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SERIES H: AUDIOVISUAL AND MULTIMEDIA SYSTEMS

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

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**Conformance of ITU-T H.810 personal health  
system: Services interface Part 6: PCD-01 HL7  
messages: Health & Fitness Service receiver**

Recommendation ITU-T H.830.6

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

# Recommendation ITU-T H.830.6

## Conformance of ITU-T H.810 personal health system: Services interface Part 6: PCD-01 HL7 messages: Health & Fitness Service receiver

### Summary

Recommendation ITU-T H.830.6 provides a test suite structure (TSS) and the test purposes (TP) for PCD-01 HL7 messages through the Health & Fitness Service (HFS) receiver in the Services interface, based on the requirements defined in the Recommendations of the ITU-T H.810 sub-series, of which Recommendation ITU-T H.810 (2016) is the base Recommendation. The objective of this test specification is to provide a high probability of interoperability at this interface.

Recommendation ITU-T H.830.6 is a transposition of Continua Test Tool DG2016, Test Suite Structure & Test Purposes, Services Interface; Part 6: PCD-01 HL7 Messages. HFS Receiver (Version 1.8, 2017-03-14), that was developed by the Personal Connected Health Alliance. A number of versions of this specification existed before transposition.

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

### History

| Edition | Recommendation              | Approval   | Study Group | Unique ID*                                                                |
|---------|-----------------------------|------------|-------------|---------------------------------------------------------------------------|
| 1.0     | ITU-T H.836                 | 2015-01-13 | 16          | <a href="http://handle.itu.int/11.1002/1000/12254">11.1002/1000/12254</a> |
| 1.0     | ITU-T H.830.6               | 2015-01-13 | 16          | <a href="http://handle.itu.int/11.1002/1000/12592">11.1002/1000/12592</a> |
| 2.0     | ITU-T H.830.6               | 2016-07-14 | 16          | <a href="http://handle.itu.int/11.1002/1000/12927">11.1002/1000/12927</a> |
| 3.0     | ITU-T H.830.6               | 2017-04-13 | 16          | <a href="http://handle.itu.int/11.1002/1000/13213">11.1002/1000/13213</a> |
| 3.1     | ITU-T H.830.6 (2017) Cor. 1 | 2017-11-29 | 16          | <a href="http://handle.itu.int/11.1002/1000/13425">11.1002/1000/13425</a> |

### Keywords

Conformance testing, Continua Design Guidelines, e-health, ITU-T H.810, PCD-01 HL7 messages, personal connected health devices, Health & Fitness Service receiver, Services interface.

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

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

## Introduction

This Recommendation is the transposition of Continua Test Tool DG2016, Test Suite Structure & Test Purposes, Services Interface; Part 6: PCD-01 HL7 Messages. HFS Receiver (Version 1.8, 2017-03-14), that was developed by the Personal Connected Health Alliance. The table below shows the revision history of this test specification; it may contain versions that existed before transposition.

| Version | Date       | Revision history                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.2     | 2012-10-05 | Initial release for Test Tool DG2011. This is the same version as "TSS&TP_1.5_WAN_PART_6_(REC PCD-01)_v1.2.doc" because new features included in [b-CDG 2011] do not affect the test procedures specified in this document.                                                                                                                                                                                                                                |
| 1.3     | 2013-05-24 | Initial release for Test Tool DG2012. This uses "TSS&TP_DG2011_WAN_PART_6_(REC PCD-01)_v1.2" as baseline and adds new features included in [b-CDG 2012]: <ul style="list-style-type: none"><li>• Adds glucose meter new spec version</li><li>• Adds body composition analyser device specialization</li><li>• Adds basic electrocardiograph device specialization</li></ul>                                                                                |
| 1.4     | 2014-01-24 | Initial release for Test Tool DG2013. This uses "TSS&TP_DG2012_WAN_PART_6_(REC PCD-01)_v1.3.doc" as a baseline and adds new features included in [b-ITU-T H.810 (2013)]/[b-CDG 2013]: <ul style="list-style-type: none"><li>• Adds glucose meter BLE</li><li>• Adds BLE SSP support</li><li>• Adds NFC new transport</li><li>• Adds INR device specialization</li></ul>                                                                                    |
| 1.5     | 2014-04-24 | TM Lite & Doc Enhancements (Test Tool v4.0 Maintenance Release 1). It uses "TSS&TP_DG2013_WAN_PART_6_(REC PCD-01)_v1.4.doc" as a baseline and it adds new features included in Documentation Enhancements: <ul style="list-style-type: none"><li>• "Other PICS" row has been added</li></ul>                                                                                                                                                               |
| 1.6     | 2015-07-01 | Initial release for Test Tool DG2015. It uses "TSS&TP_DG2011_WAN_PART_6_(REC PCD-01)_v1.5" as a baseline and adds new features included in Continua DG 2015: <ul style="list-style-type: none"><li>• Changes in test suite structure</li><li>• Added international normalized ratio device specialization</li><li>• Added sleeping apnoea breathing therapy equipment device specialization</li><li>• Added support for hData Observation Upload</li></ul> |
| 1.7     | 2016-09-20 | Initial release for Test Tool DG2016. It implements changes according to [ITU-T H.810 (2016)]/[b-CDG 2016] (Iris + Errata) refreshments.                                                                                                                                                                                                                                                                                                                   |
| 1.8     | 2017-03-14 | Added insulin pump and continuous glucose monitor specializations support.                                                                                                                                                                                                                                                                                                                                                                                 |

## Recommendation ITU-T H.830.6

### Conformance of ITU-T H.810 personal health system: Services interface Part 6: PCD-01 HL7 messages: Health & Fitness Service receiver

#### 1 Scope

The scope of this Recommendation<sup>1</sup> is to provide a test suite structure (TSS) and the test purposes (TP) for the Services interface based on the requirements defined in the Continua Design Guidelines (CDG) [ITU-T H.810 (2016)]. The objective of this test specification is to provide a high probability of interoperability at this interface.

The TSS and TP for the Services interface have been divided into the parts specified below. This Recommendation covers Part 6.

- Part 1: Web services interoperability. Health & Fitness Service sender
- Part 2: Web services interoperability. Health & Fitness Service receiver
- Part 3: SOAP/ATNA. Health & Fitness Service sender
- Part 4: SOAP/ATNA. Health & Fitness Service receiver
- Part 5: PCD-01 HL7 messages. Health & Fitness Service sender
- **Part 6: PCD-01 HL7 messages. Health & Fitness Service receiver**
- Part 7: Consent Management. Health & Fitness Service sender
- Part 8: Consent Management. Health & Fitness Service receiver
- Part 9: hData Observation Upload. Health & Fitness Service sender
- Part 10: hData Observation Upload. Health & Fitness Service receiver
- Part 11: Questionnaires. Health & Fitness Service sender
- Part 12: Questionnaires. Health & Fitness Service 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 (2016)] Recommendation ITU-T H.810 (2016), *Interoperability design guidelines for personal health systems*.

[ITU-T H.812.1] Recommendation ITU-T H.812.1 (2016), *Interoperability design guidelines for personal health systems: Services interface: Observation upload certified capability class*.

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<sup>1</sup> 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**

None.

#### **3.2 Terms defined in this Recommendation**

None.

### **4 Abbreviations and acronyms**

This Recommendation uses the following abbreviations and acronyms:

|       |                                               |
|-------|-----------------------------------------------|
| AHD   | Application Hosting Device                    |
| ATS   | Abstract Test Suite                           |
| ATNA  | Audit Trail and Node Authentication           |
| CDG   | Continua Design Guidelines                    |
| CGM   | Continuous Glucose Monitor                    |
| DUT   | Device Under Test                             |
| GUI   | Graphical User Interface                      |
| HFS   | Health & Fitness Service                      |
| HFSS  | Health & Fitness Service Sender               |
| HFSR  | Health & Fitness Service Receiver             |
| HTTP  | Hypertext Transfer Protocol                   |
| HTTPS | Hypertext Transfer Protocol Secure            |
| INR   | International Normalized Ratio                |
| IP    | Insulin Pump                                  |
| IUT   | Implementation Under Test                     |
| MDS   | Medical Device System                         |
| NFC   | Near Field Communication                      |
| PCD   | Patient Care Device                           |
| PCT   | Protocol Conformance Testing                  |
| PCO   | Point of Control and Observation              |
| PHD   | Personal Health Device                        |
| PHDC  | Personal Healthcare Device Class              |
| PHG   | Personal Health Gateway                       |
| PICS  | Protocol Implementation Conformance Statement |

|       |                                                       |
|-------|-------------------------------------------------------|
| PIXIT | Protocol Implementation extra Information for Testing |
| SABTE | Sleep Apnoea Breathing Therapy Equipment              |
| SCR   | Static Conformance Review                             |
| SDP   | Service Discovery Protocol                            |
| SOAP  | Simple Object Access Protocol                         |
| TCRL  | Test Case Reference List                              |
| TCWG  | Test and Certification Working Group                  |
| TLS   | Transport Level Security                              |
| TP    | Test Purpose                                          |
| TSS   | Test Suite Structure                                  |
| USB   | Universal Serial Bus                                  |
| URI   | Uniform Resource Identifier                           |
| 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.

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

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

## 6 Test suite structure (TSS)

The test purposes (TPs) for the Services interface have been divided into the main subgroups specified below. Annex A describes the TPs for subgroups 2.4.1 to 2.4.16 (shown in bold).

- Group 1: HFS sender (HFSS)
  - 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: Simple object access protocol (SOAP)
  - Subgroup 1.2.1: SOAP headers (HEAD)
- Group 1.3: Audit trail and node authentication (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)
  - Subgroup 1.4.15: International normalized ratio (INR)
  - Subgroup 1.4.16: Sleep apnoea breathing therapy equipment (SABTE)
  - Subgroup 1.4.17: Insulin pump (IP)
  - Subgroup 1.4.18: Continuous glucose monitor (CGM)
- Group 1.5: Consent Management (CM)
  - Subgroup 1.5.1: HFS XDR transaction (TRANS)
  - Subgroup 1.5.2: HFS metadata validation (META)
  - Subgroup 1.5.3: HFS consent directive validation (CDV)
- Group 1.6: hData Observation Upload (HDATA)
  - Subgroup 1.6.1: General (GEN)
- Group 1.7: Questionnaires (QUE)
  - Subgroup 1.7.1: General (GEN)
  - Subgroup 1.7.2: CDA validation (CDA)

– Group 2: HFS receiver (HFSR)

- 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)**
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  - Subgroup 2.7.3: hData record format (HRF)

## 7 Electronic attachment

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

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

## Annex A

### Test purposes

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

#### A.1 TP definition conventions

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

- **TP Id:** This is a unique identifier (TP/<TT>/<DUT>/<GR>/<SGR>/<XX> – <NNN>). It is specified according to the naming convention defined below:
  - Each test purpose identifier is introduced by the prefix "TP".
  - <TT>: This is the test tool that will be used in the test case.
    - HFS: Health & Fitness Services Interface
  - <DUT>: This is the device under test.
    - SEN: HFS sender
    - REC: HFS 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).
- **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 were included.
  - Testable Item: This contains testable items to be checked by the TP.
- **Test purpose:** This is a description of the requirements to be tested.
- **Applicability:** This contains the PICS items that define if the test case is applicable or not for a specific device. When a TP contains an "ALL" in this field it means that it applies to the device under test within that scope of the test (specialization, transport used, etc.).
- **Other PICS:** This contains additional PICS items (apart from the PICS specified in the Applicability row) which are used within the test case implementation and can modify the final verdict. When this row is empty, it means that only the PICS specified in the Applicability row are used within the test case implementation.
- **Initial condition:** This indicates the state to which the DUT needs to be moved at the beginning of TC execution.
- **Test procedure:** This describes the steps to be followed in order to execute the test case.
- **Pass/Fail criteria:** This provides criteria to decide whether the DUT passes or fails the test case.

#### A.2 Subgroup 2.4.1: General (GEN)

|          |                                   |
|----------|-----------------------------------|
| TP Id    | TP/HFS/REC/PCD-01-DATA/GEN/BV-000 |
| TP label | MSH Segment                       |

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                     |                       |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|-----------------------|
| <b>Coverage</b>          | <b>Spec</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | [ITU-T H.812.1]      |                     |                       |
|                          | <b>Testable items</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 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    | DateTimeDataType 1; M |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | NumericDataType 1; M | StringDataType 1; M | IDDataType 1; M       |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ISDataType 1; M      | EIDDataType 1; M    | EIDDataType 2; O      |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EIDDataType 3; O     | EIDDataType 4; O    | EIUse1; C             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EIUse2; C            | EIUse3; C           | EIUse4; C             |
|                          | <b>Spec</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | [IHE PCD-TF-2]       |                     |                       |
|                          | <b>Testable items</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | HDUse1; M            | HDUse2; C           | HDUse3; C             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | HD-1; M              | HD-2; M             | HD-3; M               |
| <b>Test purpose</b>      | <p>Check that:</p> <p>The elements of the MSH segment of a message</p> <p>[AND]</p> <p>The data type of each element.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                     |                       |
| <b>Applicability</b>     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                     |                       |
| <b>Other PICS</b>        | C_REC_DATA_001, C_REC_DATA_002, C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                     |                       |
| <b>Initial condition</b> | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                     |                       |
| <b>Test procedure</b>    | <ol style="list-style-type: none"> <li>The simulated HFS sender sends an HL7 message inside a SOAP body including an observation.</li> <li>The HFS receiver under test responds using another HL7 message. Check in the captured message that: <ol style="list-style-type: none"> <li>Only one MSH segment is present and: <ul style="list-style-type: none"> <li><input type="checkbox"/> The character ' ' is the separator element.</li> <li><input type="checkbox"/> MSH-2 = ^~\&amp; (for Encoding characters element).</li> <li><input type="checkbox"/> MSH-3 = &lt;Namespace ID (data type IS)&gt;^&lt;Universal ID (data type ST)&gt;^&lt;Universal Type (data type ID)&gt; <ul style="list-style-type: none"> <li>If C_REC_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</li> <li>If C_REC_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</li> <li>Otherwise, if Universal Type (HD-3) is valued, it takes one of the following values:</li> </ul> </li> </ul> </li> </ol> </li> </ol> |                      |                     |                       |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|  | <ul style="list-style-type: none"> <li>- 'DNS' - An Internet dotted name. Either in ASCII or as integers.</li> <li>- 'GUID' - is the same as UUID.</li> <li>- 'HCD' - The CEN Healthcare Coding Scheme Designator. (Identifiers used in DICOM follow this assignment scheme.)</li> <li>- 'HL7' - Reserved for future HL7 registration schemes.</li> <li>- 'L','M','N' - These are reserved for locally defined coding schemes.</li> <li>- '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.</li> <li>- 'URI' - Uniform resource identifier.</li> <li>- 'UUID' - The DCE universal unique identifier.</li> <li>- 'x400' - An X.400 MHS format identifier.</li> <li>- 'x500' - An X.500 directory name.</li> </ul> <p><input type="checkbox"/> MSH-4, MSH-5, MSH-6 may be empty, but if they are not empty, they have the same encoding as MSH-3.</p> <p><input type="checkbox"/> MSH-7 is encoded as YYYY[MM[DD[HH[MM[SS]]]]][+/-ZZZZ].</p> <p><input type="checkbox"/> MSH-8 is empty</p> <p><input type="checkbox"/> MSH-9 = ACK^R01^ACK</p> <p><input type="checkbox"/> MSH-10 is a string (that uniquely identifies the message)</p> <p><input type="checkbox"/> MSH-11 = &lt;Processing ID (data type ID)&gt;^&lt;Processing Mode (data type ID)&gt;<br/> where 'Processing ID' can be one of the following values:</p> <ul style="list-style-type: none"> <li>• 'D' for debugging</li> <li>• 'P' for processing</li> <li>• 'T' for training.</li> </ul> <p>And 'Processing Mode', can be one of the following values:</p> <ul style="list-style-type: none"> <li>• 'A' for archive</li> <li>• 'I' for initial load</li> <li>• 'R' for restore from archive</li> <li>• 'T' for current processing, transmitted at intervals</li> <li>• Not present (empty), meaning current processing.</li> </ul> <p><input type="checkbox"/> MSH-12 = 2.6</p> <p><input type="checkbox"/> 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 '.')</p> <p><input type="checkbox"/> MSH-14 is empty</p> <p><input type="checkbox"/> MSH-15 = NE</p> <p><input type="checkbox"/> MSH-16 = AL</p> <p><input type="checkbox"/> MSH-17 may be empty, but if it is valued, it uses a 3-character (alphabetic) form of ISO 3166.</p> <p><input type="checkbox"/> MSH-18 may be empty, but if it is valued, it has one or more of these codes:</p> <ul style="list-style-type: none"> <li>• 'ASCII' (the default)</li> <li>• '8859/1'</li> <li>• '8859/2'</li> <li>• '8859/3'</li> <li>• '8859/4'</li> </ul> |
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|                           | <ul style="list-style-type: none"> <li>• '8859/5'</li> <li>• '8859/6'</li> <li>• '8859/7'</li> <li>• '8859/8'</li> <li>• '8859/9'</li> <li>• '8859/15'</li> <li>• 'ISO IR14'</li> <li>• 'ISO IR87'</li> <li>• 'ISO IR159'</li> <li>• 'GB 18030-2000'</li> <li>• 'KS X 1001'</li> <li>• 'CNS 11643-1992'</li> <li>• 'BIG-5'</li> <li>• 'UNICODE'</li> <li>• 'UNICODE UTF-8'</li> <li>• 'UNICODE UTF-16'</li> <li>• 'UNICODE UTF-32'</li> </ul> <p><input type="checkbox"/> MSH-19 may be empty, but if it is valued, it is encoded as CWE data type:<br/> &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt; ^&lt;Alternate Identifier (ST)&gt;^&lt;Alternate Text (ST)&gt;^&lt;Name of Alternate Coding System (ID)&gt;^&lt;Coding System Version ID (ST)&gt;^&lt;Alternate Coding System Version ID (ST)&gt;^&lt;Original Text (ST)&gt;</p> <p>where CWE-1 is required, CWE-2 to CWE-6 are required but may be empty and the rest can be present.</p> <p><input type="checkbox"/> MSH-20 is empty</p> <p><input type="checkbox"/> MSH-21 = &lt;Entity Identifier (data type ST)&gt; ^ &lt;Namespace ID (data type IS)&gt; ^ &lt;Universal ID (data type ST)&gt; ^ &lt;Universal ID Type (data type ID)&gt;, where NamespaceID and UniversalID are 'HL7'</p> <p><input type="checkbox"/> MSH-22, MSH-23, MSH-24, MSH-25 are empty</p> |
| <b>Pass/Fail criteria</b> | In step 2, all elements are as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|                 |                       |                                   |                      |                     |
|-----------------|-----------------------|-----------------------------------|----------------------|---------------------|
| <b>TP Id</b>    |                       | TP/HFS/REC/PCD-01-DATA/GEN/BV-001 |                      |                     |
| <b>TP label</b> |                       | MSA and Segment Sequence Error    |                      |                     |
| <b>Coverage</b> | <b>Spec</b>           | [ITU-T H.812.1]                   |                      |                     |
|                 | <b>Testable items</b> | MSAUse; M                         | MSA-1; M             | MSA-2; M            |
|                 |                       | MSA-3; M                          | MSA-4; M             | MSA-5; M            |
|                 |                       | MSA-6; M                          | MSA-7; M             | MSA-8; M            |
|                 |                       | ERRUse 1; O                       | ERRUse 2; M          | ERR-1; M            |
|                 |                       | ERR-2; R                          | ERR-3; M             | ERR-4; M            |
|                 |                       | ERR-5; M                          | ERR-6; M             | ERR-7; O            |
|                 |                       | CWEDataType 1; M                  | CWEDataType 2; M     | CWEDataType 3; C    |
|                 |                       | CWEDataType 4; R                  | NumericDataType 1; M | StringDataType 1; M |
|                 |                       | DateTimeDataType 1; M             | EIDDataType 1; M     | EIDDataType 2; M    |
|                 |                       | EIDDataType 3; M                  | EIDDataType 4; M     | EIUse1; C           |

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|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 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 |                  |                   |
| <b>Test purpose</b>      | <p>Check that:</p> <p>The elements of every segment of the message</p> <p>[AND]</p> <p>The data type of each element.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                  |                   |
| <b>Applicability</b>     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                  |                   |
| <b>Other PICS</b>        | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                  |                   |
| <b>Initial condition</b> | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                   |                  |                   |
| <b>Test procedure</b>    | <p>1. The simulated HFS sender sends the following HL7 message without an MSH segment inside a SOAP body to make the HFS receiver respond with another HL7 message:</p> <p>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L</p> <p>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100813095715+0000</p> <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8196~16388     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R</p> <p>OBX 10  528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC 1     X     1234567890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 PulseOx v1. 5     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100813095715+0000     R   20100813095715+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua     R</p> |                   |                  |                   |

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|  | <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16388     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 NM 150456^MDC_PULS_OXIM_SAT_O2^MDC 1.0.0.8 80.5 262688^MDC_DIM_PERCENT^MDC     R   20100813095715+0000</p> <p>OBX 20 NM 149530^MDC_PULS_OXIM_PULS_RATE^MDC 1.0.0.9 70 264864^MDC_DIM_BEAT_PER_MIN^MDC     R   20100813095715+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is 'AE' – Accept Acknowledgment: Application Error</li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with the error code '100', other optional subfields might be included</li> <li><input type="checkbox"/> ERR-4 is set to: <ul style="list-style-type: none"> <li>• 'E' – Error</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> <li><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li><input type="checkbox"/> ERR-10 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-11 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-12 may be empty, but if it is valued, it is encoded as: &lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</li> </ul> <p>Where:</p> |
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|                           | <ul style="list-style-type: none"> <li>Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | In step2, all elements in each segment are as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                   |                |                                                                                                                                                                                       |                      |                     |
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| TP Id             |                | TP/HFS/REC/PCD-01-DATA/GEN/BV-002                                                                                                                                                     |                      |                     |
| TP label          |                | MSA and Required Field Missing Error                                                                                                                                                  |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                                       |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                             | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                              | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                              | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                           | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                              | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                              | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                                      | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                                      | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                                 | EIDataType 1; M      | EIDataType 2; M     |
|                   |                | EIDataType 3; M                                                                                                                                                                       | EIDataType 4; M      | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                             | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                                     |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br>[AND]<br><br>The data type of each element.                                                                        |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                             |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                        |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation.                                              |                      |                     |
| Test procedure    |                | 1. The simulated HFS sender sends the following HL7 message with an MSH segment including a MSH-7 empty inside a SOAP body to make the HFS receiver respond with another HL7 message: |                      |                     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
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|  | <p>MSH ^~\&amp; AT4_AHD^1234567890ABCDEF^EUI-64     ORU^R01^ORU_R01 MSGID12 P 2.6    NE AL    IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7</p> <p>PID    789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L</p> <p>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100813095715+0000</p> <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua    R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1    R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8196~16388    R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua    R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)   R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC    R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua    R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1    R</p> <p>OBX 10  528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC 1     X     1234567890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 PulseOx v1. 5    R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless    R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100813095715+0000    R  20100813095715+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua    R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua    R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5    R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16388    R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)   R</p> <p>OBX 19 NM 150456^MDC_PULS_OXIM_SAT_O2^MDC 1.0.0.8 90 262688^MDC_DIM_PERCENT^MDC    R  20100813095715+0000</p> <p>OBX 20 NM 149530^MDC_PULS_OXIM_PULS_RATE^MDC 1.0.0.9 80 264864^MDC_DIM_BEAT_PER_MIN^MDC    R  20100813095715+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is 'AE' – Accept Acknowledgment: Application Error</li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> |
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|                           | <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with the error code '101', other optional subfields might be included</li> <li><input type="checkbox"/> ERR-4 is set to: <ul style="list-style-type: none"> <li>• 'E' – Error</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> <li><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li><input type="checkbox"/> ERR-10 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-11 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-12 may be empty, but if it is valued, it is encoded as: &lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>• Protection code subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>• Shared Telecommunication Identifier subcomponents are: &lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | In step 2, all elements in each segment are as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

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| TP Id             |                | TP/HFS/REC/PCD-01-DATA/GEN/BV-003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                     |
| TP label          |                | MSA and Data Type Error                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EIDataType 1; M      | EIDataType 2; M     |
|                   |                | EIDataType 3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EIDataType 4; M      | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br>[AND]<br><br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                     |
| Test procedure    |                | 1. The simulated HFS sender sends the following HL7 message including a wrong data type in the first OBX segment inside a SOAP body to make the HFS receiver respond with another HL7 message:<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   20101015102130+0000  ORU^R01^ORU_R01 MSGID1 P 2.6   NE AL    IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L<br><br>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100522083542+0000<br><br>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64<br><br>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R<br><br>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R<br><br>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8196~16388     R<br><br>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R |                      |                     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|  | <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 ST 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R</p> <p>OBX 10  528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC 1     X     1234567890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 PulseOx v1.5     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100522083542+0000     R   20100522083542+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16388     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 NM 150456^MDC_PULS_OXIM_SAT_O2^MDC 1.0.0.8 76 262688^MDC_DIM_PERCENT^MDC     R   20100522083542+0000</p> <p>OBX 20 NM 149530^MDC_PULS_OXIM_PULS_RATE^MDC 1.0.0.9 100 264864^MDC_DIM_BEAT_PER_MIN^MDC     R   20100522083542+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <ol style="list-style-type: none"> <li>Only one MSA segment is present and: <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is 'AE' – Accept Acknowledgment: Application Error</li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> </li> <li>If ERR segment referring to the MSA is present: <ul style="list-style-type: none"> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with the error code '102', other optional subfields might be included</li> <li><input type="checkbox"/> ERR-4 is set to: <ul style="list-style-type: none"> <li>• 'E' – Error</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> <li><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values:</li> </ul> </li> </ol> |
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|                           | <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> <p>❑ ERR-10 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</p> <p>❑ ERR-11 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</p> <p>❑ ERR-12 may be empty, but if it is valued, it is encoded as: <i>&lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</i></p> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | In step 2, all elements in each segment are as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|-----------------|-----------------------|-------------------------------------|----------------------|---------------------|
| <b>TP Id</b>    |                       | TP/HFS/REC/PCD-01-DATA/GEN/BV-004   |                      |                     |
| <b>TP label</b> |                       | MSA and Table Value not found Error |                      |                     |
| <b>Coverage</b> | <b>Spec</b>           | [ITU-T H.812.1]                     |                      |                     |
|                 | <b>Testable items</b> | MSAUse; M                           | MSA-1; M             | MSA-2; M            |
|                 |                       | MSA-3; M                            | MSA-4; M             | MSA-5; M            |
|                 |                       | MSA-6; M                            | MSA-7; M             | MSA-8; M            |
|                 |                       | ERRUse 1; O                         | ERRUse 2; M          | ERR-1; M            |
|                 |                       | ERR-2; R                            | ERR-3; M             | ERR-4; M            |
|                 |                       | ERR-5; M                            | ERR-6; M             | ERR-7; O            |
|                 |                       | CWEDataType 1; M                    | CWEDataType 2; M     | CWEDataType 3; C    |
|                 |                       | CWEDataType 4; R                    | NumericDataType 1; M | StringDataType 1; M |
|                 |                       | DateTimeDataType 1; M               | EIDDataType 1; M     | EIDDataType 2; M    |
|                 |                       | EIDDataType 3; M                    | EIDDataType 4; M     | EIUse1; C           |
|                 |                       | EIUse2; C                           | EIUse3; C            | EIUse4; C           |

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|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 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 |                  |                   |
| <b>Test purpose</b>      | Check that:<br>The elements of every segment of the message<br>[AND]<br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                  |                   |
| <b>Applicability</b>     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                   |                  |                   |
| <b>Other PICS</b>        | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                   |                  |                   |
| <b>Initial condition</b> | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                   |                  |                   |
| <b>Test procedure</b>    | 1. The simulated HFS sender sends the following HL7 message with an MSH segment including a MSH-15 = 'XXX' inside a SOAP body to make the HFS receiver respond with another HL7 message:<br><pre> MSH ^~\&amp; AT4_AHD^1234567890ABCDEF^EUI-64   20100930102130+0000   ORU^R01^ORU_R01 MSGID123 P 2.6   XXX AL    IHE PCD ORU- R012006^HL7^2.16.840.1.113883.9.n.m^HL7  PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L  OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^ 1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100713150214+0000  OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64  OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth- body-continua    R  OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1  6.1    R  OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0. 0.0.1.2 8196~16388    R  OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth- body-continua    R  OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0 .0.2.1 1^unregulated-device(0)   R  OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIM E_SYNC_NONE^MDC    R  OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth- body-continua    R  OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0 .0.0.4.1 0~1    R  OBX 10  528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC 1     X     123456 7890ABCDEF^EUI-64  OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 PulseOx v1. 5    R  OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless    R  OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100713150214+0000      R  20100713150214+0000  OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth- body-continua    R  OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth- body-continua    R </pre> |                   |                  |                   |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
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|  | <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16388     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 NM 150456^MDC_PULS_OXIM_SAT_O2^MDC 1.0.0.8 99.1 262688^MDC_DIM_PERCENT^MDC     R  20100713150214+0000</p> <p>OBX 20 NM 149530^MDC_PULS_OXIM_PULS_RATE^MDC 1.0.0.9 82 264864^MDC_DIM_BEAT_PER_MIN^MDC     R  20100713150214+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is 'AE' – Accept Acknowledgment: Application Error</li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with the error code '103', other optional subfields might be included</li> <li><input type="checkbox"/> ERR-4 is set to: <ul style="list-style-type: none"> <li>• 'E' – Error</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> <li><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li><input type="checkbox"/> ERR-10 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-11 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-12 may be empty, but if it is valued, it is encoded as: &lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</li> </ul> <p>Where:</p> |
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|                           | <ul style="list-style-type: none"> <li>Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | In step 2, all elements in each segment are as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

|                   |                |                                                                                                                                                                                               |                      |                     |
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| TP Id             |                | TP/HFS/REC/PCD-01-DATA/GEN/BV-005                                                                                                                                                             |                      |                     |
| TP label          |                | MSA and Unsupported Message Type Error                                                                                                                                                        |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                                               |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                                     | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                                      | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                                      | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                                   | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                                      | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                                      | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                                              | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                                              | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                                         | EIDataType 1; M      | EIDataType 2; M     |
|                   |                | EIDataType 3; M                                                                                                                                                                               | EIDataType 4; M      | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                                     | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                                             |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br>[AND]<br><br>The data type of each element.                                                                                |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                                     |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation.                                                      |                      |                     |
| Test procedure    |                | 1. The simulated HFS sender sends the following HL7 message with an MSH segment including a MSH-9 = ACK^A01^ACK inside a SOAP body to make the HFS receiver respond with another HL7 message: |                      |                     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|  | <p>MSH ^~\&amp; AT4_AHD^1234567890ABCDEF^EUI-64   20100930102130+0000  <b>ACK^A01^ACK</b> MSGID12345 P 2.6   NE AL     IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7</p> <p>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L</p> <p>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100910102736+0000</p> <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8196~16388     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R</p> <p>OBX 10  528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC 1     X     1234567890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 PulseOx v1.5     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100910102736+0000     R   20100910102736+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16388     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 NM 150456^MDC_PULS_OXIM_SAT_O2^MDC 1.0.0.8 83.2 262688^MDC_DIM_PERCENT^MDC     R   20100910102736+0000</p> <p>OBX 20 NM 149530^MDC_PULS_OXIM_PULS_RATE^MDC 1.0.0.9 79 264864^MDC_DIM_BEAT_PER_MIN^MDC     R   20100910102736+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is 'AR' – Accept Acknowledgment: Application Reject</li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> |
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|                           | <p>b. If ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with the error code '200', other optional subfields might be included</li> <li><input type="checkbox"/> ERR-4 is set to: <ul style="list-style-type: none"> <li>• 'E' – Error</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> <li><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li><input type="checkbox"/> ERR-10 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-11 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-12 may be empty, but if it is valued, it is encoded as: &lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>• Protection code subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>• Shared Telecommunication Identifier subcomponents are: &lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | In step 2, all elements in each segment are as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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| TP Id             |                | TP/HFS/REC/PCD-01-DATA/GEN/BV-006                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                     |
| TP label          |                | MSA and Unsupported Event Code Error                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | EIDataType 1; M      | EIDataType 2; M     |
|                   |                | EIDataType 3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | EIDataType 4; M      | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br>[AND]<br><br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                     |
| Test procedure    |                | 1. The simulated HFS sender sends the following HL7 message with an MSH segment including a wrong event code: MSH-9 = ORU^R02^ORU_R02 inside a SOAP body to make the HFS receiver respond with another HL7 message:<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   20100930102130+0000  ORU^R02^ORU_R02 MSGID1234 P 2.6   NE AL    IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L<br><br>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100813095715+0000<br><br>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64<br><br>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua    R<br><br>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1    R<br><br>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8196~16388    R<br><br>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua    R |                      |                     |

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|  | <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)    R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC    R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua    R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1    R</p> <p>OBX 10  528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC 1    X    1234567890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 PulseOx v1.5    R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless    R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100813095715+0000    R  20100813095715+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua    R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua    R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5    R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16388    R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)    R</p> <p>OBX 19 NM 150456^MDC_PULS_OXIM_SAT_O2^MDC 1.0.0.8 80.5 262688^MDC_DIM_PERCENT^MDC    R  20100813095715+0000</p> <p>OBX 20 NM 149530^MDC_PULS_OXIM_PULS_RATE^MDC 1.0.0.9 70 264864^MDC_DIM_BEAT_PER_MIN^MDC    R  20100813095715+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is 'AR' – Accept Acknowledgment: Application Reject</li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with the error code '201', other optional subfields might be included</li> <li><input type="checkbox"/> ERR-4 is set to: <ul style="list-style-type: none"> <li>• 'E' – Error</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> <li><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values:</li> </ul> |
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|                           | <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> <p>❑ ERR-10 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</p> <p>❑ ERR-11 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</p> <p>❑ ERR-12 may be empty, but if it is valued, it is encoded as: <i>&lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</i></p> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | In step 2, all elements in each segment are as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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|-----------------|-----------------------|------------------------------------------|----------------------|---------------------|
| <b>TP Id</b>    |                       | TP/HFS/REC/PCD-01-DATA/GEN/BV-007        |                      |                     |
| <b>TP label</b> |                       | MSA and Unsupporting Processing Id Error |                      |                     |
| <b>Coverage</b> | <b>Spec</b>           | [ITU-T H.812.1]                          |                      |                     |
|                 | <b>Testable items</b> | MSAUse; M                                | MSA-1; M             | MSA-2; M            |
|                 |                       | MSA-3; M                                 | MSA-4; M             | MSA-5; M            |
|                 |                       | MSA-6; M                                 | MSA-7; M             | MSA-8; M            |
|                 |                       | ERRUse 1; O                              | ERRUse 2; M          | ERR-1; M            |
|                 |                       | ERR-2; R                                 | ERR-3; M             | ERR-4; M            |
|                 |                       | ERR-5; M                                 | ERR-6; M             | ERR-7; O            |
|                 |                       | CWEDataType 1; M                         | CWEDataType 2; M     | CWEDataType 3; C    |
|                 |                       | CWEDataType 4; R                         | NumericDataType 1; M | StringDataType 1; M |
|                 |                       | DateTimeDataType 1; M                    | EIDDataType 1; M     | EIDDataType 2; M    |
|                 |                       | EIDDataType 3; M                         | EIDDataType 4; M     | EIUse1; C           |
|                 |                       | EIUse2; C                                | EIUse3; C            | EIUse4; C           |

|                   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                  |                   |
|-------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|
|                   |  | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                  |                   |
| Test purpose      |  | Check that:<br><br>The elements of every segment of the message<br><br>[AND]<br><br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                  |                   |
| Applicability     |  | C_REC_000 AND (NOT (C_SEN_DATA_003 AND C_SEN_DATA_004 AND C_SEN_DATA_005))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                  |                   |
| Other PICS        |  | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                  |                   |
| Initial condition |  | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                  |                   |
| Test procedure    |  | 1. The simulated HFS sender sends the following HL7 message with an MSH segment sending a not supported Processing (MSH-11 = 'M') inside a SOAP body to make the HFS receiver respond with another HL7 message:<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   20100930102130+0000  ORU^R01^ORU_R01 MSGID123456 M 2.6   NE AL     H E PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L<br><br>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100813095715+0000<br><br>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64<br><br>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R<br><br>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R<br><br>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8196~16388     R<br><br>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R<br><br>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)     R<br><br>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R<br><br>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R<br><br>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R<br><br>OBX 10  528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC 1     X     1234567890ABCDEF^EUI-64<br><br>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 PulseOx v1.5     R<br><br>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R<br><br>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100813095715+0000     R   20100813095715+0000<br><br>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua     R |                  |                   |

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|  | <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16388     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 NM 150456^MDC_PULS_OXIM_SAT_O2^MDC 1.0.0.8 85.9 262688^MDC_DIM_PERCENT^MDC     R   20100813095715+0000</p> <p>OBX 20 NM 149530^MDC_PULS_OXIM_PULS_RATE^MDC 1.0.0.9 77 264864^MDC_DIM_BEAT_PER_MIN^MDC     R   20100813095715+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is 'AR' – Accept Acknowledgment: Application Reject</li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with the error code '202', other optional subfields might be included</li> <li><input type="checkbox"/> ERR-4 is set to: <ul style="list-style-type: none"> <li>• 'E' – Error</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> <li><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li><input type="checkbox"/> ERR-10 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-11 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-12 may be empty, but if it is valued, it is encoded as: &lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection</li> </ul> |
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|                           | <p><i>Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</i></p> <p>Where:</p> <ul style="list-style-type: none"> <li>Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | In step 2, all elements in each segment are as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

|                   |                |                                                                                                                                          |                      |                     |
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| TP Id             |                | TP/HFS/REC/PCD-01-DATA/GEN/BV-008                                                                                                        |                      |                     |
| TP label          |                | MSA and Unsupported Version Id Error                                                                                                     |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                          |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                 | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                 | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                              | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                 | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                 | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                         | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                         | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                    | EIDataType 1; M      | EIDataType 2; M     |
|                   |                | EIDataType 3; M                                                                                                                          | EIDataType 4; M      | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                        |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br><br>[AND]<br><br>The data type of each element.                       |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                           |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation. |                      |                     |

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| <p><b>Test procedure</b></p> | <ol style="list-style-type: none"> <li>1. The simulated HFS sender sends the following HL7 message with an MSH segment sending a MSH-12 = '2.5' inside a SOAP body to make the the HFS receiver respond with another HL7 message: <p>MSH ^~\&amp; AT4_AHD^1234567890ABCDEF^EUI-64   20100930102130+0000  ORU^R01^ORU_R01 MSGID1235 P 2.5   NE AL    IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7</p> <p>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L</p> <p>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100322172147+0000</p> <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua    R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1    R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8196~16388    R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua    R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)   R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC    R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua    R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1    R</p> <p>OBX 10  528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC 1     X     1234567890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 PulseOx v1.5    R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless    R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100322172147+0000   R   20100322172147+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua    R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.6 2^auth-body-continua    R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.5.1 1.5    R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.5.2 16388    R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.6.1 0^unregulated-device(0)   R</p> <p>OBX 19 NM 150456^MDC_PULS_OXIM_SAT_O2^MDC 1.0.0.8 77.1 262688^MDC_DIM_PERCENT^MDC    R   20100322172147+0000</p> <p>OBX 20 NM 149530^MDC_PULS_OXIM_PULS_RATE^MDC 1.0.0.9 92 264864^MDC_DIM_BEAT_PER_MIN^MDC    R   20100322172147+0000</p> </li> <li>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that: <ol style="list-style-type: none"> <li>a. Only one MSA segment is present and: <div> <input type="checkbox"/> MSA-1 is 'AR' – Accept Acknowledgment: Application Reject </div> </li> </ol> </li> </ol> |
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|                           | <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with the error code '203', other optional subfields might be included</li> <li><input type="checkbox"/> ERR-4 is set to: <ul style="list-style-type: none"> <li>• 'E' – Error</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> <li><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• N'PAT'</li> <li>• USR</li> <li>• HD</li> </ul> </li> <li><input type="checkbox"/> ERR-10 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-11 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li><input type="checkbox"/> ERR-12 may be empty, but if it is valued, it is encoded as: &lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>• Protection code subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>• Shared Telecommunication Identifier subcomponents are: &lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | In step 2, all elements in each segment are as specified.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

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| Notes |  |
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### A.3 Subgroup 2.4.2: Design guidelines (DG)

No test cases have been defined in this subgroup.

### A.4 Subgroup 2.4.3: Pulse oximeter (PO)

|                   |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                     |
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| TP Id             |                | TP/HFS/REC/PCD-01-DATA/PO/BV-000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                     |
| TP label          |                | MSA and ERR segments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | EIDDataType 1; M     | EIDDataType 2; M    |
|                   |                | EIDDataType 3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EIDDataType 4; M     | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br><br>[AND]<br><br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of a pulse oximeter device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                     |
| Test procedure    |                | 1. The simulated HFS sender sends the following HL7 message, including the mandatory objects of a pulse oximeter device inside a SOAP body to make the HFS receiver respond with another HL7 message.<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   <current time in UTC>  ORU^R01^ORU_R01 MSGID<random number> P 2.6  NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L<br><br>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100903124015+0000<br><br>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64<br><br>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continual    IR |                      |                     |

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|  | <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8196~16388     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R</p> <p>OBX 10  528388^MDC_DEV_SPEC_PROFILE_PULS_OXIM^MDC 1     X     1234567890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 PulseOx v1.5     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100903124015+0000     R   20100903124015+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16388     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 NM 150456^MDC_PULS_OXIM_SAT_O2^MDC 1.0.0.6 92.3 262688^MDC_DIM_PERCENT^MDC     R   20100903124015+0000</p> <p>OBX 20 NM 149530^MDC_PULS_OXIM_PULS_RATE^MDC 1.0.0.7 71 264864^MDC_DIM_BEAT_PER_MIN^MDC     R   20100903124015+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is one of the following values: <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> <li>• 'AR' – Accept Acknowledgment: Application Reject</li> </ul> </li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> If the HFS receiver reports an ERR segment with a severity (ERR-4) E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)</li> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field</li> </ul> |
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|                    | <p><i>Repetition (NM)</i> &gt; ^ &lt;<i>Component Number (NM)</i> &gt; ^ &lt;<i>Sub-Component Number (NM)</i> &gt;</p> <ul style="list-style-type: none"> <li>❑ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included: <ul style="list-style-type: none"> <li>• '0' – Accepted</li> <li>• '206' – Application record locked</li> <li>• '207' – Application internal error</li> </ul> </li> <li>❑ ERR-4 is set to one of these valid error severity values: <ul style="list-style-type: none"> <li>• 'W' – Warning</li> <li>• 'I' – Information</li> <li>• 'E' – Error</li> <li>• 'F' – Fatal error.</li> </ul> </li> <li>❑ ERR-5 and ERR-6 are empty</li> <li>❑ ERR-7 may be empty, but if it is valued, it is a text data</li> <li>❑ ERR-8 may be empty, but if it is valued, it is a text data</li> <li>❑ ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li>❑ ERR-10 may be empty, but if it is valued, it is encoded as: &lt;<i>Identifier (ST)</i>&gt;^&lt;<i>Text (ST)</i>&gt;^&lt; <i>Name of Coding System (ID)</i>&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li>❑ ERR-11 may be empty, but if it is valued, it is encoded as: &lt;<i>Identifier (ST)</i>&gt;^&lt;<i>Text (ST)</i>&gt;^&lt; <i>Name of Coding System (ID)</i>&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li>❑ ERR-12 may be empty, but if it is valued, it is encoded as: &lt;<i>WITHDRAWN Constituent</i>&gt;^&lt;<i>Telecommunication Use Code (ID)</i>&gt;^&lt;<i>Telecommunication Equipment Type (ID)</i>&gt;^&lt;<i>Communication Address (ST)</i>&gt;^&lt;<i>Country Code (NM)</i>&gt;^&lt;<i>Area/City Code (NM)</i>&gt;^&lt;<i>Local Number (NM)</i>&gt;^&lt;<i>Extension (NM)</i>&gt;^&lt;<i>Any Text (ST)</i>&gt;^&lt;<i>Extension Prefix (ST)</i>&gt;^&lt;<i>Speed Dial Code (ST)</i>&gt;^&lt;<i>Unformatted Telephone Number (ST)</i>&gt;^&lt;<i>Effective Start Date (DTM)</i>&gt;^&lt;<i>Expiration Date (DTM)</i>&gt;^&lt;<i>Expiration Reason (CWE)</i>&gt;^&lt;<i>Protection Code (CWE)</i>&gt;^&lt;<i>Shared Telecommunication Identifier (EI)</i>&gt;^&lt;<i>Preference Order (NM)</i>&gt;</li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: &lt;<i>Identifier (ST)</i>&gt;&amp;&lt;<i>Text (ST)</i>&gt;&amp;&lt; <i>Name of Coding System (ID)</i>&gt; &amp;&lt;<i>Alternate Identifier (ST)</i>&gt;&amp;&lt;<i>Alternate Text (ST)</i>&gt;&amp;&lt;<i>Name of Alternate Coding System (ID)</i>&gt;&amp;&lt;<i>Coding System Version ID (ST)</i>&gt;&amp;&lt;<i>Alternate Coding System Version ID (ST)</i>&gt;&amp;&lt;<i>Original Text (ST)</i>&gt;</li> <li>• Protection code subcomponents are: &lt;<i>Identifier (ST)</i>&gt;&amp;&lt;<i>Text (ST)</i>&gt;&amp;&lt; <i>Name of Coding System (ID)</i>&gt; &amp;&lt;<i>Alternate Identifier (ST)</i>&gt;&amp;&lt;<i>Alternate Text (ST)</i>&gt;&amp;&lt;<i>Name of Alternate Coding System (ID)</i>&gt;&amp;&lt;<i>Coding System Version ID (ST)</i>&gt;&amp;&lt;<i>Alternate Coding System Version ID (ST)</i>&gt;&amp;&lt;<i>Original Text (ST)</i>&gt;</li> <li>• Shared Telecommunication Identifier subcomponents are: &lt;<i>Entity Identifier (ST)</i>&gt;&amp;&lt;<i>Namespace ID (IS)</i>&gt;&amp;&lt;<i>Universal ID (ST)</i>&gt;&amp;&lt;<i>Universal ID Type (ID)</i>&gt;</li> </ul> <p>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.</p> |
| Pass/Fail criteria | <ul style="list-style-type: none"> <li>• In step 2, all elements in each segment are as specified above</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

|       |                                                                                                                                                                                                                                                                                                                                                                                                              |
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|       | <ul style="list-style-type: none"> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2010-09-03 12:40:15 UTC, Values: SpO2=92.3 [%] and PulseRate=71 [bpm]</li> </ul> |
| Notes |                                                                                                                                                                                                                                                                                                                                                                                                              |

#### A.5 Subgroup 2.4.4: Blood pressure monitor (BPM)

|                   |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                     |
|-------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| TP Id             |                | TP/HFS/REC/PCD-01-DATA/BPM/BV-000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                     |
| TP label          |                | MSA and ERR segments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | EIDataType 1; M      | EIDataType 2; M     |
|                   |                | EIDataType 3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | EIDataType 4; M      | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br><br>[AND]<br><br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of a blood pressure device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                     |
| Test procedure    |                | 1. The simulated HFS sender sends the following HL7 message, including the mandatory objects of a blood pressure device inside a SOAP body, to make the HFS receiver respond. The message sent is:<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   <current time in UTC>  ORU^R01^ORU_R01 MSGID<random number> P 2.6   NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L<br><br>OBR 1 BPMTest^AT4_AHD^1234567890ABCDEF^EUI-64 BPMTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100916145110+0000<br><br>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64<br><br>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continual     R |                      |                     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8199~7     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R</p> <p>OBX 10  528391^MDC_DEV_SPEC_PROFILE_BP^MDC 1     X     1234567890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 BloodPressure v1.5     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100916145110+0000     R  20100916145110+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 8199     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19  150020^MDC_PRESS_BLD_NONINV^MDC 1.0.1     X   20100916145110+0000</p> <p>OBX 20 NM 150021^MDC_PRESS_BLD_NONINV_SYS^MDC 1.0.1.1 120 266016^MDC_DIM_MMHG^MDC     R</p> <p>OBX 21 NM 150022^MDC_PRESS_BLD_NONINV_DIA^MDC 1.0.1.2 80 266016^MDC_DIM_MMHG^MDC     R</p> <p>OBX 22 NM 150023^MDC_PRESS_BLD_NONINV_MEAN^MDC 1.0.1.3 100 266016^MDC_DIM_MMHG^MDC     R</p> <p>OBX 23 NM 149546^MDC_PULS_RATE_NON_INV^MDC 1.0.0.8 82 264864^MDC_DIM_BEAT_PER_MIN^MDC     R  20100916145110+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is one of the following values: <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> <li>• 'AR' – Accept Acknowledgment: Application Reject</li> </ul> </li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> |
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|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|  | <ul style="list-style-type: none"> <li>❑ If the HFS receiver reports an ERR segment with severity E (error) or F (fatal error), the Message Acknowledgement value shall be CR (commit reject)</li> <li>❑ ERR-1 is empty</li> <li>❑ ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li>❑ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included: <ul style="list-style-type: none"> <li>• '0' – Message accepted</li> <li>• '206' – Application record locked</li> <li>• '207' – Application internal error</li> </ul> </li> <li>❑ ERR-4 is set to one of these valid error severity values: <ul style="list-style-type: none"> <li>• 'W' – Warning</li> <li>• 'I' – Information</li> <li>• 'E' – Error</li> <li>• 'F' – Fatal error.</li> </ul> </li> <li>❑ ERR-5 and ERR-6 are empty</li> <li>❑ ERR-7 may be empty, but if it is valued, it is a text data</li> <li>❑ ERR-8 may be empty, but if it is valued, it is a text data</li> <li>❑ ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li>❑ ERR-10 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li>❑ ERR-11 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li>❑ ERR-12 may be empty, but if it is valued, it is encoded as: &lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>• Protection code subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> </ul> |
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|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | <ul style="list-style-type: none"> <li>Shared Telecommunication Identifier subcomponents are: &lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</li> </ul> <p>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.</p>                                                                                                                                                                   |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>In step 2, all elements in each segment are as specified above</li> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2010-09-16 14:51:10 UTC, Values: Systolic=120 [mmHg], Diastolic=80 [mmHg], Mean=100 [mmHg], and PulseRate=82 [bpm]</li> </ul> |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## A.6 Subgroup 2.4.5: Thermometer (TH)

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                       |                      |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------|
| <b>TP Id</b>             | TP/HFS/REC/PCD-01-DATA/TH/BV-000                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |                      |
| <b>TP label</b>          | MSA and ERR segments                                                                                                                                                                                                                                                                                                                                                                                                                                  |                       |                      |
| <b>Coverage</b>          | <b>Spec</b>                                                                                                                                                                                                                                                                                                                                                                                                                                           | [ITU-T H.812.1]       |                      |
|                          | <b>Testable items</b>                                                                                                                                                                                                                                                                                                                                                                                                                                 | MSAUse; M             | MSA-1; M             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MSA-3; M              | MSA-4; M             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | MSA-6; M              | MSA-7; M             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ERRUse 1; O           | ERRUse 2; M          |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ERR-2; R              | ERR-3; M             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ERR-5; M              | ERR-6; M             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CWEDataType 1; M      | CWEDataType 2; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | CWEDataType 4; R      | NumericDataType 1; M |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | DateTimeDataType 1; M | EIDDataType 1; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EIDDataType 3; M      | EIDDataType 4; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | EIUse2; C             | EIUse3; C            |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | IDDataType 1; M       | ISDataType 1; M      |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | XTNDataType 2; M      | XTNDataType 3; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | XTNDataType 5; M      | XTNDataType 6; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | XTNDataType 8; M      | XTNDataType 9; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                       | XTNDataType 11; M     |                      |
| <b>Test purpose</b>      | Check that:<br>The elements of every segment of the message<br>[AND]<br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                |                       |                      |
| <b>Applicability</b>     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                      |
| <b>Other PICS</b>        | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                        |                       |                      |
| <b>Initial condition</b> | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of a thermometer device.                                                                                                                                                                                                                                                                                      |                       |                      |
| <b>Test procedure</b>    | 1. The simulated HFS sender sends the following HL7 message, including the mandatory objects of a thermometer device inside a SOAP body to make the HFS receiver respond with another HL7 message.<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   <current time in UTC>  ORU^R01^ORU_R01 MSGID<random number> P 2.6   NE AL   HE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L |                       |                      |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>OBR 1 THTest^AT4_AHD^1234567890ABCDEF^EUI-64 THTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100916145110+0000</p> <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8200~16392~32776     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R</p> <p>OBX 10  528392^MDC_DEV_SPEC_PROFILE_TEMP^MDC 1     X     1234567890A BCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 Thermometer v1.5     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100916145110+0000     R   20100916145110+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16392     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 NM 150364^MDC_TEMP_BODY^MDC 1.0.0.6 36.5 268192^MDC_DIM_DEG C^MDC     R   20100916145110+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is one of the following values: <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> <li>• 'AR' – Accept Acknowledgment: Application Reject</li> </ul> </li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> If the HFS receiver reports an ERR segment with severity E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)</li> </ul> |
|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

- ❑ ERR-1 is empty
- ❑ ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: *<Segment ID (ST)> ^ <Segment Sequence (NM)> ^ <Field Position (NM)> ^ <Field Repetition (NM)> ^ <Component Number (NM)> ^ <Sub-Component Number (NM)>*
- ❑ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:
  - '0' – Message accepted
  - '206' – Application record locked
  - '207' – Application internal error
- ❑ ERR-4 is set to one of these valid error severity values:
  - 'W' – Warning
  - 'I' – Information
  - 'E' – Error
  - 'F' – Fatal error.
- ❑ ERR-5 and ERR-6 are empty
- ❑ ERR-7 may be empty, but if it is valued, it is a text data
- ❑ ERR-8 may be empty, but if it is valued, it is a text data
- ❑ ERR-9 may be empty, but if it is valued, it is one of these values:
  - 'PAT'
  - 'NPAT'
  - 'USR'
  - 'HD'
- ❑ ERR-10 may be empty, but if it is valued, it is encoded as: *<Identifier (ST)>^<Text (ST)>^<Name of Coding System (ID)>* the rest of the elements of the CWE data type are not used in the Services interface.
- ❑ ERR-11 may be empty, but if it is valued, it is encoded as: *<Identifier (ST)>^<Text (ST)>^<Name of Coding System (ID)>* the rest of the elements of the CWE data type are not used in the Services interface.
- ❑ ERR-12 may be empty, but if it is valued, it is encoded as: *<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)>*

Where:

- Expiration Reason subcomponents are: *<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)>*
- Protection code subcomponents are: *<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)>*
- Shared Telecommunication Identifier subcomponents are: *<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.                                                                                                                                                                                                                                                                                                                                                          |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>In step 2, all elements in each segment are as specified above</li> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2010-09-16 14:51:10 UTC, Value: Body temperature= 36.5 [°C]</li> </ul> |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## A.7 Subgroup 2.4.6: Weighing scales (WEG)

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                       |                      |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------|
| <b>TP Id</b>             | TP/HFS/REC/PCD-01-DATA/WEG/BV-000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |                      |
| <b>TP label</b>          | MSA and ERR segments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                      |
| <b>Coverage</b>          | <b>Spec</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | [ITU-T H.812.1]       |                      |
|                          | <b>Testable items</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | MSAUse; M             | MSA-1; M             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | MSA-3; M              | MSA-4; M             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | MSA-6; M              | MSA-7; M             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ERRUse 1; O           | ERRUse 2; M          |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ERR-2; R              | ERR-3; M             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ERR-5; M              | ERR-6; M             |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CWEDataType 1; M      | CWEDataType 2; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CWEDataType 4; R      | NumericDataType 1; M |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | DateTimeDataType 1; M | EIDDataType 1; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIDDataType 3; M      | EIDDataType 4; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIUse2; C             | EIUse3; C            |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | IDDataType 1; M       | ISDataType 1; M      |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XTNDataType 2; M      | XTNDataType 3; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XTNDataType 5; M      | XTNDataType 6; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XTNDataType 8; M      | XTNDataType 9; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | XTNDataType 11; M     |                      |
| <b>Test purpose</b>      | Check that:<br>The elements of every segment of the message<br>[AND]<br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                       |                      |
| <b>Applicability</b>     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                      |
| <b>Other PICS</b>        | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                       |                      |
| <b>Initial condition</b> | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of a weighing scales device.                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                       |                      |
| <b>Test procedure</b>    | 1. The simulated HFS sender sends the following HL7 message, including the mandatory object of a weighing scales device inside a SOAP body to make the HFS receiver respond with another HL7 message:<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   <current time in UTC>  ORU^R01^ORU_R01 MSGID<random number> P 2.6   NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L<br><br>OBR 1 WEGTest^AT4_AHD^1234567890ABCDEF^EUI-64 WEGTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100916145510+0000 |                       |                      |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE<br/>EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-<br/>body-continua     R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 <br/>6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.<br/>0.0.1.2 8207~24591~16399     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-<br/>body-continua     R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.<br/>.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIM<br/>E_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-<br/>body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0<br/>.0.0.4.1 0~1     R</p> <p>OBX 10  528399^MDC_DEV_SPEC_PROFILE_SCALE^MDC 1     X     1234567890<br/>ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 WeighingScale<br/>v1.5     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4<br/>Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100916145510+0000   <br/>  R  20100916145510+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-<br/>body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-<br/>body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1<br/> 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC <br/>1.0.0.4.2 16399     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.<br/>0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 NM 188736^MDC_MASS_BODY_ACTUAL^MDC 1.0.0.6 80 263875^MDC_DI<br/>M_KILO_G^MDC     R  20100916145510+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the<br/>captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is one of the following values: <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> <li>• 'AR' – Accept Acknowledgment: Application Reject</li> </ul> </li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control<br/>ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> If the HFS receiver reports an ERR segment with severity E (Error) or F (Fatal<br/>Error), the Message Acknowledgement value shall be CR (Commit Reject)</li> <li><input type="checkbox"/> ERR-1 is empty</li> </ul> |
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- ❑ ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: <Segment ID (ST)> ^ <Segment Sequence (NM)> ^ <Field Position (NM)> ^ <Field Repetition (NM)> ^ <Component Number (NM)> ^ <Sub-Component Number (NM)>
  - ❑ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:
    - '0' – Message accepted
    - '206' – Application record locked
    - '207' – Application internal error
  - ❑ ERR-4 is set to one of these valid error severity values:
    - 'W' – Warning
    - 'I' – Information
    - 'E' – Error
    - 'F' – Fatal error.
  - ❑ ERR-5 and ERR-6 are empty
  - ❑ ERR-7 may be empty, but if it is valued, it is a text data
  - ❑ ERR-8 may be empty, but if it is valued, it is a text data
  - ❑ ERR-9 may be empty, but if it is valued, it is one of these values:
    - 'PAT'
    - 'NPAT'
    - 'USR'
    - 'HD'
  - ❑ ERR-10 may be empty, but if it is valued, it is encoded as: <Identifier (ST)>^<Text (ST)>^< Name of Coding System (ID)> the rest of the elements of the CWE data type are not used in the Services interface.
  - ❑ ERR-11 may be empty, but if it is valued, it is encoded as: <Identifier (ST)>^<Text (ST)>^< Name of Coding System (ID)> the rest of the elements of the CWE data type are not used in the Services interface.
  - ❑ ERR-12 may be empty, but if it is valued, it is encoded as: <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)>
- Where:
- Expiration Reason subcomponents are: <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)>
  - Protection code subcomponents are: <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)>
  - Shared Telecommunication Identifier subcomponents are: <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.                                                                                                                                                                                                                                                                                                                                                   |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>In step 2, all elements in each segment are as specified above</li> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2010-09-16 14:55:10 UTC, Values: Body Mass = 80 [kg]</li> </ul> |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

## A.8 Subgroup 2.4.7: Glucose meter (GL)

|                   |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                     |
|-------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| TP Id             |                | TP/HFS/REC/PCD-01-DATA/GL/BV-000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                     |
| TP label          |                | MSA and ERR segments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | EIDDataType 1; M     | EIDDataType 2; M    |
|                   |                | EIDDataType 3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | EIDDataType 4; M     | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br><br>[AND]<br><br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of a glucose meter device.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                     |
| Test procedure    |                | 1. The simulated HFS sender sends the following HL7 message, including the mandatory object of a glucose meter device inside a SOAP body to make the HFS receiver respond with another HL7 message:<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   <current time in UTC>  ORU^R01^ORU_R01 MSGID<random number> P 2.6   NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L<br><br>OBR 1 GLTest^AT4_AHD^1234567890ABCDEF^EUI-64 GLTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100910141527+0000 |                      |                     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE<br/>EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-<br/>body-continua     R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 <br/>6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.<br/>0.0.1.2 17~8209~24593     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-<br/>body-continua     R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0<br/>.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIM<br/>E_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-<br/>body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0<br/>.0.0.4.1 0~1     R</p> <p>OBX 10  528401^MDC_DEV_SPEC_PROFILE_GLUKOSE^MDC 1     X     1234567<br/>890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 Glucose Meter<br/>v1.0     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4<br/>Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100910141527+0000   <br/>  R  20100910141527+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-<br/>body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-<br/>body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1<br/> 1.0     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC <br/>1.0.0.4.2 8209     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.<br/>0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 NM 160184^MDC_CONC_GLU_CAPILLARY_WHOLEBLOOD^MDC 1.0.0.8 3<br/>8 264274^MDC_DIM_MILLI_G_PER_DL^MDC     R  20100910141527+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the<br/>captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is one of the following values: <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> <li>• 'AR' – Accept Acknowledgment: Application Reject</li> </ul> </li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control<br/>ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> If the HFS receiver reports an ERR segment with severity E (Error) or F (Fatal<br/>Error), the Message Acknowledgement value shall be CR (Commit Reject)</li> <li><input type="checkbox"/> ERR-1 is empty</li> </ul> |
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- ❑ ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: <Segment ID (ST)> ^ <Segment Sequence (NM)> ^ <Field Position (NM)> ^ <Field Repetition (NM)> ^ <Component Number (NM)> ^ <Sub-Component Number (NM)>
  - ❑ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:
    - '0' – Message accepted
    - '206' – Application record locked
    - '207' – Application internal error
  - ❑ ERR-4 is set to one of these valid error severity values:
    - 'W' – Warning
    - 'I' – Information
    - 'E' – Error
    - 'F' – Fatal error.
  - ❑ ERR-5 and ERR-6 are empty
  - ❑ ERR-7 may be empty, but if it is valued, it is a text data
  - ❑ ERR-8 may be empty, but if it is valued, it is a text data
  - ❑ ERR-9 may be empty, but if it is valued, it is one of these values:
    - 'PAT'
    - 'NPAT'
    - 'USR'
    - 'HD'
  - ❑ ERR-10 may be empty, but if it is valued, it is encoded as: <Identifier (ST)>^<Text (ST)>^< Name of Coding System (ID)> the rest of the elements of the CWE data type are not used in the Services interface.
  - ❑ ERR-11 may be empty, but if it is valued, it is encoded as: <Identifier (ST)>^<Text (ST)>^< Name of Coding System (ID)> the rest of the elements of the CWE data type are not used in the Services interface.
  - ❑ ERR-12 may be empty, but if it is valued, it is encoded as: <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)>
- Where:
- Expiration Reason subcomponents are: <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)>
  - Protection code subcomponents are: <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)>
  - Shared Telecommunication Identifier subcomponents are: <Entity Identifier (ST)>&<Namespace ID (IS)>&<Universal ID (ST)>&<Universal ID Type (ID)>

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
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|                           | 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.                                                                                                                                                                                                                                                                                                                                                             |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>In step 2, all elements in each segment are as specified above</li> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2010-09-10 14:15:27 UTC, Values: Glucose capillary= 38 [mg/dl]</li> </ul> |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## A.9 Subgroup 2.4.8: Cardiovascular fitness and activity monitor (CV)

|                   |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                     |
|-------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| TP Id             |                | TP/HFS/REC/PCD-01-DATA/CV/BV-000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                     |
| TP label          |                | MSA and ERR segments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | EIDDataType 1; M     | EIDDataType 2; M    |
|                   |                | EIDDataType 3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | EIDDataType 4; M     | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br><br>[AND]<br><br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of a cardiovascular device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                     |
| Test procedure    |                | 1. The simulated HFS sender sends the following HL7 message, including the mandatory Session object and an optional object of a cardiovascular device inside a SOAP body to make the HFS receiver respond with another HL7 message:<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   <current time in UTC>  ORU^R01^ORU_R01 MSGID<random number> P 2.6  NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L<br><br>OBR 1 CVTest^AT4_AHD^1234567890ABCDEF^EUI-64 CVTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100910141527+0000 |                      |                     |

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|  | <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE<br/>EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-<br/>body-continua     R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 <br/>6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.<br/>0.0.1.2 41~8233     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-<br/>body-continua     R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0<br/>.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIM<br/>E_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-<br/>body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0<br/>.0.0.4.1 0~1     R</p> <p>OBX 10  528425^MDC_DEV_SPEC_PROFILE_HF_CARDIO^MDC 1     X     123456<br/>7890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 CardioV v1.5     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4<br/>Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100910141527+0000   <br/>  R  20100910141527+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-<br/>body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-<br/>body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1<br/> 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC <br/>1.0.0.4.2 41     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.<br/>0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 CWE 8454267^MDC_HF_SESSION^MDC 1.0.0.6 8455155^MDC_HF_ACT_R<br/>UN^MDC     R  20100910141527+0000</p> <p>OBX 20 NM 68185^MDC_ATTR_TIME_PD_MSMT_ACTIVE^MDC 1.0.0.6.1 25 26432<br/>04^MDC_DIM_SEC^MDC     R</p> <p>OBX 21 NM 8454254^MDC_HF_SPEED^MDC 1.0.0.7 38.1 26870^MDC_DIM_M_PER<br/>_MIN^MDC     R  20100910141527+0000</p> <p>OBX 22 CWE 67883^MDC_ATTR_ID_PHYSIO^MDC 1.0.0.7.1 8456146^MDC_HF_M<br/>AX^MDC     R</p> <p>OBX 23 ST 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC 1.0.0.7.2 1.0.0.8     R</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the<br/>captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is one of the following values: <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> <li>• 'AR' – Accept Acknowledgment: Application Reject</li> </ul> </li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control<br/>ID) of the incoming message for which this acknowledgement is being sent</li> </ul> |
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|--|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <p><input type="checkbox"/> MSA-3 to MSA-8 are empty</p> <p>b. If the ERR segment referring to the MSA is present:</p> <p><input type="checkbox"/> If the HFS receiver reports an ERR segment with severity E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)</p> <p><input type="checkbox"/> ERR-1 is empty</p> <p><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: <i>&lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</i></p> <p><input type="checkbox"/> ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:</p> <ul style="list-style-type: none"> <li>• '0' – Message accepted</li> <li>• '206' – Application record locked</li> <li>• '207' – Application internal error</li> </ul> <p><input type="checkbox"/> ERR-4 is set to one of these valid error severity values:</p> <ul style="list-style-type: none"> <li>• 'W' – Warning</li> <li>• 'I' – Information</li> <li>• 'E' – Error</li> <li>• 'F' – Fatal error.</li> </ul> <p><input type="checkbox"/> ERR-5 and ERR-6 are empty</p> <p><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</p> <p><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</p> <p><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values:</p> <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> <p><input type="checkbox"/> ERR-10 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</p> <p><input type="checkbox"/> ERR-11 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</p> <p><input type="checkbox"/> ERR-12 may be empty, but if it is valued, it is encoded as: <i>&lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</i></p> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System</i></li> </ul> |
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|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | <p><i>Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></p> <ul style="list-style-type: none"> <li>Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>In step 2, all elements in each segment are as specified above.</li> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2010-09-10 14:15:27 UTC, Values: Speed= 38.1 [m/min]</li> </ul>                        |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## A.10 Subgroup 2.4.9: Strength fitness equipment (ST)

|                   |                |                                                                                                                                                                                                                                   |                      |                     |
|-------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| TP Id             |                | TP/HFS/REC/PCD-01-DATA/ST/BV-000                                                                                                                                                                                                  |                      |                     |
| TP label          |                | MSA and ERR segments                                                                                                                                                                                                              |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                                                                                   |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                                                                         | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                                                                          | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                                                                          | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                                                                       | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                                                                          | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                                                                          | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                                                                                  | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                                                                                  | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                                                                             | EIDataType 1; M      | EIDataType 2; M     |
|                   |                | EIDataType 3; M                                                                                                                                                                                                                   | EIDataType 4; M      | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                                                                         | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                                                                                 |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br>[AND]<br><br>The data type of each element.                                                                                                                    |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                                                                         |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                    |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of a strength fitness device.                                                             |                      |                     |
| Test procedure    |                | 1. The simulated HFS sender sends the following HL7 message, including the mandatory Set object and an optional object of a strength fitness device inside a SOAP body to make the HFS receiver respond with another HL7 message: |                      |                     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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|  | <p>MSH ^~\&amp; AT4_AHD^1234567890ABCDEF^EUI-64   current time in UTC&gt;  ORU^R01^ORU_R01 MSGID&lt;random number&gt; P 2.6   NE AL   HE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7</p> <p>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L</p> <p>OBR 1 STTest^AT4_AHD^1234567890ABCDEF^EUI-64 STTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100919211841+0000</p> <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0    X     FEEDABEEDEADBE EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua    R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1    R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 42~8234~16426    R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua    R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)   R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC    R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua    R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1    R</p> <p>OBX 10  528426^MDC_DEV_SPEC_PROFILE_HF_STRENGTH^MDC 1    X     1234567890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 StrengthFitness v1.5    R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless    R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100919211841+0000   R   20100919211841+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua    R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua    R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5    R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16426    R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)   R</p> <p>OBX 19 NM 8454344^MDC_HF_SET^MDC 1.0.0.6    R   20100919211841+0000    459284^MDC_MUSC_THORAX_PECTORAL_MAJOR^MDC</p> <p>OBX 20 NM 68185^MDC_ATTR_TIME_PD_MSMT_ACTIVE^MDC 1.0.0.6.1 25 264320^MDC_DIM_SEC^MDC    R</p> <p>OBX 21 NM 8454346^MDC_HF_REPETITION_COUNT^MDC 1.0.0.7 12 262656^MDC_DIM_DIMLESS^MDC    R   20100919211841+0000</p> <p>OBX 22 ST 68167^MDC_ATTR_SOURCE_HANDLE_REF^MDC 1.0.0.7.1 1.0.0.6    R</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <p><input type="checkbox"/> MSA-1 is one of the following values:</p> |
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|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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|  | <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> <li>• 'AR' – Accept Acknowledgment: Application Reject</li> </ul> <p><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</p> <p><input type="checkbox"/> MSA-3 to MSA-8 are empty</p> <p>b. If the ERR segment referring to the MSA is present:</p> <p><input type="checkbox"/> If the HFS receiver reports an ERR segment with severity E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)</p> <p><input type="checkbox"/> ERR-1 is empty</p> <p><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: <i>&lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</i></p> <p><input type="checkbox"/> ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:</p> <ul style="list-style-type: none"> <li>• '0' – Message accepted</li> <li>• '206' – Application record locked</li> <li>• '207' – Application internal error</li> </ul> <p><input type="checkbox"/> ERR-4 is set to one of these valid error severity values:</p> <ul style="list-style-type: none"> <li>• 'W' – Warning</li> <li>• 'I' – Information</li> <li>• 'E' – Error</li> <li>• 'F' – Fatal error.</li> </ul> <p><input type="checkbox"/> ERR-5 and ERR-6 are empty</p> <p><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</p> <p><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</p> <p><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values:</p> <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> <p><input type="checkbox"/> ERR-10 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</p> <p><input type="checkbox"/> ERR-11 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</p> <p><input type="checkbox"/> ERR-12 may be empty, but if it is valued, it is encoded as: <i>&lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</i></p> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System</i></li> </ul> |
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|                           | <p><i>Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></p> <ul style="list-style-type: none"> <li>Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>In step 2, all elements in each segment are as specified above</li> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2010-09-19 21:18:41 UTC, Values: Repetition Count = 12 [dimless]</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

#### A.11 Subgroup 2.4.10: Independent living activity hub (HUB)

|                   |                |                                                                                                                                                                              |                      |                     |
|-------------------|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| TP Id             |                | TP/HFS/REC/PCD-01-DATA/HUB/BV-000                                                                                                                                            |                      |                     |
| TP label          |                | MSA and ERR segments                                                                                                                                                         |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                              |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                    | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                     | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                     | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                  | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                     | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                     | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                             | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                             | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                        | EIDataType 1; M      | EIDataType 2; M     |
|                   |                | EIDataType 3; M                                                                                                                                                              | EIDataType 4; M      | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                    | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                            |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br>[AND]<br><br>The data type of each element.                                                               |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                    |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                               |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of an independent living hub device. |                      |                     |

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| <p><b>Test procedure</b></p> | <ol style="list-style-type: none"> <li>1. The simulated HFS sender sends the following HL7 message, including one of the optional objects of an independent living hub device inside a SOAP body to make the HFS receiver respond with another HL7 message: <p>MSH ^~\&amp; AT4_AHD^1234567890ABCDEF^EUI-64   &lt;current time in UTC&gt;  ORU^R01^ORU_R01 MSGID&lt;random number&gt; P 2.6  NE AL     HE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7</p> <p>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L</p> <p>OBR 1 HUBTest^AT4_AHD^1234567890ABCDEF^EUI-64 HUBTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100920203341+0000</p> <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 71~8263~16455     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R</p> <p>OBX 10  528455^MDC_DEV_SPEC_PROFILE_AI_ACTIVITY_HUB^MDC 1     X     1234567890ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 HUB v1.5     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100920203341+0000     R   20100920203341+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 1.5     R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16455     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 CWE 8519681^MDC_AI_TYPE_SENSOR_FALL^MDC 1.0.0.6 1^fall-detected(0)     R   20100920203341+0000</p> <p>OBX 20 CWE 8520703^MDC_AI_LOCATION^MDC 1.0.0.6.1 8522816^MDC_AI_LOCATION_BEDROOMMASTER^MDC     R</p> </li> <li>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that: <ol style="list-style-type: none"> <li>a. Only one MSA segment is present and: <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is one of the following values: <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> </ul> </li> </ul> </li> </ol> </li> </ol> |
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- 'AR' – Accept Acknowledgment: Application Reject
- ☐ MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent
- ☐ MSA-3 to MSA-8 are empty
- b. If the ERR segment referring to the MSA is present:
  - ☐ If the HFS receiver reports an ERR segment with severity E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)
  - ☐ ERR-1 is empty
  - ☐ ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: *<Segment ID (ST)> ^ <Segment Sequence (NM)> ^ <Field Position (NM)> ^ <Field Repetition (NM)> ^ <Component Number (NM)> ^ <Sub-Component Number (NM)>*
  - ☐ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:
    - '0' – Message accepted
    - '206' – Application record locked
    - '207' – Application internal error
  - ☐ ERR-4 is set to one of these valid error severity values:
    - 'W' – Warning
    - 'I' – Information
    - 'E' – Error
    - 'F' – Fatal error.
  - ☐ ERR-5 and ERR-6 are empty
  - ☐ ERR-7 may be empty, but if it is valued, it is a text data
  - ☐ ERR-8 may be empty, but if it is valued, it is a text data
  - ☐ ERR-9 may be empty, but if it is valued, it is one of these values:
    - 'PAT'
    - 'NPAT'
    - 'USR'
    - 'HD'
  - ☐ ERR-10 may be empty, but if it is valued, it is encoded as: *<Identifier (ST)>^<Text (ST)>^<Name of Coding System (ID)>* the rest of the elements of the CWE data type are not used in the Services interface.
  - ☐ ERR-11 may be empty, but if it is valued, it is encoded as: *<Identifier (ST)>^<Text (ST)>^<Name of Coding System (ID)>* the rest of the elements of the CWE data type are not used in the Services interface.
  - ☐ ERR-12 may be empty, but if it is valued, it is encoded as: *<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)>*
- Where:
  - Expiration Reason subcomponents are: *<Identifier (ST)>^<Text (ST)>^<Name of Coding System (ID)>^<Alternate Identifier (ST)>^<Alternate Text (ST)>^<Name of Alternate Coding System (ID)>^<Coding System*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | <p><i>Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></p> <ul style="list-style-type: none"> <li>Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>In step 2, all elements in each segment are as specified above</li> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2010-09-20 20:33:41 UTC, Values: Fall Sensor = "fall detected" [dimless]</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

## A.12 Subgroup 2.4.11: Adherence monitor (AM)

|                   |                |                                                                                                                                                                         |                      |                     |
|-------------------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| TP Id             |                | TP/HFS/REC/PCD-01-DATA/AM/BV-000                                                                                                                                        |                      |                     |
| TP label          |                | MSA and ERR segments                                                                                                                                                    |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                         |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                               | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                             | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                        | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                        | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                   | EIDataType 1; M      | EIDataType 2; M     |
|                   |                | EIDataType 3; M                                                                                                                                                         | EIDataType 4; M      | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                               | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                       |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br>[AND]<br><br>The data type of each element.                                                          |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                               |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                          |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of an adherence monitor device. |                      |                     |

|                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Test procedure</b></p> | <ol style="list-style-type: none"> <li> <p>The simulated HFS sender sends the following HL7 message, including the mandatory object of the standard configuration (7201) adherence monitor device inside a SOAP body to make the HFS receiver respond with another HL7 message:</p> <pre> MSH ^~\&amp; AT4_AHD^1234567890ABCDEF^EUI-64   &lt;current time in UTC&gt;  ORU^R01^ORU_R01 MSGID&lt;random number&gt; P 2.6   NE AL   HE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7  PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L  OBR 1 AMTest^AT4_AHD^1234567890ABCDEF^EUI-64 AMTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100921123934+0000  OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64  OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth- body-continua    R  OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1  6.1    R  OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0. 0.0.1.2 16456~8264    R  OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth- body-continua    R  OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0 .0.2.1 1^unregulated-device(0)   R  OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIM E_SYNC_NONE^MDC    R  OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth- body-continua    R  OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0 .0.0.4.1 0~1    R  OBX 10  528456^MDC_DEV_SPEC_PROFILE_AI_MED_MINDER^MDC 1     X     1 234567890ABCDEF^EUI-64  OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 Adherence Mon v1.5    R  OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless    R  OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100921123934+0000      R  20100921123934+0000  OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth- body-continua    R  OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth- body-continua    R  OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1  1.5    R  OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC  1.0.0.4.2 16456    R  OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1. 0.0.5.1 0^unregulated-device(0)   R  OBX 19 NM 8532992^MDC_AI_MED_DISPENSED_FIXED^MDC 1.0.0.6 44 262656^ MDC_DIM_DIMLESS^MDC    R  20100921123934+0000  OBX 20 CWE 8532994^MDC_AI_MED_STATUS^MDC 1.0.0.7 1^medication-course- complete(4)   R  OBX 21  8532995^MDC_AI_MED_FEEDBACK^MDC 1.0.1     X  OBX 22 NM 8532996^MDC_AI_MED_UF_LOCATION^MDC 1.0.1.1 5    R  20100921 123934+0000 </pre> </li> </ol> |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

OBX|23|NM|8532997^MDC\_AI\_MED\_UF\_RESPONSE^MDC|1.0.1.2|3|||||R|||20100921123934+0000

2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:
  - a. Only one MSA segment is present and:
    - ☐ MSA-1 is one of the following values:
      - 'AA' – Accept Acknowledgment: Application Accept
      - 'AR' – Accept Acknowledgment: Application Reject
    - ☐ MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent
    - ☐ MSA-3 to MSA-8 are empty
  - b. If the ERR segment referring to the MSA is present:
    - ☐ If the HFS receiver reports an ERR segment with severity E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)
    - ☐ ERR-1 is empty
    - ☐ ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: <Segment ID (ST)> ^ <Segment Sequence (NM)> ^ <Field Position (NM)> ^ <Field Repetition (NM)> ^ <Component Number (NM)> ^ <Sub-Component Number (NM)>
    - ☐ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:
      - '0' – Message accepted
      - '206' – Application record locked
      - '207' – Application internal error
    - ☐ ERR-4 is set to one of these valid error severity values:
      - 'W' – Warning
      - 'I' – Information
      - 'E' – Error
      - 'F' – Fatal error.
    - ☐ ERR-5 and ERR-6 are empty
    - ☐ ERR-7 may be empty, but if it is valued, it is a text data
    - ☐ ERR-8 may be empty, but if it is valued, it is a text data
    - ☐ ERR-9 may be empty, but if it is valued, it is one of these values:
      - 'PAT'
      - 'NPAT'
      - 'USR'
      - 'HD'
    - ☐ ERR-10 may be empty, but if it is valued, it is encoded as: <Identifier (ST)>^<Text (ST)>^<Name of Coding System (ID)> the rest of the elements of the CWE data type are not used in the Services interface.
    - ☐ ERR-11 may be empty, but if it is valued, it is encoded as: <Identifier (ST)>^<Text (ST)>^<Name of Coding System (ID)> the rest of the elements of the CWE data type are not used in the Services interface.
    - ☐ ERR-12 may be empty, but if it is valued, it is encoded as: <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

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | <p>(DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</p> <p>Where:</p> <ul style="list-style-type: none"> <li>Expiration Reason subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>Protection code subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>Shared Telecommunication Identifier subcomponents are: &lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>In step 2, all elements in each segment are as specified above</li> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurements: 2010-09-21 12:39:34 UTC, Values: Fixed Dosage Dispensed = 44 [dimless], Status = "medication course completed", Feedback Location = 5 [dimless] and Feedback Response = 3 [dimless]</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Notes</b>              | <p>[AT4]: Possible Continua DG v2011 bug. Step 2.d shows the expected OBX segment as specified in Continua DG v2011 – Appendix J Table J-29. Based on similarity between BPM and AM compound values, we understand that correct OBX segment should be:</p> <p>User Feedback Channel object follows this OBX encoding:</p> <ul style="list-style-type: none"> <li>OBX-2 is empty</li> <li>OBX-3 = 8532995^MDC_AI_MED_FEEDBACK^MDC</li> <li>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.</li> <li>OBX-5 is empty</li> <li>OBX-11 = 'X'</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

### A.13 Subgroup 2.4.12: Peak expiratory flow monitor (PF)

|                 |                       |                                  |                      |                     |
|-----------------|-----------------------|----------------------------------|----------------------|---------------------|
| <b>TP Id</b>    |                       | TP/HFS/REC/PCD-01-DATA/PF/BV-000 |                      |                     |
| <b>TP label</b> |                       | MSA and ERR segments             |                      |                     |
| <b>Coverage</b> | <b>Spec</b>           | [ITU-T H.812.1]                  |                      |                     |
|                 | <b>Testable items</b> | MSAUse; M                        | MSA-1; M             | MSA-2; M            |
|                 |                       | MSA-3; M                         | MSA-4; M             | MSA-5; M            |
|                 |                       | MSA-6; M                         | MSA-7; M             | MSA-8; M            |
|                 |                       | ERRUse 1; O                      | ERRUse 2; M          | ERR-1; M            |
|                 |                       | ERR-2; R                         | ERR-3; M             | ERR-4; M            |
|                 |                       | ERR-5; M                         | ERR-6; M             | ERR-7; O            |
|                 |                       | CWEDataType 1; M                 | CWEDataType 2; M     | CWEDataType 3; C    |
|                 |                       | CWEDataType 4; R                 | NumericDataType 1; M | StringDataType 1; M |
|                 |                       | DateTimeDataType 1; M            | EIDDataType 1; M     | EIDDataType 2; M    |
|                 |                       | EIDDataType 3; M                 | EIDDataType 4; M     | EIUse1; C           |

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                  |                   |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|------------------|-------------------|
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | EIUse2; C         | EIUse3; C        | EIUse4; C         |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 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 |                  |                   |
| <b>Test purpose</b>      | Check that:<br>The elements of every segment of the message<br>[AND]<br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                  |                   |
| <b>Applicability</b>     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |                  |                   |
| <b>Other PICS</b>        | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                  |                   |
| <b>Initial condition</b> | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of a peak flow device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                   |                  |                   |
| <b>Test procedure</b>    | 1. The simulated HFS sender sends the following HL7 message, including the mandatory objects of a peak flow device inside a SOAP body to make the HFS receiver respond with another HL7 message:<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   <current time in UTC>  ORU^R01^ORU_R01 MSGID<random number> P 2.6   NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^L<br><br>OBR 1 PFTTest^AT4_AHD^1234567890ABCDEF^EUI-64 PFTTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100921124034+0000<br><br>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64<br><br>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R<br><br>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R<br><br>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 16405~8213~24597     R<br><br>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R<br><br>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)   R<br><br>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R<br><br>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R<br><br>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R<br><br>OBX 10  528405^MDC_DEV_SPEC_PROFILE_PEFM^MDC 1     X     1234567890A BCDEF^EUI-64<br><br>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 Peak Flow v1.5     R<br><br>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R<br><br>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100921124034+0000     R   20100921124034+0000<br><br>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua     R |                   |                  |                   |

OBX|15|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|1.0.0.5|2^auth-body-continua|||||R

OBX|16|ST|532352^MDC\_REG\_CERT\_DATA\_CONTINUA\_VERSION^MDC|1.0.0.4.1|1.5|||||R

OBX|17|NA|532353^MDC\_REG\_CERT\_DATA\_CONTINUA\_CERT\_DEV\_LIST^MDC|1.0.0.4.2|16405|||||R

OBX|18|CWE|532354^MDC\_REG\_CERT\_DATA\_CONTINUA\_REG\_STATUS^MDC|1.0.0.5.1|0^unregulated-device(0)|||||R

OBX|19|NM|152584^MDC\_FLOW\_AWAY\_EXP\_FORCED\_PEAK^MDC|1.0.0.6|67|264992^MDC\_DIM\_L\_PER\_MIN^MDC|||||R|||20100921124034+0000

OBX|20|NM|152585^MDC\_FLOW\_AWAY\_EXP\_FORCED\_PEAK\_PB^MDC|1.0.0.7|35|264992^MDC\_DIM\_L\_PER\_MIN^MDC|||||R|||20100921124034+0000

OBX|21|NM|152586^MDC\_FLOW\_AWAY\_EXP\_FORCED\_PEAK\_1S^MDC|1.0.0.8|48|263744^MDC\_DIM\_L^MDC|||||R|||20100921124034+0000

2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:

a. Only one MSA segment is present and:

☐ MSA-1 is one of the following values:

- 'AA' – Accept Acknowledgment: Application Accept
- 'AR' – Accept Acknowledgment: Application Reject

☐ MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent

☐ MSA-3 to MSA-8 are empty

b. If the ERR segment referring to the MSA is present:

☐ If the HFS receiver reports an ERR segment with severity E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)

☐ ERR-1 is empty

☐ ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: <Segment ID (ST)> ^ <Segment Sequence (NM)> ^ <Field Position (NM)> ^ <Field Repetition (NM)> ^ <Component Number (NM)> ^ <Sub-Component Number (NM)>

☐ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:

- '0' – Message accepted
- '206' – Application record locked
- '207' – Application internal error

☐ ERR-4 is set to one of these valid error severity values:

- 'W' – Warning
- 'I' – Information
- 'E' – Error
- 'F' – Fatal error.

☐ ERR-5 and ERR-6 are empty

☐ ERR-7 may be empty, but if it is valued, it is a text data

☐ ERR-8 may be empty, but if it is valued, it is a text data

☐ ERR-9 may be empty, but if it is valued, it is one of these values:

- 'PAT'
- 'NPAT'

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | <ul style="list-style-type: none"> <li>• 'USR'</li> <li>• 'HD'</li> </ul> <ul style="list-style-type: none"> <li>❑ ERR-10 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li>❑ ERR-11 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt; the rest of the elements of the CWE data type are not used in the Services interface.</li> <li>❑ ERR-12 may be empty, but if it is valued, it is encoded as: &lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>• Protection code subcomponents are: &lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</li> <li>• Shared Telecommunication Identifier subcomponents are: &lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>• In step 2, all elements in each segment are as specified above</li> <li>• Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of measurements: 2010-09-21 12:40:34 UTC, Values: PEF = 67 [l/min], Personal Best = 35 [l/min], FEV1 = 48 [l]</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

#### A.14 Subgroup 2.4.13: Body composition analyser (BCA)

|                 |                       |                                   |                      |                     |
|-----------------|-----------------------|-----------------------------------|----------------------|---------------------|
| <b>TP Id</b>    |                       | TP/HFS/REC/PCD-01-DATA/BCA/BV-000 |                      |                     |
| <b>TP label</b> |                       | MSA and ERR segments              |                      |                     |
| <b>Coverage</b> | <b>Spec</b>           | [ITU-T H.812.1]                   |                      |                     |
|                 | <b>Testable items</b> | MSAUse; M                         | MSA-1; M             | MSA-2; M            |
|                 |                       | MSA-3; M                          | MSA-4; M             | MSA-5; M            |
|                 |                       | MSA-6; M                          | MSA-7; M             | MSA-8; M            |
|                 |                       | ERRUse 1; O                       | ERRUse 2; M          | ERR-1; M            |
|                 |                       | ERR-2; R                          | ERR-3; M             | ERR-4; M            |
|                 |                       | ERR-5; M                          | ERR-6; M             | ERR-7; O            |
|                 |                       | CWEDataType 1; M                  | CWEDataType 2; M     | CWEDataType 3; C    |
|                 |                       | CWEDataType 4; R                  | NumericDataType 1; M | StringDataType 1; M |

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                       |                  |                   |
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|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EIDDataType 3; M      | EIDDataType 4; M | EIUse1; C         |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EIUse2; C             | EIUse3; C        | EIUse4; C         |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 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     |                  |                   |
| <b>Test purpose</b>      | Check that:<br>The elements of every segment of the message<br>[AND]<br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                  |                   |
| <b>Applicability</b>     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                       |                  |                   |
| <b>Other PICS</b>        | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |                  |                   |
| <b>Initial condition</b> | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of a body composition analyser device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |                  |                   |
| <b>Test procedure</b>    | 1. The simulated HFS sender sends the following HL7 message inside a SOAP body to make the HFS receiver respond with another HL7 message:<br><pre> MSH ^~\&amp; AT4_AHD^1234567890ABCDEF^EUI-64   &lt;current time in UTC&gt;  ORU^R01^ORU_R01 MSGID&lt;random number&gt; P 2.6   NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7 PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L OBR 1 THTest^AT4_AHD^1234567890ABCDEF^EUI-64 THTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100916145110+0000 OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64 OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth- body-continua     R OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1  6.1     R OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0. 0.0.1.2 8212~16404~24596     R OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth- body-continua     R OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0 .0.2.1 1^unregulated-device(0)   R OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIM E_SYNC_NONE^MDC     R OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth- body-continua     R OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0 .0.0.4.1 0~1     R OBX 10  528404^MDC_DEV_SPEC_PROFILE_BCA^MDC 1     X     1234567890AB CDEF^EUI-64 OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 Body Composition Analyzer v3.0     R OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R </pre> |                       |                  |                   |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|  | <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20100916145110+0000   <br/>  R   20100916145110+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-<br/>body-continua   R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-<br/>body-continua   R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1<br/> 3.0   R</p> <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC <br/>1.0.0.4.2 16404   R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.<br/>0.0.5.1 0^unregulated-device(0)   R</p> <p>OBX 19 NM 188748^MDC_BODY_FAT^MDC 1.0.0.6 25 262688^MDC_DIM_PERCEN<br/>T^MDC   R   20100916145110+0000</p> <p>OBX 20 NM 188740^MDC_LEN_BODY_ACTUAL^MDC 1.0.0.7 175 263441^MDC_DI<br/>M_CENTI_M^MDC   R   20100916145110+0000</p> <p>OBX 21 NM 188736^MDC_MASS_BODY_ACTUAL^MDC 1.0.0.8 73.5 263875^MDC_<br/>DIM_KILO_G^MDC   R   20100916145110+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the<br/>captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is one of the following values: <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> <li>• 'AR' – Accept Acknowledgment: Application Reject</li> </ul> </li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control<br/>ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> If the HFS receiver reports an ERR segment with severity E (Error) or F (Fatal<br/>Error), the Message Acknowledgement value shall be CR (Commit Reject)</li> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the<br/>identified error, warning, or message. This field is repeated for errors which<br/>result from the combination of multiple locations. Components: &lt;Segment ID<br/>(ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field<br/>Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number<br/>(NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with one of the following valid error condition codes and other<br/>optional subfields might be included: <ul style="list-style-type: none"> <li>• '0' – Message accepted</li> <li>• '206' – Application record locked</li> <li>• '207' – Application internal error</li> </ul> </li> <li><input type="checkbox"/> ERR-4 is set to one of these valid error severity values: <ul style="list-style-type: none"> <li>• 'W' – Warning</li> <li>• 'I' – Information</li> <li>• 'E' – Error</li> <li>• 'F' – Fatal error.</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> <li><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</li> </ul> |
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|                           | <ul style="list-style-type: none"> <li>❑ ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li>❑ ERR-10 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</li> <li>❑ ERR-11 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</li> <li>❑ ERR-12 may be empty, but if it is valued, it is encoded as: <i>&lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</i></li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>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.</p> |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>• In step 2, all elements in each segment are as specified above</li> <li>• Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of measurements 2010-09-16 14:51:10 UTC, Values: Body Fat, 25 [%]; Body Height, 175 [cm] and Body Weight, 73.5 [Kg]</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

#### A.15 Subgroup 2.4.14: Basic electrocardiograph (ECG)

|                 |                       |                                   |             |          |
|-----------------|-----------------------|-----------------------------------|-------------|----------|
| <b>TP Id</b>    |                       | TP/HFS/REC/PCD-01-DATA/ECG/BV-000 |             |          |
| <b>TP label</b> |                       | MSA and ERR segments              |             |          |
| <b>Coverage</b> | <b>Spec</b>           | [ITU-T H.812.1]                   |             |          |
|                 | <b>Testable items</b> | MSAUse; M                         | MSA-1; M    | MSA-2; M |
|                 |                       | MSA-3; M                          | MSA-4; M    | MSA-5; M |
|                 |                       | MSA-6; M                          | MSA-7; M    | MSA-8; M |
|                 |                       | ERRUse 1; O                       | ERRUse 2; M | ERR-1; M |
|                 |                       | ERR-2; R                          | ERR-3; M    | ERR-4; M |

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|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CWEDataType 1; M      | CWEDataType 2; M     | CWEDataType 3; C    |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CWEDataType 4; R      | NumericDataType 1; M | StringDataType 1; M |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | DateTimeDataType 1; M | EIDataType 1; M      | EIDataType 2; M     |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EIDataType 3; M       | EIDataType 4; M      | EIUse1; C           |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EIUse2; C             | EIUse3; C            | EIUse4; C           |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | 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     |                      |                     |
| <b>Test purpose</b>      | Check that:<br>The elements of every segment of the message<br>[AND]<br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                       |                      |                     |
| <b>Applicability</b>     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                       |                      |                     |
| <b>Other PICS</b>        | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                       |                      |                     |
| <b>Initial condition</b> | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a SOAP message with an observation of a basic electrocardiograph device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                       |                      |                     |
| <b>Test procedure</b>    | 1. The simulated HFS sender sends the following HL7 message inside a SOAP body to make the HFS receiver respond with another HL7 message:<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   <current time in UTC>  ORU^R01^ORU_R01 MSGID<random number> P 2.6   NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L<br><br>OBR 1 THTest^AT4_AHD^1234567890ABCDEF^EUI-64 THTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100916145110+0000<br><br>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64<br><br>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R<br><br>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R<br><br>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8204~8332     R<br><br>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R<br><br>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)     R<br><br>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R<br><br>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R<br><br>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R<br><br>OBX 10  528384^MDC_DEV_SPEC_PROFILE_HYDRA^MDC 1     X     1234567890 ABCDEF^EUI-64 |                       |                      |                     |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
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|  | <p>OBX 11 CWE 68186^MDC_ATTR_SYS_TYPE_SPEC_LIST^MDC 1.0.0.1 528390^MDC_DEV_SPEC_PROFILE_ECG^MDC~528525^MDC_DEV_SUB_SPEC_PROFILE_HR^MDC    R   20110808135003+0000</p> <p>OBX 12 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.2 Basic Electrocardiograph v3.0    R</p> <p>OBX 13 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.3 AT4 Wireless    R</p> <p>OBX 14 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.4 20100916145110+0000    R   20100916145110+0000</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua    R</p> <p>OBX 16 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.6 2^auth-body-continua    R</p> <p>OBX 17 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.5.1 3.0    R</p> <p>OBX 18 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.5.2 8204~8332    R</p> <p>OBX 19 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.6.1 0^unregulated-device(0)    R</p> <p>OBX 20 NM 147842^MDC_ECG_HEART_RATE^MDC 1.0.0.7 80 264864^MDC_DIM_BEAT_PER_MIN^MDC    R   20100916145110+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is one of the following values: <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> <li>• 'AR' – Accept Acknowledgment: Application Reject</li> </ul> </li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If the ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> If the HFS receiver reports an ERR segment with severity E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)</li> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included: <ul style="list-style-type: none"> <li>• '0' – Message accepted</li> <li>• '206' – Application record locked</li> <li>• '207' – Application internal error</li> </ul> </li> <li><input type="checkbox"/> ERR-4 is set to one of these valid error severity values: <ul style="list-style-type: none"> <li>• 'W' – Warning</li> <li>• 'I' – Information</li> <li>• 'E' – Error</li> <li>• 'F' – Fatal error.</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> </ul> |
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|                           | <ul style="list-style-type: none"> <li>❑ ERR-7 may be empty, but if it is valued, it is a text data</li> <li>❑ ERR-8 may be empty, but if it is valued, it is a text data</li> <li>❑ ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li>❑ ERR-10 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in the Services interface.</li> <li>❑ ERR-11 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt;</i> the rest of the elements of the CWE data type are not used in Services interface.</li> <li>❑ ERR-12 may be empty, but if it is valued, it is encoded as: <i>&lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</i><br/> Where: <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> 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. </li> </ul> |  |  |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>• In step 2, all elements in each segment are as specified above</li> <li>• Verify that the HFS receiver under test is able to accept the data and time stamps (e.g., if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of measurement: 2010-09-16 14:51:10 UTC, Value: Heart Rate, 80 [beats per min.].</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |  |

#### A.16 Subgroup 2.4.15: International normalized ratio (INR)

|                 |                       |                                   |          |          |
|-----------------|-----------------------|-----------------------------------|----------|----------|
| <b>TP Id</b>    |                       | TP/HFS/REC/PCD-01-DATA/INR/BV-000 |          |          |
| <b>TP label</b> |                       | MSA and ERR segments              |          |          |
| <b>Coverage</b> | <b>Spec</b>           | [ITU-T H.812.1]                   |          |          |
|                 | <b>Testable items</b> | MSAUse; M                         | MSA-1; M | MSA-2; M |
|                 |                       | MSA-3; M                          | MSA-4; M | MSA-5; M |

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                       |                      |                     |
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|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | MSA-6; M              | MSA-7; M             | MSA-8; M            |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ERRUse 1; O           | ERRUse 2; M          | ERR-1; M            |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ERR-2; R              | ERR-3; M             | ERR-4; M            |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | ERR-5; M              | ERR-6; M             | ERR-7; O            |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CWEDataType 1; M      | CWEDataType 2; M     | CWEDataType 3; C    |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CWEDataType 4; R      | NumericDataType 1; M | StringDataType 1; M |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | DateTimeDataType 1; M | EIDDataType 1; M     | EIDDataType 2; M    |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIDDataType 3; M      | EIDDataType 4; M     | EIUse1; C           |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIUse2; C             | EIUse3; C            | EIUse4; C           |
|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 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     |                      |                     |
| <b>Test purpose</b>      | <p>Check that:</p> <p>The elements of every segment of the message</p> <p>[AND]</p> <p>The data type of each element.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                      |                     |
| <b>Applicability</b>     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                       |                      |                     |
| <b>Other PICS</b>        | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                       |                      |                     |
| <b>Initial condition</b> | The receiver under test has published a WebService and the simulated sender is ready to send a message with an Observation of an International Normalized Ratio device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                       |                      |                     |
| <b>Test procedure</b>    | <p>1. The simulated sender sends the following HL7 message, including the mandatory objects of a Pulse Oximeter device to make the receiver respond with another HL7 message.</p> <p>MSH ^~\&amp; AT4_AHD^1234567890ABCDEF^EUI-64   &lt;current time in UTC&gt;  ORU^R01^ORU_R01 MSGID&lt;random number&gt; P 2.6   NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7</p> <p>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^L</p> <p>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20100903124015+0000</p> <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     FEEDABEEDEADBE EF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 8196~16388     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R</p> |                       |                      |                     |

OBX|6|CWE|532354^MDC\_REG\_CERT\_DATA\_CONTINUA\_REG\_STATUS^MDC|0.0.0.2.1|1^unregulated-device(0)|||||R

OBX|7|CWE|68220^MDC\_TIME\_SYNC\_PROTOCOL^MDC|0.0.0.3|532224^MDC\_TIME\_SYNC\_NONE^MDC|||||R

OBX|8|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|0.0.0.4|2^auth-body-continua|||||R

OBX|9|CWE|64515^MDC\_REG\_CERT\_DATA\_CONTINUA\_AHD\_CERT\_LIST^MDC|0.0.0.4.1|0~1|||||R

OBX|10||528406^MDC\_DEV\_SPEC\_PROFILE\_COAG^MDC|1|||||X|||||0123456789ABCDEF^^0123456789ABCDEF^EUI-64

OBX|11|ST|531969^MDC\_ID\_MODEL\_NUMBER^MDC|1.0.0.1|INR v1.5|||||R

OBX|12|ST|531970^MDC\_ID\_MODEL\_MANUFACTURER^MDC|1.0.0.2|AT4 Wireless|||||R

OBX|13|DTM|67975^MDC\_ATTR\_TIME\_ABS^MDC|1.0.0.3|20100903124015+0000|||||R|||20150316145510+0000

OBX|14|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|1.0.0.4|2^auth-body-continua|||||R

OBX|15|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|1.0.0.5|2^auth-body-continua|||||R

OBX|16|ST|532352^MDC\_REG\_CERT\_DATA\_CONTINUA\_VERSION^MDC|1.0.0.4.1|6.1|||||R

OBX|17|NA|532353^MDC\_REG\_CERT\_DATA\_CONTINUA\_CERT\_DEV\_LIST^MDC|1.0.0.4.2|16388|||||R

OBX|18|CWE|532354^MDC\_REG\_CERT\_DATA\_CONTINUA\_REG\_STATUS^MDC|1.0.0.5.1|0^unregulated-device(0)|||||R

OBX|19|NM|160260^MDC\_RATIO\_INR\_COAG^MDC|1.0.0.1|0.9|268752^MDC\_DIM\_INR^MDC|||||R|||20150316145510+0000

2. HFS receiver under test responds using another HL7 message. Check in the captured message that:
  - a. Only one MSA segment is present and:
    - ☐ MSA-1 is one of the following values:
      - 'AA' – Accept Acknowledgment: Application Accept
      - 'AR' – Accept Acknowledgment: Application Reject
    - ☐ MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent
    - ☐ MSA-3 to MSA-8 are empty
  - b. If ERR segment referring to the MSA is present:
    - ☐ If the HFS receiver reports an ERR segment with Severity (ERR-4) E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)
    - ☐ ERR-1 is empty
    - ☐ ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: <Segment ID (ST)> ^ <Segment Sequence (NM)> ^ <Field Position (NM)> ^ <Field Repetition (NM)> ^ <Component Number (NM)> ^ <Sub-Component Number (NM)>
    - ☐ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:
      - '0' – Accepted
      - '206' – Application record locked
      - '207' – Application internal error

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
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|                           | <ul style="list-style-type: none"> <li>❑ ERR-4 is set to one of these valid error severity values: <ul style="list-style-type: none"> <li>• 'W' – Warning</li> <li>• 'I' – Information</li> <li>• 'E' – Error</li> <li>• 'F' – Fatal error.</li> </ul> </li> <li>❑ ERR-5 and ERR-6 are empty</li> <li>❑ ERR-7 may be empty, but if it is valued, it is a text data</li> <li>❑ ERR-8 may be empty, but if it is valued, it is a text data</li> <li>❑ ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li>❑ ERR-10 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt; the rest of the element of the CWE data type are not used in Services Interface.</i></li> <li>❑ ERR-11 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt; the rest of the element of the CWE data type are not used in Services Interface.</i></li> <li>❑ ERR-12 may be empty, but if it is valued, it is encoded as: <i>&lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</i> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt; Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>Where XTN-2, XTN-3 are required and XTN-4 to XTN-10 are required but may be empty. The rest are not supported.</p> </li> </ul> |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>• In step 2, all elements in each segment are as specified above</li> <li>• Verify that the HFS receiver under test is able to accept the data and time stamps (e.g. if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2015-03-16 14:55:10 UTC, Value: INR=0.9 [INR Units]</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

|                   |                |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                     |
|-------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| TP Id             |                | TP/HFS/REC/PCD-01-DATA/SABTE/BV-000                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                     |
| TP label          |                | MSA and ERR segments                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                     |
| Coverage          | Spec           | [ITU-T H.812.1]                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                     |
|                   | Testable items | MSAUse; M                                                                                                                                                                                                                                                                                                                                                                                                                                                    | MSA-1; M             | MSA-2; M            |
|                   |                | MSA-3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                     | MSA-4; M             | MSA-5; M            |
|                   |                | MSA-6; M                                                                                                                                                                                                                                                                                                                                                                                                                                                     | MSA-7; M             | MSA-8; M            |
|                   |                | ERRUse 1; O                                                                                                                                                                                                                                                                                                                                                                                                                                                  | ERRUse 2; M          | ERR-1; M            |
|                   |                | ERR-2; R                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ERR-3; M             | ERR-4; M            |
|                   |                | ERR-5; M                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ERR-6; M             | ERR-7; O            |
|                   |                | CWEDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                             | CWEDataType 2; M     | CWEDataType 3; C    |
|                   |                | CWEDataType 4; R                                                                                                                                                                                                                                                                                                                                                                                                                                             | NumericDataType 1; M | StringDataType 1; M |
|                   |                | DateTimeDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                        | EIDataType 1; M      | EIDataType 2; M     |
|                   |                | EIDataType 3; M                                                                                                                                                                                                                                                                                                                                                                                                                                              | EIDataType 4; M      | EIUse1; C           |
|                   |                | EIUse2; C                                                                                                                                                                                                                                                                                                                                                                                                                                                    | EIUse3; C            | EIUse4; C           |
|                   |                | 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                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                     |
| Test purpose      |                | Check that:<br><br>The elements of every segment of the message<br><br>[AND]<br><br>The data type of each element.                                                                                                                                                                                                                                                                                                                                           |                      |                     |
| Applicability     |                | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                     |
| Other PICS        |                | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                     |
| Initial condition |                | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a message with an Observation of a Sleep Apnoea Breathing Therapy Equipment device.                                                                                                                                                                                                                                                                     |                      |                     |
| Test procedure    |                | 1. The simulated HFS sender sends the following HL7 message, including the mandatory objects of a Sleep Apnoea Breathing Therapy Equipment device to make the receiver respond with another HL7 message.<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   <current time in UTC>  ORU^R01^ORU_R01 MSGID<random number> P 2.6   NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L |                      |                     |

OBR|1|POTest^AT4\_AHD^1234567890ABCDEF^EUI-64|POTest^AT4\_AHD^1234567890ABCDEF^EUI-64|182777000^monitoring of patient^SNOMED-CT|||20150316145510+0000

OBX|1||531981^MDC\_MOC\_VMS\_MDS\_AHD^MDC|0|||||X|||||FEEDABEEDEADBE EF^EUI-64

OBX|2|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|0.0.0.1|2^auth-body-continua|||||R

OBX|3|ST|532352^MDC\_REG\_CERT\_DATA\_CONTINUA\_VERSION^MDC|0.0.0.1.1|6.1|||||R

OBX|4|NA|532353^MDC\_REG\_CERT\_DATA\_CONTINUA\_CERT\_DEV\_LIST^MDC|0.0.0.1.2|8196~16388|||||R

OBX|5|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|0.0.0.2|2^auth-body-continua|||||R

OBX|6|CWE|532354^MDC\_REG\_CERT\_DATA\_CONTINUA\_REG\_STATUS^MDC|0.0.0.2.1|1^unregulated-device(0)|||||R

OBX|7|CWE|68220^MDC\_TIME\_SYNC\_PROTOCOL^MDC|0.0.0.3|532224^MDC\_TIME\_SYNC\_NONE^MDC|||||R

OBX|8|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|0.0.0.4|2^auth-body-continua|||||R

OBX|9|CWE|64515^MDC\_REG\_CERT\_DATA\_CONTINUA\_AHD\_CERT\_LIST^MDC|0.0.0.4.1|0~1|||||R

OBX|10||528409^MDC\_DEV\_SPEC\_PROFILE\_SABTE^MDC|1|||||X|||||0123456789 ABCDEF^^0123456789ABCDEF^EUI-64

OBX|11|ST|531969^MDC\_ID\_MODEL\_NUMBER^MDC|1.0.0.1|SABTE v1.5|||||R

OBX|12|ST|531970^MDC\_ID\_MODEL\_MANUFACTURER^MDC|1.0.0.2|AT4 Wireless|||||R

OBX|13|DTM|67975^MDC\_ATTR\_TIME\_ABS^MDC|1.0.0.3|20150316145510+0000|||||R|||20150316145510+0000

OBX|14|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|1.0.0.4|2^auth-body-continua|||||R

OBX|15|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|1.0.0.5|2^auth-body-continua|||||R

OBX|16|ST|532352^MDC\_REG\_CERT\_DATA\_CONTINUA\_VERSION^MDC|1.0.0.4.1|6.1|||||R

OBX|17|NA|532353^MDC\_REG\_CERT\_DATA\_CONTINUA\_CERT\_DEV\_LIST^MDC|1.0.0.4.2|16388|||||R

OBX|18|CWE|532354^MDC\_REG\_CERT\_DATA\_CONTINUA\_REG\_STATUS^MDC|1.0.0.5.1|0^unregulated-device(0)|||||R

OBX|19|NM|8410708^MDC\_SABTE\_TIME\_PD\_FLOW\_GEN\_TOTAL^MDC|1.0.0.6|67|264352^MDC\_DIM\_MIN^MDC|||||R|||20150316145510+0000

OBX|20|NM|8410712^MDC\_SABTE\_TIME\_PD\_USAGE\_TOTAL^MDC|1.0.0.7|55|264352^MDC\_DIM\_MIN^MDC|||||R|||20150316145510+0000

OBX|21|CWE|8410876^MDC\_SABTE\_MODE\_DEV\_SET^MDC|1.0.0.8|8410877^MDC\_SABTE\_MODE\_DEV\_UNDETERMINED^MDC|||||R|||20150316145510+0000

OBX|22|CWE|8410888^MDC\_SABTE\_MODE\_THERAPY\_SET^MDC|1.0.0.9|8410889^MDC\_SABTE\_MODE\_THERAPY\_UNDETERMINED^MDC|||||R|||20150316145510+0000

2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:
  - a. Only one MSA segment is present and:
    - ☐ MSA-1 is one of the following values:
      - 'AA' – Accept Acknowledgment: Application Accept
      - 'AR' – Accept Acknowledgment: Application Reject

- ☐ MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent
  - ☐ MSA-3 to MSA-8 are empty
  - b. If ERR segment referring to the MSA is present:
    - ☐ If the HFS receiver reports an ERR segment with Severity (ERR-4) E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)
    - ☐ ERR-1 is empty
    - ☐ ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: *<Segment ID (ST)> ^ <Segment Sequence (NM)> ^ <Field Position (NM)> ^ <Field Repetition (NM)> ^ <Component Number (NM)> ^ <Sub-Component Number (NM)>*
    - ☐ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:
      - '0' – Accepted
      - '206' – Application record locked
      - '207' – Application internal error
    - ☐ ERR-4 is set to one of these valid error severity values:
      - 'W' – Warning
      - 'I' – Information
      - 'E' – Error
      - 'F' – Fatal error.
    - ☐ ERR-5 and ERR-6 are empty
    - ☐ ERR-7 may be empty, but if it is valued, it is a text data
    - ☐ ERR-8 may be empty, but if it is valued, it is a text data
    - ☐ ERR-9 may be empty, but if it is valued, it is one of these values:
      - 'PAT'
      - 'NPAT'
      - 'USR'
      - 'HD'
    - ☐ ERR-10 may be empty, but if it is valued, it is encoded as: *<Identifier (ST)>^<Text (ST)>^< Name of Coding System (ID)>* the rest of the element of the CWE data type are not used in Services Interface.
    - ☐ ERR-11 may be empty, but if it is valued, it is encoded as: *<Identifier (ST)>^<Text (ST)>^< Name of Coding System (ID)>* the rest of the element of the CWE data type are not used in Services Interface.
    - ☐ ERR-12 may be empty, but if it is valued, it is encoded as: *<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)>*
- Where:
- Expiration Reason subcomponents are: *<Identifier (ST)>&<Text (ST)>&< Name of Coding System (ID)> &<Alternate Identifier (ST)>&<Alternate Text (ST)>&<Name of Alternate Coding System (ID)>&<Coding System*

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                           | <p><i>Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></p> <ul style="list-style-type: none"> <li>Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>Where XTN-2, XTN-3 are required and XTN-4 to XTN-10 are required but may be empty. The rest are not supported.</p> |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>In step 2, all elements in each segment are as specified above</li> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g. if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2015-03-16 14:55:10 UTC, Values: DPU=55 [min], DFG=67 [min], Device mode set='Device mode undetermined (22269)', Therapy mode set='Therapy mode undetermined (22269)'.</li> </ul>                                                                                                                                                                                                                                                                                                  |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

## A.18 Subgroup 2.4.17: Insulin pump (IP)

|                 |                       |                                  |                      |                     |
|-----------------|-----------------------|----------------------------------|----------------------|---------------------|
| <b>TP Id</b>    |                       | TP/HFS/REC/PCD-01-DATA/IP/BV-000 |                      |                     |
| <b>TP label</b> |                       | MSA and ERR segments             |                      |                     |
| <b>Coverage</b> | <b>Spec</b>           | [ITU-T H.812.1]                  |                      |                     |
|                 | <b>Testable items</b> | MSAUse; M                        | MSA-1; M             | MSA-2; M            |
|                 |                       | MSA-3; M                         | MSA-4; M             | MSA-5; M            |
|                 |                       | MSA-6; M                         | MSA-7; M             | MSA-8; M            |
|                 |                       | ERRUse 1; O                      | ERRUse 2; M          | ERR-1; M            |
|                 |                       | ERR-2; R                         | ERR-3; M             | ERR-4; M            |
|                 |                       | ERR-5; M                         | ERR-6; M             | ERR-7; O            |
|                 |                       | CWEDataType 1; M                 | CWEDataType 2; M     | CWEDataType 3; C    |
|                 |                       | CWEDataType 4; R                 | NumericDataType 1; M | StringDataType 1; M |
|                 |                       | DateTimeDataType 1; M            | EIDDataType 1; M     | EIDDataType 2; M    |
|                 |                       | EIDDataType 3; M                 | EIDDataType 4; M     | EIUse1; C           |
|                 |                       | EIUse2; C                        | EIUse3; C            | EIUse4; C           |
|                 |                       | 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   |

|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                   |  |  |
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|                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | XTNDataType 11; M |  |  |
| <b>Test purpose</b>      | <p>Check that:</p> <p>The elements of every segment of the message</p> <p>[AND]</p> <p>The data type of each element.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |  |  |
| <b>Applicability</b>     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                   |  |  |
| <b>Other PICS</b>        | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |  |  |
| <b>Initial condition</b> | The HFS receiver under test has published a WebService and the simulated HFS sender is ready to send a message with an Observation of an insulin pump device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |  |  |
| <b>Test procedure</b>    | <p>1. The simulated HFS sender sends the following HL7 message, including the mandatory objects of an Insulin Pump device to make the HFS receiver respond with another HL7 message.</p> <p>MSH ^~\&amp; AT4_AHD^1234567890ABCDEF^EUI-64   &lt;current time in UTC&gt;  ORU^R01^ORU_R01 MSGID&lt;random number&gt; P 2.6   NE AL   IHE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7</p> <p>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L</p> <p>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20160903124015+0000</p> <p>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     device^^FEEDABEED EADBEEF^EUI-64</p> <p>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R</p> <p>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R</p> <p>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 16403     R</p> <p>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R</p> <p>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)     R</p> <p>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R</p> <p>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R</p> <p>OBX 9 CWE 64515^MDC_REG_CERT_DATA_CONTINUA_AHD_CERT_LIST^MDC 0.0.0.4.1 0~1     R</p> <p>OBX 10  528403^MDC_DEV_SPEC_PROFILE_INSULIN_PUMP^MDC 1     X     0123456789ABCDEF^^0123456789ABCDEF^EUI-64</p> <p>OBX 11 ST 531969^MDC_ID_MODEL_NUMBER^MDC 1.0.0.1 IP v1.0     R</p> <p>OBX 12 ST 531970^MDC_ID_MODEL_MANUFACTURER^MDC 1.0.0.2 AT4 Wireless     R</p> <p>OBX 13 DTM 67975^MDC_ATTR_TIME_ABS^MDC 1.0.0.3 20160316135510+0000     R   20160316145510+0000</p> <p>OBX 14 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.4 2^auth-body-continua     R</p> <p>OBX 15 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 1.0.0.5 2^auth-body-continua     R</p> <p>OBX 16 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 1.0.0.4.1 6.1     R</p> |                   |  |  |

|  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|  | <p>OBX 17 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 1.0.0.4.2 16403     R</p> <p>OBX 18 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 1.0.0.5.1 0^unregulated-device(0)     R</p> <p>OBX 19 NM 8418344^MDC_INS_BOLUS^MDC 1.0.0.6 1 267616^MDC_DIM_X_INTL_UNIT^MDC     R  20160903124015+0000</p> <p>OBX 20 NM 8418300^MDC_INS_BASAL_RATE_SETTING^MDC 1.0.0.7 2 267840^MDC_DIM_X_INTL_UNIT_PER_HR^MDC     R  20160903124015+0000</p> <p>2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:</p> <p>a. Only one MSA segment is present and:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> MSA-1 is one of the following values: <ul style="list-style-type: none"> <li>• 'AA' – Accept Acknowledgment: Application Accept</li> <li>• 'AR' – Accept Acknowledgment: Application Reject</li> </ul> </li> <li><input type="checkbox"/> MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent</li> <li><input type="checkbox"/> MSA-3 to MSA-8 are empty</li> </ul> <p>b. If ERR segment referring to the MSA is present:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> If the HFS receiver reports an ERR segment with Severity (ERR-4) E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)</li> <li><input type="checkbox"/> ERR-1 is empty</li> <li><input type="checkbox"/> ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: &lt;Segment ID (ST)&gt; ^ &lt;Segment Sequence (NM)&gt; ^ &lt;Field Position (NM)&gt; ^ &lt;Field Repetition (NM)&gt; ^ &lt;Component Number (NM)&gt; ^ &lt;Sub-Component Number (NM)&gt;</li> <li><input type="checkbox"/> ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included: <ul style="list-style-type: none"> <li>• '0' – Accepted</li> <li>• '206' – Application record locked</li> <li>• '207' – Application internal error</li> </ul> </li> <li><input type="checkbox"/> ERR-4 is set to one of these valid error severity values: <ul style="list-style-type: none"> <li>• 'W' – Warning</li> <li>• 'I' – Information</li> <li>• 'E' – Error</li> <li>• 'F' – Fatal error.</li> </ul> </li> <li><input type="checkbox"/> ERR-5 and ERR-6 are empty</li> <li><input type="checkbox"/> ERR-7 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-8 may be empty, but if it is valued, it is a text data</li> <li><input type="checkbox"/> ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li><input type="checkbox"/> ERR-10 may be empty, but if it is valued, it is encoded as: &lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt; Name of Coding System (ID)&gt; the rest of the element of the CWE data type are not used in Services Interface.</li> </ul> |
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|                           | <p>❑ ERR-11 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt;</i> the rest of the element of the CWE data type are not used in Services Interface.</p> <p>❑ ERR-12 may be empty, but if it is valued, it is encoded as: <i>&lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</i></p> <p>Where:</p> <ul style="list-style-type: none"> <li>Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>Where XTN-2, XTN-3 are required and XTN-4 to XTN-10 are required but may be empty. The rest are not supported.</p> |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>In step 2, all elements in each segment are as specified above</li> <li>Verify that the HFS receiver under test is able to accept the data and time stamps (e.g. if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2016-09-03 12:40:15 UTC, Values: Bolus Delivered=1 [IU], Current Basal Rate Setting=2 [IU/h].</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## A.19 Subgroup 2.4.18: Continuous glucose monitor (CGM)

|                 |                       |                                   |             |          |
|-----------------|-----------------------|-----------------------------------|-------------|----------|
| <b>TP Id</b>    |                       | TP/HFS/REC/PCD-01-DATA/CGM/BV-000 |             |          |
| <b>TP label</b> |                       | MSA and ERR segments              |             |          |
| <b>Coverage</b> | <b>Spec</b>           | [ITU-T H.812.1]                   |             |          |
|                 | <b>Testable items</b> | MSAUse; M                         | MSA-1; M    | MSA-2; M |
|                 |                       | MSA-3; M                          | MSA-4; M    | MSA-5; M |
|                 |                       | MSA-6; M                          | MSA-7; M    | MSA-8; M |
|                 |                       | ERRUse 1; O                       | ERRUse 2; M | ERR-1; M |
|                 |                       | ERR-2; R                          | ERR-3; M    | ERR-4; M |
|                 |                       | ERR-5; M                          | ERR-6; M    | ERR-7; O |

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                     |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
|                   | CWEDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | CWEDataType 2; M     | CWEDataType 3; C    |
|                   | CWEDataType 4; R                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | NumericDataType 1; M | StringDataType 1; M |
|                   | DateTimeDataType 1; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EIDataType 1; M      | EIDataType 2; M     |
|                   | EIDataType 3; M                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | EIDataType 4; M      | EIUse1; C           |
|                   | EIUse2; C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | EIUse3; C            | EIUse4; C           |
|                   | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                     |
| Test purpose      | Check that:<br>The elements of every segment of the message<br>[AND]<br>The data type of each element.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                     |
| Applicability     | C_REC_000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                     |
| Other PICS        | C_REC_DATA_003, C_REC_DATA_004                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                     |
| Initial condition | The HFS receiver under test has published a Web Service and the simulated HFS sender is ready to send a message with an Observation of a Continuous Glucose Monitor device.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                     |
| Test procedure    | 1. The simulated HFS sender sends the following HL7 message, including the mandatory objects of a Continuous Glucose Monitor device to make the HFS receiver respond with another HL7 message.<br><br>MSH ^~\& AT4_AHD^1234567890ABCDEF^EUI-64   <current time in UTC>  ORU^R01^ORU_R01 MSGID<random number> P 2.6   NE AL     HE PCD ORU-R012006^HL7^2.16.840.1.113883.9.n.m^HL7<br><br>PID   789567^^^Imaginary Hospital^PI  Doe^John^Joseph^^^^L<br><br>OBR 1 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 POTest^AT4_AHD^1234567890ABCDEF^EUI-64 182777000^monitoring of patient^SNOMED-CT   20160903124015+0000<br><br>OBX 1  531981^MDC_MOC_VMS_MDS_AHD^MDC 0     X     device^^FEEDABEED EADBEEF^EUI-64<br><br>OBX 2 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.1 2^auth-body-continua     R<br><br>OBX 3 ST 532352^MDC_REG_CERT_DATA_CONTINUA_VERSION^MDC 0.0.0.1.1 6.1     R<br><br>OBX 4 NA 532353^MDC_REG_CERT_DATA_CONTINUA_CERT_DEV_LIST^MDC 0.0.0.1.2 16403     R<br><br>OBX 5 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.2 2^auth-body-continua     R<br><br>OBX 6 CWE 532354^MDC_REG_CERT_DATA_CONTINUA_REG_STATUS^MDC 0.0.0.2.1 1^unregulated-device(0)     R<br><br>OBX 7 CWE 68220^MDC_TIME_SYNC_PROTOCOL^MDC 0.0.0.3 532224^MDC_TIME_SYNC_NONE^MDC     R<br><br>OBX 8 CWE 68218^MDC_REG_CERT_DATA_AUTH_BODY^MDC 0.0.0.4 2^auth-body-continua     R |                      |                     |

OBX|9|CWE|64515^MDC\_REG\_CERT\_DATA\_CONTINUA\_AHD\_CERT\_LIST^MDC|0.0.4.1|0~1|||||R

OBX|10||528410^MDC\_DEV\_SPEC\_PROFILE\_CGM^MDC|1|||||X|||||0123456789ABCDEF^^0123456789ABCDEF^EUI-64

OBX|11|ST|531969^MDC\_ID\_MODEL\_NUMBER^MDC|1.0.0.1|CGM v1.0|||||R

OBX|12|ST|531970^MDC\_ID\_MODEL\_MANUFACTURER^MDC|1.0.0.2|AT4 Wireless|||||R

OBX|13|DTM|67975^MDC\_ATTR\_TIME\_ABS^MDC|1.0.0.3|20160316135510+0000|||||R|||20160316145510+0000

OBX|14|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|1.0.0.4|2^auth-body-continua|||||R

OBX|15|CWE|68218^MDC\_REG\_CERT\_DATA\_AUTH\_BODY^MDC|1.0.0.5|2^auth-body-continua|||||R

OBX|16|ST|532352^MDC\_REG\_CERT\_DATA\_CONTINUA\_VERSION^MDC|1.0.0.4.1|6.1|||||R

OBX|17|NA|532353^MDC\_REG\_CERT\_DATA\_CONTINUA\_CERT\_DEV\_LIST^MDC|1.0.0.4.2|16410|||||R

OBX|18|CWE|532354^MDC\_REG\_CERT\_DATA\_CONTINUA\_REG\_STATUS^MDC|1.0.0.5.1|0^unregulated-device(0)|||||R

OBX|19|NM|160212^MDC\_CONC\_GLU\_ISF^MDC|1.0.0.6|15.8|264274^MDC\_DIM\_MILLI\_G\_PER\_DL^MDC|||||R|||20160903124015+0000

2. The HFS receiver under test responds using another HL7 message. Check in the captured message that:

- a. Only one MSA segment is present and:

- ☐ MSA-1 is one of the following values:

- 'AA' – Accept Acknowledgment: Application Accept
- 'AR' – Accept Acknowledgment: Application Reject

- ☐ MSA-2 contains the message control ID from the MSH-10 (Message Control ID) of the incoming message for which this acknowledgement is being sent

- ☐ MSA-3 to MSA-8 are empty

- b. If ERR segment referring to the MSA is present:

- ☐ If the HFS receiver reports an ERR segment with Severity (ERR-4) E (Error) or F (Fatal Error), the Message Acknowledgement value shall be CR (Commit Reject)

- ☐ ERR-1 is empty

- ☐ ERR-2 should be valued with the location in the message related to the identified error, warning, or message. This field is repeated for errors which result from the combination of multiple locations. Components: <Segment ID (ST)> ^ <Segment Sequence (NM)> ^ <Field Position (NM)> ^ <Field Repetition (NM)> ^ <Component Number (NM)> ^ <Sub-Component Number (NM)>

- ☐ ERR-3 starts with one of the following valid error condition codes and other optional subfields might be included:

- '0' – Accepted
- '206' – Application record locked
- '207' – Application internal error

- ☐ ERR-4 is set to one of these valid error severity values:

- 'W' – Warning
- 'I' – Information
- 'E' – Error
- 'F' – Fatal error.

|                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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|                           | <ul style="list-style-type: none"> <li>❑ ERR-5 and ERR-6 are empty</li> <li>❑ ERR-7 may be empty, but if it is valued, it is a text data</li> <li>❑ ERR-8 may be empty, but if it is valued, it is a text data</li> <li>❑ ERR-9 may be empty, but if it is valued, it is one of these values: <ul style="list-style-type: none"> <li>• 'PAT'</li> <li>• 'NPAT'</li> <li>• 'USR'</li> <li>• 'HD'</li> </ul> </li> <li>❑ ERR-10 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt;</i> the rest of the element of the CWE data type are not used in Services Interface.</li> <li>❑ ERR-11 may be empty, but if it is valued, it is encoded as: <i>&lt;Identifier (ST)&gt;^&lt;Text (ST)&gt;^&lt;Name of Coding System (ID)&gt;</i> the rest of the element of the CWE data type are not used in Services Interface.</li> <li>❑ ERR-12 may be empty, but if it is valued, it is encoded as: <i>&lt;WITHDRAWN Constituent&gt;^&lt;Telecommunication Use Code (ID)&gt;^&lt;Telecommunication Equipment Type (ID)&gt;^&lt;Communication Address (ST)&gt;^&lt;Country Code (NM)&gt;^&lt;Area/City Code (NM)&gt;^&lt;Local Number (NM)&gt;^&lt;Extension (NM)&gt;^&lt;Any Text (ST)&gt;^&lt;Extension Prefix (ST)&gt;^&lt;Speed Dial Code (ST)&gt;^&lt;Unformatted Telephone Number (ST)&gt;^&lt;Effective Start Date (DTM)&gt;^&lt;Expiration Date (DTM)&gt;^&lt;Expiration Reason (CWE)&gt;^&lt;Protection Code (CWE)&gt;^&lt;Shared Telecommunication Identifier (EI)&gt;^&lt;Preference Order (NM)&gt;</i></li> </ul> <p>Where:</p> <ul style="list-style-type: none"> <li>• Expiration Reason subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Protection code subcomponents are: <i>&lt;Identifier (ST)&gt;&amp;&lt;Text (ST)&gt;&amp;&lt;Name of Coding System (ID)&gt; &amp;&lt;Alternate Identifier (ST)&gt;&amp;&lt;Alternate Text (ST)&gt;&amp;&lt;Name of Alternate Coding System (ID)&gt;&amp;&lt;Coding System Version ID (ST)&gt;&amp;&lt;Alternate Coding System Version ID (ST)&gt;&amp;&lt;Original Text (ST)&gt;</i></li> <li>• Shared Telecommunication Identifier subcomponents are: <i>&lt;Entity Identifier (ST)&gt;&amp;&lt;Namespace ID (IS)&gt;&amp;&lt;Universal ID (ST)&gt;&amp;&lt;Universal ID Type (ID)&gt;</i></li> </ul> <p>Where XTN-2, XTN-3 are required and XTN-4 to XTN-10 are required but may be empty. The rest are not supported.</p> |
| <b>Pass/Fail criteria</b> | <ul style="list-style-type: none"> <li>• In step 2, all elements in each segment are as specified above</li> <li>• Verify that the HFS receiver under test is able to accept the data and time stamps (e.g. if there is a log verify the date and the data are displayed in some form that indicates the correct date and time and the correct data as transmitted). Date and time of the measurement: 2016-09-03 12:40:15 UTC, Values: Glucose concentration from interstitial fluid =15.8 [mg/dl]'. </li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Notes</b>              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

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