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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

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Interoperability compliance testing of personal health
systems (HRN, PAN, LAN, TAN and WAN)

Conformance of ITU-T H.810 personal health devices: WAN interface Part 5: PCD-01 HL7 messages: Sender

Recommendation ITU-T H.830.5

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Recommendation ITU-T H.830.5

Conformance of ITU-T H.810 personal health devices: WAN interface Part 5: PCD-01 HL7 messages: Sender

Summary

Recommendation ITU-T H.830.5 is the transposition of Continua Health Alliance Test Tool DG2013, Test Suite Structure & Test Purposes, WAN Interface; Part 5: PCD-01 HL 7 Messages. Sender (Version 1.4, 2014-01-24), that was developed by the Continua Health Alliance. A number of versions of this specification existed before transposition.

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

This Recommendation was initially approved as ITU-T H.835 (01/2015) and later renumbered, without further modifications, as ITU-T H.830.5 (01/2015) for consistency with the numbering of new WAN interface conformance testing specifications.

History

Edition	Recommendation	Approval	Study Group	Unique ID[*]
1.0	ITU-T H.835	2015-01-13	16	11.1002/1000/12253
1.0	ITU-T H.830.5	2015-01-13	16	11.1002/1000/12591

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[*] To access the Recommendation, type the URL http://handle.itu.int/ in the address field of your web browser, followed by the Recommendation's unique ID. For example, http://handle.itu.int/11.1002/1000/11 830-en.

FOREWORD

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

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

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

NOTE

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

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

INTELLECTUAL PROPERTY RIGHTS

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

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

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Electronic attachment: Protocol implementation conformance statements (PICS) and protocol implementation extra information for testing (PIXIT) required for the implementation of Annex A.

Introduction

This Recommendation is the transposition of Continua Health Alliance Test Tool DG2013, Test Suite Structure & Test Purposes, WAN Interface; Part 5: PCD-01 HL 7 Messages. Sender (Version 1.4, 2014-01-24), that was developed by the Continua Health Alliance. A number of versions of this specification existed before transposition and these can be found in the table below.

Version	Date	Revision history
1.2	2012-10-05	Initial release for Test Tool DG2011. This is the same version as "TSS&TP_1.5_WAN_PART_5_(SEN PCD-01)_v1.2..doc" because new features included in [CDG 2011] do not affect the test procedures specified in this document.
1.3	2013-05-24	Initial release for Test Tool DG2012. This uses "TSS&TP_DG2011_WAN_PART_5_(SEN PCD-01)_v1.2" as a baseline and adds new features included in [CDG 2012]: – Addition of glucose meter new spec. version – Addition of body composition analyser device specialization – Addition of basic electrocardiograph device specialization
1.4	2014-01-24	Initial release for Test Tool DG2013. This uses "TSS&TP_DG2012_WAN_PART_5_(SEN PCD-01)_v1.3.doc" as a baseline and adds new features included in [ITU-T H.810]: – Addition of glucose meter BLE – Addition of BLE SSP support – Addition of NFC new transport – Addition of INR device specialization

Recommendation ITU-T H.830.5

Conformance of ITU-T H.810 personal health devices: WAN interface Part 5: PCD-01 HL7 messages: Sender

1 Scope

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

The TSS & TP for the WAN Interface document have been divided into the eight parts specified below. This Recommendation covers Part 5.

– **Part 1**: Web Services Interoperability. Sender
– **Part 2**: Web Services Interoperability. Receiver
– **Part 3**: SOAP/ATNA. Sender
– **Part 4**: SOAP/ATNA. Receiver
– **Part 5**: PCD-01 HL7 Messages. Sender
– **Part 6**: PCD-01 HL7 Messages. Receiver
– **Part 7**: Consent Management. Sender
– **Part 8**: Consent Management. Receiver

2 References

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

[ITU-T H.810]   Recommendation ITU-T H.810 (2013), *Interoperability design guidelines for personal health systems.*

[IEEE 11073-20601A] IEEE 11073-20601A-2010, *IEEE Health informatics – Personal 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 2]   IHE PCD TF 2 (2011), *IHE Patient Care Device (PCD) Technical Framework, Volume 2 (PCD TF-2): Transactions, Revision 1.0.*
<http://www.ihe.net/Technical_Framework/upload/IHE_PCD_TF_Vol2_FT_2011-08-12.pdf>

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

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:

ATNA	Audit Trail and Node Authentication
ATS	Abstract Test Suite
CDG	Continua Design Guidelines
DUT	Device Under Test
GUI	Graphical User Interface
HL7	Health Level 7
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
INR	International Normalized Ratio
IUT	Implementation Under Test
MDS	Medical Device System
NFC	Near Field Communication
PCD	Patient Care Device
PCT	Protocol Conformance Testing
PHD	Personal Healthcare Device
PHDC	Personal Healthcare Device Class
PHM	Personal Health Manager
PICS	Protocol Implementation Conformance Statement
PIXIT	Protocol Implementation extra Information for Testing
SDP	Service Discovery Protocol
SOAP	Simple Object Access Protocol
TCRL	Test Case Reference List
TCWG	Test and Certification Working Group
TLS	Transport Level Security
TP	Test Purpose

TSS	Test Suite Structure
URI	Uniform Resource Identifier
USB	Universal Serial Bus
WAN	Wide Area Network
WDM	Windows Driver Model
WS	Web Service
WSDL	Web Service Description Language
XML	extensible Markup Language

5 Conventions

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

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

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

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

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

– MAY is equivalent to 'is permitted'.

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

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

Reference is made in the ITU-T H.800-series of Recommendations to different versions of the Continua design guidelines (CDG) by a specific designation. The list of terms that may be used in this Recommendation is provided in Table 1. Furthermore, the 2013 edition of the Continua design guidelines, which is published as [ITU-T H.810], is designated by "CDG 2013" as an extension of the designations indicated in the bibliography.

Additionally, Table 2 shows the mapping between parts of [ITU-T H.810] and previous (not transposed) versions of the CDG.

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 CDG including maintenance updates of the 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 CDG including maintenance updates of CDG 2010 and additional guidelines	Adrenaline

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

CDG name	Transposed as	Version	Description	Designation
			that cover new functionalities [b-CDG 2011].	
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].	–

Table 2 – Mapping between ITU-T H.810 and previous versions of the CDG

Elements	Clauses in the CDG	Clauses in this Recommendation
System overview	Up to clause 3, plus Annex A and Appendix G	Up to clause 6, plus Annex A and Appendix V
TAN/PAN/LAN	Clauses 4 to 7, Appendices C, D, M	Clauses 7 to 10, Appendices I, II, XI
WAN	Clause 8, Appendices H, I, J, K	Clause 11; Appendices VI, VII, VIII, IX
HRN	Clause 9, Appendices E, F, L	Clause 12, Appendices III, IV, X

6 Test suite structure (TSS)

The test purposes (TP) for the WAN interface have been divided into the main subgroups specified below. Annex A describes the TPs for subgroups 1.4.1 to 1.4.14 (shown in bold).

– Group 1: Sender (SEN)
  • Group 1.1: Web services interoperability (WSI)
    ○ Subgroup 1.1.1: Basic profile (BP)
    ○ Subgroup 1.1.2: Basic security profile (BSP)
    ○ Subgroup 1.1.3: Reliable messaging (RM)
  • Group 1.2: SOAP (SOAP)
    ○ Subgroup 1.2.1: SOAP headers (HEAD)
  • Group 1.3: Audit (ATNA)
    ○ Subgroup 1.3.1: General (GEN)
    ○ Subgroup 1.3.2: PCD-01 (PCD-01)
    ○ Subgroup 1.3.3: Consent management (CM)
  • Group 1.4: PCD-01 HL7 messages (PCD-01-DATA)
    ○ **Subgroup 1.4.1: General (GEN)**
    ○ **Subgroup 1.4.2: Design guidelines (DG)**
    ○ **Subgroup 1.4.3: Pulse oximeter (PO)**
    ○ **Subgroup 1.4.4: Blood pressure monitor (BPM)**
    ○ **Subgroup 1.4.5: Thermometer (TH)**
    ○ **Subgroup 1.4.6: Weighing scales (WEG)**
    ○ **Subgroup 1.4.7: Glucose meter (GL)**
    ○ **Subgroup 1.4.8: Cardiovascular fitness and activity monitor (CV)**

- - **Subgroup 1.4.9: Strength fitness equipment (ST)**
    - **Subgroup 1.4.10: Independent living activity hub (HUB)**
    - **Subgroup 1.4.11: Adherence monitor (AM)**
    - **Subgroup 1.4.12: Peak expiratory flow monitor (PF)**
    - **Subgroup 1.4.13: Body composition analyser (BCA)**
    - **Subgroup 1.4.14: Basic electrocardiograph (ECG)**
  - Group 1.5: Consent management (CM)
    - Subgroup 1.5.1: WAN XDR transaction (TRANS)
    - Subgroup 1.5.2: WAN metadata validation (META)
    - Subgroup 1.5.3: WAN consent directive validation (CDV)
- Group 2: Receiver (REC)
  - Group 2.1: Web service interoperability (WSI)
    - Subgroup 2.1.1: Basic profile (BP)
    - Subgroup 2.1.2: Basic security profile (BSP)
    - Subgroup 2.1.3: Reliable messaging (RM)
  - Group 2.2: SOAP (SOAP)
    - Subgroup 2.2.1: SOAP headers (HEAD)
  - Group 2.3: Audit (ATNA)
    - Subgroup 2.3.1: General (GEN)
    - Subgroup 2.3.2: PCD-01 (PCD-01)
    - Subgroup 2.3.3: Consent management (CM)
  - Group 2.4: PCD-01 HL7 messages (PCD-01-DATA)
    - Subgroup 2.4.1: General (GEN)
    - Subgroup 2.4.2: Design guidelines (DG)
    - Subgroup 2.4.3: Pulse oximeter (PO)
    - Subgroup 2.4.4: Blood pressure monitor (BPM)
    - Subgroup 2.4.5: Thermometer (TH)
    - Subgroup 2.4.6: Weighing scales (WEG)
    - Subgroup 2.4.7: Glucose meter (GL)
    - Subgroup 2.4.8: Cardiovascular fitness and activity monitor (CV)
    - Subgroup 2.4.9: Strength fitness equipment (ST)
    - Subgroup 2.4.10: Independent living activity hub (HUB)
    - Subgroup 2.4.11: Adherence monitor (AM)
    - Subgroup 2.4.12: Peak expiratory flow monitor (PF)
    - Subgroup 2.4.13: Body composition analyser (BCA)
    - Subgroup 2.4.14: Basic electrocardiograph (ECG)
  - Group 2.5: Consent management (CM)
    - Subgroup 2.5.1: WAN XDR transaction (TRANS)
    - Subgroup 2.5.2: WAN service validation (SER)

7 Electronic attachment

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

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

Annex A

Test purposes

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

A.1 TP definition conventions

The test purposes (TP) 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.
    - WAN: Wide area network
  - <DUT>: This is the device under test.
    - SEN: WAN observation sender
    - REC: WAN observation receiver
  - <GR>: This identifies a group of test cases.
  - <SGR>: This identifies a subgroup of test cases.
  - <XX>: This identifies the type of testing.
    - BV: Valid behaviour test
    - BI: Invalid behaviour test
  - <NNN>: This is a sequential number that identifies the test purpose.
- **TP label**: This is the title of the TP.
- **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 are 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 1.4.1: General (GEN)

TP Id		TP/WAN/SEN/PCD-01-DATA/GEN/BV-000		
TP label		Object Hierarchy and Message Construction		
Coverage	**Spec**	[b-CDG 2012], Appendices H and I		
	Testable items	ObjectHierarchy 1; M	ObjectHierarchy 2; M	ObjectHierarchy 3; M
		ObjectHierarchy 4; M	ObjectHierarchy 5; M	ObjectHierarchy 6; R
		ObjectHierarchy 7; M	ObjectHierarchy 8; M	ObjectHierarchy 9; M
		ObjectHierarchy 10; O	HierarchyAssig 2; M	MessageConst 3; M
		MessageConst 4; M	MessageConst 5; M	MessageConst 6; M
		MessageConst 7; M	MessageConst 8; M	MessageConst 9; M
	Spec	[IHE PCD TF 2]		
	Testable items	PCD-OBX3-1; M	PCD-OBX3-2; M	PCD-OBX3-3; C
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation.		

Test procedure		1. Make the sender under test send a HL7 message inside a SOAP body.
		
		2. Check in the captured message that:
		
		   a. MDS object is contained in a separate OBX segment:
		
		     ❑ OBX-11 = 'X' in MDS-level OBX
		
		     ❑ MDS-level OBX contains in OBX-18 the device's system Id
		
		   b. If the CHANNEL-level OBX is present, OBX-11 = 'X'.
		
		   c. OBX-3 of the MDS level has the value of the MDS Model and MDS Device Type or the Device Operational Status Enumeration Object (PCD has complex operation states)
		
		   d. OBX-4 in each OBX segment indicates the following hierarchy: MDS[.VMD[.CHANNEL[.METRIC[.FACET[.SUBFACET]]]]]
		
		   where:
		
		     ❑ The MDS value '0' is reserved for observations related to the AHD itself, its own time synchronization information and its certification material and OBX-4 = 0.0.0.x, where x could be any integer value.
		
		     ❑ The VMD value is '0' because it is not used by Continua.
		
		     ❑ CHANNEL-level is used to report compound metrics, and if it is used, it is recommended that it has a unique number value. If CHANNEL-level is not used, it has a '0' value.
		
		     ❑ METRIC is used for individual measurements and its value is unique for each instance of a metric observation.
		
		     ❑ FACET is used for relating values to the core metric.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GEN/BV-001		
TP label		MSH Segment		
Coverage	Spec	[b-CDG 2012], Appendices H and K		
	Testable items	MSH-1; M	MSH-2; M	MSH-3; M
		MSH-4; M	MSH-5; M	MSH-6; M
		MSH-7; M	MSH-8; M	MSH-9; M
		MSH-10; M	MSH-11; M	MSH-12; M
		MSH-13; M	MSH-14; M	MSH-15; M
		MSH-16; M	MSH-17; M	MSH-18; M
		MSH-19; M	MSH-20; M	MSH-21; M
		MSH-22; M	MSH-23; M	MSH-24; M
		MSH-25; M	HL7Concept 2; M	CWEDataType 1; M
		CWEDataType 2; M	CWEDataType 3; C	CWEDataType 4; R
		DateTimeDataType 1; M	NumericDataType 1; M	StringDataType 1; M
		IDDataType 1; M	ISDataType 1; M	EIDataType 1; M
		EIDataType 2; O	EIDataType 3; O	EIDataType 4; O
		EIUse1; C	EIUse2; C	EIUse3; C
		EIUse4; C		
	Spec	[IHE PCD TF 2]		
	Testable items	HDUse1; M	HDUse2; C	HDUse3; C
		HD-1; M	HD-2; M	HD-3; M
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a supported device specialization inside a SOAP body.
		2. Check in the captured message that:
		  a. Only one MSH segment is present and that:
		    ❑ The character '|' is the separator element.
		    ❑ MSH-2 = '^~\&' (for the encoding characters element).
		    ❑ MSH-3 = <Namespace ID (data type IS)>^<Universal ID (data type ST)>^<Universal Type (data type ID)>
		      • If C_SEN_DATA_001=TRUE, Namespace ID (HD-1) is optional and may contain a locally unique name for the application implementing PCD actor(s). Universal ID (HD-2) contains the EUI-64 identifier as a hexadecimal string. The IEEE defined 64-bit extended unique identifier (EUI-64) is a concatenation of the 24-bit company_id value assigned by the IEEE registration authority and a 40-bit extension identifier assigned by the organization having that company_id assignment.Universal ID (HD-2) contains all three components, Third component (required): EUI-64.
		      • If C_SEN_DATA_002=TRUE, "Namespace ID" (HD-1) containing the name of the assigning authority, "Universal ID" (HD-2) containing its universal OID, and "Universal ID Type" (HD-3) containing the value ISO.
		      • Otherwise, if the Universal Type (HD-3) is valued, it takes one of the following values:
		        - 'DNS' - An Internet dotted name. Either in ASCII or as integers.
		        - 'GUID' - Same as UUID.
		        - 'HCD' - The CEN healthcare coding scheme designator. (Identifiers used in DICOM follow this assignment scheme.)
		        - 'HL7' - Reserved for future HL7 registration schemes.
		        - 'L','M','N' - These are reserved for locally defined coding schemes.
		        - 'Random' - Usually a base64 encoded string of random bits. The uniqueness depends on the length of the bits. Mail systems often generate ASCII string "unique names", from a combination of random bits and system names. Obviously, such identifiers will not be constrained to the base64 character set.
		        - 'URI' - Uniform resource identifier
		        - 'UUID' - The DCE universal unique identifier
		        - 'x400' - An X.400 MHS format identifier
		        - 'x500' - An X.500 directory name.
		    ❑ MSH-4, MSH-5 and MSH-6 may be empty, but if they are not empty, they have the same encoding as MSH-3: *<Namespace ID (data type IS)>^<Universal ID (data type ST)>^<Universal Type (data type ID)>*.
		    ❑ MSH-7 is encoded as **YYYYMMDDHHMMSS[.S[S[S[S]]]][+/-ZZZZ] (required items in bold)**		

	❑ MSH-8 is empty ❑ MSH-9 = 'ORU^R01^ORU_R01' ❑ MSH-10 is a string (that uniquely identifies the message) ❑ MSH-11 = *<Processing ID (data type ID)>^<Processing Mode (data type ID)>* where 'Processing ID' can be one of the following values: • 'D' for Debugging • 'P' for Processing • 'T' for Training. and 'Processing Mode', can be one of the following values: • 'A' for archive • 'I' for initial load • 'R' for restore from archive • 'T' for current processing, transmitted at intervals • Not present (empty), meaning current processing. ❑ MSH-12 = 2.6 ❑ MSH-13 should not be valued, but if it is valued, it is a sequence number (it is allowed to have any of these characters: '+','-' and '.') ❑ MSH-14 is empty ❑ MSH-15 = 'NE' ❑ MSH-16 = 'AL' ❑ MSH-17 may be empty, but if it is valued, it uses a 3-character (alphabetic) form of ISO 3166. ❑ MSH-18 may be empty, but if it is valued, it has one or more of these codes: • 'ASCII' (the default) • '8859/1' • '8859/2' • '8859/3' • '8859/4' • '8859/5' • '8859/6' • '8859/7' • '8859/8' • '8859/9' • '8859/15' • 'ISO IR14' • 'ISO IR87' • 'ISO IR159' • 'GB 18030-2000' • 'KS X 1001' • 'CNS 11643-1992' • 'BIG-5' • 'UNICODE' • 'UNICODE UTF-8' • 'UNICODE UTF-16' • 'UNICODE UTF-32' ❑ MSH-19 may be empty, but if it is valued, it is encoded as CWE data type: *<Identifier (ST)>^<Text (ST)>^< Name of Coding System (ID)> ^<Alternate Identifier (ST)>^<Alternate Text (ST)>^<Name of Alternate Codind System (ID)>^<Coding System Version ID (ST)>^<Alternate Coding System Version ID (ST)>^<Original Text (ST)>* where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present. ❑ MSH-20 is empty ❑ MSH-21 = *<Entity Identifier (data type ST)> ^ <Namespace ID (data type IS)> ^ <Universal ID (data type ST)> ^ <Universal ID Type (data type ID)>,* where NamespaceID and UniversalID are 'HL7' ❑ MSH-22, MSH-23, MSH-24, MSH-25 are empty
Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/GEN/BV-002		
TP label		PID Segment		
Coverage	**Spec**	[b-CDG 2012], Appendices H and K		
	Testable items	PID-1; M	PID-2; M	PID-3; M
		PID-4; M	PID-5; M	PID-6; R
		PID-7; M	PID-8; M	PID-9; M
		PID-10; M	PID-11; M	PID-12; M
		PID-13; M	PID-14; M	PID-15; R
		PID-16; R	PID-17; R	PID-18; R
		PID-19; M	PID-20; M	PID-21; R
		PID-22; R	PID-23; R	PID-24; R
		PID-25; R	PID-26; R	PID-27; R
		PID-28; M	PID-29; R	PID-30; R
		PID-31; R	PID-32; R	PID-33; R
		PID-34; R	PID-35; M	PID-36; M
		PID-37; M	PID-38; M	PID-39; M
		HL7Concept 3; M	CWEDataType 1; M	CWEDataType 2; M
		CWEDataType 3; C	CWEDataType 4; R	DateTimeDataType 1; M
		NumericDataType 1; M	StringDataType 1; M	XADDataType 1; M
		XADDataType 2; O	XADDataType 3; M	XADDataType 4; M
		XADDataType 5; M	XADDataType 6; O	XADDataType 7; M
		XADDataType 8; O	XPNDataType 1; M	XPNDataType 2; M
		XPNDataType 3; M	XPNDataType 4; M	XPNDataType 5; M
		XPNDataType 6; M	XPNDataType 7; M	XPNDataType 8; M
		XPNDataType 9; R	XPNDataType 10; M	XPNDataType 11; R
		XPNDataType 12; R	XPNDataType 13; R	XPNDataType 14; R
		CXDataType 1; M	CXDataType 2; R	CXDataType 3; R
		CXDataType 4; M	CXDataType 5; M	CXDataType 6; R
		IDDataType 1; M	ISDataType 1; M	XTNDataType 1; M
		XTNDataType 2; M	XTNDataType 3; M	XTNDataType 4; M
		XTNDataType 5; M	XTNDataType 6; M	XTNDataType 7; M
		XTNDataType 8; M	XTNDataType 9; M	XTNDataType 10; M
		XTNDataType 11; M		
	Spec	[IHE PCD TF 2]		
	Testable items	HDUse1; M	HDUse2; C	HDUse3; C
		HD-1; M	HD-2; M	HD-3; M
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a supported device specialization inside a SOAP body.
		
		2. Check in the captured message that:
		
		   a. Only one PID segment is present and:
		
		     ❑ PID-1 and PID-2 are empty		

- ❑ PID-3 is of CX data type: *<ID Number (ST)> ^ <Identifier Check Digit (ST)> ^ <Check Digit Scheme (ID)> ^ <Assigning Authority (HD)> ^ <Identifier Type Code (ID)> ^ <Assigning Facility (HD)> ^ <Effective Date (DT)> ^ <Expiration Date (DT)> ^ <Assigning Jurisdiction (CWE)> ^ <Assigning Agency or Department (CWE)>*

  - Subcomponents for assigning authority (HD): *<Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>*

  - Subcomponents for assigning facility (HD): *<Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>*

  - Subcomponents for assigning jurisdiction (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID (ST)> & <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*

    where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present.

  - Subcomponents for assigning agency or department (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID (ST)> & <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*

    where CX-1, CX-4 and CX-5 are required.

- ❑ PID-4 is empty

- ❑ PID-5 is encoded as XPN data type: *<Family Name (FN)> ^ <Given Name (ST)> ^ <Second and Further Given Names or Initials Thereof (ST)> ^ <Suffix (e.g., JR or III) (ST)> ^ <Prefix (e.g., DR) (ST)> ^ <DEPRECATED-Degree (e.g., MD) (IS)> ^ <Name Type Code (ID)> ^ <Name Representation Code (ID)> ^ <Name Context (CWE)> ^ <DEPRECATED-Name Validity Range (DR)> ^ <Name Assembly Order (ID)> ^ <Effective Date (DTM)> ^ <Expiration Date (DTM)> ^ <Professional Suffix (ST)>*

  - Subcomponents for family name (FN): *<Surname (ST)> & <Own Surname Prefix (ST)> & <Own Surname (ST)> & <Surname Prefix from Partner/Spouse (ST)> & <Surname from Partner/Spouse (ST)>*

  - Subcomponents for name context (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID (ST)> & <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*

    where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present.

  - Subcomponents for name validity range (DR): *<Range Start Date/Time (DTM)> & <Range End Date/Time (DTM)>*

    where XPN-7 is the only element that needs to be filled, and if it is an 'L' (legal name), it occurs first. Other possible values are:

    - 'A' - Alias name

    - 'B' - Name at birth

    - 'C' - Adopted name

    - 'D' - Display name

    - 'I' - Licensing name

    - 'K' - Artist name

    - 'L' - Legal name

    - 'M' - Maiden name

    - 'N' - Nickname /"Call me" name/street name

    - 'R' - Registered name (animals only)

    - 'S' - Coded pseudo-name to ensure anonymity

- 'T' - Indigenous/tribal/community name
- 'U' - Unspecified

The remaining fields or PID-5 are required but may be empty, except the deprecated one, that must be empty.

❑ PID-6 should not be valued, but if it is valued, it is encoded as XPN data type, like PID-5.

❑ PID-7 may be empty. If it is valued, it is encoded as YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

❑ PID-8 may be empty or its value is one of these values:

- 'A' – Ambiguous
- 'F' – Female
- 'M' – Male
- 'N' – Not applicable
- 'O' – Other
- 'U' – Unknown

❑ PID-9 is empty

❑ PID-10 may be empty or its value is of CWE data type: *<Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>*

and takes one of these values:

- '1002-5' - American indian or Alaska native
- '2028-9' - Asian
- '2054-5' - Black or African American
- '2076-8' - Native Hawaiian or Other Pacific islander
- '2106-3' - White
- '2131-1' - Other race

The second triplet of the CWE data type for race (alternate identifier, alternate text, and name of alternate coding system) is reserved for governmentally assigned codes.

❑ PID-11 may be empty or its value is of XAD data type: *<Street Address (SAD)> ^ <Other Designation (ST)> ^ <City (ST)> ^ <State or Province (ST)> ^ <Zip or Postal Code (ST)> ^ <Country (ID)> ^ <Address Type (ID)> ^ <Other Geographic Designation (ST)> ^ <County/Parish Code (IS)> ^ <Census Tract (IS)> ^ <Address Representation Code (ID)> ^ <DEPRECATED-Address Validity Range (DR)> ^ <Effective Date (DTM)> ^ <Expiration Date (DTM)> ^ <Expiration Reason (CWE)> ^ <Temporary Indicator (ID)> ^ <Bad Address Indicator (ID)> ^ <Address Usage (ID)> ^ <Addressee (ST)> ^ <Comment (ST)> ^ <Preference Order (NM)> ^ <Protection Code (CWE)> ^ <Address Identifier (EI)>*

- Subcomponents for street address (SAD): *<Street or Mailing Address (ST)> & <Street Name (ST)> & <Dwelling Number (ST)>*

- Subcomponents for address validity range (DR*): <Range Start Date/Time (DTM)> & <Range End Date/Time (DTM)>*

- Subcomponents for expiration reason (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID (ST)> & <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*

- Subcomponents for protection code (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> &*

<Coding System Version ID (ST)> & <Alternate Coding System Version ID (ST)> & <Original Text (ST)>

- Subcomponents for address identifier (EI): *<Entity Identifier (ST)> & <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>*

where XAD-1, XAD-3, XAD-4, XAD-5, XAD-7 are required. The remaining elements are optional.

- ❑ PID-12 is empty

- ❑ If PID-13 is valued, PCD-01 limits this to two or fewer repetitions with the primary phone number to be the first. It is of XTN data type: *<WITHDRAWN Constituent> ^ <Telecommunication Use Code (ID)> ^ <Telecommunication Equipment Type (ID)> ^ <Communication Address (ST)> ^ <Country Code (NM)> ^ <Area/City Code (NM)> ^ <Local Number (NM)> ^ <Extension (NM)> ^ <Any Text (ST)> ^ <Extension Prefix (ST)> ^ <Speed Dial Code (ST)> ^ <Unformatted Telephone number (ST)> ^ <Effective Start Date (DTM)> ^ <Expiration Date (DTM)> ^ <Expiration Reason (CWE)> ^ <Protection Code (CWE)> ^ <Shared Telecommunication Identifier (EI)> ^ <Preference Order (NM)>*

  - Subcomponents for expiration reason (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID (ST)> & <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*

  - Subcomponents for protection code (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID (ST)> & <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*

  - Subcomponents for Shared Telecommunication Identifier (EI): *<Entity Identifier (ST)> & <Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>*

where XTN-2 and XTN-3 are required and XTN-4 to XTN-10 are required but may be empty. The rest are not supported.

- ❑ PID-14 is empty.

- ❑ PID-15 should not be valued

- ❑ PID-16 should not be valued, but if it is valued, it takes a value from table 0002 HL7 V2.6

- ❑ PID-17 should not be valued, but if it is valued, it takes a value from table 0006 HL7 V2.6

- ❑ PID-18 should not be valued.

- ❑ PID-19 and PID-20 are empty.

- ❑ PID-21 should not be valued

- ❑ PID-22 should not be valued, but if it is valued, it takes one of these values:

  - 'H' - Hispanic or Latino

  - 'N' - Not Hispanic or Latino

  - 'U' - Unknown

- ❑ PID-23 should not be valued

- ❑ PID-24 should not be valued, but if it is valued, it takes one of these values:

  - 'N' - No

  - 'Y' - Yes

- ❑ PID-25 to PID-29 should not be valued

- ❑ PID-30 and PID-31 should not be valued, but if it is valued, it takes one of these values:

  - 'N' - No

- 'Y' - Yes

- ❑ PID-32 should not be valued, but if it is valued, it takes one of these values:
  - 'AL' - Patient/Person name is an alias
  - 'UA' - Unknown/Default address
  - 'UD' - Unknown/Default date of birth
  - 'US' - Unknown/Default social security number
- ❑ PID-33 should not be valued
- ❑ PID-34 should not be valued, but if it is valued, PID-34 = <Namespace ID (data type IS)>^<Universal ID (data type ST)>^<Universal Type (data type ID)>
  - If C_SEN_DATA_001=TRUE, Namespace ID (HD-1) is optional and may contain a locally unique name for the application implementing PCD actor(s). Universal ID (HD-2) contains the EUI-64 identifier as a hexadecimal string. The IEEE defined 64-bit extended unique identifier (EUI-64) is a concatenation of the 24-bit company_id value assigned by the IEEE Registration Authority, and a 40-bit extension identifier assigned by the organization having that company_id assignment.Universal ID (HD-2) contains all three components, third component (required): EUI-64
  - If C_SEN_DATA_002=TRUE, "Namespace ID" (HD-1) containing the name of the assigning authority, "Universal ID" (HD-2) containing its universal OID, and "Universal ID Type" (HD-3) containing the value ISO
  - Otherwise, if universal type (HD-3) is valued, it takes one of the following values:
    - 'DNS' - An Internet dotted name. Either in ASCII or as integers
    - 'GUID' - Same as UUID.
    - 'HCD' - The CEN healthcare coding scheme designator. (Identifiers used in DICOM follow this assignment scheme.)
    - 'HL7' - Reserved for future HL7 registration schemes
    - 'L','M','N' - These are reserved for locally defined coding schemes.
    - 'Random' - Usually a base64 encoded string of random bits. The uniqueness depends on the length of the bits. Mail systems often generate ASCII string "unique names", from a combination of random bits and system names. Obviously, such identifiers will not be constrained to the base64 character set.
    - 'URI' - Uniform resource identifier
    - 'UUID' - The DCE universal unique identifier
    - 'x400' - An X.400 MHS format identifier
    - 'x500' - An X.500 directory name
- ❑ PID-35 to PID-39 are empty, so they cannot be present.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/GEN/BV-003		
TP label		PV1 and ORC Segment		
Coverage	**Spec**	[b-CDG 2012], Appendices H and K		
	Testable items	HL7Concept 4; O	PV1-1; M	
	Spec	[IHE PCD TF 2]		
	Testable items	ORUStaticDefinition4; M	ORCUse; M	
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a supported device specialization inside a SOAP body. 2. Check in the captured message that: a. A PV1 segment may be present b. An ORC segment is not present.		
Pass/Fail criteria		Check that an ORC segment is not present.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GEN/BV-004		
TP label		OBR Segment		
Coverage	**Spec**	[b-CDG 2012] – Appendices H and K		
	Testable items	HL7Concept 5; M	OBR-1; M	OBR-2; M
		OBR-3; M	OBR-4; M	OBR-5; M
		OBR-6; M	OBR-9; M	HL7Concept 6; O
		NTE-1; M	NTE-2; M	NTE-3; M
		NTE-4; M	NTE-5; O	NTE-6; M
		NTE-7; M	NTE-8; M	CWEDataType 1; M
		CWEDataType 2; M	CWEDataType 3; C	CWEDataType 4; R
		DateTimeDataType 1; M	EIDataType 1; M	EIDataType 2; O
		EIDataType 3; O	EIDataType 4; O	EIUse1; C
		EIUse2; C	EIUse3; C	EIUse4; C
		IDDataType 1; M	ISDataType 1; M	SIDataType 1; M
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a supported device specialization inside a SOAP body. 2. Check in the captured message that: a. An OBR segment is present, but there may be more than one and: ❑ OBR-1 starts with 1 and increases sequentially in following OBR segments if there are more than one. ❑ OBR-2 is of EI data type encoded as: *<Entity Identifier (ST)> ^ <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>* If there is an existing order, OBR-2 is set to the identifier of the system that has placed that order. If there is no order or a standing one: • The first component is the order ID that is simply an arbitrary string. • The second component contains an HD that identifies the application which implements the WAN client component. • The third component contains the EUI-64 of the device which implements the WAN client component. ❑ OBR-3 is of EI data type encoded as: *<Entity Identifier (ST)> ^ <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>* • The first component is an arbitrary order ID string, • The second, third and fourth components are used like an HD to identify the application which implements the WAN client component and shall contain the EUI-64 of this device. For "standing orders", this value should match OBR-2. ❑ OBR-4 is of CWE data type encoded as: *<Identifier (ST)> ^ <Text (ST)> ^*		

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	<Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>, where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present. It contains the identifier code for the requested observation/test/battery. This can refer to specific existing orders, or nonspecific "standing" orders. When reporting events related to "standing" orders, these codes will likely describe a generic service such as: • '266706003^continuous ECG monitoring^SNOMED-CT' • '359772000^glucose monitoring at home^SNOMED-CT' • '182777000^monitoring of patient^SNOMED-CT'. ❑ OBR-5, OBR-6 and OBR-9 through to OBR-50 are empty ❑ If valued, OBR-7 is of DTM data type encoded as: YYYY[MM[DD[HH[MM[SS]]]]]][+/-ZZZZ] ❑ If valued, OBR-8 is of DTM data type encoded as: YYYY[MM[DD[HH[MM[SS]]]]]][+/-ZZZZ] b. If the NTE segment is present: ❑ NTE-1 is a non-negative number required for distinguishing when multiple NTE segments appear in a message. ❑ NTE-2 is empty ❑ NTE-3 may be empty, but if it is valued, it is a text comment. ❑ NTE-4 is empty ❑ If NTE-5 is present, it is of type XCN encoded as: *<ID Number (ST)>^<Family Name (FN)>^<Given Name (ST)>^<Second and Further Given Names or Initials Thereof (ST)>^<Suffix (ST)>^<Preffix (ST)>^<DEPRECATED-Degree (IS)>^<Source Table (IS)>^<Assigning Authority (HD)>^<Name Type Code (ID)>^<Identifier Check Digit (ST)>^<Check Digit Scheme (ID)>^<Identifier Type Code (ID)>^<Assigning Facility (HD)>^<Name Representation Code (ID)> ^ <Name Context (CWE)> ^ <DEPRECATED-Name Validity Range (DR)> ^ <Name Assembly Order (ID)> ^ <Effective Date (DTM)> ^ <Expiration Date (DTM)> ^ <Professional Suffix (ST)> ^ <Assigning Jurisdiction (CWE)> ^ <Assigning Agency or Department (CWE)>* • Subcomponents for family name (FN): *<Surname (ST)> & <Own Surname Prefix (ST)> & <Own Surname (ST)> & <Surname Prefix from Partner/Spouse (ST)> & <Surname from Partner/Spouse (ST)>* • Subcomponents for assigning authority (HD): *<Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>* • Subcomponents for assigning facility (HD): *<Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>* • Subcomponents for name context (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID& <Alternate Coding System Version ID (ST)> & <Original Text (ST)>,* where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present. • Subcomponents for name validity range (DR): *<Range Start Date/Time (DTM)>&<Range End Date/Time>* • Subcomponents for assigning jurisdiction (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID& <Alternate Coding System Version ID (ST)> & <Original Text (ST)>,* where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present. • Subcomponents for sssigning agency or department (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID& <Alternate Coding System Version ID (ST)> & <Original Text (ST)>,* where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present. ❑ NTE-6, NTE-7 and NTE-8 are empty
Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id	TP/WAN/SEN/PCD-01-DATA/GEN/BV-005

TP label		TQ1 Segment		
Coverage	Spec	[b-CDG 2012] – Appendices H and K		
	Testable items	HL7Concept 6; R	TQ1-1; M	
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a supported device specialization inside a SOAP body. 2. Check in the captured message that: a. It is recommended that a TQ1 segment is not present.		
Pass/Fail criteria		It is recommended that a TQ1 segment is not present. If it is present, issue a warning trace log message.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GEN/BV-006		
TP label		OBX Segment		
Coverage	Spec	[b-CDG 2012] – Appendices H and K		
	Testable items	HL7Concept 8; M	HL7Concept 9; O	OBR-7; M
		OBR-8; M	OBX-1; M	OBX-2; M
		OBX-3; M	OBX-4; M	OBX-6; M
		OBX-7; M	OBX-8; M	OBX-9; M
		OBX-10; M	OBX-11; M	OBX-12; M
		OBX-13; M	OBX-14; M	OBX-15; M
		OBX-16; M	OBX-17; M	OBX-18; M
		OBX-19; M	OBX-20; M	OBX-21; M
		NTE-1; M	NTE-2; M	NTE-3; M
		NTE-4; M	NTE-5; O	NTE-6; M
		NTE-7; M	NTE-8; M	CWEDataType 1; M
		CWEDataType 2; M	CWEDataType 3; C	CWEDataType 4; R
		DateTimeDataType 1; M	NumericDataType 1; M	StringDataType 1; M
		EIDataType 1; M	EIDataType 2; O	EIDataType 3; O
		EIDataType 4; O	EIUse1; C	EIUse2; C
		EIUse3; C	EIUse4; C	IDDataType 1; M
		ISDataType 1; M	SIDataType 1; M	
	Spec	[IHE PCD TF 2]		
	Testable items	PCD-OBX2; M		
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a supported device specialization inside a SOAP body.
		2. Check in the captured message that:
		    a. An OBX segment is present, but there may be more than one and:
		      ❑ OBX-1 is a sequence number of the OBX in the message.
		      ❑ OBX-2 is one of these values: CWE, CF, DT, DTM, ED, FT, NA, NM, SN, ST, TM, TX, XAD, XCN, XON, XPN, or may be empty and matches with the data type of the value of OBX-5.
		      ❑ OBX-3 is of CWE data type encoded as: *<Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>,* where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present.
		      ❑ OBX-4 is a string of type a[.b[.c[.d[.e]]]]
		      ❑ OBX-6, if valued, is of CWE data type encoded as: *<Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>,* where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present.
		      ❑ OBX-7 is of ST data type, but may be empty.		

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❑ OBX-8 is one of these values: L, H, LL, HH, <, >, N, A, AA, null, U, D, B, W, S, R, I, MS, VS, or may be empty.

❑ OBX-9 is empty.

❑ OBX-10 is recommended to be empty, but if it is valued, it is one of these values: A, N, R, S, SP, B or ST.

❑ OBX-11 is one of these values: C, D, F, I, N, O, P, R, X, U or W.

❑ OBX-12 and OBX-13 are empty.

❑ OBX-14 may be empty, but if it is valued, it is of DTM data type encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]. This timestamp is greater than or equal to OBR-7 and less than OBR-8, if they are valued.

❑ OBX-15 is recommended to be empty, but if it is valued, it is of CWE data type, encoded as: *<Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>,* where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present.

❑ OBX-16 may be empty, but if it is valued, it is of XCN data type, encoded as: *<ID Number (ST)> ^ <Family Name (FN)> ^ <Given Name (ST)> ^ <Second and Further Given Names or Initials Thereof (ST)> ^ <Suffix (e.g., JR or III) (ST)> ^ <Prefix (e.g., DR) (ST)> ^ <DEPRECATED-Degree (e.g., MD) (IS)> ^ <Source Table (IS)> ^ <Assigning Authority (HD)> ^ <Name Type Code (ID)> ^ <Identifier Check Digit (ST)> ^ <Check Digit Scheme (ID)> ^ <Identifier Type Code (ID)> ^ <Assigning Facility (HD)> ^ <Name Representation Code (ID)> ^ <Name Context (CWE)> ^ <DEPRECATED-Name Validity Range (DR)> ^ <Name Assembly Order (ID)> ^ <Effective Date (DTM)> ^ <Expiration Date (DTM)> ^ <Professional Suffix (ST)> ^ <Assigning Jurisdiction (CWE)> ^ <Assigning Agency or Department (CWE)>*

• Subcomponents for family name (FN): *<Surname (ST)> & <Own Surname Prefix (ST)> & <Own Surname (ST)> & <Surname Prefix from Partner/Spouse (ST)> & <Surname from Partner/Spouse (ST)>*

• Subcomponents for assigning authority (HD): *<Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>*

• Subcomponents for assigning facility (HD): *<Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>*

• Subcomponents for name context (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID (ST)> & <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*

• Subcomponents for name validity range (DR): *<Range Start Date/Time (DTM)> & <Range End Date/Time (DTM)>*

• Subcomponents for assigning jurisdiction (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID (ST)> & <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*

• Subcomponents for assigning agency or department (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID (ST)> & <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*

❑ OBX-17 may be empty, but if it is valued, it is of CWE data type, encoded as: *<Identifier (ST)> ^ <Text (ST)> ^ <Name of Coding System (ID)> ^ <Alternate Identifier (ST)> ^ <Alternate Text (ST)> ^ <Name of Alternate Coding System (ID)> ^ <Coding System Version ID (ST)> ^ <Alternate Coding System Version ID (ST)> ^ <Original Text (ST)>,* where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present.

❑ If valued, OBX-18 is of EI data type, encoded as: *<Entity Identifier (ST)> ^ <Namespace ID (IS)> ^ <Universal ID (ST)> ^ <Universal ID Type (ID)>,* where "Namespace ID" is recommended to be EUI-64.

❑ OBX-19 is recommended to be empty, but if it is valued, OBX-19 = OBX-14.

❑ OBX-20 may be empty, but if it is valued, it is of type CWE with an appropriate MDC code for the observation.

❑ OBX-21 to OBX-25 are strongly recommended to be empty.

b. If the NTE segment is present:

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	❑ NTE-1 is a non-negative number required for distinguishing when multiple NTE segments appear in a message
	❑ NTE-2 is empty
	❑ NTE-3 may be empty, but if it is valued, it is a text comment
	❑ NTE-4 is empty
	❑ If NTE-5 is present, it is of type XCN encoded as: *<ID Number (ST)>^<Family Name (FN)>^<Given Name (ST)>^<Second and Further Given Names or Initials Thereof (ST)>^<Suffix (ST)>^<Preffix (ST)>^<DEPRECATED-Degree (IS)>^<Source Table (IS)>^<Assigning Authority (HD)>^<Name Type Code (ID)>^<Identifier Check Digit (ST)>^<Check Digit Scheme (ID)>^<Identifier Type Code (ID)>^<Assigning Facility (HD)>^<Name Representation Code (ID)> ^ <Name Context (CWE)> ^ <DEPRECATED-Name Validity Range (DR)> ^ <Name Assembly Order (ID)> ^ <Effective Date (DTM)> ^ <Expiration Date (DTM)> ^ <Professional Suffix (ST)> ^ <Assigning Jurisdiction (CWE)> ^ <Assigning Agency or Department (CWE)>* • Subcomponents for family name (FN): *<Surname (ST)> & <Own Surname Prefix (ST)> & <Own Surname (ST)> & <Surname Prefix from Partner/Spouse (ST)> & <Surname from Partner/Spouse (ST)>* • Subcomponents for assigning authority (HD): *<Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>* • Subcomponents for assigning facility (HD): *<Namespace ID (IS)> & <Universal ID (ST)> & <Universal ID Type (ID)>* • Subcomponents for name context (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID& <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*, where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present. • Subcomponents for name validity range (DR): *<Range Start Date/Time (DTM)>&<Range End Date/Time>* • Subcomponents for assigning jurisdiction (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID& <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*, where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present. • Subcomponents for assigning agency or department (CWE): *<Identifier (ST)> & <Text (ST)> & <Name of Coding System (ID)> & <Alternate Identifier (ST)> & <Alternate Text (ST)> & <Name of Alternate Coding System (ID)> & <Coding System Version ID& <Alternate Coding System Version ID (ST)> & <Original Text (ST)>*, where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present. ❑ NTE-6, NTE-7 and NTE-8 are empty
Pass/Fail criteria	All elements in each segment are as specified.
Notes	OBX-5 is avoided and tested in each specialization because it can have any data type value.

TP Id		TP/WAN/SEN/PCD-01-DATA/GEN/BV-007		
TP label		Timestamping and Time Synchronization		
Coverage	Spec	[b-CDG 2012] – Appendices H and K		
	Testable items	Timestamp 3; M	Timestamp 4; C	Timestamp 5; C
		Timestamp 9; O	Timestamp 10; M	Timestamp 11; R
		Timestamp 12; O	Timestamp 13; O	Timestamp 15; O
		Timestamp 16; O	Timestamp 17; M	
	Spec	[b-CDG 2012] – WAN Interface		
	Testable items	DataGuidelines 22, M		
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a supported device specialization inside a SOAP body.
		2. Check in the captured message that:
		  a. In OBX segments:
		    ❑ Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		     • refIdValue: is a 32 bit integer (required)
		     • refIdName: is the normative nomenclature name for the unique code point (recommended)
		     • refIdCodeSystem = "MDC" (required).
		    ❑ MDC_TIME_SYNC_PROTOCOL is present as an independent OBX segment with:
		     • OBX-2 = 'CWE'
		     • OBX-3 = '68220^MDC_TIME_SYNC_PROTOCOL^MDC'
		     • OBX-4 = 0.x.y.z, where x, y, z could be any integer value
		     • OBX-5 = One of these values:
		    532224^MDC_TIME_SYNC_NONE^MDC
		    532225^MDC_TIME_SYNC_NTPV3^MDC
		    532226^MDC_TIME_SYNC_NTPV4^MDC
		    532227^MDC_TIME_SYNC_SNTPV4^MDC
		    532228^MDC_TIME_SYNC_SNTPV4330^MDC
		    532229^MDC_TIME_SYNC_BTV1^MDC
		    532230^MDC_TIME_SYNC_RADIO^MDC
		    532231^MDC_TIME_SYNC_HL7_NCK^MDC
		    532232^MDC_TIME_SYNC_CDMA^MDC
		    532233^MDC_TIME_SYNC_GSM^MDC
		    532234^MDC_TIME_SYNC_EBWW^MDC
		    532235^MDC_TIME_SYNC_USB_SOF^MDC
		    ❑ If another MDC_TIME_SYNC_PROTOCOL is present, it has an OBX-4 with an MDS-level different to 0, the rest of the elements of the OBX segment are the same as above.
		    ❑ If MDC_TIME_SYNC_PROTOCOL is MDC_TIME_SYNC_NONE, MDC_TIME_SYNC_ACCURACY is not present
		    ❑ If MDC_TIME_SYNC_ACCURACY is present and the synchronization protocol used is NTP, the value of the accuracy, OBX-5, is calculated using this formula:
		      (root dispersion+1/2*root delay)*clock drift
		    ❑ If relative time or Hi-Res Relative time are present as an AHD observation (OBX-4 = 0.0.0.x), where x could be any integer value:
		     • if the time synchronization between this relative or high-resolution relative clock is known relative to UTC, it is disclosed in OBX-14
		     • OBX-18 contains a Timebase Id.
		     • their respective resolution can be present: MDC_TIME_RES_REL or MDC_TIME_RES_HI_REL		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GEN/BV-008		
TP label		WAN Client Regulatory Information		
Coverage	Spec	[b-CDG 2012] – Appendix J		
	Testable items	AHDObject 2; M	AHDObject 3; M	AHDObject 4; M
		AHDObject 5; M	AHDObject 6; M	AHDObject 7; M
		AHDObject 8; M	AHDObject 10; M	AHDObject 11; M
		AHDObject 12; M	AHDObject 13; M	AHDObject 14; M
		AHDObject 15; M	AHDObject 16; M	AHDObject 17; M
		AHDObject 18; M	AHDObject 19; M	AHDObject 20; M
		AHDObject 21; M	AHDObject 22; M	AHDObject 23; M
		MeasureStatus 3; M	ObjectHierarchy 4; M	
	Spec	[b-CDG 2012] – Wan Interface		
	Testable items	DataGuidelines 10; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a supported device specialization inside a SOAP body.
		2. Check in the captured message that:
		   a. The set of zero-level OBX segments for the AHD occurs only once in a PCD-01 document after the first OBR entry.
		   b. Each MDC code using a CWE data type is encoded as:
		      \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		        where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   c. A bit flag value is encoded as \<bitValue>^\<bitName>(\<bitPosition>), where:
		     ❑ \<bitValue> = \<0 or 1>
		     ❑ \<bitName> is recommended to be the ASN.1 name for the bit
		     ❑ \<bitPosition> is the normative position of the bit.
		   d. Specific AHD shall follow this OBX encoding:
		     ❑ OBX-2 shall be empty
		     ❑ OBX-3 = 531981^ MDC_MOC_VMS_MDS_AHD^MDC
		     ❑ OBX-4 = 0
		     ❑ OBX-11 = 'X' or 'R'
		     ❑ OBX-18 (System-Id attribute) = *\<Entity Identifier (ST)>^EUI-64*
		   e. Time-Sync-Protocol attribute shall be sent as an independent OBX segment with the following mandatory fields:
		     ❑ OBX-2 = 'CWE'
		     ❑ OBX-2 = '68220^MDC_TIME_SYNC_PROTOCOL^MDC'
		     ❑ OBX-4 = 0.0.0.a, being 'a' a number indicating the metric level.
		     ❑ OBX-5 = A valid nomenclature code from nom-part-infrastruct partition.
		     ❑ OBX-11 = 'X' or 'R'
		   f. Time-Sync-Accuracy attribute, if present, shall be sent as an independent OBX segment with the following mandatory fields:
		     ❑ OBX-2 = 'NM'
		     ❑ OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
		     ❑ OBX-4 = 0.0.0.b, being 'b' a number indicating the metric level.
		     ❑ OBX-5 = NM data type value
		     ❑ OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
		     ❑ OBX-11 = 'X' or 'R'
		   g. Time-Resolution-Abs-Time attribute, if present, shall be sent as an independent OBX segment with the following mandatory fields:
		     ❑ OBX-2 = 'NM'
		     ❑ OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
		     ❑ OBX-4 = 0.0.0.c, being 'c' a number indicating the metric level.
		     ❑ OBX-5 = NM data type value
		     ❑ OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
		     ❑ OBX-11 = 'X' or 'R'
		   h. Relative-Time attribute, if present, shall be sent as an independent OBX segment with the following mandatory fields:
		     ❑ OBX-2 = 'NM'
		     ❑ OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
		     ❑ OBX-4 = 0.0.0.d, being 'd' a number indicating the metric level.
		     ❑ OBX-5 = NM data type value

- ❑ OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- ❑ OBX-11 = 'X' or 'R'
- ❑ OBX-18 = A unique identifier for the given time base.
- i. Time-Resolution-Rel-Time attribute, if present, shall be sent as an independent OBX segment with the following mandatory fields:
  - ❑ OBX-2 = 'NM'
  - ❑ OBX-3 = 68223^MDC_TIME_RES_REL^MDC
  - ❑ OBX-4 = 0.0.0.e, being 'e' a number indicating the metric level.
  - ❑ OBX-5 = NM data type value
  - ❑ OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  - ❑ OBX-11 = 'X' or 'R'
- j. HiRes-Relative-Time attribute, if present, shall be sent as an independent OBX segment with the following mandatory fields:
  - ❑ OBX-2 = 'NM'
  - ❑ OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
  - ❑ OBX-4 = 0.0.0.f, being 'f' a number indicating the metric level.
  - ❑ OBX-5 = NM data type value
  - ❑ OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  - ❑ OBX-11 = 'X' or 'R'
  - ❑ OBX-18 = A unique identifier for the given time base.
- k. Time-Resolution-High-Res-Time attribute shall be sent as an independent OBX segment with the following mandatory fields:
  - ❑ OBX-2 = 'NM'
  - ❑ OBX-3 = 68224^MDC_TIME_RES_REL_HI_RES^MDC
  - ❑ OBX-4 = 0.0.0.g, being 'g' a number indicating the metric level.
  - ❑ OBX-5 = NM data type value
  - ❑ OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  - ❑ OBX-11 = 'X' or 'R'
- l. AHD-Reg-Cert-Data-List is sent as an attribute of the device using three separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:
  - ❑ OBX-2 = 'CWE'
  - ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC
  - ❑ OBX-4 = 0.0.0.h, being 'h' a number indicating the metric level.
  - ❑ OBX-5 = One of:
    0^auth-body-empty,
    1^auth-body-ieee-11073,
    2^auth-body-continua,
    254^auth-body-experimental,
    255^auth-body-reserved
  - ❑ OBX-11 = 'X' or 'R'
- m. AHD-Reg-Cert-Data-List will be sent using four separate attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:
  - ❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:
    - • OBX-2 = 'ST'
    - • OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
    - • OBX-4 = 0.0.0.y.a, where 'y' is a number indicating the metric level of one of the three Regulation-Certification-Auth-Body attribute segments, and 'a' is a number indicating the facet level of that segment.
    - • OBX-5 =4.0 (<major-IG-version>.<minor-IG-version>),
    - • OBX-11 = 'X' or 'R'
  - ❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:
    - • OBX-2 = 'NA'
    - • OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC
    - • OBX-4 = 0.0.0.x.b, where 'x' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry and 'b' is a number indicating the facet level of that segment.
    - • OBX-5 = NA value listing the certified devices.
    - • OBX-11 = 'X' or 'R'
  - ❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:
    - • OBX-2 = 'CWE'
    - • OBX-3 =

	532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC • OBX-4 = 0.0.0.y.a, where 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute or the Regulation-Certification-Continua-AHD-Cert-List attribute as a Facet entry, and 'a' is a number indicating the facet level of that segment. • OBX-5 = <0 or 1>^unregulated-device(0) ❑ Regulation- Certification-Continua-AHD-Cert-List attribute shall be sent as an independent OBX segment with the following mandatory fields: • OBX-2 = 'CWE' • OBX-3 = 64515^MDC_REG_CERT_DATA_CONTINUA_ AHD_CERT_LIST ^MDC • OBX-4 = 0.0.0.z.a, where 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute or the Regulation-Certification-Continua-Regulation-Status attribute as a facet entry and 'a' is a number indicating the facet level of that segment. • OBX-5 = a list of AHD certification properties: 0~1 • OBX-11 = 'X' or 'R'
Pass/Fail criteria	All elements in each segment are as specified.
Notes	See Table 2 for a mappring of the appendices in [ITU-T H.810] and [b-CDG 2012].

A.3 Subgroup 1.4.2: Design guidelines (DG)

TP Id		TP/WAN/SEN/PCD-01-DATA/DG/BV-000		
TP label		DataGuidelines		
Coverage	Spec	[b-CDG 2012] – WAN Interface		
	Testable items	DataGuidelines 4; M	DataGuidelines 6; M	DataGuidelines 7; M
		DataGuidelines 22; M		
Applicability		C_SEN_000		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a supported device specialization inside a SOAP body.
		
		2. Check in the captured message that:
		
		   a. It is recommended that each segment terminates when the last non-empty element appears.
		
		   b. In the OBX segment of MDS-level:
		
		     ❑ each MDC code using a CWE data type is encoded as:
		      \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		      where:
		      • refIdValue: is a 32 bit integer (required)
		      • refIdName: is the normative nomenclature name for the unique code point (recommended)
		      • refIdCodeSystem = "MDC" (required).
		
		     ❑ OBX-3 uses one of these observation Ids, corresponding to the specific Continua PAN device used:
		      • Pulse oximeter: 528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC
		      • Blood pressure monitor: 528391^MDC_DEV_SPEC_PROFILE_BP^MDC
		      • Thermometer: 528392^MDC_DEV_SPEC_PROFILE_TEMP^MDC
		      • Weighing scales: 528399^MDC_DEV_SPEC_PROFILE_SCALE^MDC
		      • Glucose meter: 528401^MDC_DEV_SPEC_PROFILE_GLUCOSE^MDC
		      • Cardiovascular: 528425^MDC_DEV_SPEC_PROFILE_HF_CARDIO^MDC
		      • Strength fitness: 528426^MDC_DEV_SPEC_PROFILE_HF_STRENGTH^MDC
		      • Independent living hub: 528455^MDC_DEV_SPEC_PROFILE_AI_ACTIVITY_HUB^MDC
		      • Adherence monitor: 528456^MDC_DEV_SPEC_PROFILE_AI_MED_MINDER^MDC
		      • Peak expiratory flow monitor: 528405^MDC_DEV_SPEC_PROFILE_PEFM^MDC
		      • Body composition analyser: 528404^MDC_DEV_SPEC_PROFILE_BCA^MDC
		      • Basic electrocardiograph: 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and OBX-5 of System-Type-Spec-List attribute = 528390^MDC_DEV_SPEC_PROFILE_ECG^MDC and at least one of the following two profile values: 528524^MDC_DEV_SUB_SPEC_PROFILE_ECG^MDC 528525^MDC_DEV_SUB_SPEC_PROFILE_HR^MDC		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

A.4   Subgroup 1.4.3: Pulse oximeter (PO)

TP Id		TP/WAN/SEN/PCD-01-DATA/PO/BV-000		
TP label		MDS Object		
Coverage	Spec	[b-CDG 2012], Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	PulseOx 4; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012]– WAN Interface		
	Testable items	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_PO_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a Pulse oximeter device.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a pulse oximeter device inside a SOAP body. 2. Check in the captured message that:		

Test procedure (continued):

2. Check in the captured message that:
   a. The Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present.
   b. Each MDC code using a CWE data type is encoded as:
   <refIdValue>^<refIdName>^<refIdCodeSystem>
   where:
   ❑ refIdValue: is a 32 bit integer (required)
   ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
   ❑ refIdCodeSystem = "MDC" (required).
   c. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
   ❑ <bitValue> = <0 or 1>
   ❑ <bitName> is recommended to be the ASN.1 name for the bit
   ❑ <bitPosition> is the normative position of the bit.
   d. In MDS-level OBX:
   ❑ OBX-2 is empty
   ❑ If the System-Type attribute is valued, OBX-3 = 528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC
   ❑ If System-Type-Spec-List attribute contains a single value and System-Type is not valued, this value is reported as the OBX-3
   ❑ If the System-Type-Spec-List contains multiple values and System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device.
   ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC

coordinated time of the AHD

- ❑ OBX-11 = 'X'
- ❑ OBX-18 (system Id attribute) = *<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_PO_001.

e. System model attribute is sent in two different OBX segments:
- ❑ System-Model attribute:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC
  - • OBX-5 = a string representing the model number portion of the MDC_ATTR_ID_MODEL attribute
- ❑ System-Manufacturer attribute:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC
  - • OBX-5 = a string representing the model manufacturer portion of the MDC_ATTR_ID_MODEL attribute.

f. Production-Specification attribute is sent as a series of attributes:
- ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC
  - • OBX-5 = a string representing the value portion of the Production-Specification entry
  - • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification serial entry
  - • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification part entry
  - • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification hardware entry
  - • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification software entry
  - • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC

- OBX-5 = String representing the value portion of the Production-Specification firmware entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'ST'
- OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC
- OBX-5 = String representing the value portion of the Production-Specification protocol entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'ST'
- OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
- OBX-5 = String representing the value portion of the Production-Specification GMDN entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.

g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent a timestamp, its respective resolution may be sent, but in this way only:

❑ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'CWE'
- OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
- OBX-5 = One or more of:
  <0 or 1>^mds-time-capab-real-time-clock(0),
  <0 or 1>^mds-time-capab-set-clock(1),
  <0 or 1>^mds-time-capab-relative-time(2),
  <0 or 1>^mds-time-capab-high-res-relative-time(3),
  <0 or 1>^mds-time-capab-sync-abs-time(4),
  <0 or 1>^mds-time-capab-sync-rel-time(5),
  <0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),
  <0 or 1>^mds-time-state-abs-time-synced(8),
  <0 or 1>^mds-time-state-rel-time-synced(9),
  <0 or 1>^mds-time-state-hi-res-relative-time-synced(10),
  <0 or 1>^mds-time-mgr-set-time(11)

❑ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'CWE'
- OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
- OBX-5 = One of this values...
  532224^MDC_TIME_SYNC_NONE^MDC
  532225^MDC_TIME_SYNC_NTPV3^MDC
  532226^MDC_TIME_SYNC_NTPV4^MDC
  532227^MDC_TIME_SYNC_SNTPV4^MDC
  532228^MDC_TIME_SYNC_SNTPV4330^MDC
  532229^MDC_TIME_SYNC_BTV1^MDC
  532230^MDC_TIME_SYNC_RADIO^MDC
  532231^MDC_TIME_SYNC_HL7_NCK^MDC
  532232^MDC_TIME_SYNC_CDMA^MDC
  532233^MDC_TIME_SYNC_GSM^MDC

532234^MDC_TIME_SYNC_EBWW^MDC

532235^MDC_TIME_SYNC_USB_SOF^MDC

- ❑ Date and Time attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'DTM'
  - • OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
  - • OBX-5 = DTM data type value
  - • OBX-14 = UTC value
- ❑ Relative-Time attribute is not sent as an independent OBX segment for the MDS level:
- ❑ HiRes-Relative-Time attribute is not sent as an independent OBX segment for the MDS level:
- ❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'NM'
  - • OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
  - • OBX-5 = NM data type value
  - • OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- ❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'NM'
  - • OBX-3 = 68223^MDC_TIME_RES_REL^MDC
  - • OBX-5 = NM data type value
  - • OBX-6 = 264320^MDC_DIM_SEC^MDC
- ❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'NM'
  - • OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
  - • OBX-5 = NM data type value
  - • OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

h. Date-and-Time-Adjustment attribute is not present.

i. If the Power-Status attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'ST'
- ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC
- ❑ OBX-5 = One or more of:

  <0 or 1>^onMains(0),

  <0 or 1>^onBattery(1),

  <0 or 1>^chargingFull(8),

  <0 or 1>^chargingTrickle(9),

  <0 or 1>^chargingOff(10)

j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'NM'
- ❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC
- ❑ OBX-5 = NM data type value
- ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'NM'
- ❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC
- ❑ OBX-5 = Use the value contained in the BatMeasure object
- ❑ OBX-6 = Use the OID contained in the BatMeasure object

l. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:
- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC

  OBX-5 = One of:

  0^auth-body-empty,

1^auth-body-ieee-11073,

2^auth-body-continua,

254^auth-body-experimental,

255^auth-body-reserved

m. Observations from Continua-compliant source devices are sent using three attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:

❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:

- OBX-2 = 'ST'
- OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
- OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a number indicating the Facet level of that segment.
- OBX-5 = one of the following values: '1.0','1.5','2.0','3.0' or '4.0' (<major-IG-version>.<minor-IG-version>).

❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:

- OBX-2 = 'NA'
- OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC
- OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a Facet entry, and 'b' is a number indicating the facet level of that segment.
- OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 4 (PO v1.0), 16388 (PO v1.5 Wireless PAN), 8196 (PO v1.5 Wired PAN), or 24580 (PO v1.5 Sensor LAN)

❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:

- OBX-2 = 'CWE'
- OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC
- OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment.
- OBX-5 = <0 or 1>^unregulated-device(0)

n. If the System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment:

❑ OBX-2 = 'CWE'

❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC

❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values

o. Confirm-Timeout attribute is not present.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/PO/BV-001		
TP label		SpO2 Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	PulseOx 1; M	PulseOx 5; M	PulseOx 6; M
		PulseOx 7; M	PulseOx 8; M	PulseOx 9; M
		PulseOx 10; M	PulseOx 11; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MeasureStatus 1; M	MeasureStatus 2; M	MeasureStatus 3; M
		MeasureStatus 4; R	MeasureStatus 5; M	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012]– WAN Interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_PO_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a pulse oximeter device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a pulse oximeter device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one SpO2 object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present.
		  c. Each MDC code using a CWE data type is encoded as:
		    \<refIdValue\>^\<refIdName\>^\<refIdCodeSystem\>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. A bit flag value is encoded as \<bitValue\>^\<bitName\>(\<bitPosition\>), where:
		    ❑ \<bitValue\> = \<0 or 1\>
		    ❑ \<bitName\> is recommended to be the ASN.1 name for the bit
		    ❑ \<bitPosition\> is the normative position of the bit.
		  e. The SpO2 object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 150456^MDC_PULS_OXIM_SAT_O2^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the SpO2 object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC
		    ❑ OBX-11 has one of the following values:
		      • 'X', in the case of invalid, not-available or ongoing measurements (specified in the Measurement Status attribute)
		      • 'F', in the case where a validated-data Measurement Status bit is set
		      • 'R', in the other case (even if the Measurement Status is not present)
		  f. If the SpO2 Modality attribute is present, it follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the SpO2 object.
		    ❑ OBX-5 = 150580^MDC_MODALITY_FAST^MDC or 150584^MDC_MODALITY_SLOW^MDC or 150588^MDC_MODALITY_SPOT^MDC
		  g. If SpO2 Accuracy attribute is present, it follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 67914^MDC_ATTR_NU_ACCUR_MSMT^MDC
		    ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the SpO2 object.		

     ❑ OBX-5 = Numeric value

     ❑ OBX-6 = 264320^MDC_DIM_SEC^MDC

   h. If SpO2 Alert-Op-State attribute is present, it follows this OBX encoding:

     ❑ OBX-2 = 'CWE'

     ❑ OBX-3 = 67846^MDC_ATTR_AL_OP_STAT^MDC

     ❑ OBX-4 = y.0.0.x.c, where 'c' is a number indicating the facet level of the SpO2 object.

     ❑ OBX-5 = One of the values:

      <0 or 1>^lim-alert-off(0),

      <0 or 1>^lim-low-off(1), or

      <0 or 1>^lim-high-off(2)

     ❑ OBX-6 = empty

   i. If SpO2 Current-Limits attribute is present, it follows this OBX encoding:

     ❑ OBX-2 = 'NM'

     ❑ OBX-3 = 67892^MDC_ATTR_LIMIT_CURR^MDC

     ❑ OBX-4 = y.0.0.x.d, where 'd' is a number indicating the facet level of the SpO2 object.

     ❑ OBX-5 = <lower limit (NM)> ~ <upper limit (NM)>

     ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

   j. If SpO2 Alert-Op-Text-String attribute is present, it follows this OBX encoding:

     ❑ OBX-2 = 'ST'

     ❑ OBX-3 = 68014^MDC_ATTR_AL_OP_TEXT_STRING^MDC

     ❑ OBX-4 = y.0.0.x.e, where 'e' is a number indicating the facet level of the SpO2 object.

     ❑ OBX-5 = <lower limit text (ST)> ~ <upper limit text (ST)>

   k. If SpO2 Measurement Status attribute is present, it follows this OBX encoding:

     ❑ OBX-2 = 'CWE'

     ❑ OBX-3 = 67911^MDC_ATTR_MSMT_STAT^MDC

     ❑ OBX-4 = y.0.0.x.f, where 'f' is a number indicating the facet level of the SpO2 object.

     ❑ OBX-5 = One of the values:

      <0 or 1>^invalid(0),

      <0 or 1>^questionable(1),

      <0 or 1>^not-available(2),

      <0 or 1>^calibration-ongoing(3),

      <0 or 1>^test-data(4),

      <0 or 1>^demo-data(5),

      <0 or 1>^validated-data(8),

      <0 or 1>^early-indication(9),

      <0 or 1>^msmt-ongoing(10),

      <0 or 1>^msmt-state-in-alarm(14),

      <0 or 1>^msmt-state-al-inhibited(15)

   l. If the SpO2 Measurement Status attribute is present, OBX-8 of the SpO2 object has one of these values depending of the active flag in the attribute:

     ❑ invalid(0) → OBX-8 = 'INV',

     ❑ questionable(1) → OBX-8 = 'QUES',

     ❑ not-available(2) → OBX-8 = 'NAV',

     ❑ calibration-ongoing (3) → OBX-8 = 'CAL',

     ❑ test-data (4) → OBX-8 = 'TEST',

     ❑ demo-data (5) → OBX-8 = 'DEMO',

     ❑ validated-data (8) → OBX-8 = (empty),

     ❑ early-indication (9) → OBX-8 = 'EARLY',

     ❑ msmt-ongoing (10) → OBX-8 = 'BUSY',

     ❑ msmt-state-in-alarm (14) → OBX-8 = 'ALACT',

     ❑ msmt-state-al-inhibited(15) → OBX-8 = 'ALINH'.

   m. No PM-Store, PM-Segment or Scanner attributes are present.

   n. One of the timestamp attributes can be present:

     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

      • OBX-5 = Numeric value

      • OBX-18 has a timebase ID.

     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

      • OBX-5 = Numeric value

      • OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/PO/BV-002		
TP label		PulseRate Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	PulseOx 1; M	PulseOx 12; M	PulseOx 13; M
		PulseOx 14; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012]– WAN interface		
	Testable tems	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_PO_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a pulse oximeter device.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a pulse oximeter device inside a SOAP body. 2. Check in the captured message that: a. At least one PulseRate object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. PulseRate object follows this OBX encoding: ❑ OBX-2 = 'NM' ❑ OBX-3 = 149530^MDC_PULS_OXIM_PULS_RATE^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the PulseRate object respectively. ❑ OBX-5 = Numeric value ❑ OBX-6 = 264864^MDC_DIM_BEAT_PER_MIN^MDC e. If a PulseRate Modality attribute is present, it follows this OBX encoding: ❑ OBX-2 = 'CWE' ❑ OBX-3 = 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the PulseRate object. ❑ OBX-5 = 150580^MDC_MODALITY_FAST^MDC or 150584^MDC_MODALITY_SLOW^MDC or 150588^MDC_MODALITY_SPOT^MDC f. If a PulseRate Accuracy attribute is present, it follows this OBX encoding: ❑ OBX-2 = 'NM' ❑ OBX-3 = 67914^MDC_ATTR_NU_ACCUR_MSMT^MDC ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the Facet level of the PulseRate object. ❑ OBX-5 = Numeric value ❑ OBX-6 = 264320^MDC_DIM_SEC^MDC g. No PM-Store, PM-Segment or Scanner attributes are present. h. One of these timestamp attributes can be present: ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: • OBX-5 = Numeric Value • OBX-18 has a timebase ID. ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. • OBX-5 = Numeric Value • OBX-18 has a timebase ID.		
Pass/Fail riteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/PO/BV-003		
TP label		Plethysmographic Waveform RT-SA Object		
Coverage	**Spec**	[b-CDG 2012]– Appendices I and J		
	Testable items	PulseOx 1; M	PulseOx 16; M	PulseOx 17; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		RTSAClassAttr 1; M	RTSAClassAttr 2; M	RTSAClassAttr 3; M
		RTSAClassAttr 4; M	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M	NumArrayDataType 1; O	
	Spec	[b-CDG 2012]– WAN Interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_PO_001 AND C_SEN_PO_002		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a pulse oximeter device with a plethysmographic waveform object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a pulse oximeter device inside a SOAP body.
		2. Check in the captured message that:
		   a. The plethysmographic waveform object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		   <refIdValue>^<refIdName>^<refIdCodeSystem>
		   where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		   d. Plethysmographic waveform object follows this OBX encoding:
		    ❑ OBX-2 = 'NA'
		    ❑ OBX-3 = 150452^MDC_PULS_OXIM_PLETH^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the plethysmographic waveform object respectively.
		    ❑ OBX-5 = a numeric array value (i.e., 1~2~3~4~5...)
		    ❑ OBX-6 = 262656^MDC_DIM_DIMLESS^MDC or 268738^MDC_DIM_MICRO_ABSORBANCE^MDC
		   e. If the Plethysmographic Waveform Sample Period attribute is present, it follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 67981^MDC_ATTR_TIME_PD_SAMP^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the plethysmographic waveform object.
		    ❑ OBX-5 = a numeric value
		    ❑ OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
		   f. No PM-Store, PM-Segment or Scanner attributes are present.
		   g. One of the timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = a numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = a numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/PO/BV-004		
TP label		Pulsatile Quality Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	PulseOx 1; M	PulseOx 15; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_PO_001 AND C_SEN_PO_003		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a pulse oximeter device with a pulsatile quality object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a pulse oximeter device inside a SOAP body.
		2. Check in the captured message that:
		    a. At least one pulsatile quality object has sent at least one observation.
		    b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		    c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		    d. Pulsatile Quality object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 150448^MDC_PULS_OXIM_PERF_REL^MDC or 150320^MDC_SAT_O2_QUAL^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Pulsatile Quality object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = when OBX-2 is MDC_PULS_OXIM_PERF_REL then units are 262656^MDC_DIM_DIMLESS^MDC or when OBX-2 is MDC_SAT_O2_QUAL then units are 262688^MDC_DIM_PERCENT^MDC
		    e. No PM-Store, PM-Segment or Scanner attributes are present.
		    f. One of the timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		        • OBX-5 = Numeric value
		        • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		        • OBX-5 = Numeric value
		        • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/PO/BV-005		
TP label		Pulsatile Occurrence Enumeration Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	PulseOx 1; M	PulseOx 2; M	PulseOx 18; M
		PulseOx 19; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; O
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_PO_001 AND C_SEN_PO_004		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a pulse oximeter device with a pulsatile occurrence object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a pulse oximeter device inside a SOAP body.
		2. Check in the captured message that:
		  a. The pulsatile occurrence object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Pulsatile Occurrence object follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 184322^MDC_TRIG^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the pulsatile occurrence object respectively
		    ❑ OBX-5 = 184323^MDC_TRIG_BEAT^MDC or 184331^MDC_TRIG_BEAT_MAX_INRUSH^MDC or 192511^MDC_METRIC_NOS^MDC
		  e. If the pulsatile occurrence Source-Handle-Reference attribute is present, it follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the pulsatile occurrence object
		    ❑ OBX-5 = OBX-4 of the pulsatile quality numeric object or the plethysmogram RT-SA object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		     • OBX-5 = Numeric value
		     • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		     • OBX-5 = Numeric value
		     • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/PO/BV-006		
TP label		Pulsatile Characteristic Enumeration Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	PulseOx 1; M	PulseOx 2; M	PulseOx 20; M
		PulseOx 21; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_PO_001 AND C_SEN_PO_005		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a pulse oximeter device with a pulsatile characteristic object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a pulse oximeter device inside a SOAP body.
		2. Check in the captured message that:
		  a. The pulsatile characteristic object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		    ❑ <bitValue> = <0 or 1>
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		    ❑ <bitPosition> is the normative position of the bit
		  e. Pulsatile characteristic object follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 150584^MDC_PULS_OXIM_PULS_CHAR^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the pulsatile characteristic object respectively.
		    ❑ OBX-5 = One of these values:
		      <0 or 1>^pulse-qual-nominal(0),
		      <0 or 1>^pulse-qual-marginal(1),
		      <0 or 1>^pulse-qual-minimal(2),
		      <0 or 1>^pulse-qual-unacceptable(3)
		  f. If the pulsatile characteristic Source-Handle-Reference attribute is present, it follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the pulsatile characteristic object.
		    ❑ OBX-5 = OBX-4 of the pulsatile amplitude numeric object or the plethysmogram RT-SA object
		  g. No PM-Store, PM-Segment or Scanner attributes are present.
		  h. One of the timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/PO/BV-007		
TP label		Device and Sensor Annunciation Status Enumeration Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	PulseOx 1; M	PulseOx 2; M	PulseOx 22; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable tems	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_PO_001 AND C_SEN_PO_006		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a pulse oximeter device with a device and sensor annunciation status object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a pulse oximeter device inside a SOAP body.
		2. Check in the captured message that:
		    a. The device and sensor annunciation object has sent at least one observation.
		    b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		    c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		    d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		    ❑ <bitValue> = <0 or 1>
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		    ❑ <bitPosition> is the normative position of the bit
		    e. Device and sensor annunciation status object follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 150604^MDC_PULS_OXIM_DEV_STATUS^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the device and sensor annunciation status object respectively.
		    ❑ OBX-5 = One of these values:
		    <0 or 1>^sensor-disconnected(0),
		    <0 or 1>^sensor-malfunction(1),
		    <0 or 1>^sensor-displaced(2),
		    <0 or 1>^sensor-unsupported(3),
		    <0 or 1>^sensor-off(4),
		    <0 or 1>^sensor-interference(5),
		    <0 or 1>^signal-searching(6),
		    <0 or 1>^signal-pulse-questionable(7),
		    <0 or 1>^signal-non-pulsatile(8),
		    <0 or 1>^signal-erratic(9),
		    <0 or 1>^signal-low-perfusion(10),
		    <0 or 1>^signal-poor(11),
		    <0 or 1>^signal-inadequate(12),
		    <0 or 1>^signal-processing-irregularity(13),
		    <0 or 1>^device-equipment-malfunction(14),
		    <0 or 1>^device-extended-update(15)
		    f. No PM-Store, PM-Segment or Scanner attributes are present.
		    g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

A.5 Subgroup 1.4.4: Blood pressure monitor (BPM)

TP Id		TP/WAN/SEN/PCD-01-DATA/BPM/BV-000		
TP label		MDS Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	BloodPressuse 3; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_BPM_001		
Initial condition		The simulated receiver has published a WebService and the Sender under test is ready to send a SOAP message with an observation of a blood pressure device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a blood pressure device inside a SOAP body.
		2. Check in the captured message that:
		  a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  b. Each MDC code using a CWE data type is encoded as:
		    \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  c. A bit flag value is encoded as \<bitValue>^\<bitName>(\<bitPosition>), where:
		    ❑ \<bitValue> = \<0 or 1>
		    ❑ \<bitName> is recommended to be the ASN.1 name for the bit
		    ❑ \<bitPosition> is the normative position of the bit
		  d. In MDS-level OBX:
		    ❑ OBX-2 is empty
		    ❑ If the System-Type attribute is valued, OBX-3 = 528391^MDC_DEV_SPEC_PROFILE_BP^MDC
		    ❑ If the System-Type-Spec-List attribute contains a single value and the System-Type is not valued, this value is reported as the OBX-3
		    ❑ If the System-Type-Spec-List contains multiple values and the System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device
		    ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD
		    ❑ OBX-11 = 'X'
		    ❑ OBX-18 (System Id attribute) = *\<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_BPM_001.
		  e. System-Model attribute is sent in two different OBX segments:
		    ❑ System-Model attribute:
		      • OBX-2 = 'ST'
		      • OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC
		      • OBX-5 = String representing the model number portion of the MDC_ATTR_ID_MODEL attribute
		    ❑ System-Manufacturer attribute:
		      • OBX-2 = 'ST'
		      • OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC		

- OBX-5 = String representing the model manufacturer portion of the MDC_ATTR_ID_MODEL attribute.

f. Production-Specification attribute is sent as a series of attributes:
  ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC
    - OBX-5 = String representing the value portion of the Production-Specification entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC
    - OBX-5 = String representing the value portion of the Production-Specification serial entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC
    - OBX-5 = String representing the value portion of the Production-Specification part entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC
    - OBX-5 = String representing the value portion of the Production-Specification hardware entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
    - OBX-5 = String representing the value portion of the Production-Specification software entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC
    - OBX-5 = String representing the value portion of the Production-Specification firmware entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC
    - OBX-5 = String representing the value portion of the Production-Specification protocol entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
    - OBX-5 = String representing the value portion of the Production-Specification GMDN entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.

g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent as a timestamp, its respective resolution may be sent, but only as follows:
  ❑ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'CWE'
    - OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
    - OBX-5 = One or more of:
      <0 or 1>^mds-time-capab-real-time-clock(0)
      <0 or 1>^mds-time-capab-set-clock(1)
      <0 or 1>^mds-time-capab-relative-time(2)
      <0 or 1>^mds-time-capab-high-res-relative-time(3)

<div align="right">

        `<0 or 1>^mds-time-capab-sync-abs-time(4)`
        `<0 or 1>^mds-time-capab-sync-rel-time(5)`
   `<0 or 1>^mds-time-capab-sync-hi-res-relative-time(6)`
        `<0 or 1>^mds-time-state-abs-time-synced(8)`
        `<0 or 1>^mds-time-state-rel-time-synced(9)`
   `<0 or 1>^mds-time-state-hi-res-relative-time-synced(10)`
        `<0 or 1>^mds-time-mgr-set-time(11)`

</div>

❑ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'CWE'
- OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
- OBX-5 = One of this values...
  532224^MDC_TIME_SYNC_NONE^MDC
  532225^MDC_TIME_SYNC_NTPV3^MDC
  532226^MDC_TIME_SYNC_NTPV4^MDC
  532227^MDC_TIME_SYNC_SNTPV4^MDC
  532228^MDC_TIME_SYNC_SNTPV4330^MDC
  532229^MDC_TIME_SYNC_BTV1^MDC
  532230^MDC_TIME_SYNC_RADIO^MDC
  532231^MDC_TIME_SYNC_HL7_NCK^MDC
  532232^MDC_TIME_SYNC_CDMA^MDC
  532233^MDC_TIME_SYNC_GSM^MDC
  532234^MDC_TIME_SYNC_EBWW^MDC
  532235^MDC_TIME_SYNC_USB_SOF^MDC

❑ Date and Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'DTM'
- OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
- OBX-5 = DTM data type value
- OBX-14 = UTC value

❑ Relative-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
- OBX-4 = 0.0.0.x, where 'x' is any integer value
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase

❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
- OBX-4 = 0.0.0.x, where 'x' is any integer value
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase

❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68223^MDC_TIME_RES_REL^MDC
- OBX-5 = NM data type value
- OBX-6 = 264320^MDC_DIM_SEC^MDC

❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

h. Date-and-Time-Adjustment attribute is not present

i. If Power-Status attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'ST'
- ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC
- ❑ OBX-5 = One or more of:
  `<0 or 1>^onMains(0)`
  `<0 or 1>^onBattery(1)`
  `<0 or 1>^chargingFull(8)`
  `<0 or 1>^chargingTrickle(9)`
  `<0 or 1>^chargingOff(10)`

j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'NM'

    ❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC
    ❑ OBX-5 = NM data type value
    ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:
    ❑ OBX-2 = 'NM'
    ❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC
    ❑ OBX-5 = Use the value contained in the BatMeasure object
    ❑ OBX-6 = Use the OID contained in the BatMeasure object

l. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:
    ❑ OBX-2 = 'CWE'
    ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC
        OBX-5 = One of:
        0^auth-body-empty
        1^auth-body-ieee-11073
        2^auth-body-continua
        254^auth-body-experimental
        255^auth-body-reserved

m. Observations from Continua-compliant source devices are sent using three attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:
    ❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:
        • OBX-2 = 'ST'
        • OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
        • OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a number indicating the facet level of that segment.
        • OBX-5 = one of the following values: '1.0','1.5','2.0','3.0' or '4.0' (<major-IG-version>.<minor-IG-version>).
    ❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:
        • OBX-2 = 'NA'
        • OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_ DEV_LIST^MDC
        • OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry, and 'b' is a number indicating the facet level of that segment.
        • OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 7 (BPM v1.0), 16391 (BPM v1.5 Wireless PAN), 8199 (BPM v1.5 Wired PAN), 24583 (BPM v1.5 Sensor LAN), or 32775 (BPM v2.0 LP Wireless PAN)
    ❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:
        • OBX-2 = 'CWE'
        • OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC
        • OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment.
        • OBX-5 = <0 or 1>^unregulated-device(0)

n. If the System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment:
    ❑ OBX-2 = 'CWE'
    ❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC
    ❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values

o. Confirm-Timeout attribute is not present.

Pass/Fail riteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/BPM/BV-001		
TP label		Systolic, Diastolic, MAP Compound Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	BloodPressuse 1; M	BloodPressuse 2; M	BloodPressuse 4; M
		BloodPressuse 5; M	BloodPressuse 6; M	BloodPressuse 7; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		NumericClassAttr 1; M	NumericClassAttr 2; M	NumericClassAttr 3; M
		NumericClassAttr 4; M	NumericClassAttr 5; M	NumericClassAttr 6; M
		NumericClassAttr 7; O	MetricRelGroup 1; M	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012]– WAN Interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_BPM_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a blood pressure device.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a blood pressure device inside a SOAP body. 2. Check in the captured message that: a. The Systolic, Diastolic, MAP object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. Systolic, Diastolic, MAP object follows this OBX encoding: ❑ OBX-2 is empty ❑ OBX-3 = 150020^MDC_PRESS_BLD_NONINV^MDC ❑ OBX-4 = y.0.x., where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the channel-level for the Systolic, Diastolic, MAP object respectively. ❑ OBX-5 is empty ❑ OBX-11 = 'X' e. Systolic part of the compound object follows this OBX encoding: ❑ OBX-2 = 'NM'		

- ❑ OBX-3 = 150021^MDC_PRESS_BLD_NONINV_SYS^MDC

- ❑ OBX-4 = y.0.x.a, , where 'a' is a number indicating the component of the compound object

- ❑ OBX-5 = Numeric value

- ❑ OBX-6 = 266016^MDC_DIM_MMHG^MDC or 265987 ^MDC_DIM_KILO_PASCAL^MDC

    f.   Diastolic part of the compound object follows this OBX encoding:

- ❑ OBX-2 = 'NM'

- ❑ OBX-3 = 150022^MDC_PRESS_BLD_NONINV_DIA^MDC

- ❑ OBX-4 = y.0.x.b, where 'b' is a number indicating the component of the compound object

- ❑ OBX-5 = Numeric value

- ❑ OBX-6 = 266016^MDC_DIM_MMHG^MDC or 265987 ^MDC_DIM_KILO_PASCAL^MDC

    g.   Mean arterial pressure part of the compound object follows this OBX encoding:

- ❑ OBX-2 = 'NM'

- ❑ OBX-3 = 150023^MDC_PRESS_BLD_NONINV_MEAN^MDC

- ❑ OBX-4 = y.0.x.c, , where 'c' is a number indicating the component of the compound object

- ❑ OBX-5 = Numeric value

- ❑ OBX-6 = 266016^MDC_DIM_MMHG^MDC or 265987 ^MDC_DIM_KILO_PASCAL^MDC

    h.   No PM-Store, PM-Segment or Scanner attributes are present.

    i.   One of these timestamp attributes can be present:

- ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

- ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

  - • OBX-5 = Numeric value

  - • OBX-18 has a timebase ID.

- ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

  - • OBX-5 = Numeric value

  - • OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/BPM/BV-002		
TP label		PulseRate Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	BloodPressuse 2; M	BloodPressuse 8; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN Interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_BPM_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a blood pressure device with a pulse rate object.		

Test procedure		1. Make the Sender under test send a HL7 message containing an observation of a blood pressure device inside a SOAP body.
		 2. Check in the captured message that:
		  a. The PulseRate object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		  `<refIdValue>^<refIdName>^<refIdCodeSystem>`
		  where:
		   ❑ refIdValue: is a 32 bit integer (required)
		   ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		   ❑ refIdCodeSystem = "MDC" (required).
		  d. PulseRate object follows this OBX encoding:
		   ❑ OBX-2 = 'NM'
		   ❑ OBX-3 = 149546^MDC_PULS_RATE_NON_INV^MDC
		   ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the PulseRate object respectively.
		   ❑ OBX-5 = Numeric value
		   ❑ OBX-6 = 264864^MDC_DIM_BEAT_PER_MIN^MDC
		  e. No PM-Store, PM-Segment or Scanner attributes are present.
		  f. One of the timestamp attributes can be present:
		   ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		   ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		    • OBX-5 = Numeric value
		    • OBX-18 has a timebase ID.
		   ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		    • OBX-5 = Numeric value
		    • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

A.6   Subgroup 1.4.5: Thermometer (TH)

TP Id		TP/WAN/SEN/PCD-01-DATA/TH/BV-000		
TP label		MDS Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	Thermometer 3; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012]– WAN Interface		
	Testable items	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_TH_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a thermometer device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a thermometer device inside a SOAP body.
		2. Check in the captured message that:
		    a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		    b. Each MDC code using a CWE data type is encoded as:
		        \<refIdValue\>^\<refIdName\>^\<refIdCodeSystem\>
		        where:
		        ❑ refIdValue: is a 32 bit integer (required)
		        ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		        ❑ refIdCodeSystem = "MDC" (required).
		    c. A bit flag value is encoded as \<bitValue\>^\<bitName\>(\<bitPosition\>), where:
		        ❑ \<bitValue\> = \<0 or 1\>
		        ❑ \<bitName\> is recommended to be the ASN.1 name for the bit
		        ❑ \<bitPosition\> is the normative position of the bit
		    d. In MDS-level OBX:
		        ❑ OBX-2 is empty
		        ❑ If the System-Type attribute is valued, OBX-3 = 528392^MDC_DEV_SPEC_PROFILE_TEMP^MDC
		        ❑ If the System-Type-Spec-List attribute contains a single value and System-Type is not valued, this value is reported as the OBX-3
		        ❑ If the System-Type-Spec-List contains multiple values and System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device.
		        ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD
		        ❑ OBX-11 = 'X'
		        ❑ OBX-18 (System Id attribute) = \<Entity Identifier (ST)\>^EUI-64, where the entity identifier is 16 characters given by the PIXIT I_SEN_TH_001.
		    e. System model attribute is sent in two different OBX segments:
		        ❑ System-Model attribute:
		            • OBX-2 = 'ST'
		            • OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC
		            • OBX-5 = String representing the model number portion of MDC_ATTR_ID_MODEL attribute
		        ❑ System-Manufacturer attribute:
		            • OBX-2 = 'ST'
		            • OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC

- OBX-5 = String representing the model manufacturer portion of MDC_ATTR_ID_MODEL attribute.

f. Production-Specification attribute is sent as a series of attributes:
  - ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC
    - OBX-5 = String representing the value portion of the Production-Specification entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC
    - OBX-5 = String representing the value portion of the Production-Specification serial entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC
    - OBX-5 = String representing the value portion of the Production-Specification part entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC
    - OBX-5 = String representing the value portion of the Production-Specification hardware entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
    - OBX-5 = String representing the value portion of the Production-Specification software entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC
    - OBX-5 = String representing the value portion of the Production-Specification firmware entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC
    - OBX-5 = String representing the value portion of the Production-Specification protocol entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
    - OBX-5 = String representing the value portion of the Production-Specification GMDN entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.

g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent as a timestamp, its respective resolution may be sent, but only as follows:
  - ❑ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'CWE'
    - OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
    - OBX-5 = One or more of::
      <0 or 1>^mds-time-capab-real-time-clock(0),
      <0 or 1>^mds-time-capab-set-clock(1),
      <0 or 1>^mds-time-capab-relative-time(2),
      <0 or 1>^mds-time-capab-high-res-relative-time(3),

<div style="text-align:center"><0 or 1>^mds-time-capab-sync-abs-time(4),
<0 or 1>^mds-time-capab-sync-rel-time(5),
<0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),
<0 or 1>^mds-time-state-abs-time-synced(8),
<0 or 1>^mds-time-state-rel-time-synced(9),
<0 or 1>^mds-time-state-hi-res-relative-time-synced(10),
<0 or 1>^mds-time-mgr-set-time(11)</div>

- ❑ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'NM'
  - OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
  - OBX-5 = NM data type value
  - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- ❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'CWE'
  - OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
  - OBX-5 = One of this values...
    532224^MDC_TIME_SYNC_NONE^MDC
    532225^MDC_TIME_SYNC_NTPV3^MDC
    532226^MDC_TIME_SYNC_NTPV4^MDC
    532227^MDC_TIME_SYNC_SNTPV4^MDC
    532228^MDC_TIME_SYNC_SNTPV4330^MDC
    532229^MDC_TIME_SYNC_BTV1^MDC
    532230^MDC_TIME_SYNC_RADIO^MDC
    532231^MDC_TIME_SYNC_HL7_NCK^MDC
    532232^MDC_TIME_SYNC_CDMA^MDC
    532233^MDC_TIME_SYNC_GSM^MDC
    532234^MDC_TIME_SYNC_EBWW^MDC
    532235^MDC_TIME_SYNC_USB_SOF^MDC
- ❑ Date and Time attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'DTM'
  - OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
  - OBX-5 = DTM data type value
  - OBX-14 = UTC value
- ❑ Relative-Time attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'NM'
  - OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
  - OBX-4 = 0.0.0.x, where 'x' is any integer value
  - OBX-5 = NM data type value
  - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  - OBX-18 = A unique identifier for the given timebase
- ❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'NM'
  - OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
  - OBX-4 = 0.0.0.x, where 'x' is any integer value
  - OBX-5 = NM data type value
  - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  - OBX-18 = A unique identifier for the given timebase
- ❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'NM'
  - OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
  - OBX-5 = NM data type value
  - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- ❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'NM'
  - OBX-3 = 68223^MDC_TIME_RES_REL^MDC
  - OBX-5 = NM data type value
  - OBX-6 = 264320^MDC_DIM_SEC^MDC
- ❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'NM'
  - OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
  - OBX-5 = NM data type value
  - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- h. Date-and-Time-Adjustment attribute is not present
- i. If the Power-Status attribute is valued, it is sent as an independent OBX segment:
  - ❑ OBX-2 = 'ST'
  - ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC
  - ❑ OBX-5 = One or more of:
    <0 or 1>^onMains(0),
    <0 or 1>^onBattery(1),
    <0 or 1>^chargingFull(8),
    <0 or 1>^chargingTrickle(9),
    <0 or 1>^chargingOff(10)

j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'NM'
- ❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC
- ❑ OBX-5 = NM data type value
- ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'NM'
- ❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC
- ❑ OBX-5 = Use the value contained in the BatMeasure object
- ❑ OBX-6 = Use the OID contained in the BatMeasure object

l. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:
- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC
  OBX-5 = One of:
  0^auth-body-empty,
  1^auth-body-ieee-11073,
  2^auth-body-continua,
  254^auth-body-experimental,
  255^auth-body-reserved

m. Observations from Continua-compliant source devices are sent using three attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:
- ❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - • OBX-2 = 'ST'
  - • OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
  - • OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a number indicating the Facet level of that segment.
  - • OBX-5 = one of the following values: '1.0','1.5','2.0','3.0' or '4.0' (<major-IG-version>.<minor-IG-version>).
- ❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - • OBX-2 = 'NA'
  - • OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC
  - • OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry, and 'b' is a number indicating the facet level of that segment.
  - • OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 8 (TH v1.0), 16392 (TH v1.5 Wireless PAN), 8200 (TH v1.5 Wired PAN), 24584 (TH v1.5 Sensor LAN), or 32776 (TH v2.0 LP Wireless PAN)
- ❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - • OBX-2 = 'CWE'
  - • OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC
  - • OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a Facet entry, and 'a' is a number indicating the Facet level of that segment.
  - • OBX-5 = <0 or 1>^unregulated-device(0)

n. If the System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC
- ❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values

o. Confirm-Timeout attribute is not present.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/TH/BV-001		
TP label		Temperature Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Thermometer 1; M	Thermometer 2; M	Thermometer 3; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; O	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		NumericClassAttr 1; M	NumericClassAttr 2; M	NumericClassAttr 3; M
		NumericClassAttr 4; M	NumericClassAttr 5; M	NumericClassAttr 6; M
		NumericClassAttr 7; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_TH_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a thermometer device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a thermometer device inside a SOAP body.
		2. Check in the captured message that:
		  a. The temperature object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Temperature object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 188452^MDC_TEMP_AXILLA^MDC or 150364^MDC_TEMP_BODY^MDC or 188428^MDC_TEMP_EAR^MDC or 188432^MDC_TEMP_FINGER^MDC or 188456^MDC_TEMP_GIT^MDC or 188424^MDC_TEMP_ORAL^MDC or 188420^MDC_TEMP_RECT^MDC or 188448^MDC_TEMP_TOE^MDC or 150392^MDC_TEMP_TYMP^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the temperature object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 268192^MDC_DIM_DEGC^MDC or 266560^MDC_DIM_FAHR^MDC
		  e. No PM-Store, PM-Segment or Scanner attributes are present.
		  f. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

A.7　Subgroup 1.4.6: Weighing scales (WEG)

TP Id		TP/WAN/SEN/PCD-01-DATA/WEG/BV-000		
TP label		MDS Object		
Coverage	**Spec**	[b-CDG 2012]– Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	WeighingScale 3; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable tems	DeviceTimeSync1; M		
	Spec	[b-CDG 2012]– WAN Interface		
	Testable items	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_WEG_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a weighing scales device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a weighing scales device inside a SOAP body.
		
		2. Check in the captured message that:
		
		  a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		  b. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		
		  c. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		    ❑ <bitValue> = <0 or 1>
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		    ❑ <bitPosition> is the normative position of the bit
		
		  d. In MDS-level OBX:
		    ❑ OBX-2 is empty		

❑ If the System-Type attribute is valued, OBX-3 = 528399^MDC_DEV_SPEC_PROFILE_SCALE^MDC

❑ If the System-Type-Spec-List attribute contains a single value and System-Type is not valued, this value is reported as the OBX-3

❑ If the System-Type-Spec-List contains multiple values and System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device.

❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD

❑ OBX-11 = 'X'

❑ OBX-18 (System Id attribute) = *<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_WEG_001.

e. System model attribute is sent in two different OBX segments:

❑ System-Model attribute:

• OBX-2 = 'ST'

• OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC

• OBX-5 = String representing the model number portion of the MDC_ATTR_ID_MODEL attribute

❑ System-Manufacturer attribute:

• OBX-2 = 'ST'

• OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC

• OBX-5 = String representing the model manufacturer portion of the MDC_ATTR_ID_MODEL attribute.

f. Production-Specification attribute is sent as a series of attributes:

❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:

• OBX-2 = 'ST'

• OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC

• OBX-5 = String representing the value portion of the Production-Specification entry

• OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:

• OBX-2 = 'ST'

• OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC

• OBX-5 = String representing the value portion of the Production-Specification serial entry

• OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:

• OBX-2 = 'ST'

• OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC

• OBX-5 = String representing the value portion of the Production-Specification part entry

• OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:

• OBX-2 = 'ST'

• OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC

• OBX-5 = String representing the value portion of the Production-Specification hardware entry

• OBX-18 = The component portion of the Production-Specification entry

encoded as an EI datatype

❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
- OBX-5 = String representing the value portion of the Production-Specification software entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC
- OBX-5 = String representing the value portion of the Production-Specification firmware entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC
- OBX-5 = String representing the value portion of the Production-Specification protocol entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
- OBX-5 = String representing the value portion of the Production-Specification GMDN entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.

g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent as a Timestamp, its respective resolution may be sent, but not other than this:

❑ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'CWE'
- OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
- OBX-5 = One or more of:

    <0 or 1>^mds-time-capab-real-time-clock(0),

    <0 or 1>^mds-time-capab-set-clock(1),

    <0 or 1>^mds-time-capab-relative-time(2),

    <0 or 1>^mds-time-capab-high-res-relative-time(3),

    <0 or 1>^mds-time-capab-sync-abs-time(4),

    <0 or 1>^mds-time-capab-sync-rel-time(5),

    <0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),

    <0 or 1>^mds-time-state-abs-time-synced(8),

    <0 or 1>^mds-time-state-rel-time-synced(9),

    <0 or 1>^mds-time-state-hi-res-relative-time-synced(10),

    <0 or 1>^mds-time-mgr-set-time(11)

❑ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'

	• OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
	• OBX-5 = NM data type value
	• OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
	❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:
	• OBX-2 = 'CWE'
	• OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
	• OBX-5 = One of this values...
	532224^MDC_TIME_SYNC_NONE^MDC
	532225^MDC_TIME_SYNC_NTPV3^MDC
	532226^MDC_TIME_SYNC_NTPV4^MDC
	532227^MDC_TIME_SYNC_SNTPV4^MDC
	532228^MDC_TIME_SYNC_SNTPV4330^MDC
	532229^MDC_TIME_SYNC_BTV1^MDC
	532230^MDC_TIME_SYNC_RADIO^MDC
	532231^MDC_TIME_SYNC_HL7_NCK^MDC
	532232^MDC_TIME_SYNC_CDMA^MDC
	532233^MDC_TIME_SYNC_GSM^MDC
	532234^MDC_TIME_SYNC_EBWW^MDC
	532235^MDC_TIME_SYNC_USB_SOF^MDC
	❑ Date and Time attribute, if valued, is sent as an independent OBX segment:
	• OBX-2 = 'DTM'
	• OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
	• OBX-5 = DTM data type value
	• OBX-14 = UTC value
	❑ Relative-Time attribute, if valued, is sent as an independent OBX segment:
	• OBX-2 = 'NM'
	• OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
	• OBX-4 = 0.0.0.x, where 'x' is any integer value
	• OBX-5 = NM data type value
	• OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
	• OBX-18 = A unique identifier for the given timebase
	❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:
	• OBX-2 = 'NM'
	• OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
	• OBX-4 = 0.0.0.x, where 'x' is any integer value
	• OBX-5 = NM data type value
	• OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
	• OBX-18 = A unique identifier for the given timebase
	❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:
	• OBX-2 = 'NM'
	• OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
	• OBX-5 = NM data type value
	• OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
	❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:
	• OBX-2 = 'NM'
	• OBX-3 = 68223^MDC_TIME_RES_REL^MDC

- OBX-5 = NM data type value
- OBX-6 = 264320^MDC_DIM_SEC^MDC

❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'
- OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

h. Date-and-Time-Adjustment attribute is not present

i. If the Power-Status attribute is valued, it is sent as an independent OBX segment:

❑ OBX-2 = 'ST'

❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC

❑ OBX-5 = One or more of:

<0 or 1>^onMains(0),

<0 or 1>^onBattery(1),

<0 or 1>^chargingFull(8),

<0 or 1>^chargingTrickle(9),

<0 or 1>^chargingOff(10)

j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:

❑ OBX-2 = 'NM'

❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC

❑ OBX-5 = NM data type value

❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:

❑ OBX-2 = 'NM'

❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC

❑ OBX-5 = Use the value contained in the BatMeasure object

❑ OBX-6 = Use the OID contained in the BatMeasure object

l. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:

❑ OBX-2 = 'CWE'

❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC

OBX-5 = One of:

0^auth-body-empty,

1^auth-body-ieee-11073,

2^auth-body-continua,

254^auth-body-experimental,

255^auth-body-reserved

m. Observations from Continua-compliant source devices are sent using three attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:

❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:

- OBX-2 = 'ST'
- OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
- OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a

		number indicating the facet level of that segment.
		• OBX-5 = one of the following values: '1.0','1.5','2.0','3.0' or '4.0' (<major-IG-version>.<minor-IG-version>).
		❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:
		• OBX-2 = 'NA'
		• OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC
		• OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry, and 'b' is a number indicating the facet level of that segment.
		• OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 15 (WEG v1.0), 16399 (WEG v1.5 Wireless PAN), 8207 (WEG v1.5 Wired PAN), or 24591 (WEG v1.5 Sensor LAN)
		❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:
		• OBX-2 = 'CWE'
		• OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC
		• OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment.
		• OBX-5 = <0 or 1>^unregulated-device(0)
	n.	If the System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment:
		❑ OBX-2 = 'CWE'
		❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC
		❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values
	o.	Confirm-Timeout attribute is not present.
Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/WEG/BV-001		
TP label		Body Weight Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	WeighingScale 1; M	WeighingScale 2; M	WeighingScale 4; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		NumericClassAttr 1; M	NumericClassAttr 2; M	NumericClassAttr 3; M
		NumericClassAttr 4; M	NumericClassAttr 5; M	NumericClassAttr 6; M
		NumericClassAttr 7; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012]– WAN Interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_WEG_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a weighing scales device.		

Test procedure		1. Make the Sender under test send a HL7 message containing an observation of a weighing scales device inside a SOAP body.
		 2. Check in the captured message that:
		  a. The body weight object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		  \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		  where:
		  ❑ refIdValue: is a 32 bit integer (required)
		  ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		  ❑ refIdCodeSystem = "MDC" (required).
		  d. Body weight object follows this OBX encoding:
		  ❑ OBX-2 = 'NM'
		  OBX-3 = 188736^MDC_MASS_BODY_ACTUAL^MDC
		  ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the body weight object respectively.
		  ❑ OBX-5 = Numeric value
		  ❑ OBX-6 = 263875^MDC_DIM_KILO_G^MDC
		  e. No PM-Store, PM-Segment or Scanner attributes are present.
		  f. One of the timestamp attributes can be present:
		  ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		  ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		   • OBX-5 = Numeric value
		   • OBX-18 has a timebase ID.
		  ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		   • OBX-5 = Numeric value
		   • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/WEG/BV-002		
TP label		Body Height Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	WeighingScale 1; M	WeighingScale 2; M	WeighingScale 5; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		NumericClassAttr 1; M	NumericClassAttr 2; M	NumericClassAttr 3; M
		NumericClassAttr 4; M	NumericClassAttr 5; M	NumericClassAttr 6; M
		NumericClassAttr 7; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_WEG_001 AND C_SEN_WEG_002		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a weighing scales device with a Body Height object.		

Test Procedure		1. Make the sender under test send a HL7 message containing an observation of a weighing scales device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Body Height object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Body Height object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 188740^MDC_LEN_BODY_ACTUAL^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the body height object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 263441^MDC_DIM_CENTI_M^MDC or 263520^MDC_DIM_INCH^MDC
		  e. No PM-Store, PM-Segment or Scanner attributes are present.
		  f. One of the timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail Criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/WEG/BV-003		
TP label		Body Mass Index Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	WeighingScale 1; M	WeighingScale 2; M	WeighingScale 6; M
		WeighingScale 7; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN Interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_WEG_001 AND C_SEN_WEG_003		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a weighing scales device with a Body Mass Index object.		

Test procedure		1. Make the sender under test to send a HL7 message containing an observation of a weighing scales device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Body Mass Index object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Body Mass Index object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 188752^MDC_RATIO_MASS_BODY_LEN_SQ^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Body Mass Index object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 264096^MDC_DIM_KG_PER_M_SQ^MDC
		  e. If the Body Mass Index Source-Handle-Reference attribute is present, it follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Body Mass Index object.
		    ❑ OBX-5 = OBX-4 of the Body Weight object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

A.8   Subgroup 1.4.7: Glucose meter (GL)

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-000		
TP label		MDS Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	GlucoseMeter 3; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_GL_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
		2. Check in the captured message that:
		    a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		    b. Each MDC code using a CWE data type is encoded as:
		        \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		        where:
		        ❑ refIdValue: is a 32 bit integer (required)
		        ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		        ❑ refIdCodeSystem = "MDC" (required).
		    c. A bit flag value is encoded as \<bitValue>^\<bitName>(\<bitPosition>), where:
		        ❑ \<bitValue> = \<0 or 1>
		        ❑ \<bitName> is recommended to be the ASN.1 name for the bit
		        ❑ \<bitPosition> is the normative position of the bit
		    d. In the MDS-level OBX:
		        ❑ OBX-2 is empty
		        ❑ If the System-Type attribute is valued, OBX-3 = 528401^MDC_DEV_SPEC_PROFILE_GLUCOSE^MDC
		        ❑ If the System-Type-Spec-List attribute contains a single value and System-Type is not valued, this value is reported as the OBX-3
		        ❑ If the System-Type-Spec-List contains multiple values and System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device
		        ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD
		        ❑ OBX-11 = 'X'
		        ❑ OBX-18 (System Id attribute) = *\<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_GL_001.		

e. System model attribute is sent in two different OBX segments:
  ❑ System-Model attribute:
    • OBX-2 = 'ST'
    • OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC
    • OBX-5 = String representing the model number portion of the MDC_ATTR_ID_MODEL attribute
  ❑ System-Manufacturer attribute:
    • OBX-2 = 'ST'
    • OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC
    • OBX-5 = String representing the model manufacturer portion of the MDC_ATTR_ID_MODEL attribute.
f. Production-Specification attribute is sent as a series of attributes:
  ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:
    • OBX-2 = 'ST'
    • OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC
    • OBX-5 = String representing the value portion of the Production-Specification entry
    • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:
    • OBX-2 = 'ST'
    • OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC
    • OBX-5 = String representing the value portion of the Production-Specification serial entry
    • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:
    • OBX-2 = 'ST'
    • OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC
    • OBX-5 = String representing the value portion of the Production-Specification part entry
    • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:
    • OBX-2 = 'ST'
    • OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC
    • OBX-5 = String representing the value portion of the Production-Specification hardware entry
    • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:
    • OBX-2 = 'ST'
    • OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
    • OBX-5 = String representing the value portion of the Production-Specification software entry
    • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:
    • OBX-2 = 'ST'
    • OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC
    • OBX-5 = String representing the value portion of the Production-Specification firmware entry
    • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  ❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:
    • OBX-2 = 'ST'
    • OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC

- OBX-5 = String representing the value portion of the Production-Specification protocol entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
  - OBX-5 = String representing the value portion of the Production-Specification GMDN entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.
- g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent a timestamp, its respective resolution may be sent, but only as follows:
  - ❑ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'CWE'
    - OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
    - OBX-5 = One or more of:
      <0 or 1>^mds-time-capab-real-time-clock(0),
      <0 or 1>^mds-time-capab-set-clock(1),
      <0 or 1>^mds-time-capab-relative-time(2),
      <0 or 1>^mds-time-capab-high-res-relative-time(3),
      <0 or 1>^mds-time-capab-sync-abs-time(4),
      <0 or 1>^mds-time-capab-sync-rel-time(5),
      <0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),
      <0 or 1>^mds-time-state-abs-time-synced(8),
      <0 or 1>^mds-time-state-rel-time-synced(9),
      <0 or 1>^mds-time-state-hi-res-relative-time-synced(10),
      <0 or 1>^mds-time-mgr-set-time(11)
  - ❑ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
    - OBX-5 = NM data type value
    - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  - ❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'CWE'
    - OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
    - OBX-5 = One of these values:
      532224^MDC_TIME_SYNC_NONE^MDC
      532225^MDC_TIME_SYNC_NTPV3^MDC
      532226^MDC_TIME_SYNC_NTPV4^MDC
      532227^MDC_TIME_SYNC_SNTPV4^MDC
      532228^MDC_TIME_SYNC_SNTPV4330^MDC
      532229^MDC_TIME_SYNC_BTV1^MDC
      532230^MDC_TIME_SYNC_RADIO^MDC
      532231^MDC_TIME_SYNC_HL7_NCK^MDC
      532232^MDC_TIME_SYNC_CDMA^MDC
      532233^MDC_TIME_SYNC_GSM^MDC
      532234^MDC_TIME_SYNC_EBWW^MDC
      532235^MDC_TIME_SYNC_USB_SOF^MDC
  - ❑ Date and Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'DTM'
    - OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
    - OBX-5 = DTM data type value
    - OBX-14 = UTC value
  - ❑ Relative-Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
    - OBX-4 = 0.0.0.x, where 'x' is any integer value
    - OBX-5 = NM data type value

- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase
  - ❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
    - OBX-4 = 0.0.0.x, where 'x' is any integer value
    - OBX-5 = NM data type value
    - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
    - OBX-18 = A unique identifier for the given timebase
  - ❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
    - OBX-5 = NM data type value
    - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  - ❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 68223^MDC_TIME_RES_REL^MDC
    - OBX-5 = NM data type value
    - OBX-6 = 264320^MDC_DIM_SEC^MDC
  - ❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
    - OBX-5 = NM data type value
    - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

h. Date-and-Time-Adjustment attribute is not present

i. If the Power-Status attribute is valued, it is sent as an independent OBX segment:
   - ❑ OBX-2 = 'ST'
   - ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC
   - ❑ OBX-5 = One or more of:
     <0 or 1>^onMains(0),
     <0 or 1>^onBattery(1),
     <0 or 1>^chargingFull(8),
     <0 or 1>^chargingTrickle(9),
     <0 or 1>^chargingOff(10)

j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:
   - ❑ OBX-2 = 'NM'
   - ❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC
   - ❑ OBX-5 = NM data type value
   - ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:
   - ❑ OBX-2 = 'NM'
   - ❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC
   - ❑ OBX-5 = Use the value contained in the BatMeasure object
   - ❑ OBX-6 = Use the OID contained in the BatMeasure object

l. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:
   - ❑ OBX-2 = 'CWE'
   - ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC
     OBX-5 = One of:
     0^auth-body-empty,
     1^auth-body-ieee-11073,
     2^auth-body-continua,
     254^auth-body-experimental,
     255^auth-body-reserved

m. Observations from Continua-compliant source devices are sent using three

attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:

- ❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - OBX-2 = 'ST'
  - OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
  - OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a number indicating the facet level of that segment.
  - OBX-5 = one of the following values: '1.0','1.5','2.0', '3.0' or '4.0' (<major-IG-version>.<minor-IG-version>).
- ❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - OBX-2 = 'NA'
  - OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC
  - OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a Facet entry, and 'b' is a number indicating the facet level of that segment.
  - OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 17 (GL v1.0), 16401 (GL v1.5 Wireless PAN), 8209 (GL v1.5 Wired PAN), or 24593 (GL v1.5 Sensor LAN)
- ❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - OBX-2 = 'CWE'
  - OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC
  - OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment.
  - OBX-5 = <0 or 1>^unregulated-device(0)

n. If the System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC
- ❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values

o. Confirm-Timeout attribute is not present.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-001		
TP label		Glucose Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	GlucoseMeter 2; M	GlucoseMeter 4; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_GL_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
		2. Check in the captured message that:
		  a. The glucose object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Glucose object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 160184^MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD^MDC or 160188^MDC_CONC_GLU_CAPILLARY_PLASMA^MDC or 160192^MDC_CONC_GLU_VENOUS_WHOLEBLOOD^MDC or 160196^MDC_CONC_GLU_VENOUS_PLASMA^MDC or 160200^MDC_CONC_GLU_ARTERIAL_WHOLEBLOOD^MDC or 160204^MDC_CONC_GLU_ARTERIAL_PLASMA^MDC or 160364^MDC_CONC_GLU_UNDETERMINED_WHOLEBLOODor 160368^MDC_CONC_GLU_UNDETERMINED_PLASMA or 160212^MDC_CONC_GLU_ISF^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Glucose object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 264274^MDC_DIM_ MILLI_G_PER_DL^MDC or 266866^MDC_DIM_MILLI_MOLE_PER_L^MDC
		  e. No PM-Store, PM-Segment or Scanner attributes are present.
		  f. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-002		
TP label		Context Exercise Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	GlucoseMeter 1; M	GlucoseMeter 2; M	GlucoseMeter 5; M
		GlucoseMeter 6; M	GlucoseMeter 7; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_GL_001 AND C_SEN_GL_002		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device with a Context Exercise object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Context Exercise object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Context Exercise object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 8417760^MDC_CTXT_GLU_EXERCISE^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Context Exercise object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC
		  e. If the Context Exercise Source-Handle-Reference attribute is present, it follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Context Exercise object.
		    ❑ OBX-5 = OBX-4 of the Glucose object
		  f. If the Context Exercise Measure Active Period attribute is present, it follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 68185^MDC_ATTR_TIME_PD_MSMT_ACTIVE^MDC
		    ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the Facet level of the Context Exercise object.
		    ❑ OBX-5 = Numeric Value
		  g. No PM-Store, PM-Segment or Scanner attributes are present.
		  h. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-003		
TP label		Context Medication Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	GlucoseMeter 1; M	GlucoseMeter 2; M	GlucoseMeter 8; M
		GlucoseMeter 9; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN Interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_GL_001 AND C_SEN_GL_003		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device with a Context Medication object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Context Medication object has sent at least one observation
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		  \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		  where:
		  ❑ refIdValue: is a 32 bit integer (required)
		  ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		  ❑ refIdCodeSystem = "MDC" (required).
		  d. Context Medication object follows this OBX encoding:
		  ❑ OBX-2 = 'NM'
		  ❑ OBX-3 = 8417796^MDC_CTXT_MEDICATION^MDC or 8417800^MDC_CTXT_MEDICATION_RAPIDACTING^MDC or 8417804^MDC_CTXT_MEDICATION_SHORTACTING^MDC or 8417808^MDC_CTXT_MEDICATION_INTERMEDIATEACTING^MDC or 8417812^MDC_CTXT_MEDICATION_LONGACTING^MDC or 8417816^MDC_CTXT_MEDICATION_PREMIX^MDC
		  ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Context Medication object respectively.
		  ❑ OBX-5 = Numeric value
		  ❑ OBX-6 = 263890^MDC_DIM_MILLI_G^MDC or 263762^MDC_DIM_MILLI_L^MDC
		  e. If the Context Medication Source-Handle-Reference attribute is present, it follows this OBX encoding:
		  ❑ OBX-2 = 'ST'
		  ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		  ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the Context Medication object.
		  ❑ OBX-5 = OBX-4 of the Glucose object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		  ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		  ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		    • OBX-5 = Numeric value
		    • OBX-18 has a timebase ID.
		  ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		    • OBX-5 = Numeric value
		    • OBX-18 has a timebase ID		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-004		
TP label		Context Carbohydrates Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	GlucoseMeter 1; M	GlucoseMeter 2; M	GlucoseMeter 10; M
		GlucoseMeter 11; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; O
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_GL_001 AND C_SEN_GL_004		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device with a Context Carbohydrates object.		
Test procedure		1. Make the Sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.		

Test procedure content:

1. Make the Sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
2. Check in the captured message that:
   a. The Context Carbohydrates object has sent at least one observation.
   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
   c. Each MDC code using a CWE data type is encoded as:
      <refIdValue>^<refIdName>^<refIdCodeSystem>
      where:
      ❑ refIdValue: is a 32 bit integer (required)
      ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
      ❑ refIdCodeSystem = "MDC" (required).
   d. Context Carbohydrates object follows this OBX encoding:
      ❑ OBX-2 = 'NM'
      ❑ OBX-3 = 8417764^MDC_CTXT_GLU_CARB^MDC is the generic code or if specific Metric-Id is specified use it:
      8417768^MDC_CTXT_GLU_CARB_BREAKFAST^MDC or
      8417772^MDC_CTXT_GLU_CARB_LUNCH^MDC or
      8417776^MDC_CTXT_GLU_CARB_DINNER^MDC or
      8417780^MDC_CTXT_GLU_CARB_SNACK^MDC or
      8417784^MDC_CTXT_GLU_CARB_DRINK^MDC or
      8417788^MDC_CTXT_GLU_CARB_SUPPER^MDC or
      8417792^MDC_CTXT_GLU_CARB_BRUNCH^MDC
      ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Context Carbohydrates object respectively.
      ❑ OBX-5 = Numeric value
      ❑ OBX-6 = 263872^MDC_DIM_G^MDC
   e. If the Context Carbohydrates Source-Handle-Reference attribute is present, it follows this OBX encoding:
      ❑ OBX-2 = 'ST'
      ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
      ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Context Carbohydrates object.
      ❑ OBX-5 = OBX-4 of the Glucose object
   f. No PM-Store, PM-Segment or Scanner attributes are present.
   g. One of these timestamp attributes can be present:
      ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
      ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
         • OBX-5 = Numeric value
         • OBX-18 has a timebase ID.
      ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
         • OBX-5 = Numeric value
         • OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-005		
TP label		Device and Sensor Annunciation Status Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	GlucoseMeter 2; M	GlucoseMeter 12; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	EnumClassAttr 1; M
		EnumClassAttr 2; M	EnumClassAttr 3; M	EnumClassAttr 4; M
		EnumClassAttr 5; O	EnumClassAttr 6; M	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_GL_001 AND C_SEN_GL_005		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device with a Device and Sensor Annunciation Status object.		

Test procedure		1. Make the Sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
		2. Check in the captured message that:
		   a. The Device and Sensor Annunciation Status object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. A bit flag value is encoded as \<bitValue>^\<bitName>(\<bitPosition>), where:
		     ❑ \<bitValue> = \<0 or 1>
		     ❑ \<bitName> is recommended to be the ASN.1 name for the bit
		     ❑ \<bitPosition> is the normative position of the bit
		   e. Device and Sensor Annunciation Status object follows this OBX encoding:
		     ❑ OBX-2 = 'CWE'
		     OBX-3 = 8417752^MDC_GLU_METER_DEV_STATUS^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Device and Sensor Annunciation Status object respectively.
		     ❑ OBX-5 = Any of the following value...
		     \<0 or 1>^device-battery-low(0),
		     \<0 or 1>^sensor-malfunction(1),
		     \<0 or 1>^sensor-sample-size-insufficient(2)
		     \<0 or 1>^sensor-strip-insertion(3),
		     \<0 or 1>^sensor-strip-type-incorrect(4),
		     \<0 or 1>^sensor-result-too-high(5),
		     \<0 or 1>^sensor-result-too-low(6),
		     \<0 or 1>^sensor-temp-too-high(7),
		     \<0 or 1>^sensor-temp-too-low(8),
		     \<0 or 1>^sensor-read-interrupt(9),
		     \<0 or 1>^device-gen-fault(10)
		   f. No PM-Store, PM-Segment or Scanner attributes are present.
		   g. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-006		
TP label		Context Meal Enumeration Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	GlucoseMeter 1; M	GlucoseMeter 2; M	GlucoseMeter 13; M
		GlucoseMeter 14; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_GL_001 AND C_SEN_GL_006		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device with a Context Meal object.		
Test procedure		1. Make the Sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body. 2. Check in the captured message that: 　a. The Context Meal object has sent at least one observation 　b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present 　c. Each MDC code using a CWE data type is encoded as: 　　<refIdValue>^<refIdName>^<refIdCodeSystem> 　　where: 　　❑ refIdValue: is a 32 bit integer (required) 　　❑ refIdName: is the normative nomenclature name for the unique code point (recommended) 　　❑ refIdCodeSystem = "MDC" (required). 　d. Context Meal object follows this OBX encoding: 　　❑ OBX-2 = 'CWE' 　　　OBX-3 = 8417864^MDC_CTXT_GLU_MEAL^MDC 　　❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Context Meal object respectively. 　　❑ OBX-5 = 8417868^MDC_CTXT_GLU_MEAL_PREPRANDIAL^MDC or 8417872^MDC_CTXT_GLU_MEAL_POSTPRANDIAL^MDC or 8417876^MDC_CTXT_GLU_MEAL_FASTING^MDC or 8417880^MDC_CTXT_GLU_MEAL_CASUAL^MDC or 8417908^MDC_CTXT_GLU_MEAL_BEDTIME^MDC 　e. If the Context Meal Source-Handle-Reference attribute is present, it follows this OBX encoding: 　　❑ OBX-2 = 'ST' 　　❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC 　　❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Context Meal object. 　　❑ OBX-5 = OBX-4 of the Glucose object 　f. No PM-Store, PM-Segment or Scanner attributes are present. 　g. One of these timestamp attributes can be present: 　　❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] 　　❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: 　　　• OBX-5 = Numeric value 　　　• OBX-18 has a timebase ID. 　　❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. 　　　• OBX-5 = Numeric value 　　　• OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-007		
TP label		Context Sample Location Enumeration Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	GlucoseMeter 1; M	GlucoseMeter 2; M	GlucoseMeter 15; M
		GlucoseMeter 16; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	Continua Design Guidelines 2012 Errata (November 5, 2012)– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_GL_001 AND C_SEN_GL_007		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device with a Context Sample Location object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
		 2. Check in the captured message that:
		   a. The Context Sample Location object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Context Sample Location object follows this OBX encoding:
		     ❑ OBX-2 = 'CWE'
		     OBX-3 = 8417844^MDC_CTXT_GLU_SAMPLELOCATION^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Context Sample Location object respectively.
		     ❑ OBX-5 = 8417848^MDC_CTXT_GLU_SAMPLELOCATION_FINGER^MDC or 8417852^MDC_CTXT_GLU_SAMPLELOCATION_AST^MDC or 8417856^MDC_CTXT_GLU_SAMPLELOCATION_EARLOBE^MDC or 8417860^MDC_CTXT_GLU_SAMPLELOCATION_CTLSOLUTION^MDC
		   e. If the Context Sample Location Source-Handle-Reference attribute is present, it follows this OBX encoding:
		     ❑ OBX-2 = 'ST'
		     ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Context Sample Location object.
		     ❑ OBX-5 = OBX-4 of the Glucose object
		   f. No PM-Store, PM-Segment or Scanner attributes are present.
		   g. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id	TP/WAN/SEN/PCD-01-DATA/GL/BV-008
TP label	Context Tester Enumeration Object

Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	GlucoseMeter 1; M	GlucoseMeter 2; M	GlucoseMeter 17; M
		GlucoseMeter 18; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_GL_001 AND C_SEN_GL_008		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device with a Context Tester object.		

Test procedure		1. Make the sender under test to send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Context Tester object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Context Tester object follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 8417884^MDC_CTXT_GLU_TESTER^MDC
		    is the generic code or if specific Metric-Id is specified use it:
		    8417888^MDC_CTXT_GLU_TESTER_SELF^MDC or
		    8417892^MDC_CTXT_GLU_TESTER_HCP^MDC or
		    8417896^MDC_CTXT_GLU_TESTER_LAB^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Context Tester object respectively.
		    ❑ OBX-5 is empty
		  e. If the Context Tester Source-Handle-Reference attribute is present, it follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Context Tester object.
		    ❑ OBX-5 = OBX-4 of the Glucose object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of the timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-009
TP label		Context Health Enumeration Object
Coverage	Spec	[b-CDG 2012]– Appendices I and J

	Testable items	GlucoseMeter 1; M	GlucoseMeter 2; M	GlucoseMeter 19; M
		GlucoseMeter 20; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_GL_001 AND C_SEN_GL_009		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device with a Context Health object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
		 2. Check in the captured message that:
		  a. The Context Health object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		  \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		  where:
		  ❑ refIdValue: is a 32 bit integer (required)
		  ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		  ❑ refIdCodeSystem = "MDC" (required).
		  d. Context Health object follows this OBX encoding:
		  ❑ OBX-2 = 'CWE'
		    OBX-3 = 8417820^MDC_CTXT_GLU_HEALTH^MDC
		  ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Context Health object respectively.
		  ❑ OBX-5 = 8417824^MDC_CTXT_GLU_ HEALTH_MINOR^MDC or 8417828^MDC_CTXT_GLU_HEALTH_MAJOR^MDC or 8417832^MDC_CTXT_GLU_HEALTH_MENSES^MDC or 8417836^MDC_CTXT_GLU_HEALTH_STRESS^MDC or 8417840^MDC_CTXT_GLU_HEALTH_NONE^MDC
		  e. If the Context Health Source-Handle-Reference attribute is present, it follows this OBX encoding:
		  ❑ OBX-2 = 'ST'
		  ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		  ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Context Health object.
		  ❑ OBX-5 = OBX-4 of the Glucose object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of the timestamp attributes can be present:
		  ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		  ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		    • OBX-5 = Numeric value
		    • OBX-18 has a timebase ID.
		  ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		    • OBX-5 = Numeric value
		    • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-010		
TP label		HbA1c Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable	GlucoseMeter 2; M	GlucoseMeter 21; M	MetricClassAttr 1; M

items	MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
	MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
	MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
	MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
	MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
	MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
	NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
	NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
	PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
	ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
Spec	[b-CDG 2012]– WAN interface		
Testable items	DataGuidelines 22; M		

Applicability	C_SEN_000 AND C_SEN_GL_001 AND C_SEN_GL_010
Initial condition	The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device with a HbA1c object.

Test procedure	1. Make the sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
	2. Check in the captured message that:
	  a. The HbA1c object has sent at least one observation.
	  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
	  c. Each MDC code using a CWE data type is encoded as:
	    <refIdValue>^<refIdName>^<refIdCodeSystem>
	    where:
	    ❑ refIdValue: is a 32 bit integer (required)
	    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
	    ❑ refIdCodeSystem = "MDC" (required).
	  d. HbA1c object follows this OBX encoding:
	    ❑ OBX-2 = 'NM'
	    OBX-3 = 160220^MDC_CONC_HBA1C^MDC
	    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the HbA1c object respectively
	    ❑ OBX-5 = Numeric value
	    ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC
	  e. No PM-Store, PM-Segment or Scanner attributes are present.
	  f. One of these timestamp attributes can be present:
	    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
	    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
	      • OBX-5 = Numeric value
	      • OBX-18 has a timebase ID.
	    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
	      • OBX-5 = Numeric value
	      • OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/GL/BV-011		
TP label		Control Solution Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	GlucoseMeter 2; M	GlucoseMeter 22; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_GL_001 AND C_SEN_GL_011		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a glucose meter device with a Control Solution object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a glucose meter device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Control Solution object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute (MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as: \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Control Solution object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 160208^MDC_CONC_GLU_CONTROL^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Control Solution object respectively.
		    ❑ OBX-5 = Numeric value
		  e. No PM-Store, PM-Segment or Scanner attributes are present.
		  f. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

A.9　Subgroup 1.4.8: Cardiovascular fitness and activity monitor (CV)

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-000		
TP label		MDS Object		
Coverage	**Spec**	[b-CDG 2012]– Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	Cardiovascular 3; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_CV_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		
		 2. Check in the captured message that:
		
		    a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		    b. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		
		    c. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		    ❑ <bitValue> = <0 or 1>
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		    ❑ <bitPosition> is the normative position of the bit
		
		    d. In MDS-level OBX:
		    ❑ OBX-2 is empty		

- ❑ If the System-Type attribute is valued, OBX-3 = 528425^MDC_DEV_SPEC_PROFILE_HF_CARDIO^MDC
- ❑ If the System-Type-Spec-List attribute contains a single value and System-Type is not valued, this value is reported as the OBX-3
- ❑ If the System-Type-Spec-List contains multiple values and System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device.
- ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD
- ❑ OBX-11 = 'X'
- ❑ OBX-18 (System Id attribute) = *<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_CV_001.

e. System model attribute is sent in two different OBX segments:
- ❑ System-Model attribute:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC
  - • OBX-5 = String representing the model number portion of MDC_ATTR_ID_MODEL attribute
- ❑ System-Manufacturer attribute:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC
  - • OBX-5 = String representing the model manufacturer portion of MDC_ATTR_ID_MODEL attribute.

f. Production-Specification attribute is sent as a series of attributes:
- ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification entry
  - • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification serial entry
  - • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification part entry
  - • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification hardware entry
  - • OBX-18 = The component portion of the Production-Specification entry

encoded as an EI datatype
- ❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
  - OBX-5 = String representing the value portion of the Production-Specification software entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC
  - OBX-5 = String representing the value portion of the Production-Specification firmware entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC
  - OBX-5 = String representing the value portion of the Production-Specification protocol entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
  - OBX-5 = String representing the value portion of the Production-Specification GMDN entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.

g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent as a timestamp, its respective resolution may be sent, but only as follows:
- ❑ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'CWE'
  - OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
  - OBX-5 = One or more of:
    - <0 or 1>^mds-time-capab-real-time-clock(0),
    - <0 or 1>^mds-time-capab-set-clock(1),
    - <0 or 1>^mds-time-capab-relative-time(2),
    - <0 or 1>^mds-time-capab-high-res-relative-time(3),
    - <0 or 1>^mds-time-capab-sync-abs-time(4),
    - <0 or 1>^mds-time-capab-sync-rel-time(5),
    - <0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),
    - <0 or 1>^mds-time-state-abs-time-synced(8),
    - <0 or 1>^mds-time-state-rel-time-synced(9),
    - <0 or 1>^mds-time-state-hi-res-relative-time-synced(10),
    - <0 or 1>^mds-time-mgr-set-time(11)
- ❑ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'NM'

- OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'CWE'
- OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
- OBX-5 = One of this values...

  532224^MDC_TIME_SYNC_NONE^MDC

  532225^MDC_TIME_SYNC_NTPV3^MDC

  532226^MDC_TIME_SYNC_NTPV4^MDC

  532227^MDC_TIME_SYNC_SNTPV4^MDC

  532228^MDC_TIME_SYNC_SNTPV4330^MDC

  532229^MDC_TIME_SYNC_BTV1^MDC

  532230^MDC_TIME_SYNC_RADIO^MDC

  532231^MDC_TIME_SYNC_HL7_NCK^MDC

  532232^MDC_TIME_SYNC_CDMA^MDC

  532233^MDC_TIME_SYNC_GSM^MDC

  532234^MDC_TIME_SYNC_EBWW^MDC

  532235^MDC_TIME_SYNC_USB_SOF^MDC

❑ Date and Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'DTM'
- OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
- OBX-5 = DTM data type value
- OBX-14 = UTC value

❑ Relative-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
- OBX-4 = 0.0.0.x, where 'x' is any integer value
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase

❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
- OBX-4 = 0.0.0.x, where 'x' is any integer value
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase

❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68223^MDC_TIME_RES_REL^MDC

- OBX-5 = NM data type value
- OBX-6 = 264320^MDC_DIM_SEC^MDC

❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

h. Date-and-Time-Adjustment attribute is not present

i. If the Power-Status attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'ST'
- ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC
- ❑ OBX-5 = One or more of:

  <0 or 1>^onMains(0),

  <0 or 1>^onBattery(1),

  <0 or 1>^chargingFull(8),

  <0 or 1>^chargingTrickle(9),

  <0 or 1>^chargingOff(10)

j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'NM'
- ❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC
- ❑ OBX-5 = NM data type value
- ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'NM'
- ❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC
- ❑ OBX-5 = Use the value contained in the BatMeasure object
- ❑ OBX-6 = Use the OID contained in the BatMeasure object

l. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:
- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC

  OBX-5 = One of:

  0^auth-body-empty,

  1^auth-body-ieee-11073,

  2^auth-body-continua,

  254^auth-body-experimental,

  255^auth-body-reserved

m. Observations from Continua-compliant source devices are sent using three attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:
- ❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - OBX-2 = 'ST'
  - OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
  - OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a

number indicating the facet level of that segment.

- OBX-5 = one of the following values: '1.0','1.5','2.0','3.0' or '4.0' (<major-IG-version>.<minor-IG-version>).

❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:

- OBX-2 = 'NA'

- OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC

- OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry, and 'b' is a number indicating the facet level of that segment.

- OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 41 (CV v1.0), 16425 (CV v1.5 Wireless PAN), 8233 (CV v1.5 Wired PAN), or 24617 (CV v1.5 Sensor LAN)

❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:

- OBX-2 = 'CWE'

- OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC

- OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment.

- OBX-5 = <0 or 1>^unregulated-device(0)

n. If the System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment:

❑ OBX-2 = 'CWE'

❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC

❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values

o. Confirm-Timeout attribute is not present

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-001		
TP abel		Session Enumeration Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable tems	Cardiovascular 2; M	Cardiovascular 4; M	Cardiovascular 5; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body. 2. Check in the captured message that: a. At least one Session object has sent at least one observation b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. Session object follows this OBX encoding: ❑ OBX-2 = 'CWE' OBX-3 = 8454267^MDC_HF_SESSION^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Session object respectively. ❑ OBX-5 = One of the values: 8455144^MDC_HF_ACT_AMB^MDC 8455145^MDC_HF_ACT_REST^MDC 8455146^MDC_HF_ACT_MOTOR^MDC 8455147^MDC_HF_ACT_LYING^MDC 8455148^MDC_HF_ACT_SLEEP^MDC		

8455149^MDC_HF_ACT_PHYS^MDC

8455150^MDC_HF_ACT_SUS_PHYS^MDC

8455151^MDC_HF_ACT_UNKNOWN^MDC

8455152^MDC_HF_ACT_MULTIPLE^MDC

8455153^MDC_HF_ACT_MONITOR^MDC

8455154^MDC_HF_ACT_SKI^MDC

8455155^MDC_HF_ACT_RUN^MDC

8455156^MDC_HF_ACT_BIKE^MDC

8455157^MDC_HF_ACT_STAIR^MDC

8455158^MDC_HF_ACT_ROW^MDC

8455159^MDC_HF_ACT_HOME^MDC

8455160^MDC_HF_ACT_WORK^MDC

8455161^MDC_HF_ACT_WALK^MDC

e. If Session Measure Active Period attribute is present, it follows this OBX encoding:

  ❑ OBX-2 = 'NM'

  ❑ OBX-3 = 68185^MDC_ATTR_TIME_PD_MSMT_ACTIVE^MDC

  ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Session object.

  ❑ OBX-5 = Numeric value

  ❑ OBX-6 = 264320^MDC_DIM_SEC^MDC

f. No PM-Store, PM-Segment or Scanner attributes are present.

g. One of these timestamp attributes can be present:

  ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

  ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

    • OBX-5 = Numeric value

    • OBX-18 has a timebase ID.

  ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

    • OBX-5 = Numeric value

    • OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-002		
TP label		Sub-Session Enumeration Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 2; M	Cardiovascular 6; M	Cardiovascular 7; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_030		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Sub-Session object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		
		2. Check in the captured message that:
		
		   a. At least one Sub-Session object has sent at least one observation.
		
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		     where:
		
		     ❑ refIdValue: is a 32 bit integer (required)
		
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		
		     ❑ refIdCodeSystem = "MDC" (required).
		
		   d. Sub-Session object follows this OBX encoding:
		
		     ❑ OBX-2 = 'CWE'
		       OBX-3 = 8454268^MDC_HF_SUBSESSION^MDC
		
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Sub-Session object respectively.
		
		     ❑ OBX-5 = One of the values:
		       8455144^MDC_HF_ACT_AMB^MDC
		       8455145^MDC_HF_ACT_REST^MDC
		       8455146^MDC_HF_ACT_MOTOR^MDC
		       8455147^MDC_HF_ACT_LYING^MDC
		       8455148^MDC_HF_ACT_SLEEP^MDC		

8455149^MDC_HF_ACT_PHYS^MDC

8455150^MDC_HF_ACT_SUS_PHYS^MDC

8455151^MDC_HF_ACT_UNKNOWN^MDC

8455152^MDC_HF_ACT_MULTIPLE^MDC

8455153^MDC_HF_ACT_MONITOR^MDC

8455154^MDC_HF_ACT_SKI^MDC

8455155^MDC_HF_ACT_RUN^MDC

8455156^MDC_HF_ACT_BIKE^MDC

8455157^MDC_HF_ACT_STAIR^MDC

8455158^MDC_HF_ACT_ROW^MDC

8455159^MDC_HF_ACT_HOME^MDC

8455160^MDC_HF_ACT_WORK^MDC

8455161^MDC_HF_ACT_WALK^MDC

e. If the Sub-Session Measure Active Period attribute is present, it follows this OBX encoding:

❑ OBX-2 = 'NM'

❑ OBX-3 = 68185^MDC_ATTR_TIME_PD_MSMT_ACTIVE^MDC

❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Sub-Session object.

❑ OBX-5 = Numeric value

❑ OBX-6 = 264320^MDC_DIM_SEC^MDC

f. No PM-Store, PM-Segment or Scanner attributes are present.

g. One of these timestamp attributes can be present:

❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a Facet of the observation:

• OBX-5 = Numeric value

• OBX-18 has a timebase ID.

❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

• OBX-5 = Numeric value

• OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-003		
TP label		Altitude Gain Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 8; M
		Cardiovascular 9; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_002		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with an Altitude Gain object.		

Test procedure		1. Make the Sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		 2. Check in the captured message that:
		    a. At least one Altitude Gain object has sent at least one observation.
		    b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		    c. Each MDC code using a CWE data type is encoded as:
		       <refIdValue>^<refIdName>^<refIdCodeSystem>
		      where:
		      ❑ refIdValue: is a 32 bit integer (required)
		      ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		      ❑ refIdCodeSystem = "MDC" (required).
		    d. Altitude Gain object follows this OBX encoding:
		      ❑ OBX-2 = 'NM'
		       OBX-3 = 8454244^MDC_HF_ALT_GAIN^MDC
		      ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Altitude Gain object respectively.
		      ❑ OBX-5 = Numeric value
		      ❑ OBX-6 = 263424^MDC_DIM_M^MDC or 263488^MDC_DIM_FOOT^MDC
		    e. Altitude Gain Source-Handle-Reference attribute follows this OBX encoding:
		      ❑ OBX-2 = 'ST
		      ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		      ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Altitude Gain object.
		      ❑ OBX-5 = OBX-4 of Session or Subsession object
		    f. No PM-Store, PM-Segment or Scanner attributes are present.
		    g. One of these timestamp attributes can be present:
		      ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		      ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		        • OBX-5 = Numeric value
		        • OBX-18 has a timebase ID.
		      ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		        • OBX-5 = Numeric value
		        • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-004		
TP label		Altitude Loss Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 10; M
		Cardiovascular 11; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_003		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with an Altitude Loss object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		   a. At least one Altitude Loss object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		   d. Altitude Loss object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 8454245^MDC_HF_ALT_LOSS^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Altitude Loss object respectively.
		    ❑ OBX-5 = Numeric Value
		    ❑ OBX-6 = 263424^MDC_DIM_M^MDC or 263488^MDC_DIM_FOOT^MDC
		   e. Altitude Loss Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Altitude Loss object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		   f. No PM-Store, PM-Segment or Scanner attributes are present.
		   g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-005		
TP label		Altitude Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 12; M
		Cardiovascular 13; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	Continua Design Guidelines 2012 Errata (November 5, 2012)– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_004		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with an Altitude object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Altitude object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    `<refIdValue>^<refIdName>^<refIdCodeSystem>`
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Altitude object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		      OBX-3 = 8454246^MDC_HF_ALT^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Altitude object respectively.
		    ❑ OBX-5 = Numeric Value
		    ❑ OBX-6 = 263424^MDC_DIM_M^MDC or 263488^MDC_DIM_FOOT^MDC
		  e. Altitude Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Altitude object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a Facet of the observation:
		      • OBX-5 = Numeric Value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-006		
TP label		Distance Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 14; M
		Cardiovascular 15; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; O
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_027		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Distance object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Distance object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		  <refIdValue>^<refIdName>^<refIdCodeSystem>
		  where:
		  ❑ refIdValue: is a 32 bit integer (required)
		  ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		  ❑ refIdCodeSystem = "MDC" (required).
		  d. Distance object follows this OBX encoding:
		  ❑ OBX-2 = 'NM'
		  OBX-3 = 8454247^MDC_HF_DISTANCE^MDC
		  ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Distance object respectively.
		  ❑ OBX-5 = Numeric value
		  ❑ OBX-6 = 263424^MDC_DIM_M^MDC or 263488^MDC_DIM_FOOT^MDC or 268800^MDC_DIM_STEP^MDC
		  e. Distance Source-Handle-Reference attribute follows this OBX encoding:
		  ❑ OBX-2 = 'ST'
		  ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		  ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Distance object.
		  ❑ OBX-5 = OBX-4 of Session or Subsession object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		  ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		  ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		    • OBX-5 = Numeric value
		    • OBX-18 has a timebase ID.
		  ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		    • OBX-5 = Numeric value
		    • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-007		
TP label		Ascent Time and Distance Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 16; M
		Cardiovascular 17; M	Cardiovascular 18; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_028		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with an Ascent Time object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body. 2. Check in the captured message that: a. At least one Ascent Time and Distance object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: \<refIdValue\>^\<refIdName\>^\<refIdCodeSystem\> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. Ascent Time and Distance object follows this OBX encoding: ❑ OBX-2 = 'NM' OBX-3 = 8454248^MDC_HF_ASC_TIME_DIST^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Ascent Time and Distance object respectively. ❑ OBX-5 = Numeric value ❑ OBX-6 = 263424^MDC_DIM_M^MDC or 263488^MDC_DIM_FOOT^MDC or 268800^MDC_DIM_STEP^MDC e. If the Ascent Time and Distance Measure Active Period attribute is present, it follows this OBX encoding: ❑ OBX-2 = 'NM' ❑ OBX-3 = 68185^MDC_ATTR_TIME_PD_MSMT_ACTIVE^MDC ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Ascent Time and Distance object. ❑ OBX-5 = Numeric value ❑ OBX-6 = 264320^MDC_DIM_SEC^MDC f. Ascent Time and Distance Source-Handle-Reference attribute follows this OBX encoding: ❑ OBX-2 = 'ST' ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Ascent Time and Distance object. ❑ OBX-5 = OBX-4 of Session or Subsession object g. No PM-Store, PM-Segment or Scanner attributes are present. h. One of these timestamp attributes can be present: ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: • OBX-5 = Numeric value • OBX-18 has a timebase ID. ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. • OBX-5 = Numeric value • OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-008		
TP label		Descent Time and Distance Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 19; M
		Cardiovascular 20; M	Cardiovascular 21; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	Continua Design Guidelines 2012 Errata (November 5, 2012)– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_029		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Descent Time object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		   a. At least one Descent Time and Distance object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Descent Time and Distance object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		     OBX-3 = 8454249^MDC_HF_DESC_TIME_DIST^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Descent Time and Distance object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 263424^MDC_DIM_M^MDC or 263488^MDC_DIM_FOOT^MDC or
		     ❑ 268800^MDC_DIM_STEP^MDC
		   e. If the Descent Time and Distance Measure Active Period attribute is present, it follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		     ❑ OBX-3 = 68185^MDC_ATTR_TIME_PD_MSMT_ACTIVE^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Descent Time and Distance object.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 264320^MDC_DIM_SEC^MDC
		   f. Descent Time and Distance Source-Handle-Reference attribute follows this OBX encoding:
		     ❑ OBX-2 = 'ST'
		     ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Descent Time and Distance object.
		     ❑ OBX-5 = OBX-4 of Session or Subsession object
		   g. No PM-Store, PM-Segment or Scanner attributes are present.
		   h. One of the timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-009		
TP label		Latitude Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 22; M
		Cardiovascular 23; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_026		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Latitude object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		 2. Check in the captured message that:
		   a. At least one Latitude object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Latitude object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		     OBX-3 = 8454250^MDC_HF_LATITUDE^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Latitude object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 262880^MDC_DIM_ANG_DEG^MDC
		   e. Latitude Source-Handle-Reference attribute follows this OBX encoding:
		     ❑ OBX-2 = 'ST'
		     ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Latitude object.
		     ❑ OBX-5 = OBX-4 of Session or Subsession object
		   f. No PM-Store, PM-Segment or Scanner attributes are present.
		   g. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-010		
TP label		Longitude Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 24; M
		Cardiovascular 25; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_025		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Longitude object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		   a. At least one Longitude object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Longitude object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		        OBX-3 = 8454251^MDC_HF_LONGITUDE^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Longitude object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 262880^MDC_DIM_ANG_DEG^MDC
		   e. Longitude Source-Handle-Reference attribute follows this OBX encoding:
		     ❑ OBX-2 = 'ST'
		     ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Longitude object.
		     ❑ OBX-5 = OBX-4 of Session or Subsession object
		   f. No PM-Store, PM-Segment or Scanner attributes are present.
		   g. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-011		
TP label		Slopes Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 26; M
		Cardiovascular 27; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_024		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Slopes object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body. 2. Check in the captured message that: 　a. At least one Slopes object has sent at least one observation. 　b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present 　c. Each MDC code using a CWE data type is encoded as: 　　\<refIdValue>^\<refIdName>^\<refIdCodeSystem> 　　where: 　　❑ refIdValue: is a 32 bit integer (required) 　　❑ refIdName: is the normative nomenclature name for the unique code point (recommended) 　　❑ refIdCodeSystem = "MDC" (required). 　d. Slopes object follows this OBX encoding: 　　❑ OBX-2 = 'NM' 　　　OBX-3 = 8454253^MDC_HF_SLOPES^MDC 　　❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Slopes object respectively. 　　❑ OBX-5 = Numeric value 　　❑ OBX-6 = 262656^MDC_DIM_DIMLESS^MDC 　e. Slopes Source-Handle-Reference attribute follows this OBX encoding: 　　❑ OBX-2 = 'ST' 　　❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC 　　❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Slopes object. 　　❑ OBX-5 = OBX-4 of Session or Subsession object 　f. No PM-Store, PM-Segment or Scanner attributes are present. 　g. One of these timestamp attributes can be present: 　　❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] 　　❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: 　　　• OBX-5 = Numeric value 　　　• OBX-18 has a timebase ID. 　　❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. 　　　• OBX-5 = Numeric value 　　　• OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-012		
TP label		Speed Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 28; M
		Cardiovascular 29; M	Cardiovascular 30; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable Items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_023		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Speed object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Speed object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Speed object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 8454254^MDC_HF_SPEED^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Speed object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 268704^MDC_DIM_M_PER_MIN^MDC, or 268832^MDC_DIM_FOOT_PER_MIN^MDC, or 268864^MDC_DIM_INCH_PER_MIN^MDC, or 268896^MDC_DIM_STEP_PER_MIN^MDC
		  e. Speed Measurement Type attribute follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 67883^MDC_ATTR_ID_PHYSIO^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Speed object.
		    ❑ OBX-5 = 8456144^MDC_HF_MEAN_NULL_EXCLUDE^MDC or 8456145^MDC_HF_MEAN_NULL_INCLUDE^MDC or 8456146^MDC_HF_MAX^MDC or 8456147^MDC_HF_MIN^MDC
		  f. Speed Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the Speed object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		  g. No PM-Store, PM-Segment or Scanner attributes are present.
		  h. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-013		
TP label		Cadence Numeric Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 31; M
		Cardiovascular 32; M	Cardiovascular 33; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_022		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Cadence object.		
Test procedure		1. Make the Sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body. 2. Check in the captured message that: a. At least one Cadence object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. Cadence object follows this OBX encoding: ❑ OBX-2 = 'NM' OBX-3 = 8454255^MDC_HF_CAD^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Cadence object respectively. ❑ OBX-5 = Numeric value ❑ OBX-6 = 268960^MDC_DIM_RPM^MDC e. Cadence Measurement Type attribute follows this OBX encoding: ❑ OBX-2 = 'CWE' ❑ OBX-3 = 67883^MDC_ATTR_ID_PHYSIO^MDC ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Cadence object. ❑ OBX-5 = 8456144^MDC_HF_MEAN_NULL_EXCLUDE^MDC or 8456145^MDC_HF_MEAN_NULL_INCLUDE^MDC or 8456146^MDC_HF_MAX^MDC or 8456147^MDC_HF_MIN^MDC f. Cadence Source-Handle-Reference attribute follows this OBX encoding: ❑ OBX-2 = 'ST' ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the Cadence object. ❑ OBX-5 = OBX-4 of Session or Subsession object g. No PM-Store, PM-Segment or Scanner attributes are present. h. One of these timestamp attributes can be present: ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: • OBX-5 = Numeric value • OBX-18 has a timebase ID. ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. • OBX-5 = Numeric value • OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-014		
TP label		Incline Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 34; M
		Cardiovascular 35; M	Cardiovascular 36; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_021		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with an Incline object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		   a. At least one Incline object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Incline object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		      OBX-3 = 8454256^MDC_HF_INCLINE^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Incline object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC or 262880^MDC_DIM_ANG_DEG^MDC
		   e. Incline Measurement Type attribute follows this OBX encoding:
		     ❑ OBX-2 = 'CWE'
		     ❑ OBX-3 = 67883^MDC_ATTR_ID_PHYSIO^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Incline object.
		     ❑ OBX-5 = 8456144^MDC_HF_MEAN_NULL_EXCLUDE^MDC or 8456145^MDC_HF_MEAN_NULL_INCLUDE^MDC or 8456146^MDC_HF_MAX^MDC or 8456147^MDC_HF_MIN^MDC
		   f. Incline Source-Handle-Reference attribute follows this OBX encoding:
		     ❑ OBX-2 = 'ST'
		     ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		     ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the Incline object.
		     ❑ OBX-5 = OBX-4 of Session or Subsession object
		   g. No PM-Store, PM-Segment or Scanner attributes are present.
		   h. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-015		
TP label		Heart Rate Numeric Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 37; M
		Cardiovascular 38; M	Cardiovascular 39; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_020		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Heart Rate object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Heart Rate object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Heart Rate object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		      OBX-3 = 8454258^MDC_HF_HR^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Heart Rate object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 264864^MDC_DIM_BEAT_PER_MIN^MDC
		  e. Heart Rate Measurement Type attribute follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 67883^MDC_ATTR_ID_PHYSIO^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Heart Rate object.
		    ❑ OBX-5 = 8456144^MDC_HF_MEAN_NULL_EXCLUDE^MDC or 8456145^MDC_HF_MEAN_NULL_INCLUDE^MDC or 8456146^MDC_HF_MAX^MDC or 8456147^MDC_HF_MIN^MDC
		  f. Heart Rate Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the Heart Rate object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		  g. No PM-Store, PM-Segment or Scanner attributes are present.
		  h. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-016		
TP label		Max User Heart Rate Numeric Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 40; M
		Cardiovascular 41; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_019		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Max User Heart Rate object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		   a. At least one Max User Heart Rate object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Max User Heart Rate object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		      OBX-3 = 8454257^MDC_HF_HR_MAX_USER^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Max User Heart Rate object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 264864^MDC_DIM_BEAT_PER_MIN^MDC
		   e. Max User Heart Rate Source-Handle-Reference attribute follows this OBX encoding:
		     ❑ OBX-2 = 'ST'
		     ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		     ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the Max User Heart Rate object.
		     ❑ OBX-5 = OBX-4 of Session or Subsession object
		   f. No PM-Store, PM-Segment or Scanner attributes are present.
		   g. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-017		
TP label		Power Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 42; M
		Cardiovascular 43; M	Cardiovascular 44; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_018		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Power object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		   a. At least one Power object has sent at least one observation..
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Power object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		      OBX-3 = 8454259^MDC_HF_POWER^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Power object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 266176^MDC_DIM_WATT^MDC
		   e. Power Measurement Type attribute follows this OBX encoding:
		     ❑ OBX-2 = 'CWE'
		     ❑ OBX-3 = 67883^MDC_ATTR_ID_PHYSIO^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Power object.
		     ❑ OBX-5 = 8456144^MDC_HF_MEAN_NULL_EXCLUDE^MDC or 8456145^MDC_HF_MEAN_NULL_INCLUDE^MDC or 8456146^MDC_HF_MAX^MDC or 8456147^MDC_HF_MIN^MDC
		   f. Power Source-Handle-Reference attribute follows this OBX encoding:
		     ❑ OBX-2 = 'ST'
		     ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		     ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the Power object.
		     ❑ OBX-5 = OBX-4 of Session or Subsession object
		   g. No PM-Store, PM-Segment or Scanner attributes are present.
		   h. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-018		
TP label		Resistance Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 45; M
		Cardiovascular 46; M	Cardiovascular 47; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_017		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Resistance object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		 2. Check in the captured message that:
		   a. At least one Resistance object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		   d. Resistance object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 8454260^MDC_HF_RESIST^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Resistance object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = Leave blank or use 262656^MDC_DIM_DIMLESS^MDC
		   e. Resistance Measurement Type attribute follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 67883^MDC_ATTR_ID_PHYSIO^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Resistance object.
		    ❑ OBX-5 = 8456144^MDC_HF_MEAN_NULL_EXCLUDE^MDC or 8456145^MDC_HF_MEAN_NULL_INCLUDE^MDC or 8456146^MDC_HF_MAX^MDC or 8456147^MDC_HF_MIN^MDC
		   f. Resistance Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the Resistance object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		   g. No PM-Store, PM-Segment or Scanner attributes are present.
		   h. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-019		
TP label		Stride Length Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 48; M
		Cardiovascular 49; M	Cardiovascular 50; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_016		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Stride Length object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Stride Length object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Stride Length object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 8454261^MDC_HF_STRIDE^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Stride Length object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 263424^MDC_DIM_M^MDC or 263520^MDC_DIM_INCH^MDC
		  e. Stride Length Measurement Type attribute follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 67883^MDC_ATTR_ID_PHYSIO^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Stride Length object.
		    ❑ OBX-5 = 8456144^MDC_HF_MEAN_NULL_EXCLUDE^MDC or 8456145^MDC_HF_MEAN_NULL_INCLUDE^MDC or 8456146^MDC_HF_MAX^MDC or 8456147^MDC_HF_MIN^MDC
		  f. Stride Length Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the Stride Length object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		  g. No PM-Store, PM-Segment or Scanner attributes are present.
		  h. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-020		
TP label		Breathing Rate Numeric Object		
Coverage	**Spec**	[b-CDG 2012]– Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 51; M
		Cardiovascular 52; M	Cardiovascular 53; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		MetricRelGroup 2; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable Items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_015		
Initial condition		The simulated receiver has published a WebService and sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Breathing Rate object.		

Test procedure		1. Make the Sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Breathing Rate object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Breathing Rate object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 151562^MDC_RESP_RATE^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Breathing Rate object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 264928^MDC_DIM_RESP_PER_MIN^MDC
		  e. Breathing Rate Measurement Type attribute follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 67883^MDC_ATTR_ID_PHYSIO^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Breathing Rate object.
		    ❑ OBX-5 = 8456144^MDC_HF_MEAN_NULL_EXCLUDE^MDC or 8456145^MDC_HF_MEAN_NULL_INCLUDE^MDC or 8456146^MDC_HF_MAX^MDC or 8456147^MDC_HF_MIN^MDC
		  f. Breathing Rate Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the Breathing Rate object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		  g. No PM-Store, PM-Segment or Scanner attributes are present.
		  h. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-021		
TP label		Energy Expended Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 54; M
		Cardiovascular 55; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_014		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with an Energy Expended object.		

Test procedure		1. Make the sender under test to send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Energy Expended object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Energy Expended object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 8454263^MDC_HF_ENERGY^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Energy Expended object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 268928^MDC_DIM_CAL^MDC or 266112^MDC_DIM_JOULES^MDC
		  e. Energy Expended Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Energy Expended object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-022		
TP label		Calories Ingested Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 56; M
		Cardiovascular 57; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_013		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Calories object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body. 2. Check in the captured message that: a. At least one Calories Ingested object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. Calories Ingested object follows this OBX encoding: ❑ OBX-2 = 'NM' OBX-3 = 8454264^MDC_HF_CAL_INGEST^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Calories Ingested object respectively. ❑ OBX-5 = Numeric value ❑ OBX-6 = 268928^MDC_DIM_CAL^MDC e. Calories Ingested Source-Handle-Reference attribute follows this OBX encoding: ❑ OBX-2 = 'ST' ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Calories Ingested object. ❑ OBX-5 = OBX-4 of Session or Subsession object f. No PM-Store, PM-Segment or Scanner attributes are present. g. One of these timestamp attributes can be present: ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: • OBX-5 = Numeric value • OBX-18 has a timebase ID. ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. • OBX-5 = Numeric value • OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-023		
TP label		Carbohydrate Calories Ingested Numeric Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 58; M
		Cardiovascular 59; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_012		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Calories Ingested object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		   a. At least one Carbohydrate Calories Ingested object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     \<refIdValue\>^\<refIdName\>^\<refIdCodeSystem\>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Carbohydrate Calories Ingested object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		     OBX-3 = 8454265^MDC_HF_CAL_INGEST_CARB^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Carbohydrate Calories Ingested object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 268928^MDC_DIM_CAL^MDC
		   e. Carbohydrate Calories Ingested Source-Handle-Reference attribute follows this OBX encoding:
		     ❑ OBX-2 = 'ST'
		     ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Carbohydrate Calories Ingested object.
		     ❑ OBX-5 = OBX-4 of Session or Subsession object
		   f. No PM-Store, PM-Segment or Scanner attributes are present.
		   g. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-024		
TP label		Sustained Phys Activity Threshold Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 60; M
		Cardiovascular 61; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_011		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Sustained Phys Activity Threshold object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		   a. At least one Sustained Phys Activity Threshold object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Sustained Phys Activity Threshold object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		       OBX-3 = 8454266^MDC_HF_SUST_PA_THRESHOLD^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Sustained Phys Activity Threshold object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 264352^MDC_DIM_MIN^MDC
		   e. Sustained Phys Activity Threshold Source-Handle-Reference attribute follows this OBX encoding:
		     ❑ OBX-2 = 'ST'
		     ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Sustained Phys Activity Threshold object.
		     ❑ OBX-5 = OBX-4 of Session or Subsession object
		   f. No PM-Store, PM-Segment or Scanner attributes are present.
		   g. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id	TP/WAN/SEN/PCD-01-DATA/CV/BV-025

TP label		Activity Intensity Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 62; M
		Cardiovascular 63; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_010		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with an Acitivity Intensity object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body. 2. Check in the captured message that: a. At least one Activity Intensity object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: \<refIdValue>^\<refIdName>^\<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. Activity Intensity object follows this OBX encoding: ❑ OBX-2 = 'NM' OBX-3 = 8454271^MDC_HF_ACTIVITY_INTENSITY^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Activity Intensity object respectively. ❑ OBX-5 = Numeric Value ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC e. Activity Intensity Source-Handle-Reference attribute follows this OBX encoding: ❑ OBX-2 = 'ST' ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Activity Intensity object. ❑ OBX-5 = OBX-4 of Session or Subsession object f. No PM-Store, PM-Segment or Scanner attributes are present. g. One of these timestamp attributes can be present: ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: • OBX-5 = Numeric value • OBX-18 has a timebase ID. ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. • OBX-5 = Numeric value • OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-026		
TP label		Body Weight Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 64; M
		Cardiovascular 65; M	MetricClassAttr 1; M	MetricClassAttr 2; M

		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_009		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Body Weight object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Body Weight object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Body Weight object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 188736^MDC_MASS_BODY_ACTUAL^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Body Weight object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 263872^MDC_DIM_G^MDC or 263904^MDC_DIM_LB^MDC
		  e. Body Weight Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Body Weight object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-027		
TP label		Height Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 66; M
		Cardiovascular 67; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_008		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Height object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Height object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Height object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		      OBX-3 = 188740^MDC_LEN_BODY_ACTUAL^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Height object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 263424^MDC_DIM_M^MDC or 263488^MDC_DIM_FOOT^MDC
		  e. Height Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Height object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-028		
TP label		Age Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 68; M
		Cardiovascular 69; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_007		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with an Age object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body. 2. Check in the captured message that: a. At least one Age object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. Age object follows this OBX encoding: ❑ OBX-2 = 'NM' OBX-3 = 8454270^MDC_HF_AGE^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Age object respectively. ❑ OBX-5 = Numeric value ❑ OBX-6 = 264512^MDC_DIM_YR^MDC e. Age Source-Handle-Reference attribute follows this OBX encoding: ❑ OBX-2 = 'ST' ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Age object. ❑ OBX-5 = OBX-4 of Session or Subsession object f. No PM-Store, PM-Segment or Scanner attributes are present. g. One of these timestamp attributes can be present: ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: • OBX-5 = Numeric value • OBX-18 has a timebase ID. ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. • OBX-5 = Numeric value • OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-029		
TP label		Activity Time Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 70; M
		Cardiovascular 71; M	Cardiovascular 72; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	EnumClassAttr 1; M
		EnumClassAttr 2; M	EnumClassAttr 3; M	EnumClassAttr 4; M
		EnumClassAttr 5; O	EnumClassAttr 6; M	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_006		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with an Activity Time object.		

Test procedure		1. Make the sender under test to send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		 2. Check in the captured message that:
		   a. At least one Activity Time object has sent at least one observation. Each one conforms to the following steps.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Activity Time object follows this OBX encoding:
		     ❑ OBX-2 = 'CWE'
		     OBX-3 = 8454269^MDC_HF_ACTIVITY_TIME^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Activity Time object respectively.
		     ❑ OBX-5 = 8455144^MDC_HF_ACT_AMB^MDC or 8455145^MDC_HF_ACT_REST^MDC or 8455146^MDC_HF_ACT_MOTOR^MDC or 8455147^MDC_HF_ACT_LYING^MDC or 8455148^MDC_HF_ACT_SLEEP^MDC or 8455149^MDC_HF_ACT_PHYS^MDC or 8455150^MDC_HF_ACT_SUS_PHYS^MDC or 8455151^MDC_HF_ACT_UNKNOWN^MDC
		   e. Activity Time Measure Active Period attribute follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		     ❑ OBX-3 = 68185^MDC_ATTR_TIME_PD_MSMT_ACTIVE^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Activity Time object.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 264320^MDC_DIM_SEC^MDC
		   f. Activity Time Source-Handle-Reference attribute follows this OBX encoding:
		     ❑ OBX-2 = 'ST'
		     ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		     ❑ OBX-4 = y.0.0.x.b, where 'b' is a number indicating the facet level of the Activity Time object.
		     ❑ OBX-5 = OBX-4 of Session or Subsession object
		   g. No PM-Store, PM-Segment or Scanner attributes are present.
		   h. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/CV/BV-030		
TP label		Program Identifier Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	Cardiovascular 1; M	Cardiovascular 2; M	Cardiovascular 73; M
		Cardiovascular 74; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_CV_001 AND C_SEN_CV_005		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a cardiovascular device with a Program Identifier object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a cardiovascular device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Program Identifier object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Program Identifier object follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 8454252^MDC_HF_PROGRAM_ID^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Program Identifier object respectively.
		    OBX-5 = String value
		  e. Program Identifier Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Program Identifier object.
		    ❑ OBX-5 = OBX-4 of Session or Subsession object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

A.10 Subgroup 1.4.9: Strength fitness equipment (ST)

TP Id		TP/WAN/SEN/PCD-01-DATA/ST/BV-000		
TP label		MDS Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	StrengthFitness 3; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable tems	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_ST_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a Strength Fitness device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a strength fitness device inside a SOAP body.
		 2. Check in the captured message that:
		   a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   b. Each MDC code using a CWE data type is encoded as:
		     \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   c. A bit flag value is encoded as \<bitValue>^\<bitName>(\<bitPosition>), where:
		     ❑ \<bitValue> = \<0 or 1>
		     ❑ \<bitName> is recommended to be the ASN.1 name for the bit
		     ❑ \<bitPosition> is the normative position of the bit
		   d. In MDS-level OBX:
		     ❑ OBX-2 is empty
		     ❑ If the System-Type attribute is valued, OBX-3 = 528426^MDC_DEV_SPEC_PROFILE_HF_STRENGTH^MDC
		     ❑ If the System-Type-Spec-List attribute contains a single value and System-Type is not valued, this value is reported as the OBX-3
		     ❑ If the System-Type-Spec-List contains multiple values and System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device.
		     ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD
		     ❑ OBX-11 = 'X'
		     ❑ OBX-18 (System Id attribute) = *\<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_ST_001.
		   e. System model attribute is sent in two different OBX segments:
		     ❑ System-Model attribute:
		       • OBX-2 = 'ST'
		       • OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC
		       • OBX-5 = String representing the model number portion of MDC_ATTR_ID_MODEL attribute
		     ❑ System-Manufacturer attribute:
		       • OBX-2 = 'ST'
		       • OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC		

- OBX-5 = String representing the model manufacturer portion of MDC_ATTR_ID_MODEL attribute.

f. Production-Specification attribute is sent as a series of attributes:
- ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC
  - OBX-5 = String representing the value portion of the Production-Specification entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC
  - OBX-5 = String representing the value portion of the Production-Specification serial entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC
  - OBX-5 = String representing the value portion of the Production-Specification part entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC
  - OBX-5 = String representing the value portion of the Production-Specification hardware entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
  - OBX-5 = String representing the value portion of the Production-Specification software entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC
  - OBX-5 = String representing the value portion of the Production-Specification firmware entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC
  - OBX-5 = String representing the value portion of the Production-Specification protocol entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
  - OBX-5 = String representing the value portion of the Production-Specification GMDN entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.

g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent as a Timestamp, its respective resolution may be sent, but only as follows:
- ❑ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'CWE'
  - OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
  - OBX-5 = One or more of:
    <0 or 1>^mds-time-capab-real-time-clock(0),
    <0 or 1>^mds-time-capab-set-clock(1),
    <0 or 1>^mds-time-capab-relative-time(2),
    <0 or 1>^mds-time-capab-high-res-relative-time(3),

<0 or 1>^mds-time-capab-sync-abs-time(4),
<0 or 1>^mds-time-capab-sync-rel-time(5),
<0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),
<0 or 1>^mds-time-state-abs-time-synced(8),
<0 or 1>^mds-time-state-rel-time-synced(9),
<0 or 1>^mds-time-state-hi-res-relative-time-synced(10),
<0 or 1>^mds-time-mgr-set-time(11)

❑ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'CWE'
- OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
- OBX-5 = One of this values...
  532224^MDC_TIME_SYNC_NONE^MDC
  532225^MDC_TIME_SYNC_NTPV3^MDC
  532226^MDC_TIME_SYNC_NTPV4^MDC
  532227^MDC_TIME_SYNC_SNTPV4^MDC
  532228^MDC_TIME_SYNC_SNTPV4330^MDC
  532229^MDC_TIME_SYNC_BTV1^MDC
  532230^MDC_TIME_SYNC_RADIO^MDC
  532231^MDC_TIME_SYNC_HL7_NCK^MDC
  532232^MDC_TIME_SYNC_CDMA^MDC
  532233^MDC_TIME_SYNC_GSM^MDC
  532234^MDC_TIME_SYNC_EBWW^MDC
  532235^MDC_TIME_SYNC_USB_SOF^MDC

❑ Date and Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'DTM'
- OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
- OBX-5 = DTM data type value
- OBX-14 = UTC value

❑ Relative-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
- OBX-4 = 0.0.0.x, where 'x' is any integer value
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase

❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
- OBX-4 = 0.0.0.x, where 'x' is any integer value
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase

❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68223^MDC_TIME_RES_REL^MDC
- OBX-5 = NM data type value
- OBX-6 = 264320^MDC_DIM_SEC^MDC

❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:
- OBX-2 = 'NM'
- OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

h. Date-and-Time-Adjustment attribute is not present
i. If the Power-Status attribute is valued, it is sent as an independent OBX segment:
   ❑ OBX-2 = 'ST'
   ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC
   ❑ OBX-5 = One or more of:
      <0 or 1>^onMains(0),
      <0 or 1>^onBattery(1),
      <0 or 1>^chargingFull(8),
      <0 or 1>^chargingTrickle(9),
      <0 or 1>^chargingOff(10)
j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:
   ❑ OBX-2 = 'NM'

- ❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC
- ❑ OBX-5 = NM data type value
- ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

    k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'NM'
- ❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC
- ❑ OBX-5 = Use the value contained in the BatMeasure object
- ❑ OBX-6 = Use the OID contained in the BatMeasure object

    l. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:
- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC

      OBX-5 = One of:
      0^auth-body-empty,
      1^auth-body-ieee-11073,
      2^auth-body-continua,
      254^auth-body-experimental,
      255^auth-body-reserved

    m. Observations from Continua-compliant source devices are sent using three attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:
- ❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - • OBX-2 = 'ST'
  - • OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
  - • OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a number indicating the facet level of that segment.
  - • OBX-5 = one of the following values: '1.0','1.5','2.0', '3.0' or '4.0' (<major-IG-version>.<minor-IG-version>).
- ❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - • OBX-2 = 'NA'
  - • OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC
  - • OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry, and 'b' is a number indicating the facet level of that segment.
  - • OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 42 (ST v1.0), 16426 (ST v1.5 Wireless PAN), 8234 (ST v1.5 Wired PAN), or 24618 (ST v1.5 Sensor LAN)
- ❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - • OBX-2 = 'CWE'
  - • OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC
  - • OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment.
  - • OBX-5 = <0 or 1>^unregulated-device(0)

    n. If System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment:
- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC
- ❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values

    o. Confirm-Timeout attribute is not present.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/ST/BV-001		
TP label		Set Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	StrengthFitness 2; M	StrengthFitness 4; M	StrengthFitness 5; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ST_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a Strength Fitness device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a Strength Fitness device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Set object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Set object follows this OBX encoding:
		    ❑ OBX-2 is empty
		    ❑ OBX-3 = 8454344^MDC_HF_SET^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Set object respectively.
		    ❑ OBX-5 is empty
		    ❑ OBX-20 = Any of the muscle sites defined in 10442. For example 459284^MDC_MUSC_THORAX_PECTORAL_MAJOR^MDC
		  e. Set Measure Active Period attribute follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 68185^MDC_ATTR_TIME_PD_MSMT_ACTIVE^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Set object.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 264320^MDC_DIM_SEC^MDC
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a Facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		

Notes		To calculate the number situated before the MDC name of the muscle the following function is used:
		  Number of the partition code*2^{16}+Number of the attribute
		where:
		  Number of the partition code = 7 (MDC_PART_SITES)
		  Number of the attribute is given in 10442
		For example:
		  MDC_MUSC_THORAX_PECTORAL_MAJOR = 532 → 7*2^{16}+532 = 459284
		There is an errata in Appendix J Table J-24 in [b-CDG 2010]. Set object OBX-2 must be empty and not 'NM' as indicated, because OBX-5 is empty.
		NOTE – [b-CDG 2010] Table J-24 corresponds to Table VIII.24 in [ITU-T H.810]; see Table 2.		

TP Id		TP/WAN/SEN/PCD-01-DATA/ST/BV-002		
TP label		Repetition Count Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	StrengthFitness 1; M	StrengthFitness 2; M	StrengthFitness 6; M
		StrengthFitness 7; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; O
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ST_001 AND C_SEN_ST_002		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a strength fitness device with a Repetition Count object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a strength fitness device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Repetition Count object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Repetition Count object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 8454346^MDC_HF_REPETITION_COUNT^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Repetition Count object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = Leave blank or 262656^MDC_DIM_DIMLESS^MDC
		  e. Repetition Count Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Repetition Count object.
		    ❑ OBX-5 = OBX-4 of Set object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/ST/BV-003		
TP label		Resistance Numeric Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	StrengthFitness 1; M	StrengthFitness 2; M	StrengthFitness 8; M
		StrengthFitness 9; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ST_001 AND C_SEN_ST_003		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a strength fitness device with a Resistance object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a strength fitness device inside a SOAP body. 2. Check in the captured message that: a. At least one Resistance object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. Resistance object follows this OBX encoding: ❑ OBX-2 = 'NM' OBX-3 = 8454347^MDC_HF_RESISTANCE^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Resistance object respectively. ❑ OBX-5 = Numeric value ❑ OBX-6 = 262656^MDC_DIM_DIMLESS^MDC or 263872^MDC_DIM_G^MDC or 263904^MDC_DIM_LB^MDC e. Resistance Source-Handle-Reference attribute follows this OBX encoding: ❑ OBX-2 = 'ST' ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Resistance object. ❑ OBX-5 = OBX-4 of Set object f. No PM-Store, PM-Segment or Scanner attributes are present. g. One of these timestamp attributes can be present: ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of Observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: • OBX-5 = Numeric value • OBX-18 has a timebase ID. ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. • OBX-5 = Numeric value • OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/ST/BV-004		
TP label		Repetition Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	StrengthFitness 1; M	StrengthFitness 2; M	StrengthFitness 10; M
		StrengthFitness 11; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	MetricRelGroup 2; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ST_001 AND C_SEN_ST_004		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a strength fitness device with a Repetition object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a strength fitness device inside a SOAP body.
		2. Check in the captured message that:
		   a. At least one Repetition object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		   d. Repetition object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 8454345^MDC_HF_REPETITION ^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Repetition object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 263424^MDC_DIM_M^MDC or 263520^MDC_DIM_INCH^MDC
		   e. Repetition Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Repetition object.
		    ❑ OBX-5 = OBX-4 of Set object
		   f. No PM-Store, PM-Segment or Scanner attributes are present.
		   g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/ST/BV-005		
TP label		Exercise Position Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	StrengthFitness 1; M	StrengthFitness 2; M	StrengthFitness 12; M
		StrengthFitness 13; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ST_001 AND C_SEN_ST_005		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a strength fitness device with an Exercise Position object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a strength fitness device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Exercise Position object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Exercise Position object follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 8454348^MDC_HF_EXERCISE_POSITION^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Exercise Position object respectively.
		    ❑ OBX-5 = One of the values: 8455347^MDC_HF_POSITION_INCLINE^MDC
		    8455348^MDC_HF_POSITION_DECLINE^MDC
		    8455349^MDC_HF_POSITION_SEATED^MDC
		    8455350^MDC_HF_POSITION_STANDING^MDC
		    8455351^MDC_HF_POSITION_KNEELING^MDC
		    8455352^MDC_HF_POSITION_BENTOVER^MDC
		    8455353^MDC_HF_POSITION_HANGING^MDC
		    8455354^MDC_HF_POSITION_OVERHEAD^MDC
		    8455355^MDC_HF_POSITION_LYING^MDC
		  e. Exercise Position Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Exercise Position object.
		    ❑ OBX-5 = OBX-4 of Set object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/ST/BV-006		
TP label		Exercise Laterality Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	StrengthFitness 1; M	StrengthFitness 2; M	StrengthFitness 14; M
		StrengthFitness 15; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ST_001 AND C_SEN_ST_006		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a strength fitness device with an Exercise Laterality object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a strength fitness device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Exercise Laterality object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Exercise Laterality object follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 8454349^MDC_HF_EXERCISE_LATERALITY^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Exercise Laterality object respectively.
		    ❑ OBX-5 = One of the values:
		      8455344^MDC_HF_LATERALITY_BOTH^MDC
		      8455345^MDC_HF_LATERALITY_RIGHT^MDC
		      8455346^MDC_HF_LATERALITY_LEFT^MDC
		  e. Exercise Laterality Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Exercise Laterality object.
		    ❑ OBX-5 = OBX-4 of Set object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/ST/BV-007		
TP label		Exercise Grip Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	StrengthFitness 1; M	StrengthFitness 2; M	StrengthFitness 16; M
		StrengthFitness 17; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; O
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ST_001 AND C_SEN_ST_007		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a strength fitness device with an Exercise Grip object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a strength fitness device inside a SOAP body.
		 2. Check in the captured message that:
		    a. At least one Exercise Grip object has sent at least one observation.
		    b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		    c. Each MDC code using a CWE data type is encoded as:
		      <refIdValue>^<refIdName>^<refIdCodeSystem>
		      where:
		      ❑ refIdValue: is a 32 bit integer (required)
		      ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		      ❑ refIdCodeSystem = "MDC" (required).
		    d. Exercise Grip object follows this OBX encoding:
		      ❑ OBX-2 = 'CWE'
		      ❑ OBX-3 = 8454350^MDC_HF_EXERCISE_GRIP^MDC
		      ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Exercise Grip object respectively.
		      ❑ OBX-5 = One of the values: 8455544^MDC_HF_GRIP_PARALLEL^MDC
		       8455545^MDC_HF_GRIP_OVERHAND^MDC
		       8455546^MDC_HF_GRIP_UNDERHAND^MDC
		       8455547^MDC_HF_GRIP_CLOSE^MDC
		       8455548^MDC_HF_GRIP_WIDE^MDC
		       8455549^MDC_HF_GRIP_GRIPLESS^MDC
		    e. Exercise Grip Source-Handle-Reference attribute follows this OBX encoding:
		      ❑ OBX-2 = 'ST'
		      ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		      ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the Exercise Grip object.
		      ❑ OBX-5 = OBX-4 of Set object
		    f. No PM-Store, PM-Segment or Scanner attributes are present.
		    g. One of these timestamp attributes can be present:
		      ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		      ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		      ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/ST/BV-008		
TP label		Exercise Movement Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	StrengthFitness 1; M	StrengthFitness 2; M	StrengthFitness 16; M
		StrengthFitness 17; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	EnumClassAttr 1; M	EnumClassAttr 2; M
		EnumClassAttr 3; M	EnumClassAttr 4; M	EnumClassAttr 5; O
		EnumClassAttr 6; M	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ST_001 AND C_SEN_ST_008		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a strength fitness device with an Exercise Movement object.		

Test procedure		1. Make the Sender under test send a HL7 message containing an observation of a strength fitness device inside a SOAP body.
		2. Check in the captured message that:
		  a. At least one Exercise Movement object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Exercise Movement object follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 8454351^MDC_HF_EXERCISE_MOVEMENT^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Exercise Movement object respectively.
		    ❑ OBX-5 = One of the values: 8455444^MDC_HF_MOVEMENT_FLEXION^MDC
		    8455445^MDC_HF_MOVEMENT_EXTENSION^MDC
		    8455446^MDC_HF_MOVEMENT_ROTATION^MDC
		    8455447^MDC_HF_MOVEMENT_ABDUCTION^MDC
		    8455448^MDC_HF_MOVEMENT_ADDUCTION^MDC
		  e. Exercise Movement Source-Handle-Reference attribute follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the Exercise Movement object.
		    ❑ OBX-5 = OBX-4 of Set object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

A.11 Subgroup 1.4.10: Independent living activity hub (HUB)

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-000		
TP label		MDS Object		
coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	ActivityHub 5; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_HUB_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living Hub device inside a SOAP body.
		2. Check in the captured message that:
		  a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  b. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  c. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		    ❑ <bitValue> = <0 or 1>
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		    ❑ <bitPosition> is the normative position of the bit
		  d. In MDS-level OBX:
		    ❑ OBX-2 is empty
		    ❑ If the System-Type attribute is valued, OBX-3 = 528455^MDC_DEV_SPEC_PROFILE_AI_ACTIVITY_HUB^MDC
		    ❑ If the System-Type-Spec-List attribute contains a single value and System-Type is not valued, this value is reported as the OBX-3
		    ❑ If the System-Type-Spec-List contains multiple values and System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device.
		    ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD
		    ❑ OBX-11 = 'X'
		    ❑ OBX-18 (System Id attribute) = *<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_HUB_001.
		  e. System model attribute is sent in two different OBX segments:
		    ❑ System-Model attribute:
		      • OBX-2 = 'ST'
		      • OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC
		      • OBX-5 = String representing the model number portion of MDC_ATTR_ID_MODEL attribute
		    ❑ System-Manufacturer attribute:
		      • OBX-2 = 'ST'
		      • OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC		

- OBX-5 = String representing the model manufacturer portion of MDC_ATTR_ID_MODEL attribute.
  f. Production-Specification attribute is sent as a series of attributes:
  - ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC
    - OBX-5 = String representing the value portion of the Production-Specification entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC
    - OBX-5 = String representing the value portion of the Production-Specification serial entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC
    - OBX-5 = String representing the value portion of the Production-Specification part entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC
    - OBX-5 = String representing the value portion of the Production-Specification hardware entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
    - OBX-5 = String representing the value portion of the Production-Specification software entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC
    - OBX-5 = String representing the value portion of the Production-Specification firmware entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC
    - OBX-5 = String representing the value portion of the Production-Specification protocol entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - ❑ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
    - OBX-5 = String representing the value portion of the Production-Specification GMDN entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.
  g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent as a Timestamp, its respective resolution may be sent, but only as follows:
  - ❑ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'CWE'
    - OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
    - OBX-5 = One or more of:
      <0 or 1>^mds-time-capab-real-time-clock(0),
      <0 or 1>^mds-time-capab-set-clock(1),
      <0 or 1>^mds-time-capab-relative-time(2),
      <0 or 1>^mds-time-capab-high-res-relative-time(3),

<0 or 1>^mds-time-capab-sync-abs-time(4),
<0 or 1>^mds-time-capab-sync-rel-time(5),
<0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),
<0 or 1>^mds-time-state-abs-time-synced(8),
<0 or 1>^mds-time-state-rel-time-synced(9),
<0 or 1>^mds-time-state-hi-res-relative-time-synced(10),
<0 or 1>^mds-time-mgr-set-time(11)

❑ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:
  • OBX-2 = 'NM'
  • OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
  • OBX-5 = NM data type value
  • OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:
  • OBX-2 = 'CWE'
  • OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
  • OBX-5 = One of this values...
    532224^MDC_TIME_SYNC_NONE^MDC
    532225^MDC_TIME_SYNC_NTPV3^MDC
    532226^MDC_TIME_SYNC_NTPV4^MDC
    532227^MDC_TIME_SYNC_SNTPV4^MDC
    532228^MDC_TIME_SYNC_SNTPV4330^MDC
    532229^MDC_TIME_SYNC_BTV1^MDC
    532230^MDC_TIME_SYNC_RADIO^MDC
    532231^MDC_TIME_SYNC_HL7_NCK^MDC
    532232^MDC_TIME_SYNC_CDMA^MDC
    532233^MDC_TIME_SYNC_GSM^MDC
    532234^MDC_TIME_SYNC_EBWW^MDC
    532235^MDC_TIME_SYNC_USB_SOF^MDC

❑ Date and Time attribute, if valued, is sent as an independent OBX segment:
  • OBX-2 = 'DTM'
  • OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
  • OBX-5 = DTM data type value
  • OBX-14 = UTC value

❑ Relative-Time attribute, if valued, is sent as an independent OBX segment:
  • OBX-2 = 'NM'
  • OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
  • OBX-4 = 0.0.0.x, where 'x' is any integer value
  • OBX-5 = NM data type value
  • OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  • OBX-18 = A unique identifier for the given timebase

❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:
  • OBX-2 = 'NM'
  • OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
  • OBX-4 = 0.0.0.x, where 'x' is any integer value
  • OBX-5 = NM data type value
  • OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  • OBX-18 = A unique identifier for the given timebase

❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:
  • OBX-2 = 'NM'
  • OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
  • OBX-5 = NM data type value
  • OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:
  • OBX-2 = 'NM'
  • OBX-3 = 68223^MDC_TIME_RES_REL^MDC
  • OBX-5 = NM data type value
  • OBX-6 = 264320^MDC_DIM_SEC^MDC

❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:
  • OBX-2 = 'NM'
  • OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
  • OBX-5 = NM data type value
  • OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

h. Date-and-Time-Adjustment attribute is not present
i. If the Power-Status attribute is valued, it is sent as an independent OBX segment:
  ❑ OBX-2 = 'ST'
  ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC
  ❑ OBX-5 = One or more of:
    <0 or 1>^onMains(0),
    <0 or 1>^onBattery(1),
    <0 or 1>^chargingFull(8),
    <0 or 1>^chargingTrickle(9),
    <0 or 1>^chargingOff(10)
j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:
  ❑ OBX-2 = 'NM'

	❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC
	❑ OBX-5 = NM data type value
	❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC
	    k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:
	❑ OBX-2 = 'NM'
	❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC
	❑ OBX-5 = Use the value contained in the BatMeasure object
	❑ OBX-6 = Use the OID contained in the BatMeasure object
	    l. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:
	❑ OBX-2 = 'CWE'
	❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC
	    OBX-5 = One of:
	    0^auth-body-empty,
	    1^auth-body-ieee-11073,
	    2^auth-body-continua,
	    254^auth-body-experimental,
	    255^auth-body-reserved
	    m. Observations from Continua-compliant source devices are sent using three attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:
	❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:
	    • OBX-2 = 'ST'
	    • OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
	    • OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a number indicating the facet level of that segment.
	    • OBX-5 = one of the following values: '1.0','1.5','2.0','3.0' or '4.0' (<major-IG-version>.<minor-IG-version>).
	❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:
	    • OBX-2 = 'NA'
	    • OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC
	    • OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry, and 'b' is a number indicating the facet level of that segment.
	    • OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 71 (HUB v1.0), 16455 (HUB v1.5 Wireless PAN), 8263 (HUB v1.5 Wired PAN), or 24647 (HUB v1.5 Sensor LAN)
	❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:
	    • OBX-2 = 'CWE'
	    • OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC
	    • OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment.
	    • OBX-5 = <0 or 1>^unregulated-device(0)
	    n. If the System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment:
	❑ OBX-2 = 'CWE'
	❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC
	❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values
	    o. Confirm-Timeout attribute is not present.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-001		
TP label		Fall Sensor Enumeration Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 6; M	ActivityHub 7; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_002		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with a Fall Sensor object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body.
		
		 2. Check in the captured message that:
		
		    a. At least one Fall Sensor object has sent at least one observation.
		
		    b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		    c. Each MDC code using a CWE data type is encoded as:
		      <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		      where:
		
		      ❑ refIdValue: is a 32 bit integer (required)
		
		      ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		
		      ❑ refIdCodeSystem = "MDC" (required).
		
		    d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		
		      ❑ <bitValue> = <0 or 1>
		
		      ❑ <bitName> is recommended to be the ASN.1 name for the bit
		
		      ❑ <bitPosition> is the normative position of the bit
		
		    e. Fall Sensor object follows this OBX encoding:
		
		      ❑ OBX-2 = 'CWE'
		
		      ❑ OBX-3 = 8519681^MDC_AI_TYPE_SENSOR_FALL^MDC
		
		      ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Fall Sensor object respectively.
		
		      ❑ OBX-5 = One of the following flags:		

<0 or 1>^fall-detected(0)

Additionally, optionally, any of the general sensor health flags:

<0 or 1>^auto-presence-received(16),

<0 or 1>^auto-presence-failed(17),

<0 or 1>^low-battery(18),

<0 or 1>^fault(19),

<0 or 1>^end-of-life(20)

    f.   Fall Sensor Location attribute follows this OBX encoding:

- OBX-2 = 'CWE'

- OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC

- OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the Fall Sensor object.

- OBX-5 = Any of the 10471 location codes that are specified in the Supplemental-Types.

    For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

    g.   No PM-Store, PM-Segment or Scanner attributes are present.

    h.   One of these timestamp attributes can be present:

- MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

- MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
  - OBX-5 = Numeric value
  - OBX-18 has a timebase ID.

- MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
  - OBX-5 = Numeric value
  - OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.

Notes	To calculate the number situated before the MDC name of the location the following function is used:
	
	  Number of the partition code*2^{16}+Number of the attribute
	
	where:
	
	  Number of the partition code = 130 (MDC_PART_PHD_AI)
	
	  Number of the attribute is given in 10471
	
	For example:
	
	  MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-002		
TP label		PERS Sensor Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 8; M	ActivityHub 9; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_003		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with a PERS Sensor object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living Hub device inside a SOAP body.
		
		2. Check in the captured message that:
		
		   a. At least one PERS Sensor object has sent at least one observation.
		
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		    where:
		
		     ❑ refIdValue: is a 32 bit integer (required)
		
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		
		     ❑ refIdCodeSystem = "MDC" (required).
		
		   d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		
		     ❑ <bitValue> = <0 or 1>
		
		     ❑ <bitName> is recommended to be the ASN.1 name for the bit
		
		     ❑ <bitPosition> is the normative position of the bit
		
		   e. PERS Sensor object follows this OBX encoding:
		
		     ❑ OBX-2 = 'CWE'
		
		     ❑ OBX-3 = 8519682^MDC_AI_TYPE_SENSOR_PERS^MDC
		
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the PERS Sensor object respectively.
		
		     ❑ OBX-5 = One of the following flags:		

<0 or 1>^pers-activated(0)

Additionally, optionally, any of the general sensor health flags:

<0 or 1>^auto-presence-received(16),

<0 or 1>^auto-presence-failed(17),

<0 or 1>^low-battery(18),

<0 or 1>^fault(19),

<0 or 1>^end-of-life(20)

f. PERS Sensor Location attribute follows this OBX encoding:

❑ OBX-2 = 'CWE'

❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC

❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the PERS Sensor object.

❑ OBX-5 = Any of the 10471 location codes that are specified in the Supplemental-Types.

For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

g. No PM-Store, PM-Segment or Scanner attributes are present.

h. One of these timestamp attributes can be present:

❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

• OBX-5 = Numeric value

• OBX-18 has a timebase ID.

❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

• OBX-5 = Numeric value

• OBX-18 has a timebase ID.

Pass/Fail Criteria	All elements in each segment are as specified.

Notes	To calculate the number situated before the MDC name of the location the following function is used:
	
	  Number of the partition code*2^{16}+Number of the attribute
	
	where:
	
	  Number of the partition code = 130 (MDC_PART_PHD_AI)
	
	  Number of the attribute is given in 10471
	
	For example:
	
	  MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-003		
TP label		Environmental Sensor - Smoke Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 10; M	ActivityHub 11; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_004		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with an Environmental Sensor - Smoke object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body.
		
		2. Check in the captured message that:
		
		  a. At least one Environmental Sensor – Smoke object has sent at least one observation.
		
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		  c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		  where:
		
		    ❑ refIdValue: is a 32 bit integer (required)
		
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		
		    ❑ refIdCodeSystem = "MDC" (required).
		
		  d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		
		    ❑ <bitValue> = <0 or 1>
		
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		
		    ❑ <bitPosition> is the normative position of the bit
		
		  e. Environmental Sensor – Smoke object follows this OBX encoding:
		
		    ❑ OBX-2 = 'CWE'
		
		    ❑ OBX-3 = 8519683^MDC_AI_TYPE_SENSOR_SMOKE^MDC
		
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Environmental Sensor – Smoke

object respectively.

- ❑ OBX-5 = One of the following flags:

  <0 or 1>^condition-detected(0)

  Additionally, optionally, any of the general sensor health flags:

  <0 or 1>^auto-presence-received(16),

  <0 or 1>^auto-presence-failed(17),

  <0 or 1>^low-battery(18),

  <0 or 1>^fault(19),

  <0 or 1>^end-of-life(20)

f. Environmental Sensor – Smoke Location attribute follows this OBX encoding:

- ❑ OBX-2 = 'CWE'

- ❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC

- ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Environmental Sensor – Smoke object.

- ❑ OBX-5 = Any of the 10471 location codes that are specified in the supplemental-types.

  For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

g. No PM-Store, PM-Segment or Scanner attributes are present.

h. One of these timestamp attributes can be present:

- ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

- ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

  - OBX-5 = Numeric value

  - OBX-18 has a timebase ID.

- ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

  - OBX-5 = Numeric value

  - OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.

Notes	To calculate the number situated before the MDC name of the location the following function is used:
	
	   Number of the partition code*2^{16}+Number of the attribute
	
	where:
	
	   Number of the partition code = 130 (MDC_PART_PHD_AI)
	
	   Number of the attribute is given in 10471
	
	For example:
	
	   MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-004		
TP label		Environmental Sensor - CO Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 12; M	ActivityHub 13; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_005		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with an Environmental Sensor - Smoke object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body. 2. Check in the captured message that: a. At least one Environmental Sensor – CO object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where: ❑ <bitValue> = <0 or 1> ❑ <bitName> is recommended to be the ASN.1 name for the bit ❑ <bitPosition> is the normative position of the bit e. Environmental Sensor – CO object follows this OBX encoding: ❑ OBX-2 = 'CWE' ❑ OBX-3 = 8519684^MDC_AI_TYPE_SENSOR_CO^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Environmental Sensor – CO object		

respectively.

- ❑ OBX-5 = One of the following flags:

  <0 or 1>^condition-detected(0)

  Additionally, optionally, any of the general sensor health flags:

  <0 or 1>^auto-presence-received(16),

  <0 or 1>^auto-presence-failed(17),

  <0 or 1>^low-battery(18),

  <0 or 1>^fault(19),

  <0 or 1>^end-of-life(20)

f. Environmental Sensor – CO Location attribute follows this OBX encoding:

- ❑ OBX-2 = 'CWE'

- ❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC

- ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Environmental Sensor – CO object.

- ❑ OBX-5 = Any of the 10471 location codes that are specified in the supplemental-types.

  For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

g. No PM-Store, PM-Segment or Scanner attributes are present.

h. One of these timestamp attributes can be present:

- ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

- ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

  - OBX-5 = Numeric value

  - OBX-18 has a timebase ID.

- ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

  - OBX-5 = Numeric value

  - OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.

Notes	To calculate the number situated before the MDC name of the location the following function is used:
	
	  Number of the partition code*2^{16}+Number of the attribute
	
	where:
	
	  Number of the partition code = 130 (MDC_PART_PHD_AI)
	
	  Number of the attribute is given in 10471
	
	For example:
	
	  MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-005		
TP label		Environmental Sensor - Water Enumeration Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 14; M	ActivityHub 15; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_006		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with an Environmental Sensor – Water object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body.
		
		2. Check in the captured message that:
		
		   a. At least one Environmental Sensor – Water object has sent at least one observation.
		
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		     where:
		
		     ❑ refIdValue: is a 32 bit integer (required)
		
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		
		     ❑ refIdCodeSystem = "MDC" (required).
		
		   d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		
		     ❑ <bitValue> = <0 or 1>
		
		     ❑ <bitName> is recommended to be the ASN.1 name for the bit
		
		     ❑ <bitPosition> is the normative position of the bit
		
		   e. Environmental Sensor – Water object follows this OBX encoding:
		
		     ❑ OBX-2 = 'CWE'
		
		     ❑ OBX-3 = 88519685^MDC_AI_TYPE_SENSOR_WATER^MDC
		
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Environmental Sensor – Water object		

respectively.

- ❑ OBX-5 = One of the following flags:

  <0 or 1>^condition-detected(0)

  Additionally, optionally, any of the general sensor health flags:

  <0 or 1>^auto-presence-received(16),

  <0 or 1>^auto-presence-failed(17),

  <0 or 1>^low-battery(18),

  <0 or 1>^fault(19),

  <0 or 1>^end-of-life(20)

f. Environmental Sensor – Water Location attribute follows this OBX encoding:

- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC
- ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the Environmental Sensor – Water object.
- ❑ OBX-5 = Any of the 10471 location codes that are specified in the Supplemental-Types.

  For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

g. No PM-Store, PM-Segment or Scanner attributes are present.

h. One of these timestamp attributes can be present:

- ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
- ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
  - OBX-5 = Numeric value
  - OBX-18 has a timebase ID.
- ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
  - OBX-5 = Numeric value
  - OBX-18 has a timebase ID.

Pass/Fail .riteria	All elements in each segment are as specified.
Notes	To calculate the number situated before the MDC name of the location the following function is used: Number of the partition code$*2^{16}$+Number of the attribute where: Number of the partition code = 130 (MDC_PART_PHD_AI) Number of the attribute is given in 10471 For example: MDC_AI_LOCATION_LIVINGROOM = 3648 → 130$*2^{16}$+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-006		
TP label		Environmental Sensor - Gas Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 16; M	ActivityHub 17; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_007		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with an Environmental Sensor – Gas object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body. 2. Check in the captured message that: a. At least one Environmental Sensor – Gas object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where: ❑ <bitValue> = <0 or 1> ❑ <bitName> is recommended to be the ASN.1 name for the bit ❑ <bitPosition> is the normative position of the bit e. Environmental Sensor – Gas object follows this OBX encoding: ❑ OBX-2 = 'CWE' ❑ OBX-3 = 8519686^MDC_AI_TYPE_SENSOR_GAS^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Environmental Sensor – Gas object		

respectively.

- ❑ OBX-5 = One of the following flags:

  <0 or 1>^condition-detected(0)

  Additionally, optionally, any of the general sensor health flags:

  <0 or 1>^auto-presence-received(16),

  <0 or 1>^auto-presence-failed(17),

  <0 or 1>^low-battery(18),

  <0 or 1>^fault(19),

  <0 or 1>^end-of-life(20)

f.   Environmental Sensor – Gas Location attribute follows this OBX encoding:

- ❑ OBX-2 = 'CWE'

- ❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC

- ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Environmental Sensor – Gas object.

- ❑ OBX-5 = Any of the 10471 location codes that are specified in the supplemental-types.

  For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

g.   No PM-Store, PM-Segment or Scanner attributes are present.

h.   One of these timestamp attributes can be present:

- ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

- ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

  - OBX-5 = Numeric value

  - OBX-18 has a timebase ID.

- ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

  - OBX-5 = Numeric value

  - OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	To calculate the number situated before the MDC name of the location the following function is used: Number of the partition code*2^{16}+Number of the attribute where: Number of the partition code = 130 (MDC_PART_PHD_AI) Number of the attribute is given in 10471 For example: MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-007		
TP label		Motion Sensor Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 18; M	ActivityHub 19; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_008		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with a Motion Sensor object.		

Test procedure		1. Make the sender under test to send a HL7 message containing an observation of an independent living hub device inside a SOAP body.
		
		2. Check in the captured message that:
		
		   a. At least one Motion Sensor object has sent at least one observation
		
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		   c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		   where:
		
		     ❑ refIdValue: is a 32 bit integer (required)
		
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		
		     ❑ refIdCodeSystem = "MDC" (required).
		
		   d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		
		     ❑ <bitValue> = <0 or 1>
		
		     ❑ <bitName> is recommended to be the ASN.1 name for the bit
		
		     ❑ <bitPosition> is the normative position of the bit
		
		   e. Motion Sensor object follows this OBX encoding:
		
		     ❑ OBX-2 = 'CWE'
		
		     ❑ OBX-3 = 8519687^MDC_AI_TYPE_SENSOR_MOTION^MDC
		
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Motion Sensor object respectively.
		
		     ❑ OBX-5 = One of the following flags:

<0 or 1>^motion-detected(0),

<0 or 1>^motion-detected-delayed(1),

<0 or 1>^tamper-detected(2)

Additionally, optionally, any of the general sensor health flags:

<0 or 1>^auto-presence-received(16),

<0 or 1>^auto-presence-failed(17),

<0 or 1>^low-battery(18),

<0 or 1>^fault(19),

<0 or 1>^end-of-life(20)

    f.   Motion Sensor Location attribute follows this OBX encoding:

      ❑ OBX-2 = 'CWE'

      ❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC

      ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Motion Sensor object.

      ❑ OBX-5 = Any of the 10471 location codes that are specified in the supplemental-types.

        For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

    g.   No PM-Store, PM-Segment or Scanner attributes are present.

    h.   One of these timestamp attributes is present:

      ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]]][+/-ZZZZ]

      ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

         • OBX-5 = Numeric value

         • OBX-18 has a timebase ID.

      ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

         • OBX-5 = Numeric value

         • OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.

Notes	To calculate the number situated before the MDC name of the location the following function is used:
	
	  Number of the partition code$*2^{16}$+Number of the attribute
	
	where:
	
	  Number of the partition code = 130 (MDC_PART_PHD_AI)
	
	  Number of the attribute is given in 10471
	
	For example:
	
	  MDC_AI_LOCATION_LIVINGROOM = 3648 → 130$*2^{16}$+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-008		
TP label		Property Exit Sensor Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 20; M	ActivityHub 21; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_009		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with a Property Exit Sensor object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body. 2. Check in the captured message that: a. At least one Property Exit Sensor object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: \<refIdValue>^\<refIdName>^\<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. A bit flag value is encoded as \<bitValue>^\<bitName>(\<bitPosition>), where: ❑ \<bitValue> = \<0 or 1> ❑ \<bitName> is recommended to be the ASN.1 name for the bit ❑ \<bitPosition> is the normative position of the bit e. Property Exit Sensor object follows this OBX encoding: ❑ OBX-2 = 'CWE' ❑ OBX-3 8519688^MDC_AI_TYPE_SENSOR_PROPEXIT^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Property Exit Sensor object respectively.		

	❑ OBX-5 = One of the following flags: <0 or 1>^occupant-exit-property(0), <0 or 1>^exit-door-left-open(1) Additionally, optionally, any of the general sensor health flags: <0 or 1>^auto-presence-received(16), <0 or 1>^auto-presence-failed(17), <0 or 1>^low-battery(18), <0 or 1>^fault(19), <0 or 1>^end-of-life(20) f. Property Exit Sensor Location attribute follows this OBX encoding: ❑ OBX-2 = 'CWE' ❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Property Exit Sensor object. ❑ OBX-5 = Any of the 10471 location codes that are specified in the supplemental-types. For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC g. No PM-Store, PM-Segment or Scanner attributes are present. h. One of these timestamp attributes can be present: ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]]][+/-ZZZZ] ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: • OBX-5 = Numeric value • OBX-18 has a timebase ID. ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. • OBX-5 = Numeric value • OBX-18 has a timebase ID.
Pass/Fail criteria	All elements in each segment are as specified.

Notes	To calculate the number situated before the MDC name of the location the following function is used:
	
	  Number of the partition code*2^{16}+Number of the attribute
	
	where:
	
	  Number of the partition code = 130 (MDC_PART_PHD_AI)
	
	  Number of the attribute is given in 10471
	
	For example:
	
	  MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-009		
TP label		Enuresis Sensor Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 22; M	ActivityHub 23; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_010		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with a Enuresis Sensor object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body.
		
		2. Check in the captured message that:
		
		   a. At least one Enurisis Sensor object has sent at least one observation
		
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		
		   d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		     ❑ <bitValue> = <0 or 1>
		     ❑ <bitName> is recommended to be the ASN.1 name for the bit
		     ❑ <bitPosition> is the normative position of the bit
		
		   e. Enuresis Sensor object follows this OBX encoding:
		     ❑ OBX-2 = 'CWE'
		     ❑ OBX-3 = 8519689^MDC_AI_TYPE_SENSOR_ENURESIS^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Enuresis Sensor object respectively.
		     ❑ OBX-5 = One of the following flags:		

<0 or 1>^enuresis-detected(0)

Additionally, optionally, any of the general sensor health flags:

<0 or 1>^auto-presence-received(16),

<0 or 1>^auto-presence-failed(17),

<0 or 1>^low-battery(18),

<0 or 1>^fault(19),

<0 or 1>^end-of-life(20)

    f.   Enuresis Sensor Location attribute follows this OBX encoding:

- ❑ OBX-2 = 'CWE'

- ❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC

- ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Enuresis Sensor object.

- ❑ OBX-5 = Any of the 10471 location codes that are specified in the Supplemental-Types.

  For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

    g.   No PM-Store, PM-Segment or Scanner attributes are present.

    h.   One of these timestamp attributes can be present:

- ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

- ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
  - • OBX-5 = Numeric value
  - • OBX-18 has a timebase ID.

- ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
  - • OBX-5 = Numeric value
  - • OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.

Notes	To calculate the number situated before the MDC name of the location the following function is used:
	
	  Number of the partition code*2^{16}+Number of the attribute
	
	where:
	
	  Number of the partition code = 130 (MDC_PART_PHD_AI)
	
	  Number of the attribute is given in 10471
	
	For example:
	
	  MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-010		
TP label		Contact Closure Sensor Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 24; M	ActivityHub 25; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_011		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with a Contact Closure Sensor object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body. 2. Check in the captured message that: a. At least one Contact Closure Sensor object ha sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where: ❑ <bitValue> = <0 or 1> ❑ <bitName> is recommended to be the ASN.1 name for the bit ❑ <bitPosition> is the normative position of the bit e. Contact Closure Sensor object follows this OBX encoding: ❑ OBX-2 = 'CWE' ❑ OBX-3 = 8519690^MDC_AI_TYPE_SENSOR_CONTACTCLOSURE^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Contact Closure Sensor object respectively.		

	❑ OBX-5 = One of the following flags: <0 or 1>^contact-opened(0), <0 or 1>^contact-closed(1) Additionally, optionally, any of the general sensor health flags: <0 or 1>^auto-presence-received(16), <0 or 1>^auto-presence-failed(17), <0 or 1>^low-battery(18), <0 or 1>^fault(19), <0 or 1>^end-of-life(20) f. Contact Closure Sensor Location attribute follows this OBX encoding: ❑ OBX-2 = 'CWE' ❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Contact Closure Sensor object. ❑ OBX-5 = Any of the 10471 location codes that are specified in the supplemental-types. For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC g. No PM-Store, PM-Segment or Scanner attributes are present. h. One of these timestamp attributes can be present: ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]]][+/-ZZZZ] ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: • OBX-5 = Numeric value • OBX-18 has a timebase ID. ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. • OBX-5 = Numeric value • OBX-18 has a timebase ID.
Pass/Fail criteria	All elements in each segment are as specified.
Notes	To calculate the number situated before the MDC name of the location the following function is used: Number of the partition code*2^{16}+Number of the attribute where: Number of the partition code = 130 (MDC_PART_PHD_AI) Number of the attribute is given in 10471 For example: MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-011		
TP label		Usage Sensor Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 26; M	ActivityHub 27; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_012		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with a Usage Sensor object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body.
		
		2. Check in the captured message that:
		
		  a. At least one Usage Sensor object has sent at least one observation.
		
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		  c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		  where:
		
		    ❑ refIdValue: is a 32 bit integer (required)
		
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		
		    ❑ refIdCodeSystem = "MDC" (required).
		
		  d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		
		    ❑ <bitValue> = <0 or 1>
		
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		
		    ❑ <bitPosition> is the normative position of the bit
		
		  e. Usage Sensor object follows this OBX encoding:
		
		    ❑ OBX-2 = 'CWE'
		
		    ❑ OBX-3 = 8519691^MDC_AI_TYPE_SENSOR_USAGE^MDC
		
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Usage Sensor object respectively.
		
		    ❑ OBX-5 = One of the following flags:

<0 or 1>^usage-started(0),

<0 or 1>^usage-ended(1),

<0 or 1>^expected-use-start-violation(2),

<0 or 1>^expected-use-stop-violation(3),

<0 or 1>^absence-violation(4)

Additionally, optionally, any of the general sensor health flags:

<0 or 1>^auto-presence-received(16),

<0 or 1>^auto-presence-failed(17),

<0 or 1>^low-battery(18),

<0 or 1>^fault(19),

<0 or 1>^end-of-life(20)

f. Usage Sensor Location attribute follows this OBX encoding:

  ❑ OBX-2 = 'CWE'

  ❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC

  ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the Usage Sensor object.

  ❑ OBX-5 = Any of the 10471 location codes that are specified in the Supplemental-Types.

  For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

g. No PM-Store, PM-Segment or Scanner attributes are present.

h. One of these timestamp attributes can be present:

  ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

  ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

    • OBX-5 = Numeric value

    • OBX-18 has a timebase ID.

  ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

    • OBX-5 = Numeric value

    • OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.

Notes	To calculate the number situated before the MDC name of the location the following function is used:
	
	  Number of the partition code*2^{16}+Number of the attribute
	
	where:
	
	  Number of the partition code = 130 (MDC_PART_PHD_AI)
	
	  Number of the attribute is given in 10471
	
	For example:
	
	  MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-012		
TP label		Switch Sensor Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 28; M	ActivityHub 29; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_013		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with a Switch Sensor object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body.
		
		2. Check in the captured message that:
		
		  a. At least one Switch Sensor object has sent at least one observation.
		
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		
		  d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		    ❑ <bitValue> = <0 or 1>
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		    ❑ <bitPosition> is the normative position of the bit
		
		  e. Switch Sensor object follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 8519692^MDC_AI_TYPE_SENSOR_SWITCH^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Switch Sensor object respectively.
		    ❑ OBX-5 = One of the following flags:		

<0 or 1>^switch-on(0),

<0 or 1>^switch-off(1)

Additionally, optionally, any of the general sensor health flags:

<0 or 1>^auto-presence-received(16),

<0 or 1>^auto-presence-failed(17),

<0 or 1>^low-battery(18),

<0 or 1>^fault(19),

<0 or 1>^end-of-life(20)

    f.   Switch Sensor Location attribute follows this OBX encoding:

❑ OBX-2 = 'CWE'

❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or
68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC

❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the Switch Sensor object.

❑ OBX-5 = Any of the 10471 location codes that are specified in the supplemental-types.

For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

    g.   No PM-Store, PM-Segment or Scanner attributes are present.

    h.   One of these timestamp attributes can be present:

❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

• OBX-5 = Numeric value

• OBX-18 has a timebase ID.

❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

• OBX-5 = Numeric value

• OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.

Notes	To calculate the number situated before the MDC name of the location the following function is used:
	
	  Number of the partition code*2^{16}+Number of the attribute
	
	where:
	
	  Number of the partition code = 130 (MDC_PART_PHD_AI)
	
	  Number of the attribute is given in 10471
	
	For example:
	
	  MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-013		
TP label		Medication Dosage Sensor Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 30; M	ActivityHub 31; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_014		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with a Medication Dosage Sensor object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body. 2. Check in the captured message that:		

   a. At least one Medication Dosage Sensor object has sent at least one observation.

   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present

   c. Each MDC code using a CWE data type is encoded as:
      <refIdValue>^<refIdName>^<refIdCodeSystem>

     where:

      ❑ refIdValue: is a 32 bit integer (required)

      ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)

      ❑ refIdCodeSystem = "MDC" (required).

   d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:

      ❑ <bitValue> = <0 or 1>

      ❑ <bitName> is recommended to be the ASN.1 name for the bit

      ❑ <bitPosition> is the normative position of the bit

   e. Medication Dosage Sensor object follows this OBX encoding:

      ❑ OBX-2 = 'CWE'

      ❑ OBX-3 = 8519693^MDC_AI_TYPE_SENSOR_DOSAGE^MDC

      ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Medication Dosage Sensor object

respectively.

- ❏ OBX-5 = One of the following flags:

  <0 or 1>^dosage-taken(0),

  <0 or 1>^dosage-missed(1)

  Additionally, optionally, any of the general sensor health flags:

  <0 or 1>^auto-presence-received(16),

  <0 or 1>^auto-presence-failed(17),

  <0 or 1>^low-battery(18),

  <0 or 1>^fault(19),

  <0 or 1>^end-of-life(20)

f. Medication Dosage Sensor Location attribute follows this OBX encoding:

- ❏ OBX-2 = 'CWE'

- ❏ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC

- ❏ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the Medication Dosage Sensor object.

- ❏ OBX-5 = Any of the 10471 location codes that are specified in the supplemental-types.

  For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

g. No PM-Store, PM-Segment or Scanner attributes are present.

h. One of these timestamp attributes can be present:

- ❏ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation Metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]

- ❏ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

  - OBX-5 = Numeric value

  - OBX-18 has a timebase ID.

- ❏ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

  - OBX-5 = Numeric value

  - OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.

Notes	To calculate the number situated before the MDC name of the location the following function is used:
	
	    Number of the partition code*2^{16}+Number of the attribute
	
	where:
	
	    Number of the partition code = 130 (MDC_PART_PHD_AI)
	
	    Number of the attribute is given in 10471
	
	For example:
	
	    MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

TP Id		TP/WAN/SEN/PCD-01-DATA/HUB/BV-014		
TP label		Temperature Sensor Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ActivityHub 1; M	ActivityHub 2; M	ActivityHub 3; M
		ActivityHub 4; M	ActivityHub 32; M	ActivityHub 33; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_HUB_001 AND C_SEN_HUB_015		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a HUB device with a Temperature Sensor object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an independent living hub device inside a SOAP body.
		
		2. Check in the captured message that:
		
		  a. At least one Temperature Sensor object has sent at least one observation. Each one conforms to the following steps.
		
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		    where:
		
		    ❑ refIdValue: is a 32 bit integer (required)
		
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		
		    ❑ refIdCodeSystem = "MDC" (required).
		
		  d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		
		    ❑ <bitValue> = <0 or 1>
		
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		
		    ❑ <bitPosition> is the normative position of the bit
		
		  e. Temperature Sensor object follows this OBX encoding:
		
		    ❑ OBX-2 = 'CWE'
		
		    ❑ OBX-3 = 8519694^MDC_AI_TYPE_SENSOR_TEMP^MDC
		
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Temperature Sensor object		

respectively.

- ❑ OBX-5 = One of the following flags:

  <0 or 1>^high-temperature-detected(0),

  <0 or 1>^low-temperature-detected(1),

  <0 or 1>^rate-of-change-too-fast(2)

  Additionally, optionally, any of the general sensor health flags:

  <0 or 1>^auto-presence-received(16),

  <0 or 1>^auto-presence-failed(17),

  <0 or 1>^low-battery(18),

  <0 or 1>^fault(19),

  <0 or 1>^end-of-life(20)

f. Temperature Sensor Location attribute follows this OBX encoding:

- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 8520703^MDC_AI_LOCATION^MDC or 68193^MDC_ATTR_SUPPLEMENTAL_TYPES^MDC
- ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the Temperature Sensor object.
- ❑ OBX-5 = Any of the 10471 location codes that are specified in the supplemental-types.

  For example: 8523328^MDC_AI_LOCATION_LIVINGROOM^MDC

g. No PM-Store, PM-Segment or Scanner attributes are present.

h. One of these timestamp attributes can be present:

- ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
- ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
  - • OBX-5 = Numeric value
  - • OBX-18 has a timebase ID.
- ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
  - • OBX-5 = Numeric value
  - • OBX-18 has a timebase ID.

Pass/Fail criteria	All elements in each segment are as specified.
Notes	To calculate the number situated before the MDC name of the location the following function is used: Number of the partition code*2^{16}+Number of the attribute where: Number of the partition code = 130 (MDC_PART_PHD_AI) Number of the attribute is given in 10471 For example: MDC_AI_LOCATION_LIVINGROOM = 3648 → 130*2^{16}+3648 = 8523328.

A.12   Subgroup 1.4.11: Adherence monitor (AM)

TP Id		TP/WAN/SEN/PCD-01-DATA/AM/BV-000		
TP label		MDS Object		
Coverage	**Spec**	[b-CDG 2012]– Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	AdherenceMon 2; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_AM_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of an adherence monitor device.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of an adherence monitor device inside a SOAP body. 2. Check in the captured message that: a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present b. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). c. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where: ❑ <bitValue> = <0 or 1> ❑ <bitName> is recommended to be the ASN.1 name for the bit ❑ <bitPosition> is the normative position of the bit d. In MDS-level OBX: ❑ OBX-2 is empty ❑ If the System-Type attribute is valued, OBX-3 = 528456^MDC_DEV_SPEC_PROFILE_AI_MED_MINDER^MDC ❑ If the System-Type-Spec-List attribute contains a single value and System-Type is not valued, this value is reported as the OBX-3 ❑ If the System-Type-Spec-List contains multiple values and System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device. ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD ❑ OBX-11 = 'X' ❑ OBX-18 (System Id attribute) = *<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_AM_001.		

e. System model attribute is sent in two different OBX segments:
- ❑ System-Model attribute:
  - OBX-2 = 'ST'
  - OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC
  - OBX-5 = String representing the model number portion of the MDC_ATTR_ID_MODEL attribute
- ❑ System-Manufacturer attribute:
  - OBX-2 = 'ST'
  - OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC
  - OBX-5 = String representing the model manufacturer portion of the MDC_ATTR_ID_MODEL attribute.

f. Production-Specification attribute is sent as a series of attributes:
- ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC
  - OBX-5 = String representing the value portion of the Production-Specification entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC
  - OBX-5 = String representing the value portion of the Production-Specification serial entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC
  - OBX-5 = String representing the value portion of the Production-Specification part entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC
  - OBX-5 = String representing the value portion of the Production-Specification hardware entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
  - OBX-5 = String representing the value portion of the Production-Specification software entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC
  - OBX-5 = String representing the value portion of the Production-Specification firmware entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC

- OBX-5 = String representing the value portion of the Production-Specification protocol entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
  - Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'ST'
    - OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
    - OBX-5 = String representing the value portion of the Production-Specification GMDN entry
    - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.
  - g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent as a timestamp, its respective resolution may be sent, but only as follows:
    - Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:
      - OBX-2 = 'CWE'
      - OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
      - OBX-5 = One or more of:
        <0 or 1>^mds-time-capab-real-time-clock(0),
        <0 or 1>^mds-time-capab-set-clock(1),
        <0 or 1>^mds-time-capab-relative-time(2),
        <0 or 1>^mds-time-capab-high-res-relative-time(3),
        <0 or 1>^mds-time-capab-sync-abs-time(4),
        <0 or 1>^mds-time-capab-sync-rel-time(5),
        <0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),
        <0 or 1>^mds-time-state-abs-time-synced(8),
        <0 or 1>^mds-time-state-rel-time-synced(9),
        <0 or 1>^mds-time-state-hi-res-relative-time-synced(10),
        <0 or 1>^mds-time-mgr-set-time(11)
    - Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:
      - OBX-2 = 'NM'
      - OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
      - OBX-5 = NM data type value
      - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
    - Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:
      - OBX-2 = 'CWE'
      - OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
      - OBX-5 = One of this values...
        532224^MDC_TIME_SYNC_NONE^MDC
        532225^MDC_TIME_SYNC_NTPV3^MDC
        532226^MDC_TIME_SYNC_NTPV4^MDC
        532227^MDC_TIME_SYNC_SNTPV4^MDC
        532228^MDC_TIME_SYNC_SNTPV4330^MDC
        532229^MDC_TIME_SYNC_BTV1^MDC
        532230^MDC_TIME_SYNC_RADIO^MDC
        532231^MDC_TIME_SYNC_HL7_NCK^MDC
        532232^MDC_TIME_SYNC_CDMA^MDC
        532233^MDC_TIME_SYNC_GSM^MDC
        532234^MDC_TIME_SYNC_EBWW^MDC
        532235^MDC_TIME_SYNC_USB_SOF^MDC
    - Date and Time attribute, if valued, is sent as an independent OBX segment:
      - OBX-2 = 'DTM'
      - OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
      - OBX-5 = DTM data type value
      - OBX-14 = UTC value
    - Relative-Time attribute, if valued, is sent as an independent OBX segment:
      - OBX-2 = 'NM'
      - OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
      - OBX-4 = 0.0.0.x, where 'x' is any integer value
      - OBX-5 = NM data type value

- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase
  - ❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
    - OBX-4 = 0.0.0.x, where 'x' is any integer value
    - OBX-5 = NM data type value
    - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
    - OBX-18 = A unique identifier for the given timebase
  - ❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
    - OBX-5 = NM data type value
    - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  - ❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 68223^MDC_TIME_RES_REL^MDC
    - OBX-5 = NM data type value
    - OBX-6 = 264320^MDC_DIM_SEC^MDC
  - ❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
    - OBX-5 = NM data type value
    - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
  h. Date-and-Time-Adjustment attribute is not present
  i. If the Power-Status attribute is valued, it is sent as an independent OBX segment:
    - ❑ OBX-2 = 'ST'
    - ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC
    - ❑ OBX-5 = One or more of:
      <0 or 1>^onMains(0),
      <0 or 1>^onBattery(1),
      <0 or 1>^chargingFull(8),
      <0 or 1>^chargingTrickle(9),
      <0 or 1>^chargingOff(10)
  j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:
    - ❑ OBX-2 = 'NM'
    - ❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC
    - ❑ OBX-5 = NM data type value
    - ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC
  k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:
    - ❑ OBX-2 = 'NM'
    - ❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC
    - ❑ OBX-5 = Use the value contained in the BatMeasure object
    - ❑ OBX-6 = Use the OID contained in the BatMeasure object
  l. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:
    - ❑ OBX-2 = 'CWE'
    - ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC
      OBX-5 = One of:
      0^auth-body-empty,
      1^auth-body-ieee-11073,
      2^auth-body-continua,
      254^auth-body-experimental,
      255^auth-body-reserved
  m. Observations from Continua-compliant source devices are sent using three

	attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:
	❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding: • OBX-2 = 'ST' • OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC • OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a number indicating the facet level of that segment. • OBX-5 = one of the following values: '1.0','1.5','2.0', '3.0' or '4.0' (<major-IG-version>.<minor-IG-version>).
	❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding: • OBX-2 = 'NA' • OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC • OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry, and 'b' is a number indicating the facet level of that segment. • OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 16456 (AM v1.5 Wireless PAN), 8264 (AM v1.5 Wired PAN), or 24648 (AM v1.5 Sensor LAN)
	❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding: • OBX-2 = 'CWE' • OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC • OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment. • OBX-5 = <0 or 1>^unregulated-device(0)
	n. If System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment: ❑ OBX-2 = 'CWE' ❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC ❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values
	o. Confirm-Timeout attribute is not present.
Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/AM/BV-001		
TP label		Fixed Dosage Dispensed Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	AdherenceMon 1; M	AdherenceMon 3; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_AM_001 AND C_SEN_AM_002		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of an adhrence monitor device with a Fixed Dosage Dispensed object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an adherence monitor device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Fixed Dosage Dispensed object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Fixed Dosage Dispensed object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 8532992^MDC_AI_MED_DISPENSED_FIXED^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Fixed Dosage Dispensed object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = Leave blank or 262656^MDC_DIM_DIMLESS^MDC
		  e. No PM-Store, PM-Segment or Scanner attributes are present.
		  f. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/AM/BV-002		
TP label		Variable Dosage Dispensed Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	AdherenceMon 1; M	AdherenceMon 4; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_AM_001 AND C_SEN_AM_003		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of an adhrence monitor device with a Variable Dosage Dispensed object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an adherence monitor device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Variable Dosage Dispensed object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Variable Dosage Dispensed object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 8532993^MDC_AI_MED_DISPENSED_VARIABLE^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Variable Dosage Dispensed object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 263762^MDC_DIM_MILLI_L^MDC or 263890^MDC_DIM_MILLI_G^MDC or 267616^MDC_DIM_INTL_UNIT^MDC
		  e. No PM-Store, PM-Segment or Scanner attributes are present.
		  f. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/AM/BV-003		
TP label		User Feedback Channel Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	AdherenceMon 1; M	AdherenceMon 5; M	AdherenceMon 6; M
		AdherenceMon 7; M	MetricClassAttr 1; M	MetricClassAttr 2; M
		MetricClassAttr 3; O	MetricClassAttr 4; M	MetricClassAttr 5; M
		MetricClassAttr 6; O	MetricClassAttr 7; O	MetricClassAttr 8; O
		MetricClassAttr 9; M	MetricClassAttr 10; O	MetricClassAttr 11; M
		MetricClassAttr 12; O	MetricClassAttr 13; O	MetricClassAttr 14; O
		MetricClassAttr 15; C	MetricClassAttr 16; C	MetricClassAttr 17; C
		MetricClassAttr 18; O	NumericClassAttr 1; M	NumericClassAttr 2; M
		NumericClassAttr 3; M	NumericClassAttr 4; M	NumericClassAttr 5; M
		NumericClassAttr 6; M	NumericClassAttr 7; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	NumArrayDataType 1; O
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_AM_001 AND C_SEN_AM_004		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of an adhrence monitor device with a User Feedback Channel object.		
Test procedure		1. Make the sender under test to send a HL7 message containing an observation of an adherence monitor device inside a SOAP body. 2. Check in the captured message that: a. The User Feedback Channel object has sent at least one observation. b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present c. Each MDC code using a CWE data type is encoded as: \<refIdValue>^\<refIdName>^\<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). d. User Feedback Channel object follows this OBX encoding: ❑ OBX-2 = 'NA' OBX-3 = 8532995^MDC_AI_MED_FEEDBACK^MDC ❑ OBX-4 = y.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the channel level for the User Feedback Channel object respectively. ❑ OBX-5 = Numeric array value ❑ OBX-6 = Leave blank or 262656^MDC_DIM_DIMLESS^MDC ❑ OBX-11 = 'X' e. User Feedback Location attribute follows this OBX encoding:		

<table>
<tr><td colspan="2">

❑ OBX-2 = 'NM'

OBX-3 = 8532996^MDC_AI_MED_UF_LOCATION^MDC
❑ OBX-4 = y.0.x.a, where 'a' is a number indicating the metric level of the User Feedback Channel object
❑ OBX-5 = Numeric value
❑ OBX-6 = Leave blank or 262656^MDC_DIM_DIMLESS^MDC

<p>f.   User Feedback Response attribute follows this OBX encoding:</p>

❑ OBX-2 = 'NM'

OBX-3 = 8532997^MDC_AI_MED_UF_RESPONSE^MDC
❑ OBX-4 = y.0.x.b, where 'b' is a number indicating the metric level of the User Feedback Channel object
❑ OBX-5 = Numeric value
❑ OBX-6 = Leave blank or 262656^MDC_DIM_DIMLESS^MDC

<p>g.   No PM-Store, PM-Segment or Scanner attributes are present.</p>
<p>h.   One of these timestamp attributes can be present:</p>

❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:

• OBX-5 = Numeric value
• OBX-18 has a timebase ID.

❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.

• OBX-5 = Numeric value
• OBX-18 has a timebase ID.

</td></tr>
<tr><td>Pass/Fail criteria</td><td>All elements in each segment are as specified.</td></tr>
<tr><td>Notes</td><td>
In [b-CDG 2010], Step 2.d shows the expected OBX segment as specified in Appendix J, Table J-29 [b-CDG 2010]. Based on the similarity between the BPM and AM compound values, it is understood that the correct OBX segment should be:

User Feedback Channel object follows this OBX encoding:

❑ OBX-2 is empty
❑ OBX-3 = 8532995^MDC_AI_MED_FEEDBACK^MDC
❑ OBX-4 = y.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the channel level for the User Feedback Channel object respectively.
❑ OBX-5 is empty
❑ OBX-11 = 'X'

NOTE – [b-CDG 2010] Table J-29 corresponds to Table VIII.29 in [ITU-T H.810]; see Table 2.
</td></tr>
</table>

TP Id		TP/WAN/SEN/PCD-01-DATA/AM/BV-004		
TP label		Status Reporter Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	AdherenceMon 1; M	AdherenceMon 8; M	AdherenceMon 9; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		EnumClassAttr 1; M	EnumClassAttr 2; M	EnumClassAttr 3; M
		EnumClassAttr 4; M	EnumClassAttr 5; O	EnumClassAttr 6; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_AM_001 AND C_SEN_AM_005		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of an adhrence monitor device with a Status Reporter object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of an adherence monitor device inside a SOAP body.
		
		2. Check in the captured message that:
		
		  a. The Status Reporter object has sent at least one observation.
		
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		
		  d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		    ❑ <bitValue> = <0 or 1>
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		    ❑ <bitPosition> is the normative position of the bit
		
		  e. Status Reporter object follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 8532994^MDC_AI_MED_STATUS^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Status Reporter object respectively.
		    ❑ OBX-5 = Any of the status flags:
		      <0 or 1>^medication-not-dispensed-as-expected(0)		

<table>
<tr><td></td><td colspan="3"><0 or 1>^medication-dispensed-unexpectedly(1)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^medication-unfit(2)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^medication-expiration(3)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^medication-course-complete(4)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^medication-taken-incorrectly(5)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^medication-course-reloaded(6)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^monitor-tamper(7)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^monitor-environmental-exceeded-high(8)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^monitor-environmental-exceeded-low(9)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^monitor-inoperable(10)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^consumer-non-compliant-yellow(11)</td></tr>
<tr><td></td><td colspan="3"><0 or 1>^consumer-non-compliant-red(12)</td></tr>
<tr><td></td><td>f.</td><td colspan="2">If valued, Context Key attribute follows this OBX encoding:</td></tr>
<tr><td></td><td></td><td>❑</td><td>OBX-2 = 'EI'</td></tr>
<tr><td></td><td></td><td>❑</td><td>OBX-3 = 68216^MDC_ATTR_CONTEXT_KEY^MDC</td></tr>
<tr><td></td><td></td><td>❑</td><td>OBX-4 = y.0.0.x.z, where 'z' is a number indicating the metric level of the Context Key attribute.</td></tr>
<tr><td></td><td></td><td>❑</td><td>OBX-5 = <Entity Identifier (ST)>^EUI-64</td></tr>
<tr><td></td><td>g.</td><td colspan="2">No PM-Store, PM-Segment or Scanner attributes are present.</td></tr>
<tr><td></td><td>h.</td><td colspan="2">One of these timestamp attributes can be present:</td></tr>
<tr><td></td><td></td><td>❑</td><td>MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]</td></tr>
<tr><td></td><td></td><td>❑</td><td>MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:</td></tr>
<tr><td></td><td></td><td></td><td>• OBX-5 = Numeric value</td></tr>
<tr><td></td><td></td><td></td><td>• OBX-18 has a timebase ID.</td></tr>
<tr><td></td><td></td><td>❑</td><td>MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.</td></tr>
<tr><td></td><td></td><td></td><td>• OBX-5 = Numeric value</td></tr>
<tr><td></td><td></td><td></td><td>• OBX-18 has a timebase ID.</td></tr>
<tr><td>Pass/Fail criteria</td><td colspan="3">All elements in each segment are as specified.</td></tr>
<tr><td>Notes</td><td colspan="3">In [b-CDG 2010], Step 2.e shows the expected OBX segment based on IEEE 11073-10472 Context-Key attribute specification. Appendix J, Table J-29 in [b-CDG 2010] shows this attribute as directly dependent of MDS Object and IEEE 11073-10472 shows this attribute as part of Status Reporter Object.

NOTE – [b-CDG 2010] Table J-29 corresponds to Table VIII.29 in [ITU-T H.810]; see Table 2.</td></tr>
</table>

A.13 Subgroup 1.4.12: Peak expiratory flow monitor (PF)

TP Id		TP/WAN/SEN/PCD-01-DATA/PF/BV-000		
TP label		MDS Object		
Coverage	Spec	[b-CDG 2012]– Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	PeakFlow 2; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable Items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable Items	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_PF_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a peak flow device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a peak flow device inside a SOAP body.
		
		2. Check in the captured message that:
		
		  a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		  b. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		  where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		
		  c. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		    ❑ <bitValue> = <0 or 1>
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		    ❑ <bitPosition> is the normative position of the bit
		
		  d. In MDS-level OBX:
		    ❑ OBX-2 is empty

    ❑ If the System-Type attribute is valued, OBX-3 = 528405^MDC_DEV_SPEC_PROFILE_PEFM^MDC

    ❑ If the System-Type-Spec-List attribute contains a single value and System-Type is not valued, this value is reported as the OBX-3

    ❑ If the System-Type-Spec-List contains multiple values and System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device.

    ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD

    ❑ OBX-11 = 'X'

    ❑ OBX-18 (System Id attribute) = *<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_PF_001.

  e. System model attribute is sent in two different OBX segments:

    ❑ System-Model attribute:

     • OBX-2 = 'ST'

     • OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC

     • OBX-5 = String representing the model number portion of the MDC_ATTR_ID_MODEL attribute

    ❑ System-Manufacturer attribute:

     • OBX-2 = 'ST'

     • OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC

     • OBX-5 = String representing the model manufacturer portion of the MDC_ATTR_ID_MODEL attribute.

  f. Production-Specification attribute is sent as a series of attributes:

    ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:

     • OBX-2 = 'ST'

     • OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC

     • OBX-5 = String representing the value portion of the Production-Specification entry

     • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

    ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:

     • OBX-2 = 'ST'

     • OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC

     • OBX-5 = String representing the value portion of the Production-Specification serial entry

     • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

    ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:

     • OBX-2 = 'ST'

     • OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC

     • OBX-5 = String representing the value portion of the Production-Specification part entry

     • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

    ❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:

     • OBX-2 = 'ST'

     • OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC

     • OBX-5 = String representing the value portion of the Production-Specification hardware entry

     • OBX-18 = The component portion of the Production-Specification entry

encoded as an EI datatype

❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'

- OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC

- OBX-5 = String representing the value portion of the Production-Specification software entry

- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'

- OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC

- OBX-5 = String representing the value portion of the Production-Specification firmware entry

- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'

- OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC

- OBX-5 = String representing the value portion of the Production-Specification protocol entry

- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'

- OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC

- OBX-5 = String representing the value portion of the Production-Specification GMDN entry

- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.

g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent as a timestamp, its respective resolution may be sent, but only as follows:

❑ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'CWE'

- OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC

- OBX-5 = One or more of:

  <0 or 1>^mds-time-capab-real-time-clock(0),

  <0 or 1>^mds-time-capab-set-clock(1),

  <0 or 1>^mds-time-capab-relative-time(2),

  <0 or 1>^mds-time-capab-high-res-relative-time(3),

  <0 or 1>^mds-time-capab-sync-abs-time(4),

  <0 or 1>^mds-time-capab-sync-rel-time(5),

  <0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),

  <0 or 1>^mds-time-state-abs-time-synced(8),

  <0 or 1>^mds-time-state-rel-time-synced(9),

  <0 or 1>^mds-time-state-hi-res-relative-time-synced(10),

  <0 or 1>^mds-time-mgr-set-time(11)

❑ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'

		• OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
		• OBX-5 = NM data type value
		• OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
		❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:
		• OBX-2 = 'CWE'
		• OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
		• OBX-5 = One of this values...
		532224^MDC_TIME_SYNC_NONE^MDC
		532225^MDC_TIME_SYNC_NTPV3^MDC
		532226^MDC_TIME_SYNC_NTPV4^MDC
		532227^MDC_TIME_SYNC_SNTPV4^MDC
		532228^MDC_TIME_SYNC_SNTPV4330^MDC
		532229^MDC_TIME_SYNC_BTV1^MDC
		532230^MDC_TIME_SYNC_RADIO^MDC
		532231^MDC_TIME_SYNC_HL7_NCK^MDC
		532232^MDC_TIME_SYNC_CDMA^MDC
		532233^MDC_TIME_SYNC_GSM^MDC
		532234^MDC_TIME_SYNC_EBWW^MDC
		532235^MDC_TIME_SYNC_USB_SOF^MDC
		❑ Date and Time attribute, if valued, is sent as an independent OBX segment:
		• OBX-2 = 'DTM'
		• OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
		• OBX-5 = DTM data type value
		• OBX-14 = UTC value
		❑ Relative-Time attribute, if valued, is sent as an independent OBX segment:
		• OBX-2 = 'NM'
		• OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
		• OBX-4 = 0.0.0.x, where 'x' is any integer value
		• OBX-5 = NM data type value
		• OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
		• OBX-18 = A unique identifier for the given timebase
		❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:
		• OBX-2 = 'NM'
		• OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
		• OBX-4 = 0.0.0.x, where 'x' is any integer value
		• OBX-5 = NM data type value
		• OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
		• OBX-18 = A unique identifier for the given timebase
		❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:
		• OBX-2 = 'NM'
		• OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
		• OBX-5 = NM data type value
		• OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
		❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:
		• OBX-2 = 'NM'
		• OBX-3 = 68223^MDC_TIME_RES_REL^MDC

- OBX-5 = NM data type value
- OBX-6 = 264320^MDC_DIM_SEC^MDC
  - ❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:
    - OBX-2 = 'NM'
    - OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
    - OBX-5 = NM data type value
    - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

h. Date-and-Time-Adjustment attribute is not present

i. If the Power-Status attribute is valued, it is sent as an independent OBX segment:
  - ❑ OBX-2 = 'ST'
  - ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC
  - ❑ OBX-5 = One or more of:
    <0 or 1>^onMains(0),
    <0 or 1>^onBattery(1),
    <0 or 1>^chargingFull(8),
    <0 or 1>^chargingTrickle(9),
    <0 or 1>^chargingOff(10)

j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:
  - ❑ OBX-2 = 'NM'
  - ❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC
  - ❑ OBX-5 = NM data type value
  - ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:
  - ❑ OBX-2 = 'NM'
  - ❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC
  - ❑ OBX-5 = Use the value contained in the BatMeasure object
  - ❑ OBX-6 = Use the OID contained in the BatMeasure object

p. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:
  - ❑ OBX-2 = 'CWE'
  - ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC
    OBX-5 = One of:
    0^auth-body-empty,
    1^auth-body-ieee-11073,
    2^auth-body-continua,
    254^auth-body-experimental,
    255^auth-body-reserved

q. Observations from Continua-compliant source devices are sent using three attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:
  - ❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:
    - OBX-2 = 'ST'
    - OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
    - OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a

number indicating the facet level of that segment.

- OBX-5 = one of the following values: '1.0','1.5','2.0','3.0' or '4.0' (<major-IG-version>.<minor-IG-version>).

❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:

- OBX-2 = 'NA'

- OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC

- OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry, and 'b' is a number indicating the facet level of that segment.

- OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 16405 (PF v1.5 Wireless PAN), 8213 (PF v1.5 Wired PAN), or 24597 (PF v1.5 Sensor LAN)

❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:

- OBX-2 = 'CWE'

- OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC

- OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment.

- OBX-5 = <0 or 1>^unregulated-device(0)

l. If the System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment:

❑ OBX-2 = 'CWE'

❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC

❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values

m. Confirm-Timeout attribute is not present.

| **Pass/Fail criteria** | All elements in each segment are as specified. |
| **Notes** | |

TP Id		TP/WAN/SEN/PCD-01-DATA/PF/BV-001		
TP label		PEF Numeric Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	PeakFlow 1; M	PeakFlow 3; M	PeakFlow 4; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		NumericClassAttr 1; M	NumericClassAttr 2; M	NumericClassAttr 3; M
		NumericClassAttr 4; M	NumericClassAttr 5; M	NumericClassAttr 6; M
		NumericClassAttr 7; O	MeasureStatus 1; M	MeasureStatus 2; M
		MeasureStatus 3; M	MeasureStatus 4; R	MeasureStatus 5; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_PF_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a peak flow device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a peak flow device inside a SOAP body.
		2. Check in the captured message that:
		   a. The PEF object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		     ❑ <bitValue> = <0 or 1>
		     ❑ <bitName> is recommended to be the ASN.1 name for the bit
		     ❑ <bitPosition> is the normative position of the bit
		   e. PEF object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		       OBX-3 = 152584^MDC_FLOW_AWAY_EXP_FORCED_PEAK^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the PEF object respectively.
		     ❑ OBX-5 = Numeric Value
		     ❑ OBX-6 = 264992^MDC_DIM_L_PER_MIN^MDC
		     ❑ OBX-11 has one of the following values:
		       • 'X', in case of invalid, not-available or ongoing measurements (specified in the Measurement Status attribute)
		       • 'F', in case of validated-data Measurement Status bit is set
		       • 'R', in other case (even if Measurement status is not present)
		   f. If valued, the PEF Measurement Status attribute follows this OBX encoding:
		     ❑ OBX-2 = 'CWE'
		       OBX-3 = 67911^MDC_ATTR_MSMT_STAT^MDC
		     ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the PEF object
		     ❑ OBX-5 = Any of the following flags:
		       <0 or 1>^msmt-stat-post-med(0) or
		       <0 or 1>^msmt-stat-cough(1) or
		       <0 or 1>^msmt-stat-short-effort(2) or
		       <0 or 1>^msmt-stat-long-time-to-peak(3)
		   g. No PM-Store, PM-Segment or Scanner attributes are present.
		   h. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/PF/BV-002		
TP label		Personal Best Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	PeakFlow 1; M	PeakFlow 5; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_PF_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a peak flow device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a peak flow device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Personal Best object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Personal Best object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 152585^MDC_FLOW_AWAY_EXP_FORCED_PEAK_PB^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Personal Best object respectively.
		    ❑ OBX-5 = Numeric Value
		    ❑ OBX-6 = 264992^MDC_DIM_L_PER_MIN^MDC
		  e. No PM-Store, PM-Segment or Scanner attributes are present.
		  f. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/PF/BV-003		
TP label		FEV1 Numeric Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	PeakFlow 1; M	PeakFlow 6; M	PeakFlow 7; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		NumericClassAttr 1; M	NumericClassAttr 2; M	NumericClassAttr 3; M
		NumericClassAttr 4; M	NumericClassAttr 5; M	NumericClassAttr 6; M
		NumericClassAttr 7; O	MeasureStatus 1; M	MeasureStatus 2; M
		MeasureStatus 3; M	MeasureStatus 4; R	MeasureStatus 5; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_PF_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a peak flow device.		

Test procedure		1. Make the sender under test to send a HL7 message containing an observation of a peak flow device inside a SOAP body.
		2. Check in the captured message that:
		  a. The FEV1 object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    \<refIdValue>^\<refIdName>^\<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. A bit flag value is encoded as \<bitValue>^\<bitName>(\<bitPosition>), where:
		    ❑ \<bitValue> = <0 or 1>
		    ❑ \<bitName> is recommended to be the ASN.1 name for the bit
		    ❑ \<bitPosition> is the normative position of the bit
		  e. FEV1 object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    OBX-3 = 152586^MDC_FLOW_AWAY_EXP_FORCED_PEAK_1S^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the FEV1 object respectively.
		    ❑ OBX-5 = Numeric Value
		    ❑ OBX-6 = 263744^MDC_DIM_L ^MDC
		    ❑ OBX-11 has one of the following values:
		      • 'X', in case of invalid, not-available or ongoing measurements (specified in Measurement Status attribute)
		      • 'F', in the case of validated-data Measurement Status bit is set
		      • 'R', in the other case (even if the Measurement Status is not present)
		  f. If valued, FEV1 Measurement Status attribute follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    OBX-3 = 67911^MDC_ATTR_MSMT_STAT^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the facet level of the FEV1 object
		    ❑ OBX-5 = Any of the following flags:
		    <0 or 1>^msmt-stat-post-med(0) or
		    <0 or 1>^msmt-stat-cough(1) or
		    <0 or 1>^msmt-stat-short-effort(2) or
		    <0 or 1>^msmt-stat-long-time-to-peak(3)
		  g. No PM-Store, PM-Segment or Scanner attributes are present.
		  h. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/PF/BV-004		
TP label		FEV6 Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	PeakFlow 1; M	PeakFlow 8; M	PeakFlow 9; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		NumericClassAttr 1; M	NumericClassAttr 2; M	NumericClassAttr 3; M
		NumericClassAttr 4; M	NumericClassAttr 5; M	NumericClassAttr 6; M
		NumericClassAttr 7; O	MeasureStatus 1; M	MeasureStatus 2; M
		MeasureStatus 3; M	MeasureStatus 4; R	MeasureStatus 5; M
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012]– WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_PF_001 AND C_SEN_PF_002		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a peak flow device with a FEV6 object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a peak flow device inside a SOAP body.
		
		 2. Check in the captured message that:
		
		   a. The FEV6 object has sent at least one observation.
		
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) and Metric-Structure-Small (MDC_ATTR_METRIC_STRUCT_SMALL) attribute and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		   c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		
		     where:
		
		     ❑ refIdValue: is a 32 bit integer (required)
		
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		
		     ❑ refIdCodeSystem = "MDC" (required).
		
		   d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		
		     ❑ <bitValue> = <0 or 1>
		
		     ❑ <bitName> is recommended to be the ASN.1 name for the bit
		
		     ❑ <bitPosition> is the normative position of the bit
		
		   e. FEV6 object follows this OBX encoding:
		
		     ❑ OBX-2 = 'NM'
		
		       OBX-3 = 152587^MDC_FLOW_AWAY_EXP_FORCED_PEAK_6S^MDC
		
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the FEV6 object respectively.		

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- OBX-5 = Numeric value
- OBX-6 = 263744^MDC_DIM_L ^MDC
- OBX-11 has one of the following values:
  - 'X', in the case of invalid, not-available or ongoing measurements (specified in Measurement Status attribute)
  - 'F', in the case of validated-data Measurement Status bit is set
  - 'R', in the other case (even if Measurement status is not present)

    f. No PM-Store, PM-Segment or Scanner attributes are present.

    g. If valued, the FEV6 Measurement Status attribute follows this OBX encoding:

- OBX-2 = 'CWE'

    OBX-3 = 67911^MDC_ATTR_MSMT_STAT^MDC

- OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the FEV6 object
- OBX-5 = Any of the following flags:

    <0 or 1>^msmt-stat-post-med(0) or

    <0 or 1>^msmt-stat-cough(1) or

    <0 or 1>^msmt-stat-short-effort(2) or

    <0 or 1>^msmt-stat-long-time-to-peak(3)

    h. One of these timestamp attributes can be present:

- MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
- MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
  - OBX-5 = Numeric value
  - OBX-18 has a timebase ID.
- MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
  - OBX-5 = Numeric value
  - OBX-18 has a timebase ID.

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<td>**Pass/Fail criteria**</td>
<td>All elements in each segment are as specified.</td>
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<td>**Notes**</td>
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A.14 Subgroup 1.4.13: Body composition analyser (BCA)

TP Id		TP/WAN/SEN/PCD-01-DATA/BCA/BV-000		
TP label		MDS Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 17; M	MDSObject 18; M
		MDSObject 19; M	MDSObject 20; M	MDSObject 21; M
		MDSObject 22; M	MDSObject 23; M	MDSObject 24; M
		MDSObject 25; M	MDSObject 26; M	MDSObject 27; M
		MDSObject 28; M	MDSObject 29; M	MDSObject 30; M
		MDSObject 31; M	MDSObject 32; M	BodyComp 2; M
		Timestamp 13; O	Timestamp 14; O	Timestamp 15; O
		Timestamp 17; M		
	Spec	[IHE PCD TF 2]		
	Testable items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 9; M	DataGuidelines 21; M	DataGuidelines 22; M
Applicability		C_SEN_000 AND C_SEN_BCA_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a body composition analyser device.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a body composition analyser device inside a SOAP body. 2. Check in the captured message that:		

Test procedure (continued):

1. Make the sender under test send a HL7 message containing an observation of a body composition analyser device inside a SOAP body.

2. Check in the captured message that:

   a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present

   b. Each MDC code using a CWE data type is encoded as:
   <refIdValue>^<refIdName>^<refIdCodeSystem>

   where:

   ❑ refIdValue: is a 32 bit integer (required)

   ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)

   ❑ refIdCodeSystem = "MDC" (required).

   c. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:

   ❑ <bitValue> = <0 or 1>

   ❑ <bitName> is recommended to be the ASN.1 name for the bit

   ❑ <bitPosition> is the normative position of the bit

   d. In MDS-level OBX:

   ❑ OBX-2 is empty

   ❑ If the System-Type attribute is valued, OBX-3 = 528404^MDC_DEV_SPEC_PROFILE_BCA^MDC

   ❑ If the System-Type-Spec-List attribute contains a single value and System-Type is not valued, this value is reported as the OBX-3

- ❑ If the System-Type-Spec-List contains multiple values and System-Type is not valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC and the specialization list is reported as an attribute of the device.
- ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD
- ❑ OBX-11 = 'X'
- ❑ OBX-18 (System Id attribute) = *<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_BCA_001.

e. System model attribute is sent in two different OBX segments:

- ❑ System-Model attribute:
  - OBX-2 = 'ST'
  - OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC
  - OBX-5 = String representing the model number portion of the MDC_ATTR_ID_MODEL attribute
- ❑ System-Manufacturer attribute:
  - OBX-2 = 'ST'
  - OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC
  - OBX-5 = String representing the model manufacturer portion of the MDC_ATTR_ID_MODEL attribute.

f. Production-Specification attribute is sent as a series of attributes:

- ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC
  - OBX-5 = String representing the value portion of the Production-Specification entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC
  - OBX-5 = String representing the value portion of the Production-Specification serial entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC
  - OBX-5 = String representing the value portion of the Production-Specification part entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:
  - OBX-2 = 'ST'
  - OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC
  - OBX-5 = String representing the value portion of the Production-Specification hardware entry
  - OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

□ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
- OBX-5 = String representing the value portion of the Production-Specification software entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

□ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC
- OBX-5 = String representing the value portion of the Production-Specification firmware entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

□ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC
- OBX-5 = String representing the value portion of the Production-Specification protocol entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

□ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
- OBX-5 = String representing the value portion of the Production-Specification GMDN entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.

g. Mds-Time-Info attribute is sent as a series of attributes. When it is sent as a timestamp, its respective resolution may be sent, but only as follows:

□ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'CWE'
- OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
- OBX-5 = One or more of:

    <0 or 1>^mds-time-capab-real-time-clock(0),

    <0 or 1>^mds-time-capab-set-clock(1),

    <0 or 1>^mds-time-capab-relative-time(2),

    <0 or 1>^mds-time-capab-high-res-relative-time(3),

    <0 or 1>^mds-time-capab-sync-abs-time(4),

    <0 or 1>^mds-time-capab-sync-rel-time(5),

    <0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),

    <0 or 1>^mds-time-state-abs-time-synced(8),

    <0 or 1>^mds-time-state-rel-time-synced(9),

    <0 or 1>^mds-time-state-hi-res-relative-time-synced(10),

    <0 or 1>^mds-time-mgr-set-time(11)

□ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX

segment:

- OBX-2 = 'NM'
- OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'CWE'
- OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
- OBX-5 = One of this values...

  532224^MDC_TIME_SYNC_NONE^MDC

  532225^MDC_TIME_SYNC_NTPV3^MDC

  532226^MDC_TIME_SYNC_NTPV4^MDC

  532227^MDC_TIME_SYNC_SNTPV4^MDC

  532228^MDC_TIME_SYNC_SNTPV4330^MDC

  532229^MDC_TIME_SYNC_BTV1^MDC

  532230^MDC_TIME_SYNC_RADIO^MDC

  532231^MDC_TIME_SYNC_HL7_NCK^MDC

  532232^MDC_TIME_SYNC_CDMA^MDC

  532233^MDC_TIME_SYNC_GSM^MDC

  532234^MDC_TIME_SYNC_EBWW^MDC

  532235^MDC_TIME_SYNC_USB_SOF^MDC

❑ Date and Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'DTM'
- OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
- OBX-5 = DTM data type value
- OBX-14 = UTC value

❑ Relative-Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'
- OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
- OBX-4 = 0.0.0.x, where 'x' is any integer value
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase

❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'
- OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
- OBX-4 = 0.0.0.x, where 'x' is any integer value
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase

❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'
- OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
- OBX-5 = NM data type value

- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

  ❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:

  - OBX-2 = 'NM'

  - OBX-3 = 68223^MDC_TIME_RES_REL^MDC

  - OBX-5 = NM data type value

  - OBX-6 = 264320^MDC_DIM_SEC^MDC

  ❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:

  - OBX-2 = 'NM'

  - OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC

  - OBX-5 = NM data type value

  - OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

h. Date-and-Time-Adjustment attribute is not present

i. If the Power-Status attribute is valued, it is sent as an independent OBX segment:

  ❑ OBX-2 = 'ST'

  ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC

  ❑ OBX-5 = One or more of:

  <0 or 1>^onMains(0),

  <0 or 1>^onBattery(1),

  <0 or 1>^chargingFull(8),

  <0 or 1>^chargingTrickle(9),

  <0 or 1>^chargingOff(10)

j. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:

  ❑ OBX-2 = 'NM'

  ❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC

  ❑ OBX-5 = NM data type value

  ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

k. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:

  ❑ OBX-2 = 'NM'

  ❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC

  ❑ OBX-5 = Use the value contained in the BatMeasure object

  ❑ OBX-6 = Use the OID contained in the BatMeasure object

l. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:

  ❑ OBX-2 = 'CWE'

  ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC

  OBX-5 = One of:

  0^auth-body-empty,

  1^auth-body-ieee-11073,

  2^auth-body-continua,

  254^auth-body-experimental,

  255^auth-body-reserved

m. Observations from Continua-compliant source devices are sent using three attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX segments:

	❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding: • OBX-2 = 'ST' • OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC • OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments, and 'a' is a number indicating the facet level of that segment. • OBX-5 = one of the following values: '1.0','1.5','2.0', '3.0' or '4.0'(<major-IG-version>.<minor-IG-version>). ❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding: • OBX-2 = 'NA' • OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC • OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry, and 'b' is a number indicating the facet level of that segment. • OBX-5 = NA value listing the certified device, at least it shall contain one of these values: 16404 (BCA v1.5 Wireless PAN), 8212 (BCA v1.5 Wired PAN), or 24596 (BCA v1.5 Sensor LAN) ❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding: • OBX-2 = 'CWE' • OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC • OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment. • OBX-5 = <0 or 1>^unregulated-device(0) n. If the System-Type-Spec-List attribute is valued, it is sent as an independent OBX segment: ❑ OBX-2 = 'CWE' ❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC ❑ OBX-5 = one or more MDC_DEV_SPEC_PROFILE values o. Confirm-Timeout attribute is not present.
Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/BCA/BV-001		
TP label		Body Fat Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	BodyComp 1; M	BodyComp 3; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_BCA_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a body composition analyser device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a body composition analyser device inside a SOAP body.
		 2. Check in the captured message that:
		   a. At least one Body Fat object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL) Metric-Structure-Small attribute (MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Body Fat object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		     OBX-3 = 188748^MDC_BODY_FAT^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Body Fat object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC or 263875^MDC_DIM_KILO_G^MDC or 263904^MDC_DIM_LB^MDC
		   e. No PM-Store, PM-Segment or Scanner attributes are present.
		   f. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/BCA/BV-002		
TP label		Body Height Numeric Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	BodyComp 1; M	BodyComp 4; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_BCA_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a body composition analyser device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a body composition analyser device inside a SOAP body.
		2. Check in the captured message that:
		    a. The Body Height object has sent at least one observation.
		    b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute(MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		    c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		    Where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		    d. Body Height object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 188740^MDC_LEN_BODY_ACTUAL^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Body Height object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 263441^MDC_DIM_CENTI_M^MDC or 263520^MDC_DIM_INCH^MDC
		    e. No PM-Store, PM-Segment or Scanner attributes are present.
		    f. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/BCA/BV-003		
TP label		Body Weight Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	BodyComp 1; M	BodyComp 5; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_BCA_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a body composition analyser device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a body composition analyser device inside a SOAP body.
		2. Check in the captured message that:
		   a. The Body Weight object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute (MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Body Weight object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		      OBX-3 = 188736^MDC_MASS_BODY_ACTUAL^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Body Weight object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 263875^MDC_DIM_KILO_G^MDC or 263904^MDC_DIM_LB^MDC
		   e. No PM-Store, PM-Segment or Scanner attributes are present.
		   f. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/BCA/BV-004		
TP label		Body Mass Index Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	BodyComp 1; M	BodyComp 6; M	BodyComp 7; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		NumericClassAttr 1; M	NumericClassAttr 2; M	NumericClassAttr 3; M
		NumericClassAttr 4; M	NumericClassAttr 5; M	NumericClassAttr 6; M
		NumericClassAttr 7; O	MetricRelGroup 2; O	PM-StoreAttr; M
		PM-SegmentAttr; M	ScannerAttr 1; M	ScannerAttr 2; M
		ScannerAttr 3; M	ScannerAttr 4; M	
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_BCA_001 AND C_SEN_BCA_002		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a body composition analyser device with a Body Mass Index object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a body composition analyser device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Body Mass Index object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute (MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Body Mass Index object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 188752^MDC_RATIO_MASS_BODY_LEN_SQ^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Body Mass Index object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 264096^MDC_DIM_KG_PER_M_SQ^MDC
		  e. If the Body Mass Index Source-Handle-Reference attribute is present, it follows this OBX encoding:
		    ❑ OBX-2 = 'ST'
		    ❑ OBX-3 = 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC
		    ❑ OBX-4 = y.0.0.x.a, where 'a' is a number indicating the Facet level of the Body Mass Index object.
		    ❑ OBX-5 = OBX-4 of the Body Weight object
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id	TP/WAN/SEN/PCD-01-DATA/BCA/BV-005
TP label	Fat Free Mass Numeric Object

Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	BodyComp 1; M	BodyComp 8; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_BCA_001 AND C_SEN_BCA_003		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a body composition analyser device with a Fat Free Mass object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a body composition analyser device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Fat Free Mass object has sent as least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute (MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Fat Free Mass object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 188756^MDC_MASS_BODY_FAT_FREE^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Fat Free Mass object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 263875^MDC_DIM_KILO_G^MDC or 263904^MDC_DIM_LB^MDC
		  e. No PM-Store, PM-Segment or Scanner attributes are present.
		  f. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/BCA/BV-006		
TP label		Soft Lean Mass Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	BodyComp 1; M	BodyComp 9; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_BCA_001 AND C_SEN_BCA_004		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a body composition analyser device with a Soft Lean Mass object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a body composition analyser device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Soft Lean Mass object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute (MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. Soft Lean Mass object follows this OBX encoding:
		    ❑ OBX-2 = 'NM'
		    ❑ OBX-3 = 188760^MDC_MASS_BODY_SOFT_LEAN^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Soft Lean Mass object respectively.
		    ❑ OBX-5 = Numeric value
		    ❑ OBX-6 = 263875^MDC_DIM_KILO_G^MDC or 263904^MDC_DIM_LB^MDC
		  e. Any PM-Store, PM-Segment or Scanner attributes are not present.
		  f. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/BCA/BV-007		
TP label		Body Water Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	BodyComp 1; M	BodyComp 10; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_BCA_001 AND C_SEN_BCA_005		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a body composition analyser device with a Body Water object.		

Test procedure		1. Make the sender under test to send a HL7 message containing an observation of a body composition analyser device inside a SOAP body.
		 2. Check in the captured message that:
		   a. At least one Body Water object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute (MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. Body Water object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		     ❑ OBX-3 = 188764^MDC_BODY_WATER^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Body Water object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 263875^MDC_DIM_KILO_G^MDC or 263904^MDC_DIM_LB^MDC or 262688^MDC_DIM_PERCENT^MDC
		   e. No PM-Store, PM-Segment or Scanner attributes are present.
		   f. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

A.15 Subgroup 1.4.14: Basic electrocardiograph (ECG)

TP Id		TP/WAN/SEN/PCD-01-DATA/ECG/BV-000		
TP label		MDS Object		
Coverage	**Spec**	[b-CDG 2012] – Appendices I and J		
	Testable items	MDSClassAttr 1; M	MDSClassAttr 2; C	MDSClassAttr 3; M
		MDSClassAttr 4; M	MDSClassAttr 5; M	MDSClassAttr 6; M
		MDSClassAttr 7; O	MDSClassAttr 8; M	MDSClassAttr 9; C
		MDSClassAttr 10; C	MDSClassAttr 11; C	MDSClassAttr 12; M
		MDSClassAttr 13; M	MDSClassAttr 14; M	MDSClassAttr 15; M
		MDSClassAttr 16; M	MDSClassAttr 17; C	MDSClassAttr 18; M
		MDSObject 1; M	MDSObject 2; M	MDSObject 3; M
		MDSObject 4; M	MDSObject 5; M	MDSObject 6; M
		MDSObject 7; M	MDSObject 8; M	MDSObject 9; M
		MDSObject 10; M	MDSObject 11; M	MDSObject 12; M
		MDSObject 13; O	MDSObject 14; O	MDSObject 15; O
		MDSObject 16; M	MDSObject 18; M	MDSObject 19; M
		MDSObject 20; M	MDSObject 21; M	MDSObject 22; M
		MDSObject 23; M	MDSObject 24; M	MDSObject 25; M
		MDSObject 26; M	MDSObject 27; M	MDSObject 28; M
		MDSObject 29; M	MDSObject 30; M	MDSObject 31; M
		MDSObject 32; M	ElectroCardio 2; M	ElectroCardio 3; M
		ElectroCardio 4; M	Timestamp 13; O	Timestamp 14; O
		Timestamp 15; O	Timestamp 17; M	
	Spec	[IHE PCD TF 2]		
	Testable items	DeviceTimeSync1; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 7; M	DataGuidelines 9; M	DataGuidelines 21; M
		DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ECG_001		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a basic electrocardiograph device.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a basic electrocardiograph device inside a SOAP body.
		
		 2. Check in the captured message that:
		
		   a. Handle attribute (MDC_ATTR_ID_HANDLE), Dev-Config-Id attribute (MDC_ATTR_DEV_CONFIG_ID) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		
		   b. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem>
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		
		   c. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		     ❑ <bitValue> = <0 or 1>
		     ❑ <bitName> is recommended to be the ASN.1 name for the bit
		     ❑ <bitPosition> is the normative position of the bit
		
		   d. In MDS-level OBX:
		     ❑ OBX-2 is empty		

- ❑ If the System-Type attribute is valued, OBX-3 = 528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC
- ❑ If the Date-and-Time attribute is valued, OBX-14 is valued with the UTC coordinated time of the AHD
- ❑ OBX-11 = 'X'
- ❑ OBX-18 (System Id attribute) = *<Entity Identifier (ST)>^EUI-64*, where the entity identifier is 16 characters given by the PIXIT I_SEN_ECG_001

e. System-Type-Spec-List attribute shall follow this OBX encoding:
- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC
- ❑ OBX-5 = 528390^MDC_DEV_SPEC_PROFILE_ECG^MDC and at least one of the following two profile values: 528524^MDC_DEV_SUB_SPEC_PROFILE_ECG^MDC 528525^MDC_DEV_SUB_SPEC_PROFILE_HR^MDC

f. Tick-Resolution attribute, if present, shall follow this OBX encoding:
- ❑ OBX-2 = 'NM'
- ❑ OBX-3 = 68229^MDC_ATTR_TICK_RES^MDC
- ❑ OBX-5 = NM data type value
- ❑ OBX-6 = 265842^MDC_DIM_PER_SEC^MDC

g. System model attribute is sent in two different OBX segments:
- ❑ System-Model attribute:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531969^MDC_ID_MODEL_NUMBER^MDC
  - • OBX-5 = String representing the model number portion of the MDC_ATTR_ID_MODEL attribute
- ❑ System-Manufacturer attribute:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531970^MDC_ID_MODEL_MANUFACTURER^MDC
  - • OBX-5 = String representing the model manufacturer portion of the MDC_ATTR_ID_MODEL attribute

h. Production-Specification attribute is sent as a series of attributes:
- ❑ Production-Specification-Unspecified attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531971^MDC_ID_PROD_SPEC_UNSPECIFIED^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification entry
  - • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Serial attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531972^MDC_ID_PROD_SPEC_SERIAL^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification serial entry
  - • OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype
- ❑ Production-Specification-Part attribute, if valued, is sent as an independent OBX segment:
  - • OBX-2 = 'ST'
  - • OBX-3 = 531973^MDC_ID_PROD_SPEC_PART^MDC
  - • OBX-5 = String representing the value portion of the Production-Specification part entry
  - • OBX-18 = The component portion of the Production-Specification entry

encoded as an EI datatype

❑ Production-Specification-Hardware attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531974^MDC_ID_PROD_SPEC_HW^MDC
- OBX-5 = String representing the value portion of the Production-Specification hardware entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Software attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531975^MDC_ID_PROD_SPEC_SW^MDC
- OBX-5 = String representing the value portion of the Production-Specification software entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Firmware attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531976^MDC_ID_PROD_SPEC_FW^MDC
- OBX-5 = String representing the value portion of the Production-Specification firmware entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-Protocol attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531977^MDC_ID_PROD_SPEC_PROTOCOL_REV^MDC
- OBX-5 = String representing the value portion of the Production-Specification protocol entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype

❑ Production-Specification-GMDN group attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'ST'
- OBX-3 = 531978^MDC_ID_PROD_SPEC_GMDN^MDC
- OBX-5 = String representing the value portion of the Production-Specification GMDN entry
- OBX-18 = The component portion of the Production-Specification entry encoded as an EI datatype.

i. Mds-Time-Info attribute is sent as a series of attributes. When it is sent as a timestamp, its respective resolution may be sent, but only as follows:

❑ Mds-Time-Cap-State attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'CWE'
- OBX-3 = 68219^MDC_TIME_CAP_STATE^MDC
- OBX-5 = One or more of:

  <0 or 1>^mds-time-capab-real-time-clock(0),

  <0 or 1>^mds-time-capab-set-clock(1),

  <0 or 1>^mds-time-capab-relative-time(2),

  <0 or 1>^mds-time-capab-high-res-relative-time(3),

  <0 or 1>^mds-time-capab-sync-abs-time(4),

  <0 or 1>^mds-time-capab-sync-rel-time(5),

		<0 or 1>^mds-time-capab-sync-hi-res-relative-time(6),
		<0 or 1>^mds-time-state-abs-time-synced(8),
		<0 or 1>^mds-time-state-rel-time-synced(9),
		<0 or 1>^mds-time-state-hi-res-relative-time-synced(10),
		<0 or 1>^mds-time-mgr-set-time(11)

❑ Time-Sync-Accuracy attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'
- OBX-3 = 68221^MDC_TIME_SYNC_ACCURACY^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Sync-Protocol attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'CWE'
- OBX-3 = 68220^MDC_TIME_SYNC_PROTOCOL^MDC
- OBX-5 = One of this values...

  532224^MDC_TIME_SYNC_NONE^MDC

  532225^MDC_TIME_SYNC_NTPV3^MDC

  532226^MDC_TIME_SYNC_NTPV4^MDC

  532227^MDC_TIME_SYNC_SNTPV4^MDC

  532228^MDC_TIME_SYNC_SNTPV4330^MDC

  532229^MDC_TIME_SYNC_BTV1^MDC

  532230^MDC_TIME_SYNC_RADIO^MDC

  532231^MDC_TIME_SYNC_HL7_NCK^MDC

  532232^MDC_TIME_SYNC_CDMA^MDC

  532233^MDC_TIME_SYNC_GSM^MDC

  532234^MDC_TIME_SYNC_EBWW^MDC

  532235^MDC_TIME_SYNC_USB_SOF^MDC

❑ Date and Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'DTM'
- OBX-3 = 67975^MDC_ATTR_TIME_ABS^MDC
- OBX-5 = DTM data type value
- OBX-14 = UTC value

❑ Relative-Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'
- OBX-3 = 67983^MDC_ATTR_TIME_REL^MDC
- OBX-4 = 0.0.0.x, where 'x' is any integer value
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase

❑ HiRes-Relative-Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'
- OBX-3 = 68072^MDC_ATTR_TIME_REL_HI_RES^MDC
- OBX-4 = 0.0.0.x, where 'x' is any integer value
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC
- OBX-18 = A unique identifier for the given timebase

❑ Time-Resolution-Abs-Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'
- OBX-3 = 68222^MDC_TIME_RES_ABS^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

❑ Time-Resolution-Rel-Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'
- OBX-3 = 68223^MDC_TIME_RES_REL^MDC
- OBX-5 = NM data type value
- OBX-6 = 264320^MDC_DIM_SEC^MDC

❑ Time-Resolution-High-Res-Time attribute, if valued, is sent as an independent OBX segment:

- OBX-2 = 'NM'
- OBX-3 = 68224^MDC_TIME_RES_HI_RES^MDC
- OBX-5 = NM data type value
- OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC

j. Date-and-Time-Adjustment attribute is not present

k. If the Power-Status attribute is valued, it is sent as an independent OBX segment:

- ❑ OBX-2 = 'ST'
- ❑ OBX-3 = 67925^MDC_ATTR_POWER_STAT^MDC
- ❑ OBX-5 = One or more of:

  <0 or 1>^onMains(0),

  <0 or 1>^onBattery(1),

  <0 or 1>^chargingFull(8),

  <0 or 1>^chargingTrickle(9),

  <0 or 1>^chargingOff(10)

l. If the Battery-Level attribute is valued, it is sent as an independent OBX segment:

- ❑ OBX-2 = 'NM'
- ❑ OBX-3 = 67996^MDC_ATTR_VAL_BATT_CHARGE^MDC
- ❑ OBX-5 = NM data type value
- ❑ OBX-6 = 262688^MDC_DIM_PERCENT^MDC

m. If the Remaining-Battery-Time attribute is valued, it is sent as an independent OBX segment:

- ❑ OBX-2 = 'NM'
- ❑ OBX-3 = 67976^MDC_ATTR_TIME_BATT_REMAIN^MDC
- ❑ OBX-5 = Use the value contained in the BatMeasure object
- ❑ OBX-6 = Use the OID contained in the BatMeasure object

n. Reg-Cert-Data-List is sent as an attribute of the device using two separate Regulation-Certification-Auth-Body OBX segments with different facet-level entries and the following mandatory fields:

- ❑ OBX-2 = 'CWE'
- ❑ OBX-3 = 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC

  OBX-5 = One of:

  0^auth-body-empty,

  1^auth-body-ieee-11073,

  2^auth-body-continua,

  254^auth-body-experimental,

  255^auth-body-reserved.

o. Observations from Continua-compliant source devices are sent using three attributes as facet-level entries of the Regulation-Certification-Auth-Body OBX

segments:

- ❑ Regulation-Certification-Continua-Version attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - OBX-2 = 'ST'
  - OBX-3 = 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC
  - OBX-4 = x.0.0.y.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of one of the two Regulation-Certification-Auth-Body attribute segments and 'a' is a number indicating the facet level of that segment
  - OBX-5 = one of the following values: '1.0','1.5','2.0','3.0' or '4.0' (<major-IG-version>.<minor-IG-version>)
- ❑ Regulation-Certification-Continua-Certified-Device-List attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - OBX-2 = 'NA'
  - OBX-3 = 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC
  - OBX-4 = x.0.0.y.b, where 'x' is a number indicating the OBX-4 of the MDS-level, 'y' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which has the Regulation-Certification-Continua-Version attribute as a facet entry, and 'b' is a number indicating the facet level of that segment
  - OBX-5 = NA value listing the certified devices. At least it shall contain one of these profiles: 8332 (ECG profile v1.5 Wired PAN), 8333 (HR profile v1.5 Wired PAN), 16524 (ECG profile v1.5 Wireless PAN), 16525 (HR profile v1.5 Wireless PAN), 24716 (ECG profile v1.5 Sensor LAN), or 24717 (HR profile v1.5 Sensor LAN), and the corresponding specialization for each one: 8204 (ECG v1.5 Wired PAN), 16396 (ECG v1.5 Wireless PAN) or 24588 (ECG v1.5 Sensor LAN)
- ❑ Regulation-Certification-Continua-Regulation-Status attribute shall be sent as an independent OBX segment and shall use the following encoding:
  - OBX-2 = 'CWE'
  - OBX-3 = 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC
  - OBX-4 = x.0.0.z.a, where 'x' is a number indicating the OBX-4 of the MDS-level, 'z' is a number indicating the metric level of the Regulation-Certification-Auth-Body attribute segment which does not have the Regulation-Certification-Continua-Version attribute as a facet entry, and 'a' is a number indicating the facet level of that segment
  - OBX-5 = <0 or 1>^unregulated-device(0)

p. Confirm-Timeout attribute is not present

Pass/Fail criteria	All elements in each segment are as specified.
Notes	

TP Id		TP/WAN/SEN/PCD-01-DATA/ECG/BV-001		
TP label		Heart Rate Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ElectroCardio 1; M	ElectroCardio 5; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ECG_001 AND C_SEN_ECG_002		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a basic electrocardiograph device with a Heart Rate object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a basic electrocardiograph device inside a SOAP body. 2. Check in the captured message that: 　a. The Heart Rate object has sent at least one observation. 　b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute (MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present 　c. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> 　　where: 　　❑ refIdValue: is a 32 bit integer (required) 　　❑ refIdName: is the normative nomenclature name for the unique code point (recommended) 　　❑ refIdCodeSystem = "MDC" (required). 　d. Heart Rate object follows this OBX encoding: 　　❑ OBX-2 = 'NM' 　　❑ OBX-3 = 147842^MDC_ECG_HEART_RATE^MDC or 8410590^MDC_ECG_HEART_RATE_INSTANT^MDC 　　❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Heart Rate object respectively. 　　❑ OBX-5 = Numeric value 　　❑ OBX-6 = 264864^MDC_DIM_BEAT_PER_MIN^MDC 　e. No PM-Store, PM-Segment or Scanner attributes are present. 　f. One of these timestamp attributes can be present: 　　❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] 　　❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a Facet of the observation: 　　　• OBX-5 = Numeric value 　　　• OBX-18 has a timebase ID. 　　❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. 　　　• OBX-5 = Numeric value 　　　• OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/ECG/BV-002		
TP label		R-R Interval Numeric Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ElectroCardio 1; M	ElectroCardio 6; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ECG_001 AND C_SEN_ECG_003		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a basic electrocardiograph device with an R-R Interval object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a basic electrocardiograph device inside a SOAP body.
		2. Check in the captured message that:
		   a. The R-R Interval object has sent at least one observation.
		   b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute (MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present
		   c. Each MDC code using a CWE data type is encoded as:
		     `<refIdValue>^<refIdName>^<refIdCodeSystem>`
		     where:
		     ❑ refIdValue: is a 32 bit integer (required)
		     ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		     ❑ refIdCodeSystem = "MDC" (required).
		   d. R-R Interval object follows this OBX encoding:
		     ❑ OBX-2 = 'NM'
		     ❑ OBX-3 = 147240^MDC_ECG_TIME_PD_RR_GL^MDC
		     ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the R-R Interval object respectively.
		     ❑ OBX-5 = Numeric value
		     ❑ OBX-6 = 264338^MDC_DIM_MILLI_SEC^MDC or 268992^MDC_DIM_TICK^MDC
		   e. No PM-Store, PM-Segment or Scanner attributes are present.
		   f. One of these timestamp attributes can be present:
		     ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		     ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.
		     ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		       • OBX-5 = Numeric value
		       • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/ECG/BV-003		
TP label		ECG Waveform RT-SA Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ElectroCardio 1; M	ElectroCardio 7; M	ElectroCardio 8; M
		MetricClassAttr 1; M	MetricClassAttr 2; M	MetricClassAttr 3; O
		MetricClassAttr 4; M	MetricClassAttr 5; M	MetricClassAttr 6; O
		MetricClassAttr 7; O	MetricClassAttr 8; O	MetricClassAttr 9; M
		MetricClassAttr 10; O	MetricClassAttr 11; M	MetricClassAttr 12; O
		MetricClassAttr 13; O	MetricClassAttr 14; O	MetricClassAttr 15; C
		MetricClassAttr 16; C	MetricClassAttr 17; C	MetricClassAttr 18; O
		NumericClassAttr 1; M	NumericClassAttr 2; M	NumericClassAttr 3; M
		NumericClassAttr 4; M	NumericClassAttr 5; M	NumericClassAttr 6; M
		NumericClassAttr 7; O	PM-StoreAttr; M	PM-SegmentAttr; M
		ScannerAttr 1; M	ScannerAttr 2; M	ScannerAttr 3; M
		ScannerAttr 4; M		
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ECG_001 AND C_SEN_ECG_004		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a basic electrocardiograph device with a ECG Waveform object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a basic electrocardiograph device inside a SOAP body. 2. Check in the captured message that: g. At least one ECG Waveform object has sent at least one observation. h. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute(MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present i. Each MDC code using a CWE data type is encoded as: <refIdValue>^<refIdName>^<refIdCodeSystem> where: ❑ refIdValue: is a 32 bit integer (required) ❑ refIdName: is the normative nomenclature name for the unique code point (recommended) ❑ refIdCodeSystem = "MDC" (required). j. ECG Waveform object follows this OBX encoding: ❑ OBX-2 = 'NA' ❑ OBX-3 = 131328^MDC_ECG_ELEC_POTL^MDC or 131329^MDC_ECG_ELEC_POTL_I^MDC or 131330^MDC_ECG_ELEC_POTL_II^MDC or 131389^MDC_ECG_ELEC_POTL_III^MDC or 131390^MDC_ECG_ELEC_POTL_AVR^MDC or 131391^MDC_ECG_ELEC_POTL_AVL^MDC or 131392^MDC_ECG_ELEC_POTL_AVF^MDC or 131331^MDC_ECG_ELEC_POTL_V1^MDC or 131332^MDC_ECG_ELEC_POTL_V2^MDC or 131333^MDC_ECG_ELEC_POTL_V3^MDC or 131334^MDC_ECG_ELEC_POTL_V4^MDC or 131335^MDC_ECG_ELEC_POTL_V5^MDC or 131336^MDC_ECG_ELEC_POTL_V6^MDC ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the ECG Waveform object respectively. ❑ OBX-5 = Numeric array value (i.e., 11^22^33^44^55^66^77^88^99~...) ❑ OBX-6 = 266418^MDC_DIM_MILLI_VOLT^MDC k. ECG waveform Sample-Period attribute of ECG waveform object shall be sent and shall follow this OBX encoding: ❑ OBX-2 = 'NM' ❑ OBX-3 = 67981^MDC_ATTR_TIME_PD_SAMP^MDC ❑ OBX-5 = Numeric Value ❑ OBX-6 = 264339^MDC_DIM_MICRO_SEC^MDC l. No PM-Store, PM-Segment or Scanner attributes are present. m. One of these timestamp attributes can be present: ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: • OBX-5 = Numeric value • OBX-18 has a timebase ID. ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. • OBX-5 = Numeric value • OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id		TP/WAN/SEN/PCD-01-DATA/ECG/BV-004		
TP label		Device Status Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ElectroCardio 1; M	ElectroCardio 9; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 21; M	DataGuidelines 22; M	
Applicability		C_SEN_000 AND C_SEN_ECG_001 AND C_SEN_ECG_005		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a basic electrocardiograph device with a Device Status object.		

Test procedure		1. Make the sender under test send a HL7 message containing an observation of a basic electrocardiograph device inside a SOAP body.
		2. Check in the captured message that:
		  a. The Device Status object has sent at least one observation.
		  b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute (MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present.
		  c. Each MDC code using a CWE data type is encoded as:
		    <refIdValue>^<refIdName>^<refIdCodeSystem>
		    where:
		    ❑ refIdValue: is a 32 bit integer (required)
		    ❑ refIdName: is the normative nomenclature name for the unique code point (recommended)
		    ❑ refIdCodeSystem = "MDC" (required).
		  d. A bit flag value is encoded as <bitValue>^<bitName>(<bitPosition>), where:
		    ❑ <bitValue> = <0 or 1>
		    ❑ <bitName> is recommended to be the ASN.1 name for the bit
		    ❑ <bitPosition> is the normative position of the bit
		  e. Device Status object follows this OBX encoding:
		    ❑ OBX-2 = 'CWE'
		    ❑ OBX-3 = 8410584^MDC_ECG_DEV_STAT^MDC
		    ❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Device Status object respectively.
		    ❑ OBX-5 = One of the values:
		      <0 or 1>^leadwire-loss(0),
		      <0 or 1>^leadsignal-loss(1),
		      <0 or 1>^leadwire-loss-first-lead(2),
		      <0 or 1>^leadsignal-loss-first-lead(3),
		      <0 or 1>^leadwire-loss-second-lead(4),
		      <0 or 1>^leadsignal-loss-second-lead(5),
		      <0 or 1>^leadwire-loss-third-lead(6),
		      <0 or 1>^leadsignal-loss-third-lead(7)
		  f. No PM-Store, PM-Segment or Scanner attributes are present.
		  g. One of these timestamp attributes can be present:
		    ❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ]
		    ❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation:
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.
		    ❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation.
		      • OBX-5 = Numeric value
		      • OBX-18 has a timebase ID.		

Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

TP Id	TP/WAN/SEN/PCD-01-DATA/ECG/BV-005

TP label		Context Data Trigger Enumeration Object		
Coverage	Spec	[b-CDG 2012] – Appendices I and J		
	Testable items	ElectroCardio 1; M	ElectroCardio 10; M	MetricClassAttr 1; M
		MetricClassAttr 2; M	MetricClassAttr 3; O	MetricClassAttr 4; M
		MetricClassAttr 5; M	MetricClassAttr 6; O	MetricClassAttr 7; O
		MetricClassAttr 8; O	MetricClassAttr 9; M	MetricClassAttr 10; O
		MetricClassAttr 11; M	MetricClassAttr 12; O	MetricClassAttr 13; O
		MetricClassAttr 14; O	MetricClassAttr 15; C	MetricClassAttr 16; C
		MetricClassAttr 17; C	MetricClassAttr 18; O	NumericClassAttr 1; M
		NumericClassAttr 2; M	NumericClassAttr 3; M	NumericClassAttr 4; M
		NumericClassAttr 5; M	NumericClassAttr 6; M	NumericClassAttr 7; O
		PM-StoreAttr; M	PM-SegmentAttr; M	ScannerAttr 1; M
		ScannerAttr 2; M	ScannerAttr 3; M	ScannerAttr 4; M
	Spec	[b-CDG 2012] – WAN interface		
	Testable items	DataGuidelines 22; M		
Applicability		C_SEN_000 AND C_SEN_ECG_001 AND C_SEN_ECG_006		
Initial condition		The simulated receiver has published a WebService and the sender under test is ready to send a SOAP message with an observation of a basic electrocardiograph device with a Context Data Trigger object.		
Test procedure		1. Make the sender under test send a HL7 message containing an observation of a basic electrocardiograph device inside a SOAP body. 2. Check in the captured message that: 　a. The Context Data Trigger object has sent at least one observation. 　b. Handle attribute (MDC_ATTR_ID_HANDLE), Metric-Spec-Small attribute (MDC_ATTR_METRIC_SPEC_SMALL), Metric-Structure-Small attribute(MDC_ATTR_METRIC_STRUCT_SMALL) and Attribute-Value-Map attribute (MDC_ATTR_ATTRIBUTE_VALUE_MAP) are not present. 　c. Each MDC code using a CWE data type is encoded as: 　　<refIdValue>^<refIdName>^<refIdCodeSystem> 　　where: 　　❑ refIdValue: is a 32 bit integer (required) 　　❑ refIdName: is the normative nomenclature name for the unique code point (recommended) 　　❑ refIdCodeSystem = "MDC" (required). 　d. Context Data Trigger object follows this OBX encoding: 　　❑ OBX-2 = 'CWE' 　　❑ OBX-3 = 8410585^MDC_ECG_EVT_CTXT_GEN^MDC 　　❑ OBX-4 = y.0.0.x, where 'y' and 'x' are numbers indicating the OBX-4 of the MDS-level and the metric level for the Context Data Trigger object respectively. 　　❑ OBX-5 = One of the values: 　　　8410586^MDC_ECG_EVT_CTXT_USER^MDC or 　　　8410587^MDC_ECG_EVT_CTXT_PERIODIC^MDC or 　　　8410588^MDC_ECG_EVT_CTXT_DETECTED^MDC or 　　　8410589^MDC_ECG_EVT_CTXT_EXTERNAL^MDC 　e. No PM-Store, PM-Segment or Scanner attributes are present. 　f. One of these timestamp attributes can be present: 　　❑ MDC_ATTR_TIME_STAMP_ABS, mapped in OBX-14 of the observation metric-level and encoded as: YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ] 　　❑ MDC_ATTR_TIME_STAMP_REL, transmitted as a facet of the observation: 　　　• OBX-5 = Numeric value 　　　• OBX-18 has a timebase ID. 　　❑ MDC_ATTR_TIME_STAMP_HI_RES, transmitted as a facet of the observation. 　　　• OBX-5 = Numeric value 　　　• OBX-18 has a timebase ID.		
Pass/Fail criteria		All elements in each segment are as specified.		
Notes				

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