



# DICOM Conformance Statement

## ORS Visual Application

© 2012 Object Research Systems (ORS) Inc

Homepage: [www.theobjects.com](http://www.theobjects.com)

Revision: 1.3

# Table of Contents

1. Introduction .....	5
1.1. Revision History.....	5
1.2. Purpose / Audience of this Document.....	5
1.3. Remarks.....	5
1.3.1. Integration .....	5
1.3.2. Validation.....	5
1.3.3. Future Evolution.....	5
1.4. Definitions, Terms and Abbreviations .....	6
1.5 References .....	6
2. Networking.....	7
2.1. Implementation Model .....	7
2.1.1. Application SCU Data Flow Diagram .....	7
2.1.2. Application SCP Data Flow Diagram.....	8
2.2. Functional Definitions of Application Entities .....	9
2.2.1. Verification-SCU .....	9
2.2.2. Verification-SCP .....	9
2.2.3. Find-SCU .....	9
2.2.4. Find-SCP .....	9
2.2.5. Move-SCU .....	10
2.2.6. Move-SCP .....	10
2.2.7. Storage-SCP .....	10
2.2.8. Storage-SCU.....	10
2.3. Application Entity Specification .....	10
2.3.1. Verification-SCU AE Specification .....	10
2.3.1.1. SOP Classes.....	10
2.3.1.2. Association Policies .....	10
2.3.1.2.1. General .....	10
2.3.1.2.2. Number of Associations .....	10
2.3.1.2.3. Asynchronous Nature.....	10
2.3.1.3. Association Initiating Policy .....	11
2.3.1.3.1. Real World Activity -Verify .....	11
2.3.1.3.2. Proposed Presentation Contexts.....	11
2.3.1.3.3. SOP Specific Conformance.....	11
2.3.2. Find-SCU AE Specification .....	11
2.3.2.1. SOP Classes.....	11
2.3.2.2. Association Policies .....	11
2.3.2.2.1. General .....	11
2.3.2.2.2. Number of Associations .....	11
2.3.2.2.3. Asynchronous Nature.....	12
2.3.2.3. Association Initiating Policy .....	12
2.3.2.3.1. Real World Activity -Search.....	12
2.3.2.3.2. Proposed Presentation Contexts.....	12
2.3.2.3.3. SOP Specific Conformance.....	12
2.3.3. Find-SCP AE Specification.....	13
2.3.3.1. SOP Classes.....	13
2.3.3.2. Association Policies .....	13

2.3.3.2.1. General .....	13
2.3.3.2.2. Number of Associations .....	13
2.3.3.2.3. Asynchronous Nature .....	13
2.3.3.3. Association Initiating Policy .....	13
2.3.3.3.1. Real World Activity -Search .....	13
2.3.3.3.2. Proposed Presentation Contexts .....	13
2.3.3.3.3. SOP Specific Conformance.....	14
2.3.4. Move-SCU AE Specification .....	14
2.3.4.1. SOP Classes.....	14
2.3.4.2. Association Policies .....	14
2.3.4.2.1. General .....	14
2.3.4.2.2. Number of Associations .....	14
2.3.4.2.3. Asynchronous Nature .....	14
2.3.4.3. Association Initiating Policy .....	15
2.3.4.3.1. Real World Activity -Move.....	15
2.3.4.3.2. Proposed Presentation Contexts .....	15
2.3.4.3.3. SOP Specific Conformance.....	15
2.3.5. Move-SCP AE Specification.....	15
2.3.5.1. SOP Classes.....	15
2.3.5.2. Association Policies .....	15
2.3.5.2.1. General .....	15
2.3.5.2.2. Number of Associations .....	16
2.3.5.2.3. Asynchronous Nature .....	16
2.3.5.3. Association Initiating Policy .....	16
2.3.5.3.1. Real World Activity -Move.....	16
2.3.5.3.2. Proposed Presentation Contexts .....	16
2.3.5.3.3. SOP Specific Conformance.....	16
2.3.6. Storage-SCU AE Specification .....	16
2.3.6.1. SOP Classes.....	16
2.3.6.2. Association Policies .....	17
2.3.6.2.1. General .....	17
2.3.6.2.2. Number of Associations .....	17
2.3.6.2.3. Asynchronous Nature .....	17
2.3.6.3. Association Initiating Policy .....	17
2.3.6.3.1. Real World Activity - Send to Remote Server .....	17
2.3.6.3.2. Proposed Presentation Contexts .....	18
2.3.6.3.3. SOP Specific Conformance.....	18
2.3.7. Storage-SCP AE Specification.....	18
2.3.7.1. SOP Classes.....	18
2.3.7.2. Association Policies .....	19
2.3.7.2.1. General .....	19
2.3.7.2.2. Number of Associations .....	19
2.3.7.2.3. Asynchronous Nature .....	19
2.3.7.3. Association Initiating Policy .....	19
2.3.7.4. Association Acceptance Policy .....	19
2.3.7.4.1. Real World Activity - Store .....	19
2.3.7.4.2. Proposed Presentation Contexts .....	19
2.3.7.4.3. SOP Specific Conformance.....	19
3. ORS Visual DICOM Media Services.....	20
3.1. Real World Activity – Read Image(s) from Media.....	20

4. Communication Profiles.....	22
4.1. Supported Communication Stacks .....	22
4.1.1. OSI Stack.....	22
4.1.2. TCP/IP Stack.....	22
4.1.2.1. Physical Media Support .....	22
4.1.3. Point-to-Point Stack .....	22
5. Extensions/Specializations/Privatizations.....	23
5.1. Standard Extended/Specialized/Private SOPs.....	23
5.2. Private Transfer Syntaxes.....	23
6. Configuration .....	24
6.1. AE Title Address Mapping .....	24
6.1.1. Local AE Titles .....	24
6.1.2. Remote AE Titles .....	24
6.2. Configurable Parameters .....	24
7. Support of Extended Character Sets.....	25

# 1. Introduction

## 1.1. Revision History

Revision	Date	Author	Reason
1.1	July 2007	Normand Mongeau	First Draft
1.2	April 2010	Normand Mongeau	Update
1.3	March 2012	Normand Mongeau	Update

## 1.2. Purpose / Audience of this Document

This document is the DICOM 3.0 Conformance Statement for the ORS Visual application.

The user of this document is involved with system integration and/or software design. We assume that the user is familiar with the terminology and concepts that are used in the DICOM 3.0 standard.

Readers not familiar with DICOM 3.0 terminology should first read the appropriate parts of the DICOM standard itself, prior to read this conformance statement.

## 1.3. Remarks

The use of this DICOM Conformance Statement and the corresponding DICOM Standard is intended to facilitate communication with other DICOM modalities, but it is not sufficient to guarantee by itself successful interoperability. The implementer should also consider the following issues:

### 1.3.1. Integration

The integration of any device into an overall system is beyond the scope of the DICOM 3.0. The user is responsible for analyzing the requirements of any application that needs to be integrated. Comparison of DICOM Conformance statements is a first step for achieving interoperability.

### 1.3.2. Validation

Before any clinical use, test procedures needed to be defined and the test should be performed, to validate the desired connectivity.

### 1.3.3. Future Evolution

The DICOM Standard is evolving to achieve best adaption to future clinical needs. ORS reserves the right to change its products or to discontinue its delivery if changes in the DICOM Standard require this.

## 1.4. Definitions, Terms and Abbreviations

All symbols and abbreviations used herein are described in the Digital Imaging and Communications in Medicine (DICOM) standard, parts 1 through 13 (NEMAPS 3.1-13).

## 1.5 References

The DICOM Standard homepage: <http://medical.nema.org>.

## 2. Networking

### 2.1. Implementation Model

#### 2.1.1. Application SCU Data Flow Diagram

The Application Flow Diagram below shows all data flows from the ORS Visual application, representing its SCU roles.

ORS Visual is the client viewer application, and provides a user interface. Internally it handles all the different aspects of the network services, but conceptually it can be modeled as these different Application Entities (even though they share the same configuration Application Title):

- Verification-SCU, which verifies network connectivity

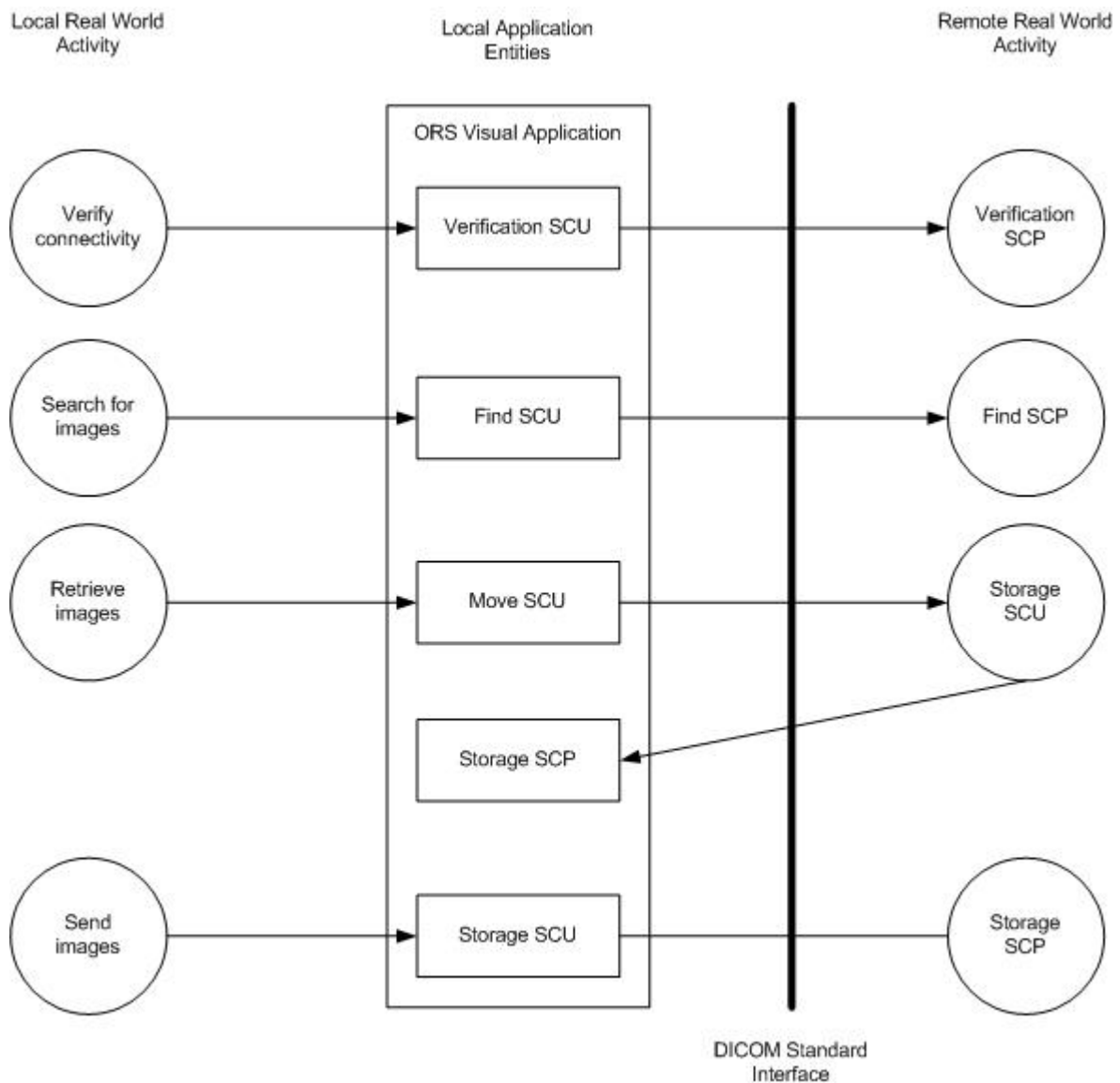
- Find-SCU, which issues search requests

- Find-SCP, which answers search requests

- Move-SCU, which issues move requests

- Storage-SCP, which receives images from a remote server

- Storage-SCU, which sends images to a remote server

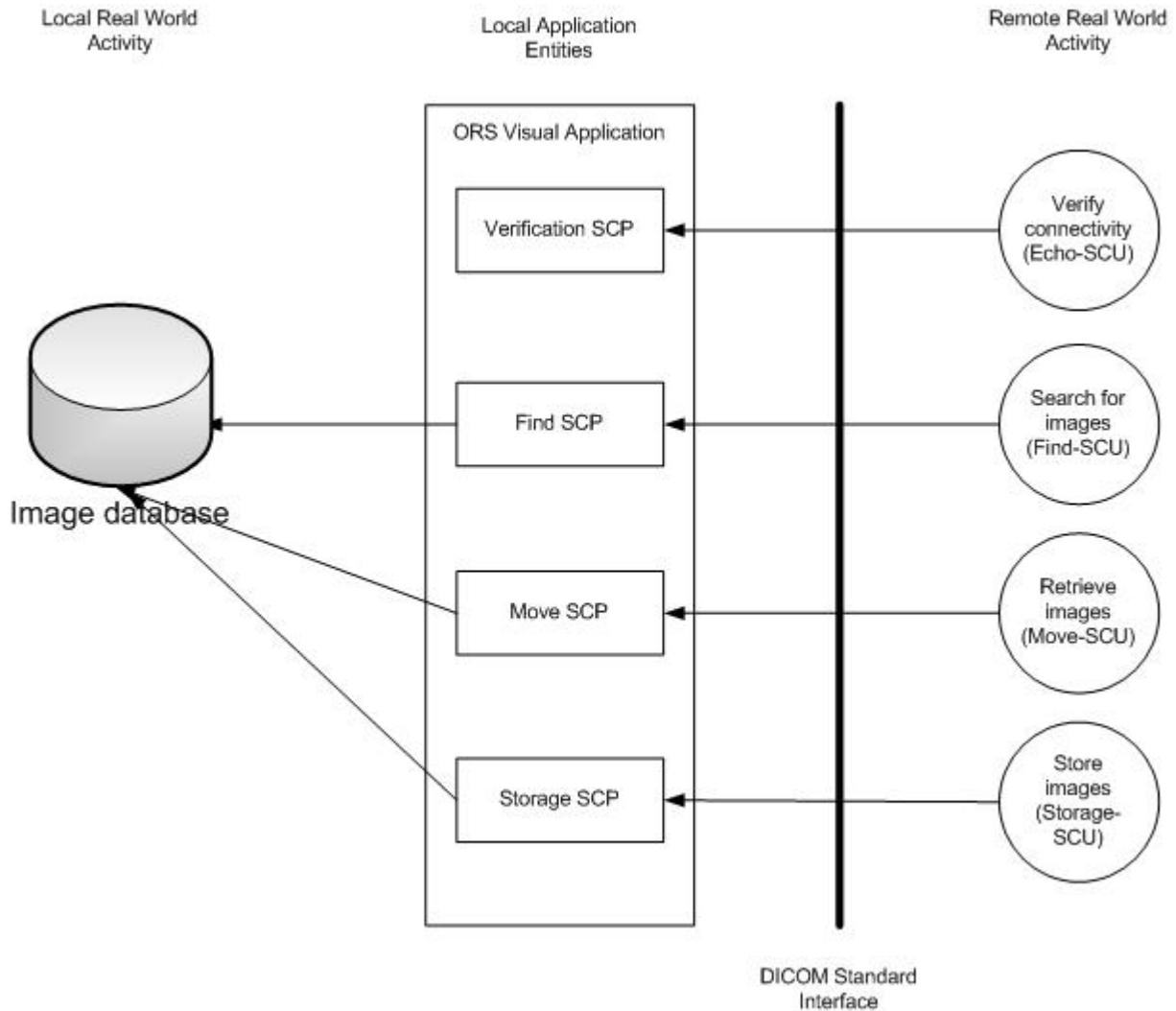


## 2.1.2. Application SCP Data Flow Diagram

The Application Flow Diagram below shows all data flows into the ORS Visual application, representing its SCP roles.

ORS Visual is the client viewer application, and provides a user interface. Internally it handles all the different aspects of the network services, but conceptually it can be modeled as these different Application Entities (even though they share the same configuration Application Title):

- Verification-SCP, for remote parties who want to verify network connectivity
- Find-SCP, which responds to remote search requests
- Move-SCP, which honors remote move requests
- Storage-SCP, which receives images from a remote server



## 2.2. Functional Definitions of Application Entities

### 2.2.1. Verification-SCU

Verification-SCU is triggered by a user that wants to verify network connectivity with a remote server.

### 2.2.2. Verification-SCP

Verification-SCU is triggered by a remote user that wants to verify network connectivity with the ORS Visual node.

### 2.2.3. Find-SCU

Find-SCU is triggered by a user that wants to search for images on a remote server.

### 2.2.4. Find-SCP

Find-SCP is triggered by a remote user that wants to search for images on the ORS Visual node. A separate dedicated process implements the service.

## 2.2.5. Move-SCU

Move-SCU is triggered by a user after a successful search, to retrieve the images from a remote server in order to view them.

## 2.2.6. Move-SCP

Move-SCU is triggered by a remote user that want to retrieve images from the ORS Visual node. A separate dedicated process implements the service.

## 2.2.7. Storage-SCP

Storage-SCP is a separate dedicated process (it also implements Find-SCP), that waits for images to arrive after a retrieve (Move-SCU) request. When images arrive they are stored in a local database, for subsequent listing and viewing.

## 2.2.8. Storage-SCU

Storage-SCU is triggered when users want to send modified images back to a remote server for permanent storage.

# 2.3. Application Entity Specification

## 2.3.1. Verification-SCU AE Specification

### 2.3.1.1. SOP Classes

Verification-SCU provides Standard Conformance to the following DICOM 3.0 SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	Yes	No

### 2.3.1.2. Association Policies

#### 2.3.1.2.1. General

Verification-SCU initiates but never accepts associations.

#### 2.3.1.2.2. Number of Associations

Verification-SCU initiates one association.

#### 2.3.1.2.3. Asynchronous Nature

Verification-SCU does not support asynchronous communication.

### 2.3.1.3. Association Initiating Policy

Verification-SCU attempts to establish one association for every network connectivity verification.

#### 2.3.1.3.1. Real World Activity -Verify

The associated real world activity is a C-ECHO operation. In the preferences dialog, under the DICOM category, the user opens a DICOM server from the list of servers. The user can then click on the “Verify” button to check the network connectivity with the server. An association request is sent to the requested destination for the appropriate SOP class.

#### 2.3.1.3.2. Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Verification	1.2.840.10008.1.1	Implicit VR, Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

#### 2.3.1.3.3. SOP Specific Conformance

Verification-SCU provides standard conformance to DICOM communication verification.

## 2.3.2. Find-SCU AE Specification

### 2.3.2.1. SOP Classes

Find-SCU provides Standard Conformance to the following DICOM 3.0 SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
Study Root Query/Retrieve Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Yes	No

### 2.3.2.2. Association Policies

#### 2.3.2.2.1. General

Find-SCU initiates but never accepts associations.

#### 2.3.2.2.2. Number of Associations

Find-SCU initiates one association.

### 2.3.2.2.3. Asynchronous Nature

Find-SCU does not support asynchronous communication.

### 2.3.2.3. Association Initiating Policy

Find-SCU attempts to establish one association for every search request by a user.

#### 2.3.2.3.1. Real World Activity -Search

The associated real world activity is a C-FIND operation. In the DICOM Browser dialog, the user can specify different search criteria to look for images on a remote server. The user then clicks on the “Search” button to trigger the search request. An association request is sent to the requested destination for the appropriate SOP class.

#### 2.3.2.3.2. Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Study Root Query Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR, Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2 .1		
		Explicit VR Big Endian	1.2.840.10008.1.2 .2		

#### 2.3.2.3.3. SOP Specific Conformance

Find-SCU supports C-FIND response values as defined in DICOM v.3.0 Part 4. All Required (R) and Unique (U) Study, Series, and Image level keys are supported for the Study Root information models. In addition, certain Optional (O) keys are supported. For a Study Root Query/Retrieve the following keys are supported:

Study Root Query/Retrieve: Supported Keys			
Data Level	Description	Tag	Type
Study	Study Date	(0008,0020)	R
Study	Study Time	(0008,0030)	R
Study	Study Accession Number	(0008,0050)	R
Study	Patient’s Name	(0010,0010)	R
Study	Patient ID	(0010,0020)	R
Study	Study ID	(0020,0010)	R
Study	Study Instance UID	(0020,000D)	U
Study	Study Referring MD’s Name	(0008,0090)	O
Study	Study Description	(0008,1030)	O
Study	Modalities in Study	(0008,0061)	O

Series	Number of Series Related Instances	(0020,1209)	O
--------	------------------------------------	-------------	---

## 2.3.3. Find-SCP AE Specification

### 2.3.3.1. SOP Classes

Find-SCP provides Standard Conformance to the following DICOM 3.0 SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
Study Root Query/Retrieve Model – FIND	1.2.840.10008.5.1.4.1.2.2.1	No	Yes

### 2.3.3.2. Association Policies

#### 2.3.3.2.1. General

Find-SCP accepts but never initiates associations.

#### 2.3.3.2.2. Number of Associations

Find-SCP accepts an unlimited number of associations.

#### 2.3.3.2.3. Asynchronous Nature

Find-SCP does not support asynchronous communication.

### 2.3.3.3. Association Initiating Policy

Find-SCP does not initiate associations.

#### 2.3.3.3.1. Real World Activity -Search

The associated real world activity is a C-FIND operation. Remote users can issue C-FIND operations after negotiating an association. Find-SCP performs the search in its internal database, and returns results.

#### 2.3.3.3.2. Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Study Root Query Retrieve Information Model - FIND	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR, Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

		Explicit VR Big Endian	1.2.840.10008.1.2 .2		
--	--	---------------------------	-------------------------	--	--

### 2.3.3.3.3. SOP Specific Conformance

Find-SCP returns C-FIND response values as defined in DICOM v.3.0 Part 4. All Required (R) and Unique (U) Study, Series, and Image level keys are supported for the Study Root information models. In addition, certain Optional (O) keys are supported. For a Study Root Query/Retrieve the following keys are supported:

Study Root Query/Retrieve: Supported Keys			
Data Level	Description	Tag	Type
Study	Study Date	(0008,0020)	R
Study	Study Time	(0008,0030)	R
Study	Study Accession Number	(0008,0050)	R
Study	Patient's Name	(0010,0010)	R
Study	Patient ID	(0010,0020)	R
Study	Study ID	(0020,0010)	R
Study	Study Instance UID	(0020,000D)	U
Study	Study Referring MD's Name	(0008,0090)	O
Study	Study Description	(0008,1030)	O
Series	Number of Series Related Instances	(0020,1209)	O
Series	Series Description	(0008,103e)	O
Series	Series ID	(0020,000e)	O
Series	Modality	(0008,0060)	O

## 2.3.4. Move-SCU AE Specification

### 2.3.4.1. SOP Classes

Move-SCU provides Standard Conformance to the following DICOM 3.0 SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
Study Root Query/Retrieve Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	Yes	No

### 2.3.4.2. Association Policies

#### 2.3.4.2.1. General

Move-SCU initiates but never accepts associations.

#### 2.3.4.2.2. Number of Associations

Move-SCU initiates one association.

#### 2.3.4.2.3. Asynchronous Nature

Move-SCU supports asynchronous communication.

### 2.3.4.3. Association Initiating Policy

Move-SCU attempts to establish one association for every retrieve request by a user.

#### 2.3.4.3.1. Real World Activity -Move

The associated real world activity is a C-MOVE operation. In the DICOM Browser dialog, after a successful search operation, the user can request to retrieve a Study, a Series, or a list of Series from a list. An association request is sent to the requested destination for the appropriate SOP class.

#### 2.3.4.3.2. Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Study Root Query Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR, Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2 .1		
		Explicit VR Big Endian	1.2.840.10008.1.2 .2		

#### 2.3.4.3.3. SOP Specific Conformance

Move-SCU provides standard conformance.

## 2.3.5. Move-SCP AE Specification

### 2.3.5.1. SOP Classes

Move-SCP provides Standard Conformance to the following DICOM 3.0 SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
Study Root Query/Retrieve Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	No	Yes

### 2.3.5.2. Association Policies

#### 2.3.5.2.1. General

Move-SCP accepts but never initiates associations.

### 2.3.5.2.2. Number of Associations

Move-SCP supports an unlimited number of associations.

### 2.3.5.2.3. Asynchronous Nature

Move-SCP supports asynchronous communication.

### 2.3.5.3. Association Initiating Policy

Move-SCP does not initiate associations.

#### 2.3.5.3.1. Real World Activity -Move

The associated real world activity is a C-MOVE operation, triggered by a remote user. A separate process negotiates the association for the appropriate SOP class with the remote node. After a successful negotiation the images are sent to the remote node.

#### 2.3.5.3.2. Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Study Root Query Retrieve Information Model - MOVE	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR, Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2 .1		
		Explicit VR Big Endian	1.2.840.10008.1.2 .2		

#### 2.3.5.3.3. SOP Specific Conformance

Move-SCP provides standard conformance.

## 2.3.6. Storage-SCU AE Specification

### 2.3.6.1. SOP Classes

Storage-SCU provides Standard Conformance to the following DICOM 3.0 SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
CR Image Storage	1.2.840.10008.5.1.4.1.1.1	Yes	No
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Yes	No
DX Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	Yes	No
DX Image Storage (Raw)	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	No
US Image Storage (retired)	1.2.840.10008.5.1.4.1.1.6	Yes	No
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	No
US Multi-Frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Yes	No
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	No
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	No
MG Storage (Presentation)	1.2.840.10008.5.1.4.1.1.2	Yes	No
MG Storage (Raw)	1.2.840.10008.5.1.4.1.1.2.1	Yes	No
NM Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	Yes	No
NM Image Storage	1.2.840.10008.5.1.4.1.1.20	Yes	No
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Yes	No
XA Biplane Image Storage(Retired)	1.2.840.10008.5.1.4.1.1.12.3	Yes	No
RF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Yes	No
Standard PET Image Storage	1.2.840.10008.5.1.4.1.1.128	Yes	No
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Yes	No
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Yes	No

## 2.3.6.2. Association Policies

### 2.3.6.2.1. General

Storage-SCU initiates but never accepts associations.

### 2.3.6.2.2. Number of Associations

Storage-SCU initiates one association.

### 2.3.6.2.3. Asynchronous Nature

Storage-SCU does not support asynchronous communication.

## 2.3.6.3. Association Initiating Policy

Storage-SCU attempts to establish one association for every retrieve request by a user.

### 2.3.6.3.1. Real World Activity - Send to Remote Server

The associated real world activity is a C-STORE operation. After the user selects the “Export Series” button, a dialog is shown with several export options. When the user chooses to export to a DICOM remote server, the Storage-SCU is solicited. An association request is sent to the requested destination for the appropriate SOP class.

### 2.3.6.3.2. Proposed Presentation Contexts

Transfer Syntaxes for Send To Remote Server	
Name	UID
Implicit VR, Little Endian	1.2.840.10008.1.2
Explicit VR, Little Endian	1.2.840.10008.1.2.1
Explicit VR, Big Endian	1.2.840.10008.1.2.2

### 2.3.6.3.3. SOP Specific Conformance

Storage-SCU sends images sequentially to the remote server(s). Storage-SCU will propose the transfer syntax of the stored SOP instance, and the default, Implicit VR, Little Endian (ILE). That is, if the SOP instance is stored using a compressed syntax, Storage-SCU has the ability to decompress it into the ILE syntax for receivers that cannot process compressed images.

## 2.3.7. Storage-SCP AE Specification

### 2.3.7.1. SOP Classes

Storage-SCP provides Standard Conformance to the following DICOM 3.0 SOP Classes:

SOP Class Name	SOP Class UID	SCU	SCP
CR Image Storage	1.2.840.10008.5.1.4.1.1.1	No	Yes
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	No	Yes
DX Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1	No	Yes
DX Image Storage (Raw)	1.2.840.10008.5.1.4.1.1.1.1.1	No	Yes
US Image Storage (retired)	1.2.840.10008.5.1.4.1.1.6	No	Yes
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	No	Yes
US Multi-Frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	No	Yes
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	No	Yes
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	No	Yes
MG Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2	No	Yes
MG Storage (Raw)	1.2.840.10008.5.1.4.1.1.1.2.1	No	Yes
NM Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5	No	Yes
NM Image Storage	1.2.840.10008.5.1.4.1.1.20	No	Yes
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	No	Yes
XA Biplane Image Storage(Retired)	1.2.840.10008.5.1.4.1.1.12.3	No	Yes
RF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	No	Yes
Standard PET Image Storage	1.2.840.10008.5.1.4.1.1.128	No	Yes
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	No	Yes
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	No	Yes

## 2.3.7.2. Association Policies

### 2.3.7.2.1. General

Storage-SCP accepts but never initiates associations.

### 2.3.7.2.2. Number of Associations

Storage-SCP supports an unlimited number of associations.

### 2.3.7.2.3. Asynchronous Nature

Storage-SCP does not support asynchronous communication.

## 2.3.7.3. Association Initiating Policy

Storage-SCP does not initiate associations.

## 2.3.7.4. Association Acceptance Policy

When STORAGE-SCP accepts an association, it will respond to storage requests.

### 2.3.7.4.1. Real World Activity - Store

The associated real world activity is a C-STORE operation. After the remote user has made a store request, a separate thread is put in wait mode, and responds to incoming C\_STORE commands. As instances are received they are copied to the local file system and a record inserted into the local database. If the received instance is a duplicate of a previously received instance, the old file and database record will be overwritten with the new one.

### 2.3.7.4.2. Proposed Presentation Contexts

Transfer Syntaxes for Retrieve	
Name	UID
Implicit VR, Little Endian	1.2.840.10008.1.2
Explicit VR, Little Endian	1.2.840.10008.1.2.1
Explicit VR, Big Endian	1.2.840.10008.1.2.2

### 2.3.7.4.3. SOP Specific Conformance

STORAGE-SCP provides standard conformance to the Storage Service Class.

### 3. ORS Visual DICOM Media Services

ORS Visual conforms to DICOM Media Storage Service and File Format (PS 3.10) and the Media Storage Application Profiles (PS 3.11) for reading images on CD-Recordable media.

The following application profile is supported by ORS Visual:

Description	Identifier
General Purpose CD-R Image Interchange Profile	STD-GEN-CD

Through this application profile, ORS Visual supports the following real world activity:

Real World Activity	Role	SC Option
Read Image(s) from Media	FSR	Interchange

#### 3.1. Real World Activity – Read Image(s) from Media

When reading images from media, ORS Visual assumes the role of FSR. DICOM Part 10 Volume image import is standard.

In order for ORS Visual to store the images contained on Media correctly, the following mandatory DICOM image attributes (DICOM Part 10) are required:

IOD	Field	Tag
Patient	Patient Name	(0010,0010)
Patient	Patient ID	(0010,0020)
Study	Study ID	(0020,0010)
Study	Study UID	(0020,000D)
Series	Modality	(0008,0060)
Series	Series Number	(0020,0011)
Image	Referenced SOP Class UID in File	(0004,1510)
Image	Referenced SOP Instance UID in File	(0004,1511)
Image	Referenced Transfer Syntax UID in File	(0004,1512)
Image	Referenced File ID	(0004,1500)
Image	Image Number	(0020,0013)

ORS Visual can only import and read images from the following SOP classes:

Supported SOP Classes: DICOM Part 10 Import	
Name	UID
CR Image Storage	1.2.840.10008.5.1.4.1.1.1
CT Image Storage	1.2.840.10008.5.1.4.1.1.2
DX Image Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.1
DX Image Storage (Raw)	1.2.840.10008.5.1.4.1.1.1.1.1
MR Image Storage	1.2.840.10008.5.1.4.1.1.4
US Image Storage (retired)	1.2.840.10008.5.1.4.1.1.6
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1

US Multi-Frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3
US Multi-Frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1
SC Image Storage	1.2.840.10008.5.1.4.1.1.7
MG Storage (Presentation)	1.2.840.10008.5.1.4.1.1.1.2
MG Storage (Raw)	1.2.840.10008.5.1.4.1.1.1.2.1
NM Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.5
NM Image Storage	1.2.840.10008.5.1.4.1.1.20
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1
XA Biplane Image Storage(Retired)	1.2.840.10008.5.1.4.1.1.12.3
RF Image Storage	1.2.840.10008.5.1.4.1.1.12.2
Standard PET Image Storage	1.2.840.10008.5.1.4.1.1.128
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1

The only transfer syntax supported by ORS Visual when importing and reading images from Media:

<b>Supported Transfer Syntax: DICOM Part 10 Import</b>	
<b>Name</b>	<b>UID</b>
Explicit VR, Little Endian	1.2.840.10008.1.2.1

## 4. Communication Profiles

### 4.1. Supported Communication Stacks

ORS Visual provides DICOM TCP/IP Network Communication Support as defined in Part 8 of the DICOMV3.0 Standard.

#### 4.1.1. OSI Stack

Not supported.

#### 4.1.2. TCP/IP Stack

ORS Visual uses the TCP/IP stack of the operating system upon which it is executed (Windows 2000/NT/XP/Vista/7).

##### 4.1.2.1. Physical Media Support

Any physical media supported by the underlying platform (Windows 2000/NT/XP/Vista/7).

#### 4.1.3. Point-to-Point Stack

Not supported.

## **5. Extensions/Specializations/Privatizations**

### **5.1. Standard Extended/Specialized/Private SOPs**

Not applicable.

### **5.2. Private Transfer Syntaxes**

Not applicable.

## 6. Configuration

The configuration is stored on each workstation.

### 6.1. AE Title Address Mapping

#### 6.1.1. Local AE Titles

The mapping from AE Title to TCP/IP addresses and ports is configurable and set at the time of installation by Installation Personnel. This mapping is necessary for the local Storage-SCP to function properly. The following information is needed:

- Local AE name
- TCP/IP Port

#### 6.1.2. Remote AE Titles

The mapping of external AE Titles to TCP/IP addresses and ports is configurable and set at the time of installation by Installation Personnel. This mapping is necessary for resolving the IP address and port of C-FIND, C-MOVE and C\_STORE Destination Application Entities and must be correctly configured. The following information is needed:

- Remote AE name
- Remote host address
- Remote host port

### 6.2. Configurable Parameters

Not applicable.

## 7. Support of Extended Character Sets

On the operating systems that support them (Windows 2000/NT/XP/Vista/7), ORS Visual supports the following character sets in the application Value Representations (for example, Patient's Name, 0010,0010):

Character Set	Windows Code Page	Description
ISO_IR 100	28591	Latin Alphabet No. 1 Unextended
ISO_IR 101	28592	Latin Alphabet No. 2 Unextended
ISO_IR 109	28593	Latin Alphabet No. 3 Unextended
ISO_IR 110	28594	Latin Alphabet No. 4 Unextended
ISO_IR 126	28597	Greek Unextended
ISO_IR 144	28595	Cyrillic Unextended
ISO_IR 127	28596	Arabic Unextended
ISO_IR 138	28598	Hebrew Unextended
ISO_IR 148	28599	Latin Alphabet No. 5 (Turkish) Unextended
ISO_IR 192	65001	Unicode in UTF-8
ISO_IR 13	932	JIS X 0201 (Shift JIS) Unextended
ISO_IR 166	874	TIS 620-2533 (Thai) Unextended
ISO 2022 IR 100	28591	Latin Alphabet No. 1 Extended
ISO 2022 IR 101	28592	Latin Alphabet No. 2 Extended
ISO 2022 IR 109	28593	Latin Alphabet No. 3 Extended
ISO 2022 IR 110	28594	Latin Alphabet No. 4 Extended
ISO 2022 IR 126	28597	Greek Extended
ISO 2022 IR 144	28595	Cyrillic Extended
ISO 2022 IR 127	28596	Arabic Extended
ISO 2022 IR 144	28598	Hebrew Extended
ISO 2022 IR 148	28599	Latin Alphabet No. 5 (Turkish) Extended
ISO 2022 IR 166	874	TIS 620-2533 (Thai) Extended
ISO 2022 IR 149	20949	KS X 1001 (Hangul and Hanja) Extended
ISO 2022 IR 13	50222	JIS X 0201 (Shift JIS) Extended
ISO 2022 IR 87	50222	JIS X 0208 (Kanji) Extended
ISO 2022 IR 159	50222	JIS X 0212 (Kanji) Extended
GB18030	54936	Chinese (Simplified) Extended