Field: Carbohydrate ID • Format: uint8
		Value: Not relevant
		v. Field: Carbohydrate
		Format: SFLOAT
		Value: Not relevant
		vi. Field: Meal
		This field is not included vii. Field: Tester
		This field is not included
		viii. Field: Health
		This field is not included ix. Field: Exercise Duration
		This field is not included
		x. Field: Exercise Intensity
		This field is not included
		xi. Field: Medication ID
		This field is not included xii. Field: Medication
		This field is not included
		xiii. Field: HbA1c
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement
		followed by the Glucose measurement context to the manager under test. Check in manager transporder output for the Blood glucose chieft. Handle attribute
Pass/Fail cri	iteria	5. Check in manager transcoder output for the Blood glucose object – Handle attribute. In step 5, the Context carbohydrates object – Handle attribute is not present; however, if it
. 455/1 411 611	ıu	is present then its value is different to 0.
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Handle attribute is not present, or if it is present then:
		 Object: Context carbohydrates numeric object Attribute-id: MDC_ATTR_ID_HANDLE (2337)
		☐ Attribute-id. MDC_ATTR_ID_HANDLE (2337) ☐ Attribute-type: INT-U16
		☐ Attribute-value: Any value other than 0
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Handle attribute value.

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-038
TP label		Whitepaper. Glucosemeter Context Carbohydrates Object - Type Attribute
Coverage	Spec	[Bluetooth PHDT v1.4]
Testable items		GL Numeric 26; M
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_011
Initial condit	ion	The manager under test and the simulated agent are in the standby state.
Test proced Pass/Fail cri	ure	The manager under test and the simulated agent are in the standby state. 1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are: a. Glucose measurement context (0x2A34) i. Field: Flags • Format: 8 bit • Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included ii. Field: Sequence number • Format: uint16 • Value: Not relevant iii. Field: Extended Flags • This field is not included iv. Field: Carbohydrate ID • Format: uint8 • Value: Not relevant v. Field: Carbohydrate • Format: SFLOAT • Value: Not relevant vi. Field: Tester • This field is not included vii. Field: Tester • This field is not included viii. Field: Exercise Duration • This field is not included xi. Field: Exercise Duration • This field is not included xi. Field: Exercise Duration • This field is not included xii. Field: Health • This field is not included xii. Field: Medication ID • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is not included xiii. Field: HoA1c • This field is
Notes		MDC_PART_PHD_DM MDC_CTXT_GLU_CARB}. In step 5, possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Context carbohydrates object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: • partition: MDC_PART_PHD_DM or 128 (dec) or 00 80 (hex) • code: MDC_CTXT_GLU_CARB or 29156 (dec) or 71 E4 (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? NM 8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC 1.0.0.a 75

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-039
TP label		Whitepaper. Glucosemeter Context Carbohydrates Object - Metric-Spec-Small Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
Coverage	Testable	GL Numeric 27; M
	items	SE Hamono 27, W
Applicability	y	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
		C_MAN_BLE_011
Initial condit	tion	The manager under test and the simulated agent are in the standby state.
Test proced	ure	1. The simulated agent is configured with a Glucose profile (device specialization); it has a
		measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this
		test case is:
		a. Glucose measurement context (0x2A34)
		i. Field: Flags
		• Format: 8 bit
		 Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID,
		Medication Value and HbA1c fields are not included
		ii. Field: Sequence number
		Format: uint16
		Value: Not relevant
		iii. Field: Extended Flags
		This field is not included iv. Field: Carbohydrate ID
		Format: uint8
		Value: Not relevant
		v. Field: Carbohydrate - units of kilograms
		Format: SFLOAT Value: Net relevant
		Value: Not relevant Vi. Field: Meal
		This field is not included
		vii. Field: Tester
		This field is not included
		viii. Field: Health
		This field is not included ix. Field: Exercise Duration
		This field is not included
		x. Field: Exercise Intensity
		This field is not included
		xi. Field: Medication ID
		This field is not included xii. Medication – units of kilograms
		This field is not included
		xiii. Medication – units of litres
		This field is not included
		xiv. Field: HbA1c This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated
		agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the
		simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose
		measurement context to the manager under test.
		5. Check in manager transcoder output for the Context carbohydrate numeric object – Metric-Spec-
		Small attribute.
Pass/Fail cri	iteria	In step 5, the Context carbohydrate numeric object – Metric-Spec-Small attribute is present
		and its value is {0xF048} (mss-avail-intermittent mss-avail-stored-data mss-upd-aperiodic
Notes		mss-msmt-aperiodic mss-acc-agent-initiated mss-cat-manual). Possible values in typical points of observation after transcoder output are:
140162		a) IEEE 11073 Objects and Attributes
		Metric-Spec-Small attribute is present:
		Object: Context carbohydrates numeric object
		Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)
		□ Attribute-type: BITS-16
		☐ Attribute-value: F0 48 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-
		data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9),
		mss-cat-manual(12) set to TRUE and remaining BITS set to FALSE
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Metric-Spec-Small attribute value.

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-040
TP label		Whitepaper. Glucosemeter Context Carbohydrates Object - Metric-Id Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
Testable items		GL Numeric 28; M
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_011
Initial condi	tion	The manager under test and the simulated agent are in the standby state.
Test proced		1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		 The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are: a. Glucose measurement context (0x2A34)
		i. Field: Flags
		 Format: 8 bit Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included
		ii. Field: Sequence number • Format: uint16
		Value: Not relevant Field: Extended Flags
		This field is not included
		iv. Field: Carbohydrate IDFormat: uint8
		 Value: Several values are checked in this test case Field: Carbohydrate - units of kilograms Format: SFLOAT
		Value: Not relevant Field: Meal
		This field is not included vii. Field: Tester
		This field is not included viii. Field: Health
		This field is not included ix. Field: Exercise Duration
		 This field is not included x. Field: Exercise Intensity
		This field is not included
		This field is not included
		xii. Medication – units of kilogramsThis field is not included
		xiii. Medication – units of litres • This field is not included
		xiv. Field: HbA1c • This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Carbohydrate ID field set to 0x01 =
		Breakfast) to the manager under test. 5. Check in manager transcoder output for the Context carbohydrate numeric object – Metric-Id attribute.
		6. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Carbohydrate
		 ID field set to 0x02 = Lunch) to the manager under test 7. Check in manager transcoder output for the Context carbohydrate numeric object – Metric-Id attribute.
		8. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a

Glucose measurement followed by the Glucose measurement context (Carbohydrate ID field set to 0x03 = Dinner) to the manager under test Check in manager transcoder output for the Context carbohydrate numeric object – Metric-Id attribute. 10. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Carbohydrate ID field set to 0x04 = Snack) to the manager under test 11. Check in manager transcoder output for the Context carbohydrate numeric object – Metric-Id attribute. 12. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Carbohydrate ID field set to 0x05 = Drink) to the manager under test. 13. Check in manager transcoder output for the Context carbohydrate numeric object – Metric-Id attribute. 14. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Carbohydrate ID field set to 0x06 = Supper) to the manager under test. 15. Check in manager transcoder output for the Context carbohydrate numeric object -Metric-Id attribute. 16. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context (Carbohydrate ID field set to 0x07 = Brunch) to the manager under test. 17. Check in manager transcoder output for the Context carbohydrate numeric object -Metric-Id attribute. Pass/Fail criteria In step 5, the Context carbohydrate object - Metric-Id attribute is present and its value is MDC CTXT GLU CARB BREAKFAST. In step 7, the Context carbohydrate object – Metric-Id attribute is present and its value is MDC_CTXT_GLU_CARB_LUNCH. In step 9, the Context carbohydrate object – Metric-Id attribute is present and its value is MDC CTXT GLU CARB DINNER. In step 11, the Context carbohydrate object - Metric-Id attribute is present and its value is MDC_CTXT_GLU_CARB_SNACK In step 13, the Context carbohydrate object - Metric-Id attribute is present and its value is MDC CTXT GLU CARB DRINK. In step 15, the Context carbohydrate object - Metric-Id attribute is present and its value is MDC_CTXT_GLU_CARB_SUPPER. In step 17, the Context carbohydrate object - Metric-Id attribute is present and its value is MDC_CTXT_GLU_CARB_BRUNCH. Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Id attribute is present: Object: Context carbohydrate object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC_CTXT_GLU_CARB_BREAKFAST or 29160 (dec) or 71 E8 (hex) WAN PCD-01 message PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-OBX|?|NM|8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC| 1.0.0.a|130| 263872^MDC_DIM_G^MDC||||R|||[current_date_time] In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Metric-Id attribute is present: Object: Context carbohydrate object Attribute-id: MDC_ATTR_ID_PHYSIO (2347) Attribute-type: code (INT-U16) Attribute-value: code: MDC_CTXT_GLU_CARB_LUNCH or 29164 (dec) or 71 EC (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-OBX|?|NM|8417772^MDC_CTXT_GLU_CARB_LUNCH^MDC| 1.0.0.a|130| 263872^MDC_DIM_G^MDC|||||R|||[current_date_time] In step 9, possible values in typical points of observation after transcoder output are: IEEE 11073 Objects and Attributes

```
Metric-Id attribute is present:
        Object: Context carbohydrate object
        Attribute-id: MDC ATTR ID PHYSIO (2347)
    Attribute-type: code (INT-U16)
       Attribute-value: code: MDC CTXT GLU CARB DINNER or 29168 (dec) or 71 F0
        (hex)
   WAN PCD-01 message
PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-
OBX|?|NM|8417776^MDC_CTXT_GLU_CARB_DINNER^MDC| 1.0.0.a|130|
263872^MDC_DIM_G^MDC ||||R|||[current_date_time]
In step 11, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Metric-Id attribute is present:
        Object: Context carbohydrate object
    Attribute-id: MDC_ATTR_ID_PHYSIO (2347)
    \Box
        Attribute-type: code (INT-U16)
        Attribute-value: code: MDC CTXT GLU CARB SNACK or 29172 (dec) or 71 F4
        (hex)
   WAN PCD-01 message
b)
PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-
OBX|?|NM|8417780^MDC_CTXT_GLU_CARB_SNACK^MDC| 1.0.0.a|130|
263872^MDC_DIM_G^MDC|||||R|||[current_date_time]
In step 13, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Metric-Id attribute is present:
        Object: Context carbohydrate object
    Attribute-id: MDC_ATTR_ID_PHYSIO (2347)
    Attribute-type: code (INT-U16)
        Attribute-value: code: MDC_CTXT_GLU_CARB_DRINK or 29176 (dec) or 71 F8
        (hex)
   WAN PCD-01 message
PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-
OBXI?INMI8417784^MDC CTXT GLU CARB DRINK^MDCI 1.0.0.al130I
263872^MDC_DIM_G^MDC|||||R|||[current_date_time]
In step 15, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Metric-Id attribute is present:
    Object: Context carbohydrate object
       Attribute-id: MDC_ATTR_ID_PHYSIO (2347)
    Attribute-type: code (INT-U16)
    Attribute-value: code: MDC_CTXT_GLU_CARB_SUPPER or 29180 (dec) or 71
        FC (hex)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-
OBX|?|NM|8417788^MDC CTXT GLU CARB SUPPER^MDC| 1.0.0.a|130|
263872^MDC_DIM_G^MDC||||R|||[current_date_time]
In step 17, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Metric-Id attribute is present:
       Object: Context carbohydrate object
    Attribute-id: MDC_ATTR_ID_PHYSIO (2347)
    Attribute-type: code (INT-U16)
        Attribute-value: code: MDC_CTXT_GLU_CARB_BRUNCH or 29184 (dec) or 72
        00 (hex)
   WAN PCD-01 message
b)
PCD-01 message includes a segment like this with a Metric-Id attribute value (check OBX-
OBX|?|NM|8417792^MDC_CTXT_GLU_CARB_BRUNCH^MDC|
```

1.0.0.a|130|263872^MDC_DIM_G^MDC||||R|||[current_date_time]

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-041
TP label		Whitepaper. Glucosemeter Context Carbohydrates Object - Unit-Code Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
J	Testable	GL Numeric 29; M
items		
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
		C_MAN_BLE_011
Initial condit		The manager under test and the simulated agent are in the standby state.
Test proced	ure	The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this
		test case is:
		a. Glucose measurement context (0x2A34) i. Field: Flags
		• Format: 8 bit
		 Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included
		and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID,
		Medication Value and HbA1c fields are not included
		ii. Field: Sequence number • Format: uint16
		Value: Not relevant
		iii. Field: Extended Flags
		This field is not included
		iv. Field: Carbohydrate ID
		Format: uint8Value: Not relevant
		v. Field: Carbohydrate - units of kilograms
		Format: SFLOAT
		Value: Not relevant
		vi. Field: Meal
		This field is not included vii. Field: Tester
		This field is not included
		viii. Field: Health
		This field is not included
		ix. Field: Exercise Duration
		 This field is not included x. Field: Exercise Intensity
		This field is not included
		xi. Field: Medication ID
		This field is not included Madication write of bild propers
		xii. Medication – units of kilograms This field is not included
		xiii. Medication – units of litres
		This field is not included
		xiv. Field: HbA1c
		This field is not included 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated
		agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the
		simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose
		measurement context to the manager under test.
		5. Check in manager transcoder output for the Context carbohydrate object – Unit-Code attribute
Pass/Fail cri	teria	In step 5, the Context carbohydrate object – Unit-Code attribute is present and its value is
		MDC_DIM_X_G
Notes		In step 5, possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Unit-Code attribute is present: Object: Context carbohydrates object
		☐ Attribute-id: MDC_ATTR_UNIT_CODE (2454)
		Attribute-type: INT-U16
		Attribute-value: MDC_DIM_X_G or 1728 (dec) or 06 C0 (hex)
		b) WAN PCD-01 message
		PCD-01 message includes a segment like this with Unit-Code attribute value (check OBX-
		6):
		OBX ? NM 8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC 1.0.0.a
		130 263872^MDC_DIM_G^MDC R [current_date_time]

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-042			
TP label		Whitepaper. Glucosemeter Context Carbohydrates Object - Absolute-Time-Stamp Attribute			
Coverag	Spec	[Bluetooth PHDT v1.4]			
е	Testab	GL Numeric 30; M	Date-Time Conv 2; M	Date-Time Conv 3; M	
	le items	Date-Time Conv 4; M	Date-Time Conv 5; M		
Applicabi	lity	C_MAN_BLE_000 AND C_N	MAN_BLE_002 AND C_MAN_BLE	_007 AND C_MAN_BLE_011	
Initial con	_		the simulated agent are in the sta		
	items lity dition	C_MAN_BLE_000 AND C_M The manager under test and 1. The simulated agent is a measurement ready to 2. The simulated agent important for this test case are: a. Glucose measurement b. Glucose measurement agent and it is 4. When the pairing has been the simulated agent to repoint (RACP) and the simulated agent and it is simulated agent to repoint (RACP) and the simulated agent and it is simulated agent and it	MAN_BLE_002 AND C_MAN_BLE the simulated agent are in the sta configured with a Glucose profile (be sent and it is in the advertising plements several BLE characterist ent (0x2A18) ent context (0x2A34) initiates a discovery process (scatarts a pairing process with the sire completed (connection state), eport stored records writing an op mulated agent sends a Glucose n context to the manager under test ent (0x2A18) s bit 010011 (MSB → LSB). Glucose of Sample Location and Time Offse nunciation field is not included an uence number int16 to relevant entire Time the pate and Time gust 2nd, 2012, 10:59:27 entire Offset	andby state. Idevice specialization); it has a state (it is discoverable). Itics. The characteristics of interest state. Inning state). It discovers the mulated agent (initiating state). Ithe manager under test requests eration in Record Access Control measurement followed by the access. The measurement of interest for stoncentration in units of kg/L, to fields are included Sensor	
		Format: S	cose Concentration - units of kg/L FLOAT		
		This field vii. Field: Type	cose Concentration - units of mol/Lis not included	-	
		viii. Field: Sam • This field ix. Field: Sen	is not included ple Location is not included sor Status Annunciation is not included		
		i. Field: Flag Format: 8 Value: 00 included a Medicatio	bit 00 0001 (MSB → LSB). Carbohyd and Meal, Tester-Health, Exercise n ID, Medication Value and HbA1 uence number	Duration and Exercise Intensity,	

I	
	Value: Not relevant
	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	Format: uint8
	Value: Not relevant
	v. Field: Carbohydrate - units of kilograms
	Format: SFLOAT
	Value: Not relevant
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	xi. Field: Medication ID
	This field is not included
	xii. Medication – units of kilograms
	This field is not included
	xiii. Medication – units of litres
	This field is not included
	xiv. Field: HbA1c
	This field is not included
	Check in manager transcoder output for the Context carbohydrate object – Absolute-Time- Stamp attribute.
Pass/Fail criteria	In step 5, the Context carbohydrate object – Absolute-Time-Stamp attribute is present, its value matches with the Time Stamp field in conjunction with the Time Offset field of the Glucose measurement characteristic and the fraction of seconds is set to 0.
Notes	Possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Absolute-Time-Stamp attribute is present:
	☐ Object: Context carbohydrates object
	☐ Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448)
	Attribute-type: SEQUENCE (century (INT-U8), year (INT-U8), month (INT-U8), day (INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)} (BCD encoding)
	☐ Attribute-value:
	• century: 20 (hex) or 32 (dec)
	 year: 12 (hex) or 18 (dec)
	• month: 08 (hex) or 8 (dec)
	• day: 02 (hex) or 2 (dec)
	• hour: 12 (hex) or 18 (dec)
	• minute: 59 (hex) or 89 (dec)
	• second: 27 (hex) or 39 (dec)
	sec-fractions: 00 (hex) or 0 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value (check OBX-14):
	OBX ? NM 8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC 1.0.0.a 130 263872^MDC_DIM_G^MDC R 20120802125927+0000

TDIJ		TD// D DAN/MAN/DUDTA//OL/DV 040
TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-043
TP label		Whitepaper. Glucosemeter Context Carbohydrates Object - Basic-Nu-Observed-Value Attribute 1
Cavarana Casa		[Bluetooth PHDT v1.4]
Coverage	Spec Testable	
	items	GL Numeric 31; M Short Float Type 1; C
Applicability	<i>'</i>	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_011
Initial condit	tion	The manager under test and the simulated agent are in the standby state.
Test proced		 In the manager under test and the simulated agent are in the standoly state. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the adventising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Glucose measurement context (0x2A34) The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case is:
		Value attribute.
Pass/Fail cri	iteria	In step 5, the Context carbohydrate object – Basic-Nu-Observed-Value attribute is present
		and its value matches with Carbohydrate Value field of Glucose measurement context characteristic: 130 g.
Notes	_	In step 5, possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Basic-Nu-Observed-Value attribute is present:
		□ Object: Context carbohydrates object
		Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
		□ Attribute-type: SFLOAT
		Attribute-value: 0082 (hex) or F514 (hex) or 130 (dec)
		b) WAN PCD-01 message
		PCD-01 message includes a segment like this with a Basic-Nu-Observed-Value attribute
		value (check OBX-5):
		OBX ? NM 8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC 1.0.0.a
		130 263872^MDC_DIM_G^MDC R [current_date_time]

TP Id	TP/LP-PAN/MAN/PHDTW/GL/BV-044	
TP label	Whitepaper. Glucosemeter Context Carbohydrates Object - Basic-Nu-Observed-Value	
	Attribute 2	
Coverage Spec	[Bluetooth PHDT v1.4]	
Testabl		
items	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	
Applicability	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND	
	C_MAN_BLE_011	
Initial condition	The manager under test and the simulated agent are in the standby state.	
Test procedure	The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be cost and it is in the advertising state (it is discovered by).	
	measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this	
	test case is:	
	a. Glucose measurement context (0x2A34)	
	3. The manager under test initiates a discovery process (scanning state). It discovers the simulated	
	agent and it starts a pairing process with the simulated agent (initiating state).	
	4. When the pairing has been completed (connection state), the manager under test requests the	
	simulated agent to report stored records writing an operation in Record Access Control Point	
	(RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test:	
	a. Glucose measurement context (0x2A34)	
	i. Field: Flags	
	Format: 8 bit	
	 Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included 	
	and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID,	
	Medication Value and HbA1c fields are not included	
	ii. Field: Sequence number	
	Format: uint16Value: Not relevant	
	iii. Field: Extended Flags	
	This field is not included	
	iv. Field: Carbohydrate ID	
	Format: uint8	
	Value: Not relevant	
	v. Field: Carbohydrate - units of kilograms	
	Format: SFLOAT	
	 Value: 0.130 kg 	
	vi. Field: Meal	
	This field is not included	
	vii. Field: Tester	
	This field is not included viii. Field: Health	
	This field is not included	
	ix. Field: Exercise Duration	
	This field is not included	
	x. Field: Exercise Intensity	
	This field is not included	
	xi. Field: Medication ID	
	This field is not included	
	xii. Medication – units of kilograms	
	This field is not included xiii. Medication – units of litres	
	This field is not included	
	xiv. Field: HbA1c	
	This field is not included	
	5. Check in manager transcoder output for the Context carbohydrate object – Basic-Nu-Observed-	
	Value attribute.	
	6. The simulated agent sends the measurement to the manager under test with the following value:	
	a. Glucose measurement context (0x2A34)	
	i. Field: Flags	
	 Format: 8 bit Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included 	
	and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID,	
	Medication Value and HbA1c fields are not included	
	ii. Field: Sequence number	
	Format: uint16	
	Value: Not relevant	
	iii. Field: Extended Flags	
	This field is not included	

- iv. Field: Carbohydrate ID
 - Format: uint8
 - Value: Not relevant
 - . Field: Carbohydrate units of kilograms
 - Format: SFLOAT
 - Value: 07 FF (hex). Special value: NaN
- vi. Field: Meal
 - This field is not included
- vii. Field: Tester
 - This field is not included
- viii. Field: Health
 - This field is not included
- ix. Field: Exercise Duration
 - This field is not included
 - Field: Exercise Intensity
 - This field is not included
- xi. Field: Medication ID
 - This field is not included
- xii. Medication units of kilograms
 - · This field is not included
- xiii. Medication units of litres
 - This field is not included
- xiv. Field: HbA1c
 - This field is not included
- Check in manager transcoder output for the Context carbohydrate object Basic-Nu-Observed-Value attribute.
- 8. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Glucose measurement context (0x2A34)
 - i. Field: Flags
 - Format: 8 bit
 - Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included
 - ii. Field: Sequence number
 - Format: uint16
 - Value: Not relevant
 - iii. Field: Extended Flags
 - This field is not included
 - v. Field: Carbohydrate ID
 - Format: uint8
 - Value: Not relevant
 - v. Field: Carbohydrate units of kilograms
 - Format: SFLOAT
 - Value: 00 80 (hex). Special value: NRes
 - vi. Field: Meal
 - This field is not included
 - vii. Field: Tester
 - This field is not included
 - viii. Field: Health
 - · This field is not included
 - x. Field: Exercise DurationThis field is not included
 - Field: Exercise Intensity
 - This field is not included
 - xi. Field: Medication ID
 - This field is not included
 - xii. Medication units of kilograms
 - This field is not included
 - xiii. Medication units of litres
 - This field is not included
 - xiv. Field: HbA1c
 - This field is not included
- Check in manager transcoder output for the Context carbohydrate object Basic-Nu-Observed-Value attribute.
- 10. The simulated agent sends the measurement to the manager under test with the following value:
 - a. Glucose measurement context (0x2A34)
 - i. Field: Flags
 - Format: 8 bit

- Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included
- ii. Field: Sequence number
 - Format: uint16
 - Value: Not relevant
- iii. Field: Extended Flags
 - This field is not included
- Field: Carbohydrate ID
 - Format: uint8
 - Value: Not relevant
 - Field: Carbohydrate units of kilograms
 - Format: SFLOAT
 - Value: 07 FE (hex). Special value: +INFINITY
- Field: Meal
 - This field is not included
- vii Field: Tester
 - This field is not included
- viii. Field: Health
 - This field is not included
- Field: Exercise Duration ix.
 - This field is not included
 - Field: Exercise Intensity
 - This field is not included
- Field: Medication ID This field is not included
- Medication units of kilograms
 - This field is not included
- Medication units of litres xiii.
 - This field is not included
- xiv. Field: HbA1c
 - This field is not included
- 11. Check in manager transcoder output for the Context carbohydrate object Basic-Nu-Observed-Value attribute.
- The simulated agent sends the measurement to the manager under test with the following value:
 - Glucose measurement context (0x2A34)
 - Field: Flags i.
 - Format: 8 bit
 - Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included
 - Field: Sequence number
 - Format: uint16
 - Value: Not relevant
 - iii. Field: Extended Flags
 - This field is not included
 - Field: Carbohydrate ID
 - Format: uint8
 - Value: Not relevant
 - Field: Carbohydrate units of kilograms
 - Format: SFLOAT
 - Value: 08 02 (hex). Special value: -INFINITY
 - Field: Meal
 - This field is not included
 - Field: Tester
 - This field is not included
 - viii Field: Health
 - This field is not included
 - Field: Exercise Duration
 - This field is not included
 - Field: Exercise Intensity This field is not included
 - Field: Medication ID xi.
 - This field is not included
 - Medication units of kilograms xii.
 - This field is not included
 - xiii. Medication - units of litres
 - This field is not included
 - Field: HbA1c xiv.
 - This field is not included

	13. Check in manager transcoder output for the Context carbohydrate object – Basic-Nu-Observed-Value attribute.
Pass/Fail criteria	In step 5, the Context carbohydrate object – Basic-Nu-Observed-Value attribute is present
	and its value is 130 g. In step 7, the Context carbohydrate object – Basic -Nu-Observed-Value attribute is present
	and its value is 0x07FF.
	In step 9, the Context carbohydrate object – Basic -Nu-Observed-Value attribute is present and its value is 0x0800.
	In step 11, the Context carbohydrate object – Basic -Nu-Observed-Value attribute is present and its value is 0x07FE.
	In step 13, the Context carbohydrate object – Basic -Nu-Observed-Value attribute is present and its value is 0x0802.
Notes	In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
	Basic-Nu-Observed-Value attribute is present:
	□ Object: Context carbohydrates object
	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
	Attribute-type: SFLOATAttribute-value: 0082 (hex) or F514 (hex) or 130 (dec)
	b) WAN PCD-01 message
	PCD-01 message includes a segment like this with a Basic-Nu-Observed-Value attribute
	value (check OBX-5): OBX ? NM 8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC 1.0.0.a
	130 263872^MDC_DIM_G^MDC R [current_date_time]
	In step 7, possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Basic -Nu-Observed-Value attribute is present: Object: Context carbohydrates object
	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
	Attribute-type: SFLOAT
	Attribute-value: 07 FF(hex) or NaN (note that is not allowed a decimal value)WAN PCD-01 message
	PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute
	value (8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC) because it has a special
	value and these values are not included in the PCD-01 message.
	In step 9, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
	Basic -Nu-Observed-Value attribute is present:
	 Object: Context carbohydrates object
	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
	Attribute-type: SFLOATAttribute-value: 08 00 (hex) or NRes (note that a decimal value is not allowed)
	b) WAN PCD-01 message
	PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute value (8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC) because it has a special
	value and these values are not included in the PCD-01 message.
	In step 11, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
	Basic -Nu-Observed-Value attribute is present:
	 Object: Context carbohydrates object
	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
	Attribute-type: SFLOATAttribute-value: 07 FE (hex) or +INFINITY (note that a decimal value is not
	allowed)
	b) WAN PCD-01 message
	PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute value (8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC) because it has a special
	value and these values are not included in the PCD-01 message.
	In step 13, possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Basic -Nu-Observed-Value attribute is present: Object: Context carbohydrates object
	Attribute-id: MDC_ATTR_NU_VAL_OBS_BASIC (2636)
	□ Attribute-type: SFLOAT
	Attribute-value: 08 02 (hex) or -INFINITY (note that a decimal value is not allowed)
	b) WAN PCD-01 message PCD-01 message does not include segments with a Basic -Nu-Observed-Value attribute
	value (8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC) because it has a special
	value and these values are not included in the PCD-01 message.

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-045
TP label		Whitepaper. Glucosemeter Context Carbohydrates value
Coverage	Spec	[Bluetooth PHDT v1.4]
-	Testable	Short Float Type 1; C Date-Time Conv 1; M GL Numeric 30; M
items		GL Numeric 31; M
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_007 AND C_MAN_BLE_011
Initial condit	ion	The manager under test and the simulated agent are in the standby state.
Test procedu	ıre	1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:
		a. Glucose measurement (0x2A18)
		b. Glucose measurement context (0x2A34)
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test:
		a. Glucose measurement (0x2A18)
		i. Field: Flags
		Format: 8 bit
		 Value: 00010010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location are included, Time Offset and Sensor Status Annunciation fields are not included and Context information follows
		ii. Field: Sequence number
		Format: uint16
		Value: Not relevant
		iii. Field: Base Time
		Format: Date and Time
		 Value: August 2nd, 2012, 11:08:25
		iv. Field: Time Offset
		This field is not included
		v. Field: Glucose Concentration - units of kg/L
		Format: SFLOAT
		Value: Not relevant
		vi. Field: Glucose Concentration - units of mol/L
		This field is not included
		vii. Field: Type
		Format: nibble
		Value: Not relevant
		viii. Field: Sample Location
		Format: nibble
		Value: Not relevant
		ix. Field: Sensor Status Annunciation

	This field is not included
	b. Glucose measurement context (0x2A34)
	i. Field: Flags
	• Format: 8 bit
	 Value: 0000 0001 (MSB → LSB). Carbohydrate ID and Carbohydrate is included and Meal, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included
	ii. Field: Sequence number
	Format: uint16
	Value: Not relevant
	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	Format: uint8
	Value: 0x01 (Breakfast)
	v. Field: Carbohydrate - units of kilograms
	Format: SFLOAT
	Value: 0.130 kg
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	xi. Field: Medication ID
	This field is not included
	xii. Medication – units of kilograms
	This field is not included
	xiii. Medication – units of litres
	This field is not included
	xiv. Field: HbA1c
	This field is not included
	5. Check that the manager accepts the measurement and decodes its value properly (Context carbohydrates value, Context carbohydrates units and base time).
Pass/Fail criteria	In step 5, the manager under test shows the following Context carbohydrate 130 g with the time stamp '2012-08-02 11:08:25'.
Notes	

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-046
TP label		Whitepaper. Glucosemeter Device & Sensor Annunciation Enumeration Object - Handle Attribute
Coverage		
Coverage	Spec	[Bluetooth PHDT v1.4]
Testable items		GL Enumeration 1; O
A		O MANURIE COO AND O MANURIE COO AND O MANURIE COOTAND
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
		C_MAN_BLE_012
Initial condit		The manager under test and the simulated agent are in the standby state.
Test procedu	ure	1. The simulated agent is configured with a Glucosemeter profile (device specialization);
		it has a measurement ready to be sent and it is in the advertising state (it is
		discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of
		interest for this test case is:
		a. Glucose measurement (0x2A18)
		i. Field: Flags
		Format: 8 bit
		 Value: 00001010 (MSB → LSB). Glucose concentration in units of kg/L,
		Type and Sample Location, Sensor Status Annunciation fields are
		included. Time Offset field is not included. Context information does not
		follow
		ii. Field: Sequence number
		Format: uint16
		Value: Not relevant
		iii. Field: Base Time
		Format: Date and Time
		Value: Not relevant
		iv. Field: Time Offset
		This field is not included
		v. Field: Glucose Concentration - units of kg/L
		Format: SFLOAT
		Value: Not relevant
		vi. Field: Glucose Concentration - units of mol/L
		This field is not included
		vii. Field: Type
		Format: nibble
		Value: Not relevant
		viii. Field: Sample Location
		Format: nibble
		Value: Not relevant
		ix. Field: Sensor Status Annunciation
		Format: 16bit
		Value: Not relevant
		3. The manager under test initiates a discovery process (scanning state). It discovers the
		simulated agent and it starts a pairing process with the simulated agent (initiating
		state).
		4. When the pairing has been completed (connection state), the manager under test
		requests the simulated agent to report stored records writing an operation in Record
		Access Control Point (RACP) and the simulated agent sends a Glucose measurement
		to the manager under test.
		5. Check in manager transcoder output for the Device & Sensor annunciation
D /=		enumeration object – Handle attribute.
Pass/Fail cri	teria	In step 5, the Device & Sensor annunciation enumeration object – Handle attribute is not
Nat		present; however, if it is present then its value is different to 0.
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Handle attribute is not present, or if it is present then:
		Object: Device & Sensor annunciation enumeration object
		Attribute-id: MDC_ATTR_ID_HANDLE (2337)
		Attribute-type: INT-U16
		Attribute-value: Any value other than 0
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Handle attribute value.

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-047
TP label		Whitepaper. Glucosemeter Device & Sensor Annunciation Enumeration Object - Type
		Attribute
Coverage Spec Testable items		[Bluetooth PHDT v1.4]
		GL Enumeration 2; M
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_012
Initial condit	ion	The manager under test and the simulated agent are in the standby state.
Test procedo		 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are: Glucose measurement (0x2A18) Field: Flags Format: 8 bit Value: 00001010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location, Sensor Status Annunciation fields are included. Time Offset field is not included. Context information does not follow Field: Sequence number Format: unit16 Value: Not relevant Field: Base Time Format: Date and Time Value: Not relevant Field: Time Offset This field is not included V. Field: Glucose Concentration - units of kg/L Format: SFLOAT Value: Not relevant Field: Glucose Concentration - units of mol/L This field is not included Vii. Field: Glucose Concentration - units of mol/L This field is not included Viii. Field: Sample Location Format: nibble Value: Not relevant Viii. Field: Sensor Status Annunciation Format: 16bit Value: Not relevant The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in
Notes		and its value is { MDC_PART_PHD_DM MDC_GLU_METER_DEV_STATUS }. In step 5, possible values in typical points of observation after transcoder output are:
110163		a) IEEE 11073 Objects and Attributes
		Type attribute is present:
		□ Object: Device & Sensor annunciation enumeration object
		□ Attribute-id: MDC_ATTR_ID_TYPE (2351)
		☐ Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)}
		☐ Attribute-value:
		partition: MDC_PART_PHD_DM or 128 (dec) or 00 80 (hex)
		 code: MDC_GLU_METER_DEV_STATUS or 29144 (dec) or 71D8 (hex)
		b) WAN PCD-01 message
		PCD-01 message includes a segment like this with a Type attribute value (check OBX-3):
		OBX ? NM 8417752^MDC_GLU_METER_DEV_STATUS^MDC 1.0.0.a 1^device-battery-
		low(0) R [current_date_time]

Whitepaper, Glucosemeter Device & Sensor Annunciation Enumeration Object - Metric-Spec-Small Attribute	TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-048				
Spec							
Spec Bluetooth PHDT v1.4 Testable T							
Testable GL Enumeration 3; M	Coverage Spec						
Items	•						
Initial condition	items						
1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Glucose measurement (0x2A18) i. Field: Flags i. Field: Flags i. Format: 8 bit value: 00001010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location, and Sensor Status Annunciation fields are included. Time Offset field is not included. Context information does not follow ii. Field: Sequence number Format: bate and Time Value: Not relevant iii. Field: Base Time Format: Date and Time Value: Not relevant Field: Glucose Concentration - units of kg/L Format: SFLOAT Value: Not relevant Vi. Field: Glucose Concentration - units of mol/L Field: Glucose Concentration - units of mol/L Value: Not relevant Vi. Field: Glucose Concentration - units of mol/L This field is not included Vii. Field: Sensor Status Annunciation Format: nibble Value: Not relevant Viii. Field: Sensor Status Annunciation Format: fibilt Value: Not relevant Viii. Field: Sensor Status Annunciation Format: fibilt Value: Not relevant Viii. Field: Sensor Status Annunciation Format: fibilt Value: Not relevant Viii. Field: Sensor Status Annunciation Format: fibilt Value: Not relevant Viii. Field: Sensor Status Annunciation Format: mibble Value: Not relevant Viii. Field: Sensor Status Annunciation Format: mibble Value: Not relevant Viii. Field: Sensor Status Annunciation Format: mibble Value: Not relevant Viii. Field: Sensor Status Annunciation Format: mibble Value: Not relevant Viii. Field: Sensor Status Annunciation Format: mibble Value: Not relevant Viii. Field: Sensor Status Annunciation Format: mibble Value: Not relevant Viii. Field: Sensor Status Annunciation Format: mibble Value: Not relevant Viii. Field: Sensor Status Annunciation Format: mibble Value: Not relevant Viii. Field: Sensor Status Annunciation Format: mibble Value: Not re			C_MAN_BLE_012				
a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Glucose measurement (0x2A18) i. Field: Flags • Format: 8 bit • Value: 00001010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location, and Sensor Status Annunciation fields are included. Time Offset field is not included. Context information does not follow ii. Field: Sequence number • Format: Time Offset field is not included. Context information does not follow iii. Field: Sequence number • Format: unint16 • Value: Not relevant Field: Time Offset • This field is not included v. Field: Time Offset • This field is not included v. Field: Glucose Concentration - units of kg/L • Format: SFLOAT • Value: Not relevant vi. Field: Glucose Concentration - units of mol/L • This field is not included vii. Field: Sample Location • Format: nibble • Value: Not relevant viii. Field: Sample Location • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not relevant ix. Field: Sensor Status Annunciation • Format: nibble • Value: Not rele							
Attribute-value: F0 40 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9) set to TRUE and remaining BITS set to FALSE b) WAN PCD-01 message	Pass/Fail cri	ure	 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Glucose measurement (oxAA18) Field: Flags Format: 8 bit Value: 00001010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location, and Sensor Status Annunciation fields are included. Time Offset field is not included. Context information does not follow Field: Sequence number Format: unit16 Value: Not relevant Field: Base Time Format: Date and Time Value: Not relevant Field: Time Offset This field is not included V. Field: Glucose Concentration - units of kg/L Format: SFLOAT Value: Not relevant Field: Glucose Concentration - units of mol/L This field is not included Vi. Field: Type Format: nibble Value: Not relevant Field: Sample Location Format: nibble Value: Not relevant Field: Sensor Status Annunciation Format: 16bit Value: Not relevant The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). When the pairing has been completed (connection state), the manager under test requests the simulated agent for port stored records writing an operation in Record Access Control Point (RACP				
LECTOR TEMPORARY CORA DO INCIDIO ACCIDENTA MILLA MEDICACIDADA ANTICIDA VALIDA			PCD-01 message does not include segments with a Metric-Spec-Small attribute value.				

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-049					
TP label		Whitepaper. Glucosemeter Device & Sensor Annunciation Enumeration Object - Absolute- Time-Stamp Attribute					
Coverage Spec		[Bluetooth PHDT v1.4]					
-	Testable	GL Enumeration	4; M	Date-Time Conv 2; M	Date-Time Conv 3; M		
	items	Date-Time Conv 4; M Date-Time Conv 5; M					
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_012					
Initial condition		The manager under test and the simulated agent are in the standby state.					
Test procedure		 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 					
		The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are:					
		a. Glucose measurement (0x2A18)					
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).					
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case are:					
		a. Glucose measurement (0x2A18)					
		i. Field: Flags					
		Format: 8 bit					
		 Value: 00001011 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location, Time Offset fields and Sensor Status Annunciation field are included. Context information does not follow 					
		ii. Field: Sequence number					
		Format: uint16					
		•	Value: Not	relevant			
		iii.	Field: Base	Time			
		•	Format: Da	te and Time			
		•	Value: Aug	ust 2nd, 2012, 10:59:27			
		iv. Field: Time Offset					
		•	Format: sin	t16			
		•	Value: 120	minutes			
		V.	Field: Gluco	se Concentration - units of kg/L	-		
		•	Format: SF	LOAT			
		•	Value: Not	relevant			
		vi.	Field: Gluco	se Concentration - units of mol	/L		
		•	This field is	not included			
		vii.	Field: Type				
		•	Format: nib	ble			
		•	Value: Not	relevant			

	viii. Field: Sample Location			
	Format: nibble			
	Value: Not relevant			
	ix. Field: Sensor Status Annunciation			
	Format: 16bit			
	Value: Not relevant			
	Check in manager transcoder output for the Device & Sensor annunciation enumeration object – Absolute-Time-Stamp attribute.			
Pass/Fail criteria	In step 5, the Device & Sensor annunciation enumeration object – Absolute-Time-Stamp attribute is present, its value matches with the Time Stamp field in conjunction with the Time Offset field of the Glucose measurement characteristic and the fraction of seconds is set to 0.			
Notes	Possible values in typical points of observation after transcoder output are:			
	a) IEEE 11073 Objects and Attributes			
	Absolute-Time-Stamp attribute is present:			
	☐ Object: Device & Sensor annunciation enumeration object			
	☐ Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448)			
	Attribute-type: SEQUENCE {century (INT-U8), year (INT-U8), month (INT-U8), da (INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)} (BCD encoding)			
	☐ Attribute-value:			
	• century: 20 (hex) or 32 (dec)			
	 year: 12 (hex) or 18 (dec) 			
	 month: 08 (hex) or 8 (dec) 			
	 day: 02 (hex) or 2 (dec) 			
	 hour: 12 (hex) or 18 (dec) 			
	• minute: 59 (hex) or 89 (dec)			
	• second: 27 (hex) or 39 (dec)			
	sec-fractions: 00 (hex) or 0 (dec)			
	b) WAN PCD-01 message			
	PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value (check OBX-14):			
	OBX ? NM 8417752^MDC_GLU_METER_DEV_STATUS^MDC 1.0.0.a 1^device-battery-low(0) R 20120802125927+0000			

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-050				
TP label		Whitepaper. Glucosemeter Device & Sensor Annunciation Enumeration Object - Enum-Observed-Value-Basic-Bit-Str Attribute				
Coverage Spec		[Bluetooth PHDT v1.4]				
	Testable items	GL Enumeration 5; M				
Applicability	у	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_012				
Initial condi	tion	The manager under test and the simulated agent are in the standby state.				
Test procedure		 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Glucose measurement (0x2A18) Field: Flags 				
		 Format: 8 bit Value: 00001010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location, and Sensor Status Annunciation fields are included. Time Offset field is not included. Context information does not follow 				
		ii. Field: Sequence numberFormat: uint16				
		Value: Not relevant				
		iii. Field: Base Time				
		Format: Date and Time				
		Value: Not relevant				
		iv. Field: Time Offset				
		This field is not included				
		v. Field: Glucose Concentration - units of kg/L				
		Value: Not relevant				
		vi. Field: Glucose Concentration - units of mol/L				
		This field is not included				
		vii. Field: Type				
		Format: nibble				
		Value: Not relevant				
		viii. Field: Sample Location				
		Format: nibble				
		Value: Not relevant				
		ix. Field: Sensor Status Annunciation				
		Format: 16bit				
		Value: Several values are checked in this test case				
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).				
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 000000000000001 0x0001 (MSB → LSB) = device battery low] to the manager under test.				
		Check in manager transcoder output for the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute.				
		6. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 000000000000010 0x0002 (MSB → LSB) = sensor malfunction] to the manager under test.				

- Check in manager transcoder output for the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute.
- 8. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 0000000000000100 0x0004 (MSB → LSB) = sample size insufficient, not enough blood or control solution] to the manager under test.
- 9. Check in manager transcoder output for the Device & Sensor annunciation enumeration object Enum-Observed-Value-Basic-Bit-Str attribute.
- 10. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 0000000000001000 0x0008 (MSB → LSB) = stripo insertion error] to the manager under test.
- 11. Check in manager transcoder output for the Device & Sensor annunciation enumeration object Enum-Observed-Value-Basic-Bit-Str attribute.
- 12. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 000000000010000 0x0010 (MSB → LSB) = strip type is incorrect] to the manager under test.
- 13. Check in manager transcoder output for the Device & Sensor annunciation enumeration object Enum-Observed-Value-Basic-Bit-Str attribute.
- 14. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 000000000100000 0x0020 (MSB → LSB) = sensor result higher than device can process] to the manager under test.
- 15. Check in manager transcoder output for the Device & Sensor annunciation enumeration object Enum-Observed-Value-Basic-Bit-Str attribute.
- 16. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 000000001000000 0x0040 (MSB → LSB) = sensor result lower than device can process] to the manager under test.
- 17. Check in manager transcoder output for the Device & Sensor annunciation enumeration object Enum-Observed-Value-Basic-Bit-Str attribute.
- 18. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 0000000010000000 0x0080 (MSB → LSB) = ambient temperature too high for a valid test/result] to the manager under test.
- 19. Check in manager transcoder output for the Device & Sensor annunciation enumeration object Enum-Observed-Value-Basic-Bit-Str attribute.
- 20. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 0000000100000000 0x0100 (MSB → LSB) = ambient temperature too low for a valid test/result] to the manager under test.
- 21. Check in manager transcoder output for the Device & Sensor annunciation enumeration object Enum-Observed-Value-Basic-Bit-Str attribute.
- 22. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 0000001000000000 0x0200 (MSB → LSB) = reading was interrupted and/or strip was pulled too soon] to the manager under test.
- 23. Check in manager transcoder output for the Device & Sensor annunciation enumeration object Enum-Observed-Value-Basic-Bit-Str attribute.
- 24. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sensor Status Annunciation ID field set to 000001000000000 0x0400 (MSB → LSB) = general device fault] to the manager under test.
- 25. Check in manager transcoder output for the Device & Sensor annunciation enumeration object Enum-Observed-Value-Basic-Bit-Str attribute.

Pass/Fail criteria

In step 5, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: device-battery-low(0) \rightarrow 0x8000.

In step 7, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: sensor-malfunction(1) \rightarrow 0x4000.

In step 9, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: sensor-sample-size-insufficient(2) \rightarrow 0x2000.

In step 11, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: sensor -strip-insertion(3) → 0x1000.

In step 13, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: sensor -strip-type-incorrect(4) \rightarrow 0x0800.

In step 15, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: sensor-result-too-high(5) \rightarrow 0x0400.

In step 17, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: sensor-result-too-low(6) \rightarrow 0x0200.

In step 19, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: sensor-temp-too-high(7) \rightarrow 0x0100.

In step 21, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: sensor-temp-too-low(8) \rightarrow 0x0080.

In step 23, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: sensor-read-interrupt(9) \rightarrow 0x0040.

In step 25, the Device & Sensor annunciation enumeration object - Enum-Observed-Value-Basic-Bit-Str attribute is present and its value matches with the Sensor Status Annunciation Value field of the Glucose measurement characteristic: sensor-gen-fault(10) \rightarrow 0x0020.

Notes

In step 5, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Enum-Observed-Value-Basic-Bit-Str attribute is present:

- Object: Device & Sensor annunciation enumeration object
- □ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
- ☐ Attribute-type: BITS-16
- □ Attribute-value: 32768 (dec) or 0x8000 (hex)
- b) WAN PCD-01 message

PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check

 $OBX|?|NM|8417752^{MDC}_GLU_METER_DEV_STATUS^{MDC}|1.0.0.a|1^{device-battery-low}(0)|||||R|||[current_date_time]$

In step 7, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Enum-Observed-Value-Basic-Bit-Str attribute is present:

- □ Object: Device & Sensor annunciation enumeration object
- Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
- ☐ Attribute-type: BITS-16
- ☐ Attribute-value: 16384 (dec) or 0x4000 (hex)

b) WAN PCD-01 message

PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check

 $OBX|?|NM|~8417752^MDC_GLU_METER_DEV_STATUS^MDC|1.0.0.a|1^sensor-malfunction(1)|||||R|||[current_date_time]$

In step 9, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes
Enum-Observed-Value-Basic-Bit-Str attribute is present:
□ Object: Device & Sensor annunciation enumeration object
☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
☐ Attribute-type: BITS-16
☐ Attribute-value: 8192 (dec) or 0x2000 (hex)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check
OBX ? NM 8417752^MDC_GLU_METER_DEV_STATUS^MDC 1.0.0.a 1^sensor-sample-size-insufficient(2) R [current_date_time]
In step 11, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Enum-Observed-Value-Basic-Bit-Str attribute is present:
 Object: Device & Sensor annunciation enumeration object
☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
☐ Attribute-type: BITS-16
☐ Attribute-value: 4096 (dec) or 0x1000 (hex)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check
OBX ? NM 8417752^MDC_GLU_METER_DEV_STATUS^MDC 1.0.0.a 1^sensor-strip-insertion(3) R [current_date_time]
In step 13, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
Enum-Observed-Value-Basic-Bit-Str attribute is present:
□ Object: Device & Sensor annunciation enumeration object
Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
☐ Attribute-type: BITS-16
☐ Attribute-value: 2048(dec) or 0x0800 (hex)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check
OBX ? NM 8417752^MDC_GLU_METER_DEV_STATUS^MDC 1.0.0.a 1^sensor-striptype-incorrect(4) R [current_date_time]
In step 15, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Enum-Observed-Value-Basic-Bit-Str attribute is present:
□ Object: Device & Sensor annunciation enumeration object
☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
□ Attribute-type: BITS-16
☐ Attribute-value: 1024 (dec) or 0x0400 (hex)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check
OBX ? NM 8417752^MDC_GLU_METER_DEV_STATUS^MDC 1.0.0.a 1^sensor-result-too-high(5) R [current_date_time] 1^(5)
In step 17, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Enum-Observed-Value-Basic-Bit-Str attribute is present:
Object: Device & Sensor annunciation enumeration object
☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
□ Attribute-type: BITS-16
☐ Attribute-value: 512(dec) or 0x0200 (hex)
b) WAN PCD-01 message
. <i>,</i>

PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check

OBX|?|NM| 8417752^MDC_GLU_METER_DEV_STATUS^MDC|1.0.0.a|1^sensor-result-too-low(6)|||||R|||[current_date_time]

In step 19, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Enum-Observed-Value-Basic-Bit-Str attribute is present:

- □ Object: Device & Sensor annunciation enumeration object
- ☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
- ☐ Attribute-type: BITS-16
- ☐ Attribute-value: 256 (dec) or 0x0100 (hex)
- b) WAN PCD-01 message

PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check

OBX|?|NM| 8417752^MDC_GLU_METER_DEV_STATUS^MDC|1.0.0.a|1^sensor-temptoo-high(7)|||||R|||[current_date_time]

In step 21, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Enum-Observed-Value-Basic-Bit-Str attribute is present:

- □ Object: Device & Sensor annunciation enumeration object
- □ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
- ☐ Attribute-type: BITS-16
- ☐ Attribute-value: 128 (dec) or 0x0080 (hex)
- b) WAN PCD-01 message

PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check

OBX|?|NM| 8417752^MDC_GLU_METER_DEV_STATUS^MDC|1.0.0.a|1^sensor-temptoo-low(8)|||||R|||[current_date_time]

In step 23, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Enum-Observed-Value-Basic-Bit-Str attribute is present:

- □ Object: Device & Sensor annunciation enumeration object
- □ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
- Attribute-type: BITS-16
- ☐ Attribute-value: 64 (dec) or 0x0040 (hex)
- b) WAN PCD-01 message

PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check

 $OBX|?|NM|~8417752^{MDC}_GLU_METER_DEV_STATUS^{MDC}|1.0.0.a|1^{sensor-read-interrupt}(9)|||||R|||[current_date_time]$

In step 25, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Enum-Observed-Value-Basic-Bit-Str attribute is present:

- □ Object: Device & Sensor annunciation enumeration object
- ☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_BASIC_BIT_STR (2662)
- ☐ Attribute-type: BITS-16
- ☐ Attribute-value: 32 (dec) or 0x0020 (hex)
- b) WAN PCD-01 message

PCD-01 message includes a segment like this with an Enum-Observed-Value-Basic-Bit-Str attribute value. Check

OBX|?|NM| 8417752^MDC_GLU_METER_DEV_STATUS^MDC|1.0.0.a|1^device-genfault(10)|||||R|||[current_date_time]

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-051				
TP label		Whitepaper. Glucosemeter Device & Sensor Annunciation Enumeration Object value				
Coverage	Spec	[Bluetooth PHDT v1.4]				
Ooverage	Testable	GL Enumeration 4; M GL Enumeration 5; M Date-Time Conv 1; M				
	items	GL Enumeration 4, W GL Enumeration 5, W Date-Time Conv 1, W				
Applicability		C MAN DIE 000 AND C MAN DIE 007 AND C MAN DIE 012				
Initial condit		C_MAN_BLE_000 AND C_MAN_BLE_007 AND C_MAN_BLE_012				
		The manager under test and the simulated agent are in the standby state.				
Test proced	ure	1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).				
		The simulated agent implements several BLE characteristics. The characteristic of				
		interest for this test case is:				
		a. Glucose measurement (0x2A18)				
		3. The manager under test initiates a discovery process (scanning state). It discovers the				
		simulated agent and it starts a pairing process with the simulated agent (initiating				
		state). 4. When the pairing has been completed (connection state), the manager under test				
		requests the simulated agent to report stored records writing an operation in Record				
		Access Control Point (RACP) and the simulated agent sends the measurement to the				
		manager under test with the following value:				
		a. Glucose measurement (0x2A18)				
		i. Field: Flags				
		Format: 8 bit				
		 Value: 00001010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location, and Sensor Status Annunciation fields are 				
		included. Time Offset field is not included. Context information does not				
		follow				
ii. Field: Sequence nur		ii. Field: Sequence number				
		Format: uint16				
		Value: Not relevant				
		iii. Field: Base Time				
		Format: Date and Time				
		 Value: August 2nd, 2012, 11:08:25 				
		iv. Field: Time Offset				
		This field is not included				
		v. Field: Glucose Concentration - units of kg/L				
		Format: SFLOAT				
		Value: Not relevant				
		vi. Field: Glucose Concentration - units of mol/L				
		This field is not included				
		vii. Field: Type				
		Format: nibble				
		Value: Not relevant				
		viii. Field: Sample Location				
		Format: nibble				
		Value: Not relevant				
		ix. Field: Sensor Status Annunciation				
1		Format: 16bit				
		 Value: device battery low (00000000000001 MSB → LSB) 				
		5. Check that the manager accepts the measurement and decodes its value properly				
		(sensor status annunciation and base time).				
Pass/Fail cri	teria	In step 5, the manager under test shows the following 'Sensor Status Annunciation' device battery low (000000000000001) with the time stamp '2012-08-02 11:08:25'.				
Notes						

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-052			
TP label		Whitepaper. Glucosemeter Context Meal Enumeration Object - Handle Attribute			
Coverage Spec		[Bluetooth PHDT v1.4]			
	stable	GL Enumeration 6; O			
iten	ns				
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND			
,		C_MAN_BLE_013			
Initial condition		The manager under test and the simulated agent are in the standby state.			
Test procedure		1. The simulated agent is configured with a Glucosemeter profile (device specialization);			
•		it has a measurement ready to be sent and it is in the advertising state (it is			
		discoverable).			
		2. The simulated agent implements several BLE characteristics. The characteristic of			
		interest for this test case is:			
		a. Glucose measurement context (0x2A34)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 0000 0010 (MSB → LSB). Meal is included and Carbohydrate ID, 			
		Carbohydrate, Tester-Health, Exercise Duration, Exercise Intensity,			
		Medication ID, Medication Value and HbA1c fields are not included			
		ii. Field: Sequence number			
		• Format: uint16			
		Value: Not relevant			
		iii. Field: Extended Flags			
		This field is not included			
		iv. Field: Carbohydrate ID			
		This field is not included			
		v. Field: Carbohydrate - units of kilograms			
		This field is not included			
		vi. Field: Meal			
		Format: uint8			
		Value: Not relevant			
		vii. Field: Tester			
		This field is not included			
		viii. Field: Health			
		This field is not included			
		ix. Field: Exercise Duration			
		This field is not included			
		x. Field: Exercise Intensity			
		This field is not included			
		xi. Field: Medication ID			
		This field is not included			
		xii. Medication – units of kilograms			
		This field is not included			
		xiii. Medication – units of litres			
		This field is not included			
		xiv. Field: HbA1c			
		This field is not included			
3. The manager under test initiates a discovery p simulated agent and it starts a pairing process state). 4. When the pairing has been completed (connect requests the simulated agent to report stored requests Control Point (RACP) and the simulated followed by the Glucose measurement context 5. Check in manager transcoder output for the Context attribute. Pass/Fail criteria In step 5, the Context meal enumeration object – H					
		simulated agent and it starts a pairing process with the simulated agent (initiating			
		,			
		requests the simulated agent to report stored records writing an operation in Record			
		Access Control Point (RACP) and the simulated agent sends a Glucose measurement			
		followed by the Glucose measurement context to the manager under test.			
		j ,			
		In step 5, the Context meal enumeration object – Handle attribute is not present; however,			
Notes		if it is present then its value is different to 0.			
Notes		Possible values in typical points of observation after transcoder output are:			
		a) IEEE 11073 Objects and Attributes Handle attribute is not present, or if it is present then:			
		Handle attribute is not present, or if it is present then:			
		Object: Context meal enumeration object			
		Attribute-id: MDC_ATTR_ID_HANDLE (2337)Attribute-type: INT-U16			
		□ Attribute-type: INT-U16 □ Attribute-value: Any value other than 0			
		b) WAN PCD-01 message			
		PCD-01 message does not include segments with a Handle attribute value.			
		1 OD OT message does not motive segments with a mandle attribute value.			

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-053			
TP label		Whitepaper. Glucosemeter Context Meal Enumeration Object - Type Attribute			
		Whitepaper. Glacosemeter Context Mear Enumeration Object - Type Attribute			
Coverage	Spec	[Bluetooth PHDT v1.4]			
	Testable items	GL Enumeration 7; M			
Applicability	Applicability C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_013				
Initial condi	tion	The manager under test and the simulated agent are in the standby state.			
Initial condi Test proced	ure				
		PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? CWE 8417864^MDC_CTXT_GLU_MEAL^MDC 1.0.0.7 8417868^			
		MDC_CTXT_GLU_MEAL_PREPRANDIAL^MDC R [current_date_time]			

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-054			
TP label		Whitepaper. Glucosemeter Context Meal Enumeration Object - Metric-Spec-Small Attribute			
Coverage Spec		[Bluetooth PHDT v1.4]			
	Testable items	GL Enumeration 8; M			
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND			
		C_MAN_BLE_013			
Initial condit	tion	The manager under test and the simulated agent are in the standby state.			
Test procedure		 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: 			
		 a. Glucose measurement context (0x2A34) i. Field: Flags • Format: 8 bit • Value: 0000 0010 (MSB → LSB). Meal is included and Carbohydrate ID, Carbohydrate, Tester-Health, Exercise Duration, Exercise Intensity, Medication 			
		ID, Medication Value and HbA1c fields are not included ii. Field: Sequence number Format: uint16 Value: Not relevant iii. Field: Extended Flags This field is not included			
		 iv. Field: Carbohydrate ID This field is not included v. Field: Carbohydrate - units of kilograms 			
		 This field is not included vi. Field: Meal Format: uint8 			
		 Value: Not relevant vii. Field: Tester This field is not included 			
		viii. Field: Health This field is not included			
		ix. Field: Exercise Duration This field is not included x. Field: Exercise Intensity			
		This field is not included xi. Field: Medication ID			
		 This field is not included xii. Medication – units of kilograms This field is not included 			
		xiii. Medication – units of litres			
		This field is not included xiv. Field: HbA1c			
		 This field is not included The manager under test initiates a discovery process (scanning state). It discovers the simulated 			
		 agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. 			
5. Check in mana		 Check in manager transcoder output for the Context meal enumeration object – Metric-Spec- Small attribute. 			
Pass/Fail cri	iteria	In step 5, the Context meal enumeration object – Metric-Spec-Small attribute is present and its value is {0xF048} (mss-avail-intermittent mss-avail-stored-data mss-upd-aperiodic mss-msmt-aperiodic mss-acc-agent-initiated mss-cat-manual).			
Notes		Possible values in typical points of observation after transcoder output are:			
		a) IEEE 11073 Objects and Attributes			
		Metric-Spec-Small attribute is present:			
		 Object: Context meal numeric object Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630) 			
		Attribute-id. MDC_ATTR_METRIC_SPEC_SMALL (2630) Attribute-type: BITS-16			
		Attribute-value: F0 48 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9), mss-cat-manual(12) set to TRUE and remaining BITS set to FALSE			
		b) WAN PCD-01 message PCD-01 message does not include segments with a Metric-Spec-Small attribute value.			

TP ld		TP/LP-PAN/MAN/PH	DTW/GI	/BV-055	
TP label					bject - Absolute-Time-Stamp
Coverage	Spec	[Bluetooth PHDT v1.4]			
Testable		GL Enumeration 9; M	_	Date-Time Conv 2; M	Date-Time Conv 3; M
	items	Date-Time Conv 4; M		Date-Time Conv 5; M	
Applicability C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_013			I_BLE_007 AND		
Initial condit	ion	The manager under t	est and th	ne simulated agent are in t	he standby state.
Initial condit Test procedu		1. The simulated ag a measurement 2. The simulated aginterest for this to a. Glucose me b. Glucose me b. Glucose me simulated agent state). 4. When the pairing requests the sim Access Control If followed by the Gmeasurement of a. Glucose me i. Fie Poly St. iii. Fie Poly St. iii. Fie Poly St. iii. Fie Poly St. iv. Fie Poly Value	gent is corready to ready to gent implement implement case a asurement asurement and it start an	Infigured with a Glucose probe sent and it is in the adversements several BLE characters: Int (0x2A18) Int context (0x2A34) Initiates a discovery process arts a pairing process with the completed (connection sepent to report stored record CP) and the simulated ageneasurement context to the for this test case are: Int (0x2A18) Int (0	ofile (device specialization); it has rertising state (it is discoverable). It discovers the second state of the simulated agent (initiating state). It discovers the she simulated agent (initiating state), the manager under test is writing an operation in Record ent sends a Glucose measurement e manager under test. The state of the second state

I				
	Format: uint16			
	Value: Not relevant			
	iii. Field: Extended Flags			
	This field is not included			
	iv. Field: Carbohydrate ID			
	This field is not included			
	v. Field: Carbohydrate - units of kilograms			
	This field is not included			
	vi. Field: Meal			
	Format: uint8			
	Value: Not relevant			
	vii. Field: Tester			
	This field is not included			
	viii. Field: Health			
	This field is not included			
	ix. Field: Exercise Duration			
	This field is not included Field Francisc Interestity			
	x. Field: Exercise Intensity			
	This field is not included			
	xi. Field: Medication ID			
	This field is not included The field is not included The field is not included.			
	xii. Medication – units of kilograms			
	This field is not included Medication units of litrog			
	xiii. Medication – units of litres			
	This field is not included Tield: Ub 44.6			
	xiv. Field: HbA1c			
	This field is not included Check in manager transpoder output for the Centext meet enumeration chiest.			
	Check in manager transcoder output for the Context meal enumeration object – Absolute-Time-Stamp attribute.			
Pass/Fail criteria	In step 5, the Context meal enumeration object – Absolute-Time-Stamp attribute is present,			
	its value matches with the Time Stamp field in conjunction with the Time Offset field of the			
	Glucose measurement characteristic and the fraction of seconds is set to 0.			
Notes	Possible values in typical points of observation after transcoder output are:			
	a) IEEE 11073 Objects and Attributes			
	Absolute-Time-Stamp attribute is present:			
	Object: Context meal object			
	□ Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448)			
	Attribute-type: SEQUENCE (century (INT-U8), year (INT-U8), month (INT-U8), day (INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)			
	U8)} (BCD encoding)			
	□ Attribute-value:			
	• century: 20 (hex) or 32 (dec)			
	• year: 12 (hex) or 18 (dec)			
	• month: 08 (hex) or 8 (dec)			
	• day: 02 (hex) or 2 (dec)			
	 hour: 12 (hex) or 18 (dec) 			
	minute: 59 (hex) or 89 (dec)			
	• second: 27 (hex) or 39 (dec)			
	 sec-fractions: 00 (hex) or 0 (dec) 			
	b) WAN PCD-01 message			
	PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value:			
	OBX ? CWE 8417864^MDC_CTXT_GLU_MEAL^MDC 1.0.0.7 8417868^			
	MDC_CTXT_GLU_MEAL_PREPRANDIAL^MDC R 20120802125927+0000			

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-056			
TP label		Whitepaper. Glucosemeter Context Meal Enumeration Object - Enum-Observed-Value-Simple-OID Attribute			
Coverage	Spec	[Bluetooth PHDT v1.4]			
	Testable items	GL Enumeration 10; M			
Applicability	y	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_013			
Initial condi	tion	The manager under test and the simulated agent are in the standby state.			
Test proced	ure	1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).			
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:			
		a. Glucose measurement context (0x2A34)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 0000 0010 (MSB → LSB). Meal is included and Carbohydrate ID, Carbohydrate, Tester-Health, Exercise Duration, Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included 			
		ii. Field: Sequence number			
		Format: uint16			
		Value: Not relevant			
		iii. Field: Extended Flags			
		This field is not included			
		iv. Field: Carbohydrate ID			
		This field is not included			
		v. Field: Carbohydrate - units of kilograms			
		This field is not included			
		vi. Field: Meal			
		Format: uint8			
		Value: Several values are checked in this test case			
		vii. Field: Tester			
		This field is not included			
		viii. Field: Health			
		This field is not included			
		ix. Field: Exercise Duration			
		This field is not included			
		x. Field: Exercise Intensity			
		This field is not included			
		xi. Field: Medication ID			
		This field is not included			
		xii. Medication – units of kilograms			
		This field is not included			
		xiii. Medication – units of litres			
		This field is not included			
		xiv. Field: HbA1c			
		This field is not included			

- The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
- 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context [Meal field set to 0x01 = Preprandial (before meal)] to the manager under test.
- Check in manager transcoder output for the Context meal enumeration object Enum-Observed-Value-Simple-OID attribute.
- 6. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement context [Meal field set to 0x02 = Postprandial (after meal)] to the manager under test.
- 7. Check in manager transcoder output for the Context meal enumeration object Enum-Observed-Value-Simple-OID attribute.
- The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement context [Meal field set to 0x03 = Fasting] to the manager under test.
- Check in manager transcoder output for the Context meal enumeration object Enum-Observed-Value-Simple-OID attribute.
- 10. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement context [Meal field set to 0x04 = Casual] to the manager under test.
- Check in manager transcoder output for the Context meal enumeration object Enum-Observed-Value-Simple-OID attribute.
- 12. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement context [Meal field set to 0x05 = Bedtime] to the manager under test.
- Check in manager transcoder output for the Context meal enumeration object Enum-Observed-Value-Simple-OID attribute.

Pass/Fail criteria

In step 5, the Context meal enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Meal Value field of the Glucose measurement context characteristic: 0x1 (preprandial – before meal).

In step 7, the Context meal enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Meal Value field of the Glucose measurement context characteristic: 0x2 (postprandial – after meal).

In step 9, the Context meal enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Meal Value field of the Glucose measurement context characteristic: 0x3 (fasting).

In step 11, the Context meal enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Meal Value field of the Glucose measurement context characteristic: 0x4 (casual – snacks, drinks etc.).

In step 13, the Context meal enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Meal Value field of the Glucose measurement context characteristic: 0x5 (bedtime).

Notes

In step 5, possible values in typical points of observation after transcoder output are:

a) IEEE 11073 Objects and Attributes

Enum-Observed-Value-Simple-OID attribute is present:

- Object: Context meal enumeration object
- ☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633)
- ☐ Attribute-type: OID-Type(INT-U16)
- □ Attribute-value: MDC_CTXT_GLU_MEAL_PREPRANDIAL (29260) or 1 (dec)
- b) WAN PCD-01 message

PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 = 8417868^MDC_CTXT_GLU_MEAL_PREPRANDIAL^MDC In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present: Object: Context meal enumeration object Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633) Attribute-type: OID-Type(INT-U16) Attribute-value: MDC_CTXT_GLU_MEAL_POSTPRANDIAL (29264) or 2 (dec) WAN PCD-01 message PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 = 8417872^MDC_CTXT_GLU_MEAL_POSTPRANDIAL^MDC In step 9, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present: Object: Context meal enumeration object □ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633) Attribute-type: OID-Type(INT-U16) Attribute-value: MDC_CTXT_GLU_MEAL_FASTING (29268) or 3 (dec) b) WAN PCD-01 message PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 = 8417876^MDC_CTXT_GLU_MEAL_FASTING^MDC In step 11, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present: Object: Context meal enumeration object ☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633) Attribute-type: OID-Type(INT-U16) Attribute-value: MDC_CTXT_GLU_MEAL_CASUAL (29272) or 4 (dec) WAN PCD-01 message PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 = 8417880^MDC_CTXT_GLU_MEAL_CASUAL^MDC In step 13, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present: Object: Context meal enumeration object Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633) Attribute-type: OID-Type(INT-U16) Attribute-value: MDC_CTXT_GLU_MEAL_BEDTIME (29300) or 5 (dec)

b) WAN PCD-01 message
 PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID

attribute value. Check OBX-2 = CWE AND OBX-5 = 8417908^MDC CTXT_GLU_MEAL_BEDTIME^MDC

TP Id TP/LP-PAN/MAN/PHDTW/GL/BV-057						
TP label		Whitepaper. Glucosemeter Context Meal Enumeration Object value				
Coverage	Spec	[Bluetooth PHDT v1.4]				
	Testable items	GL Enumeration	9; M	GL Enumeration 10; M	Date-Time Conv 1; M	
Applicability	/	C_MAN_BLE_00	00 AND C_MA	N_BLE_007 AND C_MAN_BL	E_013	
Initial condi	tion	The manager und	der test and th	ne simulated agent are in the st	andby state.	
Test proced	ure	1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).				
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:				
		a. Glucose	e measureme	nt (0x2A18)		
		b. Glucose	e measureme	nt context (0x2A34)		
				nitiates a discovery process (so rts a pairing process with the s		
		4. When the parequests the Access Confollowed by t	simulated ag trol Point (RA the Glucose n	n completed (connection state) ent to report stored records wri CP) and the simulated agent se neasurement context to the ma or this test case are:	ting an operation in Record ends a Glucose measurement	
		a. Glucose measurement (0x2A18)				
		i. Field: Flags				
		•	Format: 8 b	it		
		•	Type and S	10010 (MSB → LSB). Glucose ample Location fields are included the Annunciation field are not infollows	ded, Time Offset fields and	
		ii. Fi	ield: Sequenc	e number		
		•	Format: uin	t16		
		•	Value: Not	relevant		
		iii. Fi	ield: Base Tin	ne		
		•	Format: Da	te and Time		
		•	Value: Aug	ust 2nd, 2012, 11:08:25		
		iv. Fi	ield: Time Off	set		
		•	This field is	not included		
		v. Fi	ield: Glucose	Concentration - units of kg/L		
		•	Format: SF	LOAT		
		•	Value: Not	relevant		
		vi. Fi	ield: Glucose	Concentration - units of mol/L		
		•	This field is	not included		
		vii. Fi	ield: Type			
		•	Format: nib	ble		
		•	Value: Not	relevant		
		viii. Fi	ield: Sample I	_ocation		
		•	Format: nib	ble		
		•	Value: Not	relevant		

	ix. Field: Sensor Status Annunciation
	This field is not included
	b. Glucose measurement context (0x2A34)
	i. Field: Flags
	Format: 8 bit
	 Value: 0000 0010 (MSB → LSB). Meal field is included and Carbohydrate ID, Carbohydrate, Tester-Health, Exercise Duration and Exercise Intensity, Medication ID, Medication Value, Extended Flags and HbA1c fields are not included
	ii. Field: Sequence number
	Format: uint16
	Value: Not relevant
	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	vi. Field: Meal
	Format: uint8
	Value: preprandial – before meal (1)
	vii. Field: Tester
	This field is not included
	viii. Field: Health
	This field is not included
	ix. Field: Exercise Duration
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	xi. Field: Medication ID
	This field is not included
	xii. Field: Medication
	This field is not included
	xiii. Field: HbA1c
	This field is not included
	5. Check that the manager accepts the measurement and decodes its value properly (Meal value and base time).
Pass/Fail criteria	In step 5, the manager under test shows the following Meal preprandial – before meal (MDC_CTXT_GLU_MEAL_PREPRANDIAL or 29260) with the time stamp '2012-08-02 11:08:25'.
Notes	

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-058		
TP label		Whitepaper. Glucosemeter Context Sample Location Enumeration Object - Handle Attribute		
Coverage Spec		[Bluetooth PHDT v1.4]		
•	Testable	GL Enumeration 11; O		
	items			
Applicability	,	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_014		
Initial condit	ion	The manager under test and the simulated agent are in the standby state.		
Test proced	ure	1. The simulated agent is configured with a Glucosemeter profile (device specialization);		
Pass/Fail cri		it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 2. The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Glucose measurement (0x2A18) i. Field: Flags • Format: 8 bit • Value: 00000010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included. Time Offset and Sensor Status Annunciation fields are not included. Context information does not follow ii. Field: Sequence number • Format: uint16 • Value: Not relevant iii. Field: Base Time • Format: Date and Time • Value: Not relevant iv. Field: Time Offset • Value: Not relevant v. Field: Glucose Concentration - units of kg/L • Format: SFLOAT • Value: Not relevant vi. Field: Glucose Concentration - units of mol/L • This field is not included vii. Field: Sample Location • Format: nibble • Value: Not relevant viii. Field: Sample Location • Format: nibble • Value: Not relevant ix. Field: Sample Location • Format: nibble • Value: Not relevant ix. Field: Sample Location • This field is not included 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement to the manager under test. 5. Check in manager transcoder output for the Context Sample Location Enumeration object – Handle attribute. In step 5, the Context Sample Location Enumeration object – Handle attribute is not		
		present; however, if it is present then its value is different to 0.		
Notes		Possible values in typical points of observation after transcoder output are:		
		a) IEEE 11073 Objects and Attributes		
		Handle attribute is not present, or if it is present then:		
		Object: Context Sample Location Enumeration object		
		Attribute-id: MDC_ATTR_ID_HANDLE (2337)		
		□ Attribute-type: INT-U16		
		☐ Attribute-value: Any value other than 0		
		b) WAN PCD-01 message		
		PCD-01 message does not include segments with a Handle attribute value.		

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-059		
TP label		Whitepaper. Glucosemeter Context Sample Location Enumeration Object - Type Attribute		
Coverage Spec		[Bluetooth PHDT v1.4]		
oo to ago	Testable	GL Enumeration 12; M		
	items	,		
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_014		
Initial condit	ion			
a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characterisinterest for this test case are: a. Glucose measurement (0x2A18) i. Field: Flags • Format: 8 bit • Value: 00000010 (MSB → LSB). Glucose concentration in unitype and Sample Location fields are included. Time Offset and Status Annunciation fields are not included. Context information in the field: Sequence number • Format: uint16 • Value: Not relevant Field: Base Time • Format: Date and Time • Value: Not relevant iv. Field: Time Offset • This field is not included Field: Time Offset • This field is not included Field: Glucose Concentration - units of kg/L • Format: SFLOAT • Value: Not relevant vi. Field: Glucose Concentration - units of mol/L • This field is not included Field: Type • Format: nibble • Value: Not relevant viii. Field: Sample Location • Format: nibble • Value: Not relevant viii. Field: Sample Location • Format: nibble • Value: Not relevant Field: Sensor Status Annunciation • This field is not included 3. The manager under test initiates a discovery process (scanning state). It disc simulated agent and it starts a pairing process with the simulated agent (initiats state). 4. When the pairing has been completed (connection state), the manager under requests the simulated agent to report stored records writing an operation in		 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are: Glucose measurement (0x2A18) Field: Flags Format: 8 bit Value: 00000010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included. Time Offset and Sensor Status Annunciation fields are not included. Context information does not follow Field: Sequence number Format: uint16 Value: Not relevant Field: Base Time Format: Date and Time Value: Not relevant Field: Glucose Concentration - units of kg/L Format: SFLOAT Value: Not relevant Vi. Field: Glucose Concentration - units of mol/L This field is not included Field: Type Format: nibble Value: Not relevant Field: Sample Location Format: nibble Value: Not relevant Field: Sensor Status Annunciation This field is not included The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).		
Pass/Fail criteria		object – Type attribute. In step 5, the Context Sample Location Enumeration object – Type attribute is present and		
		its value is { MDC_PART_PHD_DM MDC_CTXT_GLU_SAMPLELOCATION }.		
Notes		In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes		
		Type attribute is present: Description Object: Context Sample Location Enumeration object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: partition: MDC_PART_PHD_DM or 128 (dec) or 00 80 (hex) code: MDC_CTXT_GLU_SAMPLELOCATION or 29236 (dec) or 7234 (hex) WAN PCD-01 message		
		PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? ? 8417844^MDC_CTXT_GLU_SAMPLELOCATION^MDC 1.0.0.a [value] 263872^MDC_DIM_G^MDC R [current_date_time]		

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-060
TP label		Whitepaper. Glucosemeter Context Sample Location Enumeration Object - Metric-Spec-
IT IANGI		Small Attribute
Coverage Spec		
Testable		[Bluetooth PHDT v1.4]
items		GL Enumeration 13; M
Applicability	/	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_014
Initial condit	tion	
	tion	
Pass/Fail criteria		object – Metric-Spec-Small attribute. In step 5, the Context Sample Location Enumeration object – Metric-Spec-Small attribute is
. 405/1 uii Cittefia		present and its value is {0xF048} (mss-avail-intermittent mss-avail-stored-data mss-upd-aperiodic mss-msmt-aperiodic mss-acc-agent-initiated mss-cat-manual).
Notes		Possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes
		Metric-Spec-Small attribute is present:
		Object: Context Sample Location Enumeration object
		Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)
		 Attribute-type: BITS-16 Attribute-value: F0 48 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9), mss-cat-manual(12) set to TRUE and remaining BITS set to FALSE
		b) WAN PCD-01 message PCD-01 message does not include segments with a Metric-Spec-Small attribute value.
		Top-of message does not include segments with a Metric-Spec-Small attribute value.

TP ld		TP/LP-PAN/MAN/PHDTV	//GL/BV-061		
TP label		Whitepaper. Glucosemeter Context Sample Location Enumeration Object - Absolute-Time-Stamp Attribute			
Coverage	Spec	[Bluetooth PHDT v1.4]			
	Testable	GL Enumeration 14; M	Date-Time Conv 2; M	Date-Time Conv 3; M	
items		Date-Time Conv 4; M	Date-Time Conv 5; M		
Applicability		C_MAN_BLE_000 AND C C_MAN_BLE_014	C_MAN_BLE_002 AND C_MAN_	_BLE_007 AND	
Initial condi	tion	The manager under test a	and the simulated agent are in th	e standby state.	
Test procedure		 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). 			
		The simulated agent interest for this test contact.	implements several BLE charac ase are:	teristics. The characteristics of	
		a. Glucose measur	ement (0x2A18)		
			est initiates a discovery process it starts a pairing process with th	(scanning state). It discovers the ne simulated agent (initiating	
		requests the simulate Access Control Point followed by the Gluco	s been completed (connection steed agent to report stored records (RACP) and the simulated agerose measurement context to the rest for this test case are:	writing an operation in Record nt sends a Glucose measurement	
		a. Glucose measur	ement (0x2A18)		
		i. Field: Flags			
		Format: 8 bit			
		Type a	and Sample Location, Time Offse	ose concentration in units of kg/L, et fields are included. Sensor d. Context information does not	
		ii. Field: S	Sequence number		
		• Forma	t: uint16		
		Value:	Not relevant		
		iii. Field: B	sase Time		
		• Forma	t: Date and Time		
		Value:	August 2nd, 2012, 10:59:27		
		iv. Field: T	ïme Offset		
		• Forma	t: sint16		
		Value:	120 minutes		
		v. Field: G	Glucose Concentration - units of	kg/L	
		• Forma	t: SFLOAT		
		Value:	Not relevant		
		vi. Field: G	Glucose Concentration - units of	mol/L	
		This fields:	eld is not included		
		vii. Field: T	ype		
		• Forma	t: nibble		
		Value:	Not relevant		
		viii. Field: S	Sample Location		

	1		
	Format: nibble		
	Value: Not relevant		
	ix. Field: Sensor Status Annunciation		
	This field is not included		
	 Check in manager transcoder output for the Context Sample Location Enumeration object – Absolute-Time-Stamp attribute. 		
Pass/Fail criteria	In step 5, the Context Sample Location Enumeration object – Absolute-Time-Stamp attribute is present, its value matches with the Time Stamp field in conjunction with the Time Offset field of the Glucose measurement characteristic and the fraction of seconds is set to 0.		
Notes	Possible values in typical points of observation after transcoder output are:		
	a) IEEE 11073 Objects and Attributes		
	Absolute-Time-Stamp attribute is present:		
	□ Object: Context Sample Location Enumeration object		
	☐ Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448)		
	Attribute-type: SEQUENCE {century (INT-U8), year (INT-U8), month (INT-U8), day (INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)} (BCD encoding)		
	☐ Attribute-value:		
	• century: 20 (hex) or 32 (dec)		
	 year: 12 (hex) or 18 (dec) 		
	 month: 08 (hex) or 8 (dec) 		
	 day: 02 (hex) or 2 (dec) 		
	• hour: 12 (hex) or 18 (dec)		
	• minute: 59 (hex) or 89 (dec)		
	• second: 27 (hex) or 39 (dec)		
	 sec-fractions: 00 (hex) or 0 (dec) 		
	b) WAN PCD-01 message		
	PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value (check OBX-14):		
	OBX ? ? 8417844^MDC_CTXT_GLU_SAMPLELOCATION^MDC 1.0.0.a 130 263872^MDC_DIM_G^MDC R 20120802 125927+0000		

TDIA		TP/LD DAN/MAN/DHDTN//CL/RV 062
TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-062
TP label		Whitepaper. Glucosemeter Context Sample Location Enumeration Object - Enum-
_	_	Observed-Value-Simple-OID Attribute
Coverage	Spec	[Bluetooth PHDT v1.4]
	Testable	GL Enumeration 15; M
	items	
Applicability	y	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
		C_MAN_BLE_014
Initial condit	tion	The manager under test and the simulated agent are in the standby state.
Test proced	ure	1. The simulated agent is configured with a Glucose profile (device specialization); it has
		a measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of
		interest for this test case is:
		a. Glucose measurement (0x2A18)
		i. Field: Flags
		• Format: 8 bit
		 Value: 00000010 (MSB → LSB). Glucose concentration in units of kg/L,
		Type and Sample Location fields are included. Time Offset and Sensor
		Status Annunciation fields are not included. Context information follows
		ii. Field: Sequence number
		Format: uint16
		Value: Not relevant
		iii. Field: Base Time
		 Format: Date and Time
		Value: Not relevant
		iv. Field: Time Offset
		This field is not included
		v. Field: Glucose Concentration - units of kg/L
		Format: SFLOAT
		Value: Not relevant
		vi. Field: Glucose Concentration - units of mol/L
		This field is not included
		vii. Field: Type
		Format: nibble
		Value: Not relevant Field: Complete section
		viii. Field: Sample Location
		Format: nibble
		Value: Several values are checked in this test case
		ix. Field: Sensor Status Annunciation
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the
		simulated agent and it starts a pairing process with the simulated agent (initiating
		state).
		4. When the pairing has been completed (connection state), the manager under test
		requests the simulated agent to report stored records writing an operation in Record
		Access Control Point (RACP) and the simulated agent sends a Glucose measurement
		[Sample Location ID field set to 0x01 = Finger] to the manager under test.
		5. Check in manager transcoder output for the Context Sample Location Enumeration
		object - Enum-Observed-Value-Simple-OID attribute.
		6. The manager under test requests the simulated agent to report stored records writing
		an operation in Record Access Control Point (RACP) and the simulated agent sends a
		Glucose measurement [Sample Location ID field set to 0x02 = Alternate Site Test
		(AST)] to the manager under test.
		7. Check in manager transcoder output for the Context Sample Location Enumeration
		object - Enum-Observed-Value-Simple-OID attribute.
		8. The manager under test requests the simulated agent to report stored records writing
		an operation in Record Access Control Point (RACP) and the simulated agent sends a
		Glucose measurement [Sample Location ID field set to 0x03 = Earlobe] to the
		manager under test.
		Check in manager transcoder output for the Context Sample Location Enumeration
		object - Enum-Observed-Value-Simple-OID attribute.
		10. The manager under test requests the simulated agent to report stored records writing
		an operation in Record Access Control Point (RACP) and the simulated agent sends a
		Glucose measurement [Sample Location ID field set to 0x04 = Control Solution] to the
		manager under test.
		11. Check in manager transcoder output for the Context Sample Location Enumeration
		object - Enum-Observed-Value-Simple-OID attribute.
		· · · · · · · · · · · · · · · · · · ·

In step 5, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x1 (finger). In step 7, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x2 (alternate site test). In step 9, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x3 (earlobe). In step 11, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
Value field of the Glucose measurement characteristic: 0x1 (finger). In step 7, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x2 (alternate site test). In step 9, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x3 (earlobe). In step 11, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes Notes Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
In step 7, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x2 (alternate site test). In step 9, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x3 (earlobe). In step 11, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x2 (alternate site test). In step 9, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x3 (earlobe). In step 11, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
Value field of the Glucose measurement characteristic: 0x2 (alternate site test). In step 9, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x3 (earlobe). In step 11, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
In step 9, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x3 (earlobe). In step 11, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x3 (earlobe). In step 11, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
Value field of the Glucose measurement characteristic: 0x3 (earlobe). In step 11, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
In step 11, the Context Sample Location Enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
Simple-OID attribute is present and its value matches with the Context Sample Location Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
Value field of the Glucose measurement characteristic: 0x4 (control solution). Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
Notes In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present:
Enum-Observed-Value-Simple-OID attribute is present:
Object: Context Sample Location Enumeration object
Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633)
Attribute-type: OID-Type(INT-U16)
☐ Attribute-value: MDC_CTXT_GLU_SAMPLELOCATION_FINGER (29240) or 1
(dec)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-O
attribute value. Check OBX-3 = 8417848^MDC_CTXT_GLU_ SAMPLELOCATION _
FINGER ^MDC
In step 7, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Enum-Observed-Value-Simple-OID attribute is present:
Object: Context Sample Location Enumeration object
Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633)
Attribute-type: OID-Type(INT-U16)
Attribute-value: MDC_CTXT_GLU_ SAMPLELOCATION _AST (29244) or 2 (d
b) WAN PCD-01 message
PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-O attribute value. Check OBX-3 =
8417852^MDC_CTXT_GLU_SAMPLELOCATION_AST^MDC
In step 9, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Enum-Observed-Value-Simple-OID attribute is present:
Object: Context Sample Location Enumeration object
Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633)
Attribute-type: OID-Type(INT-U16)
Attribute-value: MDC_CTXT_GLU_ SAMPLELOCATION _EARLOBE (29248) (
(dec)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-O
attribute value. Check OBX-3 =
8417856^MDC_CTXT_GLU_SAMPLELOCATION_EARLOBE^MDC
In step 11, possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Enum-Observed-Value-Simple-OID attribute is present:
□ Object: Context Sample Location Enumeration object
☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633)
Attribute-type: OID-Type(INT-U16)
☐ Attribute-value: MDC_CTXT_GLU_ SAMPLELOCATION
_CTRLSOLUTION(29252) or 4 (dec)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-O
attribute value. Check OBX-3 =
8417860^MDC_CTXT_GLU_SAMPLELOCATION_CTLSOLUTION^MDC

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-063			
TP label					
Coverage Spec		Whitepaper. Glucosemeter Context Sample Location Enumeration Object value [Bluetooth PHDT v1.4]			
Testable		GL Enumeration 14; M GL Enumeration 15; M Date-Time Conv 1; M			
	items	GL Enumeration 14, W GL Enumeration 13, W Date-time Conv 1, W			
Applicability	<u> </u>	C_MAN_BLE_000 AND C_MAN_BLE_007 AND C_MAN_BLE_014			
Initial condit		The manager under test and the simulated agent are in the standby state.			
Test procedu		The simulated agent is configured with a Glucose profile (device specialization); it has			
-		 a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: a. Glucose measurement (0x2A18) 			
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 			
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement [Sample Location field set to 0x0001 = Finger] followed by the Glucose measurement context to the manager under test:			
		a. Glucose measurement (0x2A18)			
		i. Field: Flags			
		Format: 8 bit			
		 Value: 00000010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included. Time Offset and Sensor Status Annunciation fields are not included. Context information does not follow 			
		ii. Field: Sequence number			
		Format: uint16			
		Value: Not relevant			
		iii. Field: Base Time			
		Format: Date and Time			
		 Value: August 2nd, 2012, 11:08:25 			
		iv. Field: Time Offset			
		This field is not included			
		v. Field: Glucose Concentration - units of kg/L			
		Format: SFLOAT			
		Value: Not relevant			
		vi. Field: Glucose Concentration - units of mol/L			
		This field is not included			
		vii. Field: Type			
		Format: nibble			
		Value: Not relevant Field: Correlate a costing			
		viii. Field: Sample Location			
		Format: nibble Value: finger (0004 MCP, N L CP)			
		 Value: finger (0001 MSB → LSB) ix. Field: Sensor Status Annunciation 			
		This field is not included			
		5. Check that the manager accepts the measurement and decodes its value properly (sample location and base time).			
Pass/Fail criteria		In step 5, the manager under test shows the following Sample Location finger (MDC_CTXT_GLU_SAMPLELOCATION_FINGER or 29240) with the time stamp '2012-08-02 11:08:25'.			
Notes					

TDIA		TD// D DAN/MAN/DI IDTM/CL/DV-0C4
TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-064
TP label		Whitepaper. Glucosemeter Context Tester Enumeration Object - Handle Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
	Testable	GL Enumeration 16; O
items		O MANUELE COS AND O MANUELE CO
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
Indicate and dist		C_MAN_BLE_015
Initial condition		The manager under test and the simulated agent are in the standby state.
Test procedu	re	The simulated agent is configured with a Glucosemeter profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		 The simulated agent implements several BLE characteristics. The characteristic of interest for this
		test case is:
		a. Glucose measurement context (0x2A34)
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 0100 (MSB → LSB). Tester-Health is included and Meal,
		Carbohydrate ID, Carbohydrate, Exercise Duration, Exercise Intensity, Medication
		ID, Medication Value and HbA1c fields are not included
		ii. Field: Sequence number • Format: uint16
		Value: Not relevant
		iii. Field: Extended Flags
		This field is not included
		iv. Field: Carbohydrate ID
		This field is not included
		v. Field: Carbohydrate - units of kilograms
		This field is not included
		vi. Field: Meal
		This field is not included vii. Field: Tester
		Format: nibble
		Value: Not relevant
		viii. Field: Health
		Format: nibble
		Value: Not relevant
		ix. Field: Exercise Duration
		This field is not included
		x. Field: Exercise Intensity
		This field is not included xi. Field: Medication ID
		xi. Field: Medication ID This field is not included
		xii. Medication – units of kilograms
		This field is not included
		xiii. Medication – units of litres
		This field is not included
		xiv. Field: HbA1c
		 This field is not included The manager under test initiates a discovery process (scanning state). It discovers the simulated
		 The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the
		simulated agent to report stored records writing an operation in Record Access Control Point
		(RACP) and the simulated agent sends a Glucose measurement followed by the Glucose
		measurement context to the manager under test.
D /E. U ! !		5. Check in manager transcoder output for the Context tester enumeration object – Handle attribute.
Pass/Fail crite	eria	In step 5, the Context tester enumeration object – Handle attribute is not present; however,
Notes		if it is present then its value is different to 0.
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Handle attribute is not present, or if it is present then:
		Object: Context tester enumeration object
		Attribute-id: MDC_ATTR_ID_HANDLE (2337)
		Attribute-type: INT-U16
		Attribute-value: Any value other than 0
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Handle attribute value.

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-065
TP label		Whitepaper. Glucosemeter Context Tester Enumeration Object - Type Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
	Testable	GL Enumeration 17; M
items		
Applicability	<i>'</i>	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_015
Initial condi	tion	
Initial condit		 The manager under test and the simulated agent are in the standby state. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are: Glucose measurement context (0x2A34) Field: Flags Format: 8 bit Value: 0000 0100 (MSB → LSB). Tester-Health is included and Meal, Carbohydrate ID, Carbohydrate, Exercise Duration, Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included Field: Sequence number Format: uint16 Value: Not relevant Field: Extended Flags This field is not included
		iv. Field: Carbohydrate ID This field is not included Field: Carbohydrate - units of kilograms This field is not included Field: Meal This field is not included Field: Tester Format: nibble Value: Not relevant Field: Health Format: nibble Value: Not relevant Field: Exercise Duration This field is not included X. Field: Exercise Intensity This field is not included Xi. Field: Medication ID This field is not included Xii. Medication – units of kilograms This field is not included Xiii. Medication – units of litres This field is not included Xiv. This field is not included Xiv.
Pass/Fail criteria		 Check in manager transcoder output for the Context tester enumeration object – Type attribute. In step 5, the Context tester enumeration object – Type attribute is present and its value is { MDC_PART_PHD_DM MDC_CTXT_GLU_TESTER }.
Notes		In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Context Tester object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: • partition: MDC_PART_PHD_DM or 128 (dec) or 00 80 (hex) • code: MDC_CTXT_GLU_TESTER or 29276 (dec) or 72 5C (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? CWE 8417884^MDC_CTXT_GLU_TESTER^MDC 1.0.0.7 8417888^

TDIA		TD/LD DAN/MAN/DUDTIN/CL/DV 066		
TP Id TP label		TP/LP-PAN/MAN/PHDTW/GL/BV-066 Whitepaper. Glucosemeter Context Tester Enumeration Object - Metric-Spec-Small		
IT IdDel				
Coverage Spec		Attribute [Bluetooth PHDT v1.4]		
Coverage	Testable			
	items			
		C_MAN_BLE_015		
		The manager under test and the simulated agent are in the standby state.		
Applicability Initial condit Test procedu	items	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_015		
		Small attribute.		
Pass/Fail cri	teria	In step 5, the Context tester enumeration object – Metric-Spec-Small attribute is present		
and		and its value is {0xF048} (mss-avail-intermittent mss-avail-stored-data mss-upd-aperiodic		
Notes		mss-msmt-aperiodic mss-acc-agent-initiated mss-cat-manual). Possible values in typical points of observation after transcoder output are:		
140163		a) IEEE 11073 Objects and Attributes		
		Metric-Spec-Small attribute is present:		
		Object: Context tester enumeration object		
		Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)		
		Attribute-id: MIDC_ATTR_METRIC_SPEC_SMALL (2030) Attribute-type: BITS-16		
		Attribute-type. BITS-16 Attribute-value: F0 48 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-		
		data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9), mss-cat-manual(12) set to TRUE and remaining BITS set to FALSE		
		b) WAN PCD-01 message		
		PCD-01 message does not include segments with a Metric-Spec-Small attribute value.		

Format: uint16Value: Not relevant
Value: Not relevant
iii. Field: Extended Flags
This field is not included
iv. Field: Carbohydrate ID
This field is not included
v. Field: Carbohydrate - units of kilograms
This field is not included
vi. Field: Meal
This field is not included
vii. Field: Tester
Format: nibble
Value: Not relevant
viii. Field: Health
Format: nibble
Value: Not relevant
ix. Field: Exercise Duration
This field is not included
x. Field: Exercise Intensity
This field is not included
xi. Field: Medication ID
This field is not included
xii. Medication – units of kilograms
This field is not included
xiii. Medication – units of litres
This field is not included
xiv. Field: HbA1c
This field is not included
Check in manager transcoder output for the Context tester enumeration object –
Absolute-Time-Stamp attribute.
ss/Fail criteria In step 5, the Context tester enumeration object – Absolute-Time-Stamp attribute is
present, its value matches with the Time Stamp field in conjunction with the Time Offset
field of the Glucose measurement characteristic and the fraction of seconds is set to 0.
Possible values in typical points of observation after transcoder output are:
a) IEEE 11073 Objects and Attributes
Absolute-Time-Stamp attribute is present:
 Object: Context tester enumeration object
☐ Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448)
Attribute-type: SEQUENCE {century (INT-U8), year (INT-U8), month (INT-U8), day
(INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)} (BCD encoding)
Attribute-value:
• century: 20 (hex) or 32 (dec)
• year: 12 (hex) or 18 (dec)
• month: 08 (hex) or 8 (dec)
• day: 02 (hex) or 2 (dec)
• hour: 12 (hex) or 18 (dec)
• minute: 59 (hex) or 89 (dec)
• second: 27 (hex) or 39 (dec)
sec-fractions: 00 (hex) or 0 (dec)
b) WAN PCD-01 message
PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value:
OBX ? CWE 8417884^MDC_CTXT_GLU_TESTER^MDC 1.0.0.7 8417888^
MDC_CTXT_GLU_TESTER_SELF^MDC R 20120802125927+0000

TDIA		TP/LP-PAN/MAN/PHDTW/GL/BV-068
TP ld		
TP label		Whitepaper. Glucosemeter Context Tester Enumeration Object - Enum-Observed-Value-Simple-OID Attribute
Coverage	Spec	[Bluetooth PHDT v1.4]
	Testable items	GL Enumeration 20; M
Applicability	1	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_015
Initial condit	tion	The manager under test and the simulated agent are in the standby state.
Test procedure		 The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is: Glucose measurement context (0x2A34) Field: Flags Format: 8 bit Value: 0000 0100 (MSB → LSB). Tester-Health is included and Meal, Carbohydrate ID, Carbohydrate, Exercise Duration, Exercise Intensity,
		Medication ID, Medication Value and HbA1c fields are not included ii. Field: Sequence number • Format: uint16 • Value: Not relevant iii. Field: Extended Flags • This field is not included iv. Field: Carbohydrate ID • This field is not included v. Field: Carbohydrate - units of kilograms • This field is not included vi. Field: Meal • This field is not included vii. Field: Tester • Format: nibble • Value: Several values are checked in this test case viii. Field: Health • Format: nibble • Value: Not relevant ix. Field: Exercise Duration • This field is not included x. Field: Exercise Intensity • This field is not included xi. Field: Medication ID • This field is not included xii. Medication – units of kilograms • This field is not included xiii. Medication – units of litres • This field is not included xiv. Field: HbA1c • This field is not included 3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent (initiating state).
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating

followed by the Glucose measurement context [Tester field set to 0x01 = Self1 to the manager under test. Check in manager transcoder output for the Context tester enumeration object - Enum-Observed-Value-Simple-OID attribute. 6. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement context [Tester field set to 0x02 = Health Care Professional] to the manager under test. Check in manager transcoder output for the Context tester enumeration object - Enum-Observed-Value-Simple-OID attribute. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement context [Tester field set to 0x03 = Lab test] to the manager under test. Check in manager transcoder output for the Context tester enumeration object - Enum-Observed-Value-Simple-OID attribute. Pass/Fail criteria In step 5, the Context tester enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Tester Value field of the Glucose measurement context characteristic: 0x1 (self). In step 7, the Context tester enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Tester Value field of the Glucose measurement context characteristic: 0x2 (Health Care Professional). In step 9, the Context tester enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Tester Value field of the Glucose measurement context characteristic: 0x3 (Lab test). In step 5, possible values in typical points of observation after transcoder output are: **Notes** a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present: □ Object: Context tester enumeration object ☐ Attribute-id: MDC ATTR ENUM OBS VAL SIMP OID (2633) Attribute-type: OID-Type(INT-U16) ☐ Attribute-value: MDC_CTXT_GLU_TESTER_SELF (29280) or 1 (dec) b) WAN PCD-01 message PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 = 8417888^MDC_CTXT_GLU_TESTER_SELF^MDC In step 7, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present: Object: Context tester enumeration object ☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633) ☐ Attribute-type: OID-Type(INT-U16) ☐ Attribute-value: MDC_CTXT_GLU_TESTER_HCP (29284) or 2 (dec) b) WAN PCD-01 message PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 = 8417892^MDC CTXT GLU TESTER HCP^MDC In step 9, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Enum-Observed-Value-Simple-OID attribute is present: Object: Context tester enumeration object ☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633) ☐ Attribute-type: OID-Type(INT-U16) Attribute-value: MDC_CTXT_GLU_TESTER_LAB (29288) or 3 (dec) b) WAN PCD-01 message PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 = 8417896^MDC_CTXT_GLU_TESTER _LAB^MDC

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-069
TP label		Whitepaper. Glucosemeter Context Tester Enumeration Object value
Coverage	Spec	[Bluetooth PHDT v1.4]
3	Testable	GL Enumeration 19; M GL Enumeration 20; M Date-Time Conv 1; M
	items	
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_007 AND C_MAN_BLE_015
Initial condit		The manager under test and the simulated agent are in the standby state.
Test procedure		The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).
		The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:
		a. Glucose measurement (0x2A18)
		b. Glucose measurement context (0x2A34)
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. The measurement of interest for this test case are:
		a. Glucose measurement (0x2A18)
		i. Field: Flags
		Format: 8 bit
		 Value: 00010010 (MSB → LSB). Glucose concentration in units of kg/L, Type and Sample Location fields are included, Time Offset fields and Sensor Status Annunciation field are not included and Context Information follows
		ii. Field: Sequence number
		Format: uint16
		Value: Not relevant
		iii. Field: Base Time
		ii. Format: Date and Time
		 Value: August 2nd, 2012, 11:08:25
		iv. Field: Time Offset
		This field is not included
		v. Field: Glucose Concentration - units of kg/L
		Format: SFLOAT
		Value: Not relevant
		vi. Field: Glucose Concentration - units of mol/L
		This field is not included
		vii. Field: Type
		Format: nibble
		Value: Not relevant
		viii. Field: Sample Location
		Format: nibble
		Value: Not relevant

Notes	
Pass/Fail criteria	In step 5, the manager under test shows the following Tester self (MDC_CTXT_GLU_TESTER_SELF or 29280) with the time stamp '2012-08-02 11:08:25'.
	(Tester value and base time).
	Check that the manager accepts the measurement and decodes its value properly
	This field is not included
	xiii. Field: HbA1c
	This field is not included
	This field is not included xii. Field: Medication
	xi. Field: Medication ID
	This field is not included This field Madigation ID.
	x. Field: Exercise Intensity
	This field is not included
	ix. Field: Exercise Duration
	Value: Not relevant
	Format: nibble
	viii. Field: Health
	 Value: self (0001 MSB → LSB)
	Format: nibble
	vii. Field: Tester
	This field is not included
	vi. Field: Meal
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	iii. Field: Extended Flags
	Value: Not relevant
	• Format: uint16
	ii. Field: Sequence number
	 Value: 0000 0100 (MSB → LSB). Tester and Health fields are included and Carbohydrate ID, Carbohydrate, Meal, Exercise Duration and Exercise Intensity, Medication ID, Medication Value, Extended Flags and HbA1c fields are not included
	Format: 8 bit
	i. Field: Flags
	b. Glucose measurement context (0x2A34)
	This field is not included

TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-070
TP label		Whitepaper. Glucosemeter Context Health Enumeration Object - Handle Attribute
Coverage Spec		[Bluetooth PHDT v1.4]
Coverage	Testable	GL Enumeration 21; O
	items	GE Enumeration 21, O
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
P. P		C_MAN_BLE_016
Initial condit	tion	The manager under test and the simulated agent are in the standby state.
Test proced	ure	The simulated agent is configured with a Glucosemeter profile (device specialization); it has a
		measurement ready to be sent and it is in the advertising state (it is discoverable).
		2. The simulated agent implements several BLE characteristics. The characteristic of interest for this
		test case is:
		a. Glucose measurement context (0x2A34)
		i. Field: Flags
		Format: 8 bit
		 Value: 0000 0100 (MSB → LSB). Tester-Health is included and Meal, Carbohydrate ID, Carbohydrate Eversion Dynation Eversion Intensity, Medication
		Carbohydrate ID, Carbohydrate, Exercise Duration, Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included
		ii. Field: Sequence number
		Format: uint16
		Value: Not relevant
		iii. Field: Extended Flags
		This field is not included
		iv. Field: Carbohydrate ID
		This field is not included
		v. Field: Carbohydrate - units of kilograms
		This field is not included
		vi. Field: Meal
		This field is not included
		vii. Field: Tester
		Format: nibble
		Value: Not relevant
		viii. Field: Health
		Format: nibble
		Value: Not relevant
		ix. Field: Exercise Duration
		This field is not included
		x. Field: Exercise Intensity
		This field is not included
		xi. Field: Medication ID
		This field is not included
		xii. Medication – units of kilograms
		This field is not included
		xiii. Medication – units of litres
		This field is not included
		xiv. Field: HbA1c
		This field is not included
		3. The manager under test initiates a discovery process (scanning state). It discovers the simulated
		agent and it starts a pairing process with the simulated agent (initiating state).
		4. When the pairing has been completed (connection state), the manager under test requests the
		simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose
		measurement context to the manager under test.
		5. Check in manager transcoder output for the Context health enumeration object – Handle attribute.
Pass/Fail cri	iteria	In step 5, the Context tester enumeration object – Handle attribute is not present; however,
		if it is present then its value is different to 0.
Notes		Possible values in typical points of observation after transcoder output are:
		a) IEEE 11073 Objects and Attributes
		Handle attribute is not present, or if it is present then:
		Object: Context health enumeration object
		□ Attribute-id: MDC_ATTR_ID_HANDLE (2337) □ Attribute-type: INT-U16
		Attribute-type: INT-016 Attribute-value: Any value other than 0
		b) WAN PCD-01 message
		PCD-01 message does not include segments with a Handle attribute value.

		TOUR DANIEL DE LA COLUMNIA DEL COLUMNIA DEL COLUMNIA DE LA COLUMNI
TP Id		TP/LP-PAN/MAN/PHDTW/GL/BV-071
TP label		Whitepaper. Glucosemeter Context Health Enumeration Object - Type Attribute
Coverage	Spec	[Bluetooth PHDT v1.4]
	Testable items	GL Enumeration 22; M
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND
Initial condi	tion	C_MAN_BLE_016 The manager under test and the simulated agent are in the standby state.
Initial condition Test procedure		The manager under test and the simulated agent are in the standby state. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable). The simulated agent implements several BLE characteristics. The characteristics of interest for this test case are: a Glucose measurement context (0x2A34)
		 a. Glucose measurement context (0x2A34) i. Field: Flags Format: 8 bit Value: 0000 0100 (MSB → LSB). Tester-Health is included and Meal, Carbohydrate ID, Carbohydrate, Exercise Duration, Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included ii. Field: Sequence number Format: uint16 Value: Not relevant iii. Field: Extended Flags This field is not included iv. Field: Carbohydrate ID This field is not included v. Field: Carbohydrate - units of kilograms This field is not included vi. Field: Meal
Pass/Fail or	itoria	 This field is not included vii. Field: Tester Format: nibble Value: Not relevant Field: Health Format: nibble Value: Not relevant ix. Field: Exercise Duration This field is not included x. Field: Exercise Intensity This field is not included xi. Field: Medication ID This field is not included xii. Medication – units of kilograms This field is not included xiii. Medication – units of litres This field is not included xiv. Field: HbA1c The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state). 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context to the manager under test. 5. Check in manager transcoder output for the Context health enumeration object – Type attribute.
Pass/Fail cr	iteria	In step 5, the Context tester enumeration object – Type attribute is present and its value is { MDC_PART_PHD_DM MDC_CTXT_GLU_HEALTH }.
Notes		In step 5, possible values in typical points of observation after transcoder output are: a) IEEE 11073 Objects and Attributes Type attribute is present: Object: Context Health object Attribute-id: MDC_ATTR_ID_TYPE (2351) Attribute-type: SEQUENCE {partition (INT-U16), code (INT-U16)} Attribute-value: • partition: MDC_PART_PHD_DM or 128 (dec) or 00 80 (hex) • code: MDC_CTXT_GLU_HEALTH or 29212 (dec) or 72 1C (hex) b) WAN PCD-01 message PCD-01 message includes a segment like this with a Type attribute value (check OBX-3): OBX ? CWE 8417820 ^MDC_CTXT_GLU_HEALTH^MDC 1.0.0.7 8417824 ^

TP IA		TP/LP-PAN/MAN/PHDTW/GL/BV-072		
TP Id TP label		Whitepaper. Glucosemeter Context Health Enumeration Object - Metric-Spec-Small		
ii labei		Attribute		
Coverage Spec		[Bluetooth PHDT v1.4]		
Testable		GL Enumeration 23; M		
A 11 1 1111	items			
Applicability		C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_016		
Initial condition	on	The manager under test and the simulated agent are in the standby state.		
Applicability Initial condition Test procedure Pass/Fail crite Notes	on re			
		a) IEEE 11073 Objects and Attributes Metric-Spec-Small attribute is present:		
		Object: Context health enumeration object		
		Attribute-id: MDC_ATTR_METRIC_SPEC_SMALL (2630)		
		Attribute-type: BITS-16		
		Attribute-value: F0 48 (hex) or BITS mss-avail-intermittent(0), mss-avail-stored-data(1), mss-upd-aperiodic(2), mss-msmt-aperiodic(3), mss-acc-agent-initiated(9), mss-cat-manual(12) set to TRUE and remaining BITS set to FALSE		
		b) WAN PCD-01 message PCD-01 message does not include segments with a Metric-Spec-Small attribute value.		

TP Id		TP/LP-PAN/MAN/PHDTW/GL	/BV-073		
TP label		Whitepaper. Glucosemeter Context Health Enumeration Object - Absolute-Time-Stamp Attribute			
Coverag Spec		[Bluetooth PHDT v1.4]			
е	Testabl	GL Enumeration 24; M	Date-Time Conv 2; M	Date-Time Conv 3; M	
	e items	Date-Time Conv 4; M	Date-Time Conv 5; M		
Applicabili	ty	C_MAN_BLE_000 AND C_M	AN_BLE_002 AND C_MAN_BLE_0	007 AND C_MAN_BLE_016	
Initial cond	dition	The manager under test and	the simulated agent are in the stand	dby state.	
I CSIADI		Date-Time Conv 4; M C_MAN_BLE_000 AND C_M The manager under test and of the simulated agent is comeasurement ready to book 2. The simulated agent impointerest for this test case a. Glucose measurement b. Glucose measurement and it states to be requested and it states are the simulated agent and it states are the simulated and a compact and a compa	Date-Time Conv 5; M AN_BLE_002 AND C_MAN_BLE_0 the simulated agent are in the stand on figured with a Glucose profile (determined agent and it is in the advertising stand are: are: ant (0x2A18) ant context (0x2A34) antitiates a discovery process (scandarts a pairing process with the simulate acompleted (connection state), the gent to report stored records writing ACP) and the simulated agent send measurement context to the manager for this test case are: ant (0x2A18) bit 10011 (MSB → LSB). Glucose cords ample Location, Time Offset fields on field is not included. Context inference number and a firme gust 2nd, 2012, 10:59:27 Offset and Time offset fields on the firm and time gust 2nd, 2012, 10:59:27 Offset and Time offset fields on the firm and time gust 2nd, 2012, 10:59:27 Offset and Time of the firm and time are and Time gust 2nd, 2012, 10:59:27 Offset and Time of the firm and the firm and time are and Time gust 2nd, 2012, 10:59:27 Offset and Time are and Time are and Time are and Time gust 2nd, 2012, 10:59:27	DO7 AND C_MAN_BLE_016 dby state. evice specialization); it has a ate (it is discoverable). s. The characteristics of hing state). It discovers the lated agent (initiating state). the manager under test gan operation in Record is a Glucose measurement ger under test. The his are included. Sensor Status	
			ose Concentration - units of kg/L FLOAT		
			ose Concentration - units of mol/L		
			s not included		
		vii. Field: Type			
		Format: nil			
		Value: Not Field: Same			
		viii. Field: Samp			
		Format: nilValue: Not			
			relevant or Status Annunciation		
			or Status Armunciation		
		b. Glucose measureme			
		i. Field: Flags	,		
		Format: 8			
		Value: 000 Carbohydr	on 0 0100 (MSB → LSB). Tester-Hea ate ID, Carbohydrate, Exercise Du ID, Medication Value and HbA1c f	ration, Exercise Intensity,	
		-	ence number		
		Format: uii			
		Value: Not	relevant		

T	The state of the s
	iii. Field: Extended Flags
	This field is not included
	iv. Field: Carbohydrate ID
	This field is not included
	v. Field: Carbohydrate - units of kilograms
	This field is not included
	vi. Field: Meal
	This field is not included
	vii. Field: Tester
	Format: nibble
	Value: Not relevant
	viii. Field: Health
	Format: nibble
	Value: Not relevant
	ix. Field: Exercise Duration
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	xi. Field: Medication ID
	This field is not included
	xii. Medication – units of kilograms
	This field is not included
	xiii. Medication – units of litres
	This field is not included
	xiv. Field: HbA1c
	This field is not included
	 Check in manager transcoder output for the Context health enumeration object – Absolute-Time-Stamp attribute.
Pass/Fail criteria	In step 5, the Context health enumeration object – Absolute-Time-Stamp attribute is present,
	its value matches with the Time Stamp field in conjunction with the Time Offset field of the Glucose measurement characteristic and the fraction of seconds is set to 0.
Notes	Possible values in typical points of observation after transcoder output are:
	a) IEEE 11073 Objects and Attributes
	Absolute-Time-Stamp attribute is present:
	☐ Object: Context tester enumeration object
	☐ Attribute-id: MDC_ATTR_TIME_STAMP_ABS (2448)
	☐ Attribute-type: SEQUENCE {century (INT-U8), year (INT-U8), month (INT-U8), day
	(INT-U8), hour (INT-U8), minute (INT-U8), second (INT-U8), sec-fractions (INT-U8)}
	(BCD encoding) Attribute-value:
	• century: 20 (hex) or 32 (dec)
	• year: 12 (hex) or 18 (dec)
	• month: 08 (hex) or 8 (dec)
	• day: 02 (hex) or 2 (dec)
	hour: 12 (hex) or 18 (dec) minute: 50 (hex) or 90 (dec)
	• minute: 59 (hex) or 89 (dec)
	second: 27 (hex) or 39 (dec) second: 27 (hex) or 0 (dec) second: 27 (hex) or 0 (dec)
	sec-fractions: 00 (hex) or 0 (dec) NAME BCD 01 maggaga
	b) WAN PCD-01 message PCD-01 message includes a segment like this with Absolute-Time-Stamp attribute value:
	OBX ? CWE 8417820^MDC_CTXT_GLU_HEALTH^MDC 1.0.0.7
	OBX CWE 64176201MIDG_CTXT_GLO_HEALTH-MIDG 1.0.0.7 8417824^MDC_CTXT_GLU_HEALTH_MINOR^MDC R 20120802125927+0000

TP ld		TP/LP-PAN/MAN/PHDTW/GL/BV-074		
TP label		Whitepaper. Glucosemeter Context Health Enumeration Object - Enum-Observed-Value-Simple-OID Attribute		
Coverage	Spec	[Bluetooth PHDT v1.4]		
	Testabl e items	GL Enumeration 25; M		
Applicability	у	C_MAN_BLE_000 AND C_MAN_BLE_002 AND C_MAN_BLE_007 AND C_MAN_BLE_016		
Initial condi	tion	The manager under test and the simulated agent are in the standby state.		
Test procedure		1. The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).		
		The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:		
		a. Glucose measurement context (0x2A34)		
		i. Field: Flags		
		Format: 8 bit		
		 Value: 0000 0100 (MSB → LSB). Tester-Health is included and Meal, Carbohydrate ID, Carbohydrate, Exercise Duration, Exercise Intensity, Medication ID, Medication Value and HbA1c fields are not included 		
		ii. Field: Sequence number		
		Format: uint16		
		Value: Not relevant		
		iii. Field: Extended Flags		
		This field is not included		
		iv. Field: Carbohydrate ID		
		This field is not included		
		v. Field: Carbohydrate - units of kilograms		
		This field is not included		
		vi. Field: Meal		
		This field is not included		
		vii. Field: Tester		
		Format: nibble		
		Value: Not relevant		
		viii. Field: Health		
		Format: nibble		
		 Value: Several values are checked in this test case 		
		ix. Field: Exercise Duration		
		This field is not included		
		x. Field: Exercise Intensity		
		This field is not included		
		xi. Field: Medication ID		
		This field is not included		
		xii. Medication – units of kilograms		
		This field is not included		
		xiii. Medication – units of litres		

· This field is not included

xiv. Field: HbA1c

- This field is not included
- The manager under test initiates a discovery process (scanning state). It discovers the simulated agent and it starts a pairing process with the simulated agent (initiating state).
- 4. When the pairing has been completed (connection state), the manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement followed by the Glucose measurement context [Health field set to 0x01 = Minor health issues] to the manager under test.
- Check in manager transcoder output for the Context HealthEnumeration object Enum-Observed-Value-Simple-OID attribute.
- 6. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement context [Health field set to 0x02 = Major Health Issues] to the manager under test.
- Check in manager transcoder output for the Context HealthEnumeration object Enum-Observed-Value-Simple-OID attribute.
- 8. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement context [Health field set to 0x03 = Menses] to the manager under test.
- Check in manager transcoder output for the Context HealthEnumeration object Enum-Observed-Value-Simple-OID attribute
- 10. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement context [Health field set to 0x04 = Under stress] to the manager under test.
- Check in manager transcoder output for the Context health enumeration object Enum-Observed-Value-Simple-OID attribute.
- 12. The manager under test requests the simulated agent to report stored records writing an operation in Record Access Control Point (RACP) and the simulated agent sends a Glucose measurement context [Health field set to 0x05 = No health issues] to the manager under test.
- 13. Check in manager transcoder output for the Context health enumeration object Enum-Observed-Value-Simple-OID attribute.

Pass/Fail criteria

In step 5, the Context health enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Health Value field of the Glucose measurement context characteristic: 0x1 (Minor health issues).

In step 7, the Context health enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Health Value field of the Glucose measurement context characteristic: 0x2 (Major health issues).

In step 9, the Context health enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Health Value field of Glucose measurement context characteristic: 0x3 (Menses).

In step 11, the Context health enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Health Value field of Glucose measurement context characteristic: 0x4 (Under stress).

In step 13, the Context health enumeration object - Enum-Observed-Value-Simple-OID attribute is present and its value matches with the Context Health Value field of Glucose measurement context characteristic: 0x5 (No health issues).

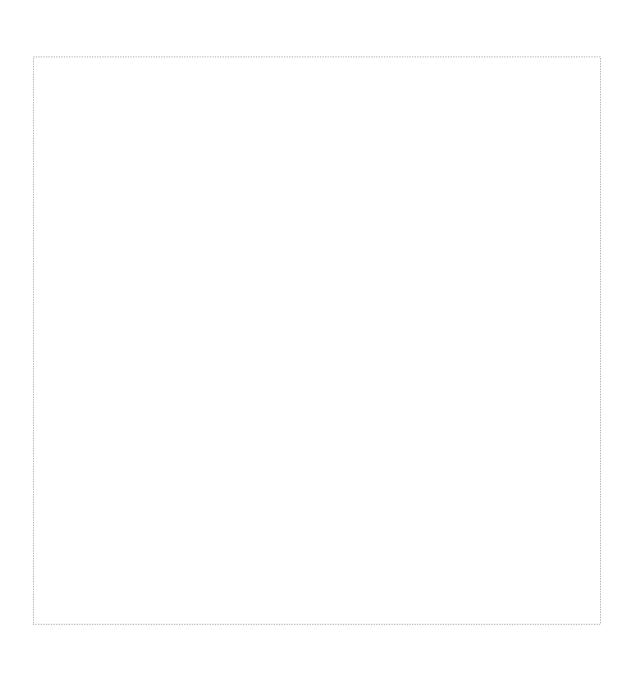
Notes	In step 5, possible values in typical points of observation after transcoder output are:			
	a) IEEE 11073 Objects and Attributes			
	Enum-Observed-Value-Simple-OID attribute is present:			
	 Object: Context health enumeration object 			
	☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633)			
	☐ Attribute-type: OID-Type(INT-U16)			
	☐ Attribute-value: MDC_CTXT_GLU_HEALTH_MINOR (29216) or 1 (dec)			
	b) WAN PCD-01 message			
	PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 = 8417824^MDC_CTXT_GLU_HEALTH_MINOR^MDC			
	In step 7, possible values in typical points of observation after transcoder output are:			
	a) IEEE 11073 Objects and Attributes			
	Enum-Observed-Value-Simple-OID attribute is present:			
	□ Object: Context HealthEnumeration object			
	☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633)			
	☐ Attribute-type: OID-Type(INT-U16)			
	☐ Attribute-value: MDC_CTXT_GLU_HEALTH_MAJOR (29220)			
	b) WAN PCD-01 message			
	PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 =			
	8417828^MDC_CTXT_GLU_HEALTH_MAJOR^MDC			
	In step 9, possible values in typical points of observation after transcoder output are:			
	a) IEEE 11073 Objects and Attributes			
	Enum-Observed-Value-Simple-OID attribute is present:			
	Object: Context HealthEnumeration object			
	☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633)			
	☐ Attribute-type: OID-Type(INT-U16)			
	☐ Attribute-value: MDC_CTXT_GLU_HEALTH_MENSES(29224)			
	b) WAN PCD-01 message			
	PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 =			
	8417832^MDC_CTXT_GLU_HEALTH_MENSES^MDC			
	In step 11, possible values in typical points of observation after transcoder output are:			
	a) IEEE 11073 Objects and Attributes			
	Enum-Observed-Value-Simple-OID attribute is present:			
	Object: Context health enumeration object			
	☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633)			
	☐ Attribute-type: OID-Type(INT-U16)			
	☐ Attribute-value: MDC_CTXT_GLU_HEALTH_STRESS (29228)			
	b) WAN PCD-01 message			
	PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 =			
	8417836^MDC_CTXT_GLU_HEALTH_STRESS^MDC			
	In step 13, possible values in typical points of observation after transcoder output are:			
	a) IEEE 11073 Objects and Attributes			
	Enum-Observed-Value-Simple-OID attribute is present:			
	□ Object: Context health enumeration object			
	☐ Attribute-id: MDC_ATTR_ENUM_OBS_VAL_SIMP_OID (2633)			
	☐ Attribute-type: OID-Type(INT-U16)			
	☐ Attribute-value: MDC_CTXT_GLU_HEALTH_NONE (29232)			
	b) WAN PCD-01 message			
	PCD-01 message includes a segment like this with an Enum-Observed-Value-Simple-OID attribute value. Check OBX-2 = CWE AND OBX-5 =			
	8417840^MDC_CTXT_GLU_HEALTH_NONE^MDC			

TP ld		TP/LP-PAN/MAN/PHDTW	/GL/BV-075		
TP label		Whitepaper. Glucosemeter Context Health Enumeration Object value			
Coverage	Spec	[Bluetooth PHDT v1.4]			
g	Testabl			Date-Time Conv 1; M	
	e items	,			
Applicability	1	C_MAN_BLE_000 AND C	MAN_BLE_007 AND C_MAN_	BLE_016	
Initial condit	tion	The manager under test a	nd the simulated agent are in the	e standby state.	
Test procedure		The simulated agent is configured with a Glucose profile (device specialization); it has a measurement ready to be sent and it is in the advertising state (it is discoverable).			
		The simulated agent implements several BLE characteristics. The characteristic of interest for this test case is:			
		a. Glucose measurement (0x2A18)			
		b. Glucose measure	ment context (0x2A34)		
			st initiates a discovery process starts a pairing process with the	(scanning state). It discovers the e simulated agent (initiating	
		requests the simulate Access Control Point followed by the Gluco	been completed (connection stated agent to report stored records (RACP) and the simulated agent se measurement context to the lest for this test case are:	writing an operation in Record t sends a Glucose measurement	
		a. Glucose measure	ment (0x2A18)		
		i. Field: Fl	ags		
		Format: 8 bit			
		Type ar Sensor	00010010 (MSB → LSB). Gluco: Ind Sample Location fields are included the same incl		
		ii. Field: Sequ	ence number		
		• Format	uint16		
		Value: I	Not relevant		
		iii. Field: Base	Time		
		iii. Format	Date and Time		
		Value: /	August 2nd, 2012, 11:08:25		
		iv. Field: Time	Offset		
		This fie	d is not included		
		v. Field: Gluc	ose Concentration - units of kg/L	-	
		Format:	SFLOAT		
		Value: I	Not relevant		
		vi. Field: Gluc	ose Concentration - units of mol	/L	
		This fie	d is not included		
		vii. Field: Type			
		Format:	nibble		
		Value: I	Not relevant		
		viii. Field: Sam	ole Location		
		Format:	nibble		
		Value: I	Not relevant		

Notes	
Pass/Fail criteria	In step 5, the manager under test shows the following Health minor health issues (MDC_CTXT_GLU_HEALTH_MINOR or 29216) with the time stamp '2012-08-02 11:08:25'.
	5. Check that the manager accepts the measurement and decodes its value properly (Health value and base time).
	 This field is not included Check that the manager accepts the measurement and decodes its value properly
	xiii. Field: HbA1c
	This field is not included This field, Uh A1a This field is not included
	xii. Field: Medication
	This field is not included
	xi. Field: Medication ID
	This field is not included
	x. Field: Exercise Intensity
	This field is not included
	ix. Field: Exercise Duration
	 Value: minor health issues (0001 MSB → LSB)
	Format: nibble
	viii. Field: Health
	Value: Not relevant
	Format: nibble
	vii. Field: Tester
	This field is not included
	vi. Field: Meal
	This field is not included
	v. Field: Carbohydrate
	This field is not included
	This field is not included iv. Field: Carbohydrate ID
	iii. Field: Extended Flags
	Value: Not relevant Field: Extended Flore
	Format: uint16 Value Not relevant.
	ii. Field: Sequence number
	 Value: 0000 0100 (MSB → LSB). Tester and Health fields are included and Carbohydrate ID, Carbohydrate, Meal, Exercise Duration and Exercise Intensity, Medication ID, Medication Value, Extended Flags and HbA1c fields are not included
	Format: 8 bit
	i. Field: Flags
	b. Glucose measurement context (0x2A34)
	This field is not included
	ix. Field: Sensor Status Annunciation

Bibliography

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[b-CDG 2010]	Continua Health Alliance, Continua Design Guidelines v1.5 (2010), <i>Continua Design Guidelines</i> .
[b-CDG 2011]	Continua Health Alliance, Continua Design Guidelines (2011) "Adrenaline", Continua Design Guidelines.
[b-CDG 2012]	Continua Health Alliance CDG, Continua Design Guidelines (2012) "Catalyst", Continua Design Guidelines.
	[b-ETSI SR 001 262] ETSI SR 001 262 v1.8.1 (2003), <i>ETSI drafting rules</i> .
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