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

**IHE/MESA Display Tests**

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# 1 Display Actor Tests

## 1.1 Introduction

The MESA tests include a number of cases each of which rely on a sequence of messages between actors. These tests range across different integration profiles:

- Retrieve Information for Display
- Enterprise User Authentication
- Patient Identity Cross Reference for MPI
- Patient Synchronized Application
- Consistent Time

This document lists the transactions and messages for a number of cases. It may not describe the clinical scenario behind each case, but listing the transactions should clearly define what is expected of each actor. These are all of the transactions involving all of the actors. When you test with your particular actor, you may see only a subset of these messages.

## 1.2 Patient Identification

## 1.3 Configuration

The MESA software is configured to use a specific database, `info_src`. That should not be changed by the user.

The software is distributed with a file `$MESA_TARGET/html/rid/rid_101xx.html`. That file contains URLs that reference `http://info-src...` You can either change `info-src` to the name of the machine where you installed the MESA tools or map the host name `info-src` to the proper IP address using your local hosts file.

## 1.4 Starting the MESA Servers

The Display actor tests use one server, the Apache Tomcat server. This server should have been installed and configured according to the instructions in the Installation Manual. To start the Tomcat server, follow these steps from a DOS prompt or Unix terminal emulator:

1. Set the environment variable `JAVA_HOME` to point to the base of the J2SDK installation.
2. `cd $TOMCAT_HOME` or `cd %TOMCAT_HOME%`
3. `bin/startup.sh` or `bin\startup.bat`

To stop the server:

UNIX `bin/shutdown.sh`

Windows kill the job in the DOS window with ^C

## 1.5 Installation Test

To make sure the MESA server is running properly with the appropriate database connections, follow these steps:

1. Use a web browser and connect to this URL: <http://info-src:8080/rid.html>. You might substitute a different host name for info-src.
2. A table of tests should appear. If not, that indicates the Tomcat web server is not operating properly or the *rid.html* file was not installed properly.
3. Select the link for test 10111. A summary report should appear. If that summary report does not appear, that indicates the database link between the MESA Java servlets and the database is not working properly.

## 1.6 Submission of Results

Test descriptions below inform the reader to “submit results to the Project Manager”. This is 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.

## **2 Test Cases: RID**

This section describes test cases that are generally associated with the RID Integration Profile. There may be some overlap with other profiles.

Each test case involves a series of transactions involving one test patient. Some patients may require that a single actor participate in multiple transactions. The tables in this section give the order of messages for an integrated system with all actors. This is provided as a centralized reference. To test an individual IHE actor, refer to the appropriate test document.

## 2.1 Test Case 10111: RID Retrieve Specific Info Request Keys 1

Test case 10111 covers RID Web Service Request Keys. The Display actor makes a request to the MESA Information Source, retrieves a report and displays that report. The Display actor is required to request reports of type SUMMARY with a specific patient ID.

### 2.1.1 References

ITI TF-2: 3.11.4

### 2.1.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 11 with the MESA Information Source. Your web service request keys should include the required keys from ITI-2: Table 3.11.4-1 and any optional keys.
3. The URL that the MESA system recognizes starts like this:

`http://info-src:8080/IHERetrieveSummaryInfo`

4. These values are required by this test:

The value for patientID is RID10111^^^RID.

The value for requestType is SUMMARY.

The value for mostRecentResults can be 0...n as defined in ITI-2 Table 3.11.4-1.

5. The parameters lowerDateTime and upperDateTime are optional.
6. The MESA Information Source will respond with results that your system should display.

Notes:

1. The MESA distribution includes an HTML file: *\$MESA\_TARGET/html/rid/rid\_101xx.html*. This file contains bullet lists with properly formatted requests.
2. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### 2.1.3 Evaluation

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file rid\_10111.xxx where xxx is the appropriate extension.
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

## 2.2 Test Case 10112: RID Retrieve Specific Info Request Keys 2

Test case 10112 covers RID Web Service Request Keys. The Display actor makes a request to the MESA Information Source, retrieves a report and displays that report. The Display actor is required to request reports with a specific patient ID. The Display actor is required to make a request with a requestType that *is not* SUMMARY.

### 2.2.1 References

ITI TF-2: 3.11.4

### 2.2.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 11 with the MESA Information Source. Your web service request keys should include the required keys from ITI-2: Table 3.11.4-1 and any optional keys.
3. The URL that the MESA system recognizes starts like this:

`http://info-src:8080/IHERetrieveSummaryInfo`

4. These values are required by this test:

The value for patientID is RID10112^^RID.

The value for requestType is one of the values listed in ITI-2 Table 3.11.4-2 excluding the value SUMMARY. That is, it can be SUMMARY-RADIOLOGY, SUMMARY-CARDIOLOGY, ... The best choices are SUMMARY-RADIOLOGY and SUMMARY-CARDIOLOGY.

The value for mostRecentResults can be 0...n as defined in ITI-2 Table 3.11.4-1.

5. The parameters lowerDateTime and upperDateTime are optional.
6. The MESA Information Source will respond with results that your system should display.

Notes:

1. The MESA distribution includes an HTML file: `$MESA_TARGET/html/rid/rid_101xx.html`. This file contains bullet lists with properly formatted requests.
2. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### **2.2.3 Evaluation**

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file rid\_10111.xxx where xxx is the appropriate extension.
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

## **2.3 Test Case 10113: RID Retrieve Specific Info Request Keys 3**

Test case 10113 covers RID Web Service Request Keys

### **2.3.1 References**

ITI TF-2: 3.11.4

## **2.4 Test Case 10121: RID Summary of Reports**

Test case 10121 covers RID Summary of Reports

### **2.4.1 References**

ITI TF-2: 3.11.4.2.2.1

## **2.5 Test Case 10122: RID List of Information Items**

Test case 10122 covers RID Summary of Reports

### **2.5.1 References**

ITI TF-2: 3.11.4.2.2.2

## **2.6 Test Case 10131: RID Retrieve Specific Info Request Response Code 401**

Test case 10131 covers the RID queries and the HTTP response code 401.

### **2.6.1 References**

ITI TF-2: 3.11.4.1.3



## **2.7 Test Case 10132: RID Retrieve Specific Info Request Response Code 404**

Test case 10132 covers the RID queries and the HTTP response code 404. The Display actor makes a request to the MESA Information Source for a report that does not exist. The MESA Information Source sends the HTTP response code 404.

### **2.7.1 References**

ITI TF-2: 3.11.4.1.3

### **2.7.2 Instructions**

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 11 with the MESA Information Source. Your web service request keys should include the required keys from ITI-2: Table 3.11.4-1 and any optional keys.
3. The URL that the MESA system recognizes starts like this:  
`http://info-src:8080/IHERetrieveSummaryInfo`
4. The value for patientID is RID10132^^^RID. The value for requestType is SUMMARY.
5. The MESA Information Source will respond with results that your system should display.

Notes:

1. The MESA distribution includes an HTML file: *\$MESA\_TARGET/htm/rid/rid\_101xx.html*. This file contains bullet lists with properly formatted requests.
2. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### **2.7.3 Evaluation**

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file rid\_10132.xxx where xxx is the appropriate extension.
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

## **2.8 Test Case 10133: RID Response Code 406**

This test is not implemented in this version of the software.

Test case 10133 covers the RID queries and the HTTP response code 406.

### **2.8.1 References**

ITI TF-2: 3.11.4.1.3

### **2.8.2 Instructions**

To run this test, follow these steps:

### **2.8.3 Evaluation**

## 2.9 Test Case 10141: RID Retrieve Document JPEG

Test case 10141 covers the RID transaction to retrieve a JPEG document.

### 2.9.1 References

ITI TF-2: 3.12.4

### 2.9.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 12 with the MESA Information Source. The tables below lists the query keys and HTTP request keys that are required and their values for this test.
3. The URL that the MESA system recognizes starts like this:  
`http://info-src:8080/IHERetrieveDocument`
4. The MESA Information Source will respond with results that your system should display.

**Test 10141 Query Keys**

Parameter	REQ	Value
requestType	R	DOCUMENT
documentUID	R	1.2.840.113654.2.3.2003.100.101
preferredContentType	R	Image/jpeg

**Test 10141 HTTP Request Fields**

HTTP Field	REQ	Value
Accept	R	One of the values listed in ITI TF-2 3.12.4.1.2 (Table 3.12.4-3). The value that makes the most sense for this test is Image/jpeg
Accept-Language	O	
Expires	R	Any valid value not to exceed one week. Example is XXXXYZZZ

Notes:

1. The MESA distribution includes an HTML file: `$MESA_TARGET/htm/rid/rid_101xx.html`. This file contains bullet lists with properly formatted requests.
2. You can use a web browser to obtain a similar file using the following URL:

`http://info-src:8080/rid.html`

3. Configuring you Diplay actor to set the HTTP Accept field is beyond the scope of this document.
4. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### 2.9.3 Evaluation

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file rid\_10141.xxx where xxx is the appropriate extension.
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

## 2.10 Test Case 10142: RID Retrieve Document PDF

Test case 10142 covers the RID transaction to retrieve a PDF document.

### 2.10.1 References

ITI TF-2: 3.12.4

### 2.10.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 12 with the MESA Information Source. The tables below lists the query keys and HTTP request keys that are required and their values for this test.

3. The URL that the MESA system recognizes starts like this:

`http://info-src:8080/IHERetrieveDocument`

4. The MESA Information Source will respond with results that your system should display.

**Test 10142 Query Keys**

Parameter	REQ	Value
requestType	R	DOCUMENT
documentUID	R	1.2.840.113654.2.3.2003.100.102
preferredContentType	R	application/pdf

**Test 10142 HTTP Request Fields**

HTTP Field	REQ	Value
Accept	R	One of the values listed in ITI TF-2 3.12.4.1.2 (Table 3.12.4-3). The value that makes the most sense for this test is <code>application/pdf</code>
Accept-Language	O	
Expires	R	Any valid value not to exceed one week. Example is <code>XXXXYYZZ</code>

## Notes:

1. The MESA distribution includes an HTML file: `$MESA_TARGET/html/rid/rid_101xx.html`. This file contains bullet lists with properly formatted requests.
2. You can use a web browser to obtain a similar file using the following URL:  
`http://info-src:8080/rid.html`
3. Configuring you Display actor to set the HTTP Accept field is beyond the scope of this document.
4. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

**2.10.3 Evaluation**

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file `rid_10142.xxx` where `xxx` is the appropriate extension.
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

**2.11 Test Case 10143: RID Retrieve Document CDA**

Test case 10143 covers the RID transaction to retrieve a CDA document. This test is not ready in this release.

**2.11.1 References**

ITI TF-2: 3.12.4

**2.11.2 Instructions**

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 12 with the MESA Information Source. The tables below lists the query keys and HTTP request keys that are required and their values for this test.
3. The URL that the MESA system recognizes starts like this:

`http://info-src:8080/IHERetrieveDocument`

4. Configuring you Display actor to set the HTTP Accept field is beyond the scope of this document.
5. The MESA Information Source will respond with results that your system should display.

#### Test 10143 Query Keys

Parameter	REQ	Value
requestType	R	DOCUMENT
documentUID	R	1.2.840.113654.2.3.2003.100.103
preferredContentType	R	Application/hl7-cda-level-one+xml

#### Test 10143 HTTP Request Fields

HTTP Field	REQ	Value
Accept	R	One of the values listed in ITI TF-2 3.12.4.1.2 (Table 3.12.4-3). The value that makes the most sense for this test is <code>Application/hl7-cda-level-one+xml</code>
Accept-Language	O	
Expires	R	Any valid value not to exceed one week. Example is <code>XXXXYYZZ</code>

Notes:

1. The MESA distribution includes an HTML file: `$MESA_TARGET/htm/ridl/rid_101xx.html`. This file contains bullet lists with properly formatted requests.
2. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### 2.11.3 Evaluation

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file `rid_10143.xxx` where xxx is the appropriate extension.
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

## 2.12 Test Case 10144: RID Retrieve Document JPEG/PDF

Test case 10144 covers the RID transaction to retrieve a JPEG or PDF document. In this test, the document can be returned by the Information Source as a JPEG image or PDF document. The Display requests the document (by UID) and can specify one or both formats in the HTTP Field *Accept*. The display should send one value in the query key field *preferredContentType*.

This test allows you to experiment with different settings for the HTTP Field *Accept* and the query key *preferredContentType*. The minimal requirement is to get this test to work with one combination of settings.

### 2.12.1 References

ITI TF-2: 3.12.4

### 2.12.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 12 with the MESA Information Source. The tables below lists the query keys and HTTP request keys that are required and their values for this test.

3. The URL that the MESA system recognizes starts like this:

`http://info-src:8080/IHERetrieveDocument`

4. The MESA Information Source will respond with results that your system should display.

#### Test 10144 Query Keys

Parameter	REQ	Value
requestType	R	DOCUMENT
documentUID	R	1.2.840.113654.2.3.2003.100.104
preferredContentType	R	image/jpeg or application/pdf

#### Test 10144 HTTP Request Fields

HTTP Field	REQ	Value
Accept	R	One or more of the values listed in ITI TF-2 3.12.4.1.2 (Table 3.12.4-3). The values that make the most sense for this test are image/jpeg or application/pdf
Accept-Language	O	
Expires	R	Any valid value not to exceed one week. Example is XXXXXYYZZ

Notes:

1. The MESA distribution includes an HTML file: `$MESA_TARGET/htm/ridl/rid_10xx.html`. This file contains bullet lists with properly formatted requests.
2. You can use a web browser to obtain a similar file using the following URL:

`http://info-src:8080/rid.html`

3. Configuring you Display actor to set the HTTP Accept field is beyond the scope of this document.
4. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### 2.12.3 Evaluation

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file rid\_10144.xxx where xxx is the appropriate extension.
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

## 2.13 Test Case 10145: RID Retrieve Document Bad Request

Test case 10145 covers the RID transaction to retrieve a JPEG. In this test, the value specified for preferredContentType is not one of the values in the HTTP Accept request field. The Information Source is expected to return a status value of 400 (Bad Request) in this case.

The purpose of this test is to demonstrate what happens when your query is not properly synchronized with your HTTP Accept parameters. For example, you might set the preferredContentType to application/pdf while your HTTP Accept only supports image/jpeg.

### 2.13.1 References

ITI TF-2: 3.12.4.1.3

### 2.13.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 12 with the MESA Information Source. The tables below lists the query keys and HTTP request keys that are required and their values for this test.
3. The URL that the MESA system recognizes starts like this:  

```
http://info-src:8080/IHERetrieveDocument
```
4. The MESA Information Source will respond with results that your system should display.

**Test 10145 Query Keys**

Parameter	REQ	Value
requestType	R	DOCUMENT
documentUID	R	1.2.840.113654.2.3.2003.100.101
preferredContentType	R	application/pdf



**Test 10145 HTTP Request Fields**

HTTP Field	REQ	Value
Accept	R	image/jpeg
Accept-Language	O	
Expires	R	Any valid value not to exceed one week. Example is XXXXYZZZ

## Notes:

1. The MESA distribution includes an HTML file: *\$MESA\_TARGET/htm/ridl/rid\_10xx.html*. This file contains bullet lists with properly formatted requests.
2. You can use a web browser to obtain a similar file using the following URL:  
`http://info-src:8080/rid.html`
3. Configuring you Diplay actor to set the HTTP Accept field is beyond the scope of this document.
4. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

**2.13.3 Evaluation**

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
  2. Name the output file `rid_10145.xxx` where xxx is the appropriate extension.
- Zip/tar the screen capture file with other results and submit to the Project Manager.

**2.14 Test Case 10146: RID Retrieve Document with Unsupported Document Type**

Test case 10146 covers the RID transaction to retrieve a document that is stored in a format that is not supported by the Image Display. The example is a CDA document that is stored; the Image Display is configured to only support JPEG and PDF documents. This case tests one of the exception modes; the Information Source will not return a document to the Image Display but will return an error code.

This test is not ready with this release of software.

**2.14.1 References**

ITI TF-2: 3.12.4

**2.14.2 Instructions**

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.

- Configure your Display to initiate IHE ITI Transaction 12 with the MESA Information Source. The tables below lists the query keys and HTTP request keys that are required and their values for this test.

- The URL that the MESA system recognizes starts like this:

`http://info-src:8080/IHERetrieveDocument`

- The MESA Information Source will respond with results that your system should display.

#### Test 10146 Query Keys

Parameter	REQ	Value
requestType	R	DOCUMENT
documentUID	R	1.2.840.113654.2.3.2003.100.103
preferredContentType	R	image/jpeg or application/pdf

#### Test 10145 HTTP Request Fields

HTTP Field	REQ	Value
Accept	R	One or more of the values listed in ITI TF-2 3.12.4.1.2 (Table 3.12.4-3) with the exception of <code>application/hl7-cda-level-one+xml</code> . The values that make the most sense for this test are <code>image/jpeg</code> or <code>application/pdf</code>
Accept-Language	O	
Expires	R	Any valid value not to exceed one week. Example is <code>XXXXYYZZ</code>

#### Notes:

- The MESA distribution includes an HTML file: `$MESA_TARGET/htm/ridl/rid_101xx.html`. This file contains bullet lists with properly formatted requests.
- You can use a web browser to obtain a similar file using the following URL:  

`http://info-src:8080/rid.html`
- Configuring you Diplay actor to set the HTTP Accept field is beyond the scope of this document.
- If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### 2.14.3 Evaluation

- Obtain a screen capture (software, digital camera) of your screen showing the returned result.
- Name the output file `rid_10146.xxx` where `xxx` is the appropriate extension.
- Zip/tar the screen capture file with other results and submit to the Project Manager.

## 2.15 Test Case 10147: RID Retrieve Non-Existing Document

Test case 10147 covers the RID transaction to retrieve a document that does not exist in the Information Source. This case tests one of the exception modes; the Information Source will not return a document to the Image Display but will return an error code.

The Information Source is expected to return the Error Code 404 – Not Found.

### 2.15.1 References

ITI TF-2: 3.12.4

### 2.15.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 12 with the MESA Information Source. The tables below lists the query keys and HTTP request keys that are required and their values for this test.

3. The URL that the MESA system recognizes starts like this:

`http://info-src:8080/IHERetrieveDocument`

4. The MESA Information Source will respond with results that your system should display.

**Test 10146 Query Keys**

Parameter	REQ	Value
requestType	R	DOCUMENT
documentUID	R	1.2.840.113654.2.3.2003.100.100
preferredContentType	R	Any of the values in ITI TF-2 3.12.4.1.2 Table 3.12.4-3.

**Test 10146 HTTP Request Fields**

HTTP Field	REQ	Value
Accept	R	One or more of the values listed in ITI TF-2 3.12.4.1.2 (Table 3.12.4-3).
Accept-Language	O	
Expires	R	Any valid value not to exceed one week. Example is XXXXXYYZZ

Notes:

1. The MESA distribution includes an HTML file: *\$MESA\_TARGET/html/rid/rid\_101xx.html*. This file contains bullet lists with properly formatted requests.
2. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### **2.15.3 Evaluation**

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file rid\_10147.xxx where xxx is the appropriate extension.
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

### **3 Test Cases: Retrieve ECG for Display (ECG)**

This section describes test cases that are generally associated with the ECG Integration Profile. There may be some overlap with other profiles.

#### **3.1 Test Case 20301: D1: Simple Display of ECGs- Basic Query/HTML Response – Summary and Display**

Test case 20301 covers D1: Simple Display. The Display actor makes a request to the MESA Information Source, retrieves a report and displays that report. The Display actor is required to request reports of type SUMMARY with a specific patient ID.

##### **3.1.1 References**

Rad TF-1: 5.3.1

##### **3.1.2 Instructions**

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 11 with the MESA Information Source. Your web service request keys should include the required keys from ITI-2: Table 3.11.4-1 and any optional keys.
3. The URL that the MESA system recognizes starts like this:  
`http://info-src:8080/IHERetrieveSummaryInfo`
4. These values are required by this test:
  - a. The value for patientID is ECG203011^^^RID.
  - b. The value for requestType is SUMMARY.
  - c. The value for mostRecentResults can be 0...n as defined in ITI-2 Table 3.11.4-1.
5. The parameters lowerDateTime and upperDateTime are optional.
6. The MESA Information Source will respond with results that your system should display.
7. Obtain a screen capture (software, digital camera) of your screen showing the returned result.

Notes:

1. The MESA distribution includes an HTML file: *\$MESA\_TARGET/html/ecg/ecg\_203xx.html*. This file contains bullet lists with properly formatted requests.
2. You can use a web browser to obtain a similar file using the following URL:

`http://info-src:8080/ecg.html`

3. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### 3.1.3 Evaluation

1. Obtain a screen capture (software, digital camera) of the summary screen. Name the output files `ecg_20301.xxx` where `xxx` is the appropriate extension (JPG, etc).
2. Zip/tar the screen capture file with other results and submit to the Project Manager.

## 3.2 Test Case 20302: D1: Simple Display of ECGs- Query – Summary – No Such Patient

Test case 20302 covers D1: Simple Display. The Display actor makes a request to the MESA Information Source for a patient that does not exist. The MESA Information Source returns status code 404. The Display should process that code and provide an “appropriate” display/rendering for the user.

### 3.2.1 References

CARD TF-1: 5.3.1

### 3.2.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 11 with the MESA Information Source. Your web service request keys should include the required keys from ITI-2: Table 3.11.4-1 and any optional keys.
3. The URL that the MESA system recognizes starts like this:  
`http://info-src:8080/IHERetrieveSummaryInfo`
4. The value for `patientID` is `ECG203019^^^RID`. The value for `requestType` is `SUMMARY`.
5. The MESA Information Source will respond with results that your system should display.

Notes:

1. The MESA distribution includes an HTML file: `$MESA_TARGET/html/ecg/ecg_203xx.html`. This file contains bullet lists with properly formatted requests.
2. You can use a web browser to obtain a similar file using the following URL:

`http://info-src:8080/ecg.html`

3. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### **3.2.3 Evaluation**

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file `ecg_20302.xxx` where `xxx` is the appropriate extension (JPG, etc.).
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

## **3.3 Test Case 20303: D1: Simple Display of ECGs- Basic Query – SUMMARY-CARDIOLOGY/HTML Response**

Test case 20303 covers D1: Simple Display. The Display actor makes a request to the MESA Information Source, retrieves a report and displays that report. The Display actor is required to request reports of type SUMMARY-CARDIOLOGY with a specific patient ID.

This differs from test 20301 in the request type. Test 20301 specifies a request type of SUMMARY. This test uses SUMMARY-CARDIOLOGY.

### **3.3.1 References**

Card TF-1: 5.3.1

### **3.3.2 Instructions**

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 11 with the MESA Information Source. Your web service request keys should include the required keys from ITI-2: Table 3.11.4-1 and any optional keys.
3. The URL that the MESA system recognizes starts like this:  
`http://info-src:8080/IHERetrieveSummaryInfo`
4. These values are required by this test:
  - d. The value for `patientID` is `ECG203011^^^RID`.
  - e. The value for `requestType` is `SUMMARY-CARDIOLOGY`.
  - f. The value for `mostRecentResults` can be `0...n` as defined in ITI-2 Table 3.11.4-1.
5. The parameters `lowerDateTime` and `upperDateTime` are optional.
6. The MESA Information Source will respond with results that your system should display.
7. Obtain a screen capture (software, digital camera) of your screen showing the returned result.

Notes:

1. The MESA distribution includes an HTML file: *\$MESA\_TARGET/html/ecg/ecg\_203xx.html*. This file contains bullet lists with properly formatted requests.
2. You can use a web browser to obtain a similar file using the following URL:  
`http://info-src:8080/ecg.html`
3. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### **3.3.3 Evaluation**

1. Obtain a screen capture (software, digital camera) of the report. Name the output file `ecg_20303.xxx` where xxx is the appropriate extension (JPG, etc).
2. Zip/tar the screen capture file with other results and submit to the Project Manager.

## **3.4 Test Case 20304: D1: Simple Display of ECGs- CARD5 Query – SUMMARY-CARDIOLOGY-ECG/XML Response**

Test case 20304 covers D1: Simple Display. The Display actor makes a request to the MESA Information Source, retrieves a report and displays that report. The Display actor is required to request reports of type SUMMARY-CARDIOLOGY-ECG with a specific patient ID.

### **3.4.1 References**

Card TF-1: 5.3.1

### **3.4.2 Instructions**

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 11 with the MESA Information Source. Your web service request keys should include the required keys from ITI-2: Table 3.11.4-1 and any optional keys.
3. The URL that the MESA system recognizes starts like this:  
`http://info-src:8080/IHERetrieveSummaryInfo`
4. These values are required by this test:
  - a. The value for `patientID` is `ECG203011^^^RID`.
  - b. The value for `requestType` is `SUMMARY-CARDIOLOGY-ECG`.



- c. The value for mostRecentResults can be 0...n as defined in ITI-2 Table 3.11.4-1.
5. The parameters lowerDateTime and upperDateTime are optional.
6. The MESA Information Source will respond with XML results that your system should display.
7. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
8. Select the link for any of the ECGs in the list. Obtain a screen capture of the ECG showing the returned result.

Notes:

1. The MESA distribution includes an HTML file: *\$MESA\_TARGET/html/ecg/ecg\_203xx.html*. This file contains bullet lists with properly formatted requests.
2. You can use a web browser to obtain a similar file using the following URL:  
`http://info-src:8080/ecg.html`
3. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### 3.4.3 Evaluation

1. Obtain a screen capture (software, digital camera) of two screens (the original list of ECGs and the ECG fore xxxxx). Name the output files *ecg\_20304a.xxx* and *ecg\_20304b.xxx* where xxx is the appropriate extension (JPG, etc).
2. Zip/tar the screen capture file with other results and submit to the Project Manager.

## 3.5 Test Case 20305: D1: Simple Display of ECGs- CARD5 Query – SUMMARY-CARDIOLOGY-ECG – No such patient

Test case 20305 covers D1: Simple Display. The Display actor makes a request to the MESA Information Source, retrieves a report and displays that report. The Display actor is required to request reports of type SUMMARY-CARDIOLOGY-ECG with a specific patient ID. The patient does not exist, and the Display should present the user with an appropriate error message.

### 3.5.1 References

Card TF-1: 5.3.1

### 3.5.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.

2. Configure your Display to initiate IHE ITI Transaction 11 with the MESA Information Source. Your web service request keys should include the required keys from ITI-2: Table 3.11.4-1 and any optional keys.
3. The URL that the MESA system recognizes starts like this:  
`http://info-src:8080/IHERetrieveSummaryInfo`
4. These values are required by this test:
  - a. The value for patientID is ECG203019^^^RID.
  - b. The value for requestType is SUMMARY-CARDIOLOGY-ECG.
  - c. The value for mostRecentResults can be 0...n as defined in ITI-2 Table 3.11.4-1.
5. The parameters lowerDateTime and upperDateTime are optional.
6. The MESA Information Source will respond with results that your system should display.

Notes:

1. The MESA distribution includes an HTML file: *\$MESA\_TARGET/html/ecg/ecg\_203xx.html*. This file contains bullet lists with properly formatted requests.
2. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### **3.5.3 Evaluation**

1. Obtain a screen capture (software, digital camera) of two screens (the original list of ECGs and the ECG for xxxxx). Name the output files *ecg\_20305.xxx* and *ecg\_20305.xxx* where xxx is the appropriate extension (JPG, etc).
2. Zip/tar the screen capture file with other results and submit to the Project Manager.

### **3.6 Test Case 20306: D1: Simple Display of ECGs- CARD5 Query – Zero Caching**

Not implemented in this release; will not be implemented before February, 2005.

### **3.7 Test Case 20307: D1: Simple Display of ECGs – Retrieve document without query**

Test case 20307 is for Information Source actors only.

### 3.8 Test Case 20308: D1: Simple Display of ECGs – Retrieve vector pdf document

Test case 20308 covers D1: Simple Display (see CARD TF-1: 5.3.1).

#### 3.8.1 References

CARD TF-1: 5.3.1

#### 3.8.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 12 with the MESA Information Source. The tables below lists the query keys and HTTP request keys that are required and their values for this test.
3. The URL that the MESA system recognizes starts like this:  
`http://info-src:8080/IHERetrieveDocument`
4. The MESA Information Source will respond with results that your system should display.

**Test 20308 Query Keys**

Parameter	REQ	Value
requestType	R	DOCUMENT
documentUID	R	1.2.840.113654.2.3.2005.20301.101
preferredContentType	R	Application/pdf

**Test 20308 HTTP Request Fields**

HTTP Field	REQ	Value
Accept	R	This is defined in Card TF-2 and should be: Application/pdf -or- */*
Accept-Language	O	
Expires	R	Any valid value not to exceed one week. Example is XXXXYZZZ

Notes:

1. The MESA distribution includes an HTML file: `$MESA_TARGET/htm/ecg/ecg_203xx.html`. This file contains bullet lists with properly formatted requests.
2. You can use a web browser to obtain a similar file using the following URL:

`http://info-src:8080/ecg.html`

3. Configuring you Display actor to set the HTTP Accept field is beyond the scope of this document.
4. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

### 3.8.3 Evaluation

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file `ecg_20308.xxx` where xxx is the appropriate extension.
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

## 3.9 Test Case 20309: D1: Simple Display of ECGs – Retrieve svg document

Test case 20309 covers D1: Simple Display (see CARD TF-1: 5.3.1).

### 3.9.1 References

CARD TF-1: 5.3.1

### 3.9.2 Instructions

To run this test, follow these steps:

1. Make sure the MESA Information Source has been started. See section 1.4 for details.
2. Configure your Display to initiate IHE ITI Transaction 12 with the MESA Information Source. The tables below lists the query keys and HTTP request keys that are required and their values for this test.

3. The URL that the MESA system recognizes starts like this:

`http://info-src:8080/IHERetrieveDocument`

4. The MESA Information Source will respond with results that your system should display.

#### Test 20309 Query Keys

Parameter	REQ	Value
<code>requestType</code>	R	DOCUMENT
<code>documentUID</code>	R	1.2.840.113654.2.3.2005.20301.102
<code>preferredContentType</code>	R	Image/svg+xml

**Test 20309 HTTP Request Fields**

HTTP Field	REQ	Value
Accept	R	Image/xvg+xml
Accept-Language	O	
Expires	R	Any valid value not to exceed one week. Example is XXXXYZZZ

Notes:

1. The MESA distribution includes an HTML file: *\$MESA\_TARGET/htm/ecgl/ecg\_203xx.html*. This file contains bullet lists with properly formatted requests.
2. You can use a web browser to obtain a similar file using the following URL:  
`http://info-src:8080/ecg.html`
3. Configuring you Diplay actor to set the HTTP Accept field is beyond the scope of this document.
4. If your system needs HL7 messages or other data to get demographics for this subject, contact the Project Manager.

**3.9.3 Evaluation**

1. Obtain a screen capture (software, digital camera) of your screen showing the returned result.
2. Name the output file *ecg\_20309.xxx* where xxx is the appropriate extension.
3. Zip/tar the screen capture file with other results and submit to the Project Manager.

## **4 Test Cases: PDI**

These test cases are generally associated with the Radiology PDI profile

### **4.1 Test Case 1931: Media “Reader” Read RSNA 2004 CD**

The purpose of this test is for the Display actor to open the INDEX.HTM file on the RSNA 2004 CD and to render the HTML pages and other files on the CD.

#### **4.1.1 References**

RAD TF

#### **4.1.2 Instructions**

To run this test, follow these steps:

1. Obtain the RSNA 2004 PDI Demonstration CD. If you do not have a physical copy of the CD, download the ISO image of the CD from the MESA distribution page and create a CD from the ISO image.
2. Use your web browser or tool to open INDEX.HTM on the CD.
3. Obtain the text file RSNA2004CD.doc from the MESA documentation page. This file will list all of the vendor studies on the RSNA CD.
4. Manually walk through all links on the CD. For those studies with multiple images, you can select a small subset of the images.
5. For each set of vendor data, modify the file RSNA2004CD.doc to indicate if you can successfully render the data. Questions are Yes/No. You can add comments at the bottom of the file.

#### **4.1.3 Evaluation**

1. Submit the modified text file to the Project Manager.
2. If there are problems with rendering, submit a screen capture demonstrating the problem and/or submit additional documentation in the RSNA2004CD.doc file.

### **4.2 Test Case 1932: Media “Reader” Reads Vendor CDs**

The purpose of this test is for the Display actor to open the INDEX.HTM file on CDs provided by vendors for the RSNA 2004 PDI demonstration.

#### **4.2.1 References**

RAD TF

#### **4.2.2 Instructions**

To run this test, follow these steps:

1. Obtain the vendor CDs from the RSNA 2004 PDI Demonstration. If you do not have a physical copy of the CDs, download the ISO images from the MESA distribution page and create a CD from the ISO image.
2. Obtain the text file VENDOR2004CD.doc from the MESA documentation page. This file will list all of the vendor CDs.
3. Use your web browser or other tool to open INDEX.HTM on the CD.
4. Manually walk through all links on the CD. For those studies with multiple images, you can select a small subset of the images.
5. For each set of vendor data, modify the file VENDOR2004CD.doc to indicate if you can successfully render the data. Questions are Yes/No. You can add comments at the bottom of the file.

#### **4.2.3 Evaluation**

1. Submit the modified text file to the Project Manager.
2. If there are problems with rendering, submit a screen capture demonstrating the problem and/or submit additional documentation in the VENDOR2004CD.doc file.