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**HIMSS and RSNA**  
**Integrating the Healthcare Enterprise**

**IHE/MESA Teaching file and  
Clinical trail Export Manager Tests**

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# 1 Export Manager Tests

## 1.1 Introduction

Read the document *IHE Radiology Technical Framework Supplement 2004-2005: Teaching file and Clinical trial Export*. This document lists all the transactions in a series of use cases which drive tests for individual actors. Export Manager will participate in all the transactions. Reading that document will allow you to understand the full set of transactions for each test.

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 `$MESA_TARGET/mesa_tests/rad/actors/exp_mgr`. Make sure the `$MESA_TARGET` and `$MESA_STORAGE` environment variables are set properly.

### 1.1.1 Integration Profiles and Test Procedures

This document lists currently only one test for Teaching file and Clinical trial Export Manager Systems.

Please refer to the Connectathon web tool to list the required tests for your system. The web address of this tool depends on the year and project manager. Please contact the appropriate project manager to obtain this information.

## 1.2 Attributes De-identification

Export Manager should remove all patient identification from the attributes of images and Key Object Note(s). This section contains a table defining those attributes that will be evaluated for de-identification in the Export Manager tests.

In the table below, the columns marked *Value* and *Zero-Length* indicate the scope of the evaluation for these attributes. Fields that are marked in the *Value* column indicate the tests will expect a non-zero-length value in the field (for example, we specify the patient name). Fields marked in the *Zero-Length* column are tested to see if the field present with zero-length value.

Tag	Attribute Name	Value	Zero-Length
0008 0018	SOP Instance UID	x	
0008 0050	Accession Number		x
0008 0090	Referring Physician's Name		x
0008 0092	Referring Physician's Address		x
0008 0094	Referring Physician's Telephone Numbers		x
0008 1048	Physician(s) of Record		x
0008 1050	Performing Physicians' Name		x
0008 1060	Name of Physicians(s) Reading Study		x
0008 1070	Operators' Name		x
0010 0010	Patient Name	MR^SCREEN	

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0010 0020	Patient ID	05-3001-6	
0010 0030	Patient's Birth Date		x
0010 0032	Patient's Birth Time		x
0010 1000	Other Patient Ids		x
0010 1001	Other Patient Names		x
0010 1090	Medical Record Locator		x
0010 2160	Ethnic Group		x
0010 2180	Occupation		x
0010 21B0	Additional Patient's History		x
0010 4000	Patient Comments		x
0020 0010	Study ID		x
0020 000D	Study Instance UID	x	
0020 000E	Series Instance UID	x	
0020 4000	Image Comments		x

**Note:** In addition, 0008 0018 "SOP Instance UID", 0020 000D "Study Instance UID", and 0020 000E "Series Instance UID, should be replaced with new values.

### 1.3 Configuration

The Export Manager scripts described below use an ASCII configuration file to identify parameters such as host names and port numbers. The configuration file is named *expmgr\_test.cfg* and is included in the directory *\$MESA\_TARGET/mesa\_tests/rad/actors/expmgr*. 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.

For IHE Basic Security tests, all messages are exchanged using TLS. MESA servers are run on the same ports but with the TLS option. The configuration file that identifies your information is *expmgr\_secure.cfg*. This separate file allows you to use different port numbers for your secure and standard configurations. You may decide to use the same port numbers for both types of communication. The MESA software will only use all secure or all standard communication for a test; we do not mix communication protocols.

The table below gives parameters for MESA servers that will receive messages from your system. Other MESA servers are started and exchange messages, but do not receive messages from the Export Manager.

Application	AE Title	Port Number
MESA Export Receiver Server		

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

## 1.4 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 Export Manager exam directory: `mesa_tests/rad/actors/exp_mgr`
2. Execute the perl script to start the servers:

```
perl scripts/start_mesa_servers.pl [loglevel]
```

*loglevel* is an optional argument (0 is default). Log levels are:

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

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

```
perl scripts/stop_mesa_servers.pl
```

Log files are stored in `$MESA_TARGET/logs`.

For the security tests, the MESA servers are started with different scripts. These are *scripts/start\_mesa\_secure.csh* and *scripts\start\_mesa\_secure.bat*. The log levels are the same as for the standard tests. The syntax for starting the servers in secure mode is:

```
scripts/start_mesa_secure.csh <log level> Unix
```

```
set LOGLEVEL=X (1, 2, 3, 4) (Windows)
```

```
scripts\start_mesa_secure.bat
```

The MESA servers are stopped using these scripts: *scripts/stop\_mesa\_secure.csh* and *scripts\stop\_mesa\_secure.bat*.

NB: The method for starting the MESA servers in “standard” mode changes with the 6.6.0 release. This better allows the MESA servers to listen for connections on ports other than our assumed defaults. This helps with some Solaris installations where there is conflict with the ports we chose as default values.

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## 1.5 Test Instructions

*Please note the test instructions change starting with the 6.7.0 release.*

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

1. Enter the Export Manager exam directory: *mesa\_tests/rad/actors/exp\_mgr*.
2. Remember the MESA servers were started according to the directions in section 1.5.

A test engine manages the test process. This test engine is driven by a text file that describes the events for the specific test. Each test below will indicate which script is appropriate. 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 3000 test is:

```
perl scripts/expmgr_tfcte.pl 3000 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 Radiology Technical Framework Supplement 2004-2005: Teaching file and Clinical trail Export*. When you have completed the sequence of events, results can be evaluated by running the evaluation script:

```
perl <test>/eval_<test>.pl <log level> <MPPS Mgr AE Title>
```

For example: `perl 3000/eval_3000.pl 3 AE_TITLE_????`

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)

## 1.6 Submission of Results

Test descriptions below inform the reader to “submit results to the Project Manager”. This does not mean “email”. The current submission process should be documented by the Project Manager, but will not include emailing files directly to the Project Manager.

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## **2 Export Manager Tests**

Each section below lists one Export Manager test. As mentioned above, the individual transactions involving the Export Manager under test are described in other documents.

In some cases, the MESA software will send a message to your Export Manager and will have no way to evaluate the response of your system. These messages must be accepted by your system, but are not listed in the sections below as being evaluated by the MESA software.

## **2.1 Export Manager Test 3001: Simple Single Study Teaching File Export**

Test 3001 covers Simple Single Study Teaching File Export .

To run this test:

```
perl scripts/expmgr_tfcte.pl 3001 <log level>
```

To evaluate this test:

```
perl 3001/eval_3001.pl <log level>
```

## **2.2 Export Manager Test 3003: Teaching File Export with Wait for More Data Sent via DICOM**

Test 3001 covers teaching file export with wait fro more data sent via DICOM.

To run this test:

```
perl scripts/expmgr_tfcte.pl 3003 <log level>
```

To evaluate this test:

```
perl 3001/eval_3003.pl <log level>
```

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