

**HIMSS and RSNA**

**Integrating the Healthcare Enterprise**

# **IHE Charge Processor Tests**

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## 1 Charge Processor Tests

This document describes tests for a Charge Processing actor. This actor will receive HL7 messages (ADT, DFT) from MESA software and process those messages.

### 1.1 Introduction

Each test is run using the same procedure. We assume you are using an interactive terminal or terminal emulator and are logged on to the MESA test system. Change directory to *\$MESA\_TARGET/ mesa\_tests/rad/actors/chg\_proc*. Make sure the *\$MESA\_TARGET* and *\$MESA\_STORAGE* environment variables are set properly.

#### 1.1.1 Integration Profiles and Test Procedures

This document lists a number of tests for Charge Processors. Connectathon Management web tool to determine what tests are required for your system/actor/profile combination.

### 1.2 Message Attributes

### 1.3 Message Values

### 1.4 Configuration

The Charge Processor scripts described below use an ASCII configuration file to identify parameters such as host names and port numbers. The configuration file is named *chgp\_test.cfg* and is included in the directory *\$MESA\_TARGET/ mesa\_tests/rad/actors/chg\_proc*. Edit the file and change entries (host name, port number) that pertain to your system. Your system is identified by entries that begin with TEST.

Read the Runtime Notes section of the *Installation Guide* to determine the proper settings for the MESA runtime environment.

### 1.5 Starting the MESA Servers

These instructions assume you are using a terminal emulator on Unix systems or an MS DOS command window under Windows NT. Each test uses a command line interface; there is no graphical user interface. Before you start the test procedure, you need to start several MESA servers. Make sure the appropriate database is running (PostgreSQL, SQL Server). To start the MESA servers:

1. Enter the Secure Node exam directory: *mesa\_tests/rad/actors/chg\_proc*
2. Execute the appropriate script to start the servers:

```
scripts/start_mesa_servers.csh [loglevel] (Unix)
```

```
scripts\start_mesa_servers.bat (Windows)
```

In the unix environment, loglevel is an optional argument (0 is default). Log levels are:

- 0 no logging
- 1 errors
- 2 warnings
- 3 verbose
- 4 conversational (really verbose)

To set the log level for Windows NT, set the environment variable LOGLEVEL to the desired value before invoking the batch file.

When you are finished running one or more tests, you can stop the servers:

```
scripts/stop_mesa_servers.csh (Unix)
```

```
scripts\stop_mesa_servers.bat (Windows)
```

Log files are stored in \$MESA\_TARGET/logs.

## 1.6 Unique Identifiers

## 1.7 Test Instructions

*Please note the test instructions change starting with the 6.8.0 release.*

Each test is independent of the others. You must collect the results of one test before starting a new test.

1. Enter the Charge Processor exam directory: *mesa\_tests/rad/actors/chg\_proc*
2. Remember the MESA servers were started according to the directions in section 1.5.

Workflow tests use a test engine that manages the test process. This test engine is used for all workflow tests and is driven by a text file that describes the events for a specific test. Each test below will indicate which script is appropriate (usually the chg script for Charge Processing). The arguments to the script are the test number and the log level for output:

- 1 errors only
- 2 warnings
- 3 verbose
- 4 reference information (pointers into IHE Technical Framework)

An example of the syntax used to invoke the script for the 1301 test is:

```
perl scripts/chgp_chg.pl 1301 1
```

The test script will announce what events are about to happen and will request that you send specific events according to the sequence defined in *IHE Tests: Transaction Sequences*. When

you have completed the sequence of events, results can be evaluated by running the evaluation script:

```
perl <test>/eval_<test>.pl <log level>
```

For example: `perl 1301/eval_1301.pl 3`

The log level for evaluation is defined as:

- 1 errors only
- 2 warnings
- 3 context information (verbose)
- 4 reference information (pointer into IHE Technical Framework)

Starting with version 6.7.0 of the MESA software, the user can change the patient name and patient ID of the test subject prior to running the test. This allows one to rerun a test without clearing the database of the prior subject. This is done from the directory *\$MESA\_TARGET/ mesa\_tests/rads/msgs*.

A perl script is used to query the user for a new patient name and other demographics; the script automatically generates the new patient identifier. The perl script can also use an existing text file to specify the new demographics. The software is shipped with text files that are designed for IHE United States. It would be a simple task to make different text files for other countries. As listed in each section below, invoke the perl script with no arguments for interactive questions. If you specify an argument, it is the name of a text file with the demographic values.

Users should reset the MESA HL7 files as described above if the user tests different actors using the same MESA test configuration. An example is a system that tests as both an Order Placer and an Order Filler. The MESA tests for one actor may leave the HL7 messages in the wrong state for those same tests by the other actor. By regenerating the HL7 messages before you run the test script, you will avoid those problems.

## 2 Charge Processor Tests

Each section below lists one test for a Charge Processor.

### 2.1 Charge Processor Test 1301: Account Management: New Account

This test sends one BAR message to your Charge Processor to create a new account. It does not follow up with an ADT message for admission or patient registration.

#### 2.1.1 References

#### 2.1.2 Instructions

The nominal patient name is ALABAMA^MONTGOMERY

To run this test, follow these steps using a DOS window or terminal emulator:

1. Set the current directory to \$MESA\_TARGET/ mesa\_tests/rad/actors/chg\_proc.
2. Make sure the MESA servers have been started as described in section 1.5 above.
3. Run the test script as follows:

```
perl scripts/ chgp_chg.pl 1301 <log>
```

4. Run the evaluation script below.

#### 2.1.3 Evaluation

Answer the questions for test 1301 in the file charge\_questions.txt. Use that file as the template, rename that file to CHGP\_1301.txt and submit your responses as the evaluation.

#### 2.1.4 Miscellaneous

To change patient name, patient ID prior to the test:

```
cd $MESA_TARGET/ mesa_tests/rad/msgs  
perl mesa_reset/1301.pl ihe-us/1301.var (or)  
perl mesa_reset/1301.pl
```

### 2.2 Charge Processor Test 1302: Account Management: Update Account

Test Case 1302 covers account management and the P05 message used to update a patient account. See IHE TF Vol 3, section 4.36.4.2.

### **2.2.1 References**

### **2.2.2 Instructions**

The nominal patient name is ALASKA^JUNEAU.

To run this test, follow these steps using a DOS window or terminal emulator:

1. Set the current directory to \$MESA\_TARGET/mesa\_tests/rad/actors/chg\_proc.
2. Make sure the MESA servers have been started as described in section 1.5 above.
3. Run the test script as follows:

```
perl scripts/ chgp_chg.pl 1302 <log>
```

4. Run the evaluation script below.

### **2.2.3 Evaluation**

Answer the questions for test 1302 in the file charge\_questions.txt. Use that file as the template, rename that file to CHGP\_1302.txt and submit your responses as the evaluation.

### **2.2.4 Miscellaneous**

To change patient name, patient ID prior to the test:

```
cd $MESA_TARGET/mesa_tests/rad/messages  
perl mesa_reset/1302.pl ihe-us/1302.var (or)  
perl mesa_reset/1302.pl
```

## **2.3 Charge Processor Test 1303: Account Management: End Account**

Test Case 1303 covers account management and the P06 message used to update a patient account. See IHE TF Vol 3, section 4.36.4.3.

### **2.3.1 References**

### **2.3.2 Instructions**

The nominal patient name is ARIZONA^PHOENIX.

To run this test, follow these steps using a DOS window or terminal emulator:

1. Set the current directory to \$MESA\_TARGET/mesa\_tests/rad/actors/chg\_proc.
2. Make sure the MESA servers have been started as described in section 1.5 above.
3. Run the test script as follows:

```
perl scripts/ chgp_chg.pl 1303 <log>
```

4. Run the evaluation script below.

### **2.3.3 Evaluation**

There is no formal evaluation for this test. This test gives you the opportunity to test receiving P06 messages. Create a file called CHGP\_1303.txt; indicate in the file you have received the P06 messages and submit the file to the Project Manager.

### **2.3.4 Miscellaneous**

To change patient name, patient ID prior to the test:

```
cd $MESA_TARGET/mesa_tests/rad/msgs
perl mesa_reset/1303.pl ihe-us/1303.var (or)
perl mesa_reset/1303.pl
```

## **2.4 Charge Processor Test 1305: Charge Posting Process Flow #1**

Test Case 1305 involves all of the actors and transactions for a fully integrated Charge Processing Process Flow. See IHE TF Vol I, section 11.3.

### **2.4.1 References**

### **2.4.2 Instructions**

The nominal patient name is CALIFORNIA^SACRAMENTO.

To run this test, follow these steps using a DOS window or terminal emulator:

1. Set the current directory to \$MESA\_TARGET/mesa\_tests/rad/actors/chg\_proc.
2. Make sure the MESA servers have been started as described in section 1.5 above.
3. Run the test script as follows:

```
perl scripts/ chgp_chg.pl 1305 <log>
```

4. Run the evaluation script below.

### **2.4.3 Evaluation**

Answer the questions for test 1305 in the file charge\_questions.txt. Use that file as the template, rename that file to CHGP\_1305.txt and submit your responses as the evaluation.



#### **2.4.4 Miscellaneous**

To change patient name, patient ID prior to the test:

```
cd $MESA_TARGET/ mesa_tests/rad/msgs  
perl mesa_reset/1305.pl ihe-us/1305.var (or)  
perl mesa_reset/1305.pl
```