



alma
medical imaging

DICOM Conformance Statement

Alma WORKSTATION 5.0

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Definitions and Abbreviations

Definitions

DICOM	Digital Imaging and Communication in Medicine
DIMSE	DICOM Message Service Element
DIMSE-C	DICOM Message Service Element with Composite information objects

Abbreviations

ACR	American College of Radiology
AE	Application Entity
ASCII	American Standard Code for Information Interchange
DB	Data base
DCS	DICOM Conformance Statement
GPS	Grayscale Presentation Statement
IOD	DICOM Information Object Definition
NEMA	National Electrical Manufacturers Association
O	Optional key attribute
R	Required key attribute
SCU	DICOM Service Class User
SCP	DICOM Service Class Provider
SOP	DICOM Service Object Pair
U	Single key attribute

1. Overviews

1.1. Purpose

This document is written according to the document PS 3.2 of the DICOM Standard and used to check connectivity with other devices that use this standard. The software acts as:

- Query/Retrieve: SCU
- Storage: SCU y SCP
- Verification: SCU y SCP
- Dicom Print: SCU

1.2. Scope

Alma WORKSTATION is an application to display DICOM images and Structured Reports obtained over the network from interchange media, or from files loaded from the local file system.

The application supports querying to remote systems for a list of DICOM objects that may then be retrieved to the local system. It also supports sending locally loaded images across the network to another system.

All storage SOP Classes can be received, stored and transmitted by the application, but not all can be displayed in this application as we define in the next Table:

SOP Classes Name	Sop Class UID	SCU	SCP
Verification	1.2.840.10008.1.1	Yes	Yes
Study Root Information Model FIND	1.2.840.10008.5.1.4.1.2.2.1	Yes	No
Study Root Information Model MOVE	1.2.840.10008.5.1.4.1.2.2.2	Yes	Yes
CR Image Storage	1.2.840.10008.5.1.4.1.1.1	Yes	Yes
Digital X-Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Yes	Yes
Digital X-Ray Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	Yes
Digital Mammography Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Yes	Yes
Digital Mammography Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	Yes
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Yes	Yes

SOP Classes Name	Sop Class UID	SCU	SCP
RF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Yes	Yes
XA BiPlane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	Yes	Yes
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	Yes	Yes
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Yes	Yes
NM Image Storage	1.2.840.10008.5.1.4.1.1.20	Yes	Yes
US Multiframe Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	Yes
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Yes	Yes
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	Yes	Yes
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	Yes	Yes
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	Yes	Yes
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	Yes	Yes
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	Yes	Yes
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	Yes
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	Yes
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	Yes	Yes
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	Yes	Yes
VL Slide–Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	Yes	Yes
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	Yes
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	Yes	Yes
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	Yes	Yes
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	Yes	Yes
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.	Yes	Yes
Cardiac Electrophysiology Storage	1.2.840.10008.5.1.4.1.1.9.3.1	Yes	Yes
Digital Intra–oral X–Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.3	Yes	Yes
Digital Intra–oral X–Ray Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	Yes	Yes

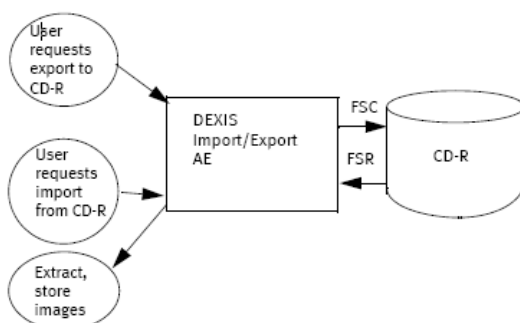
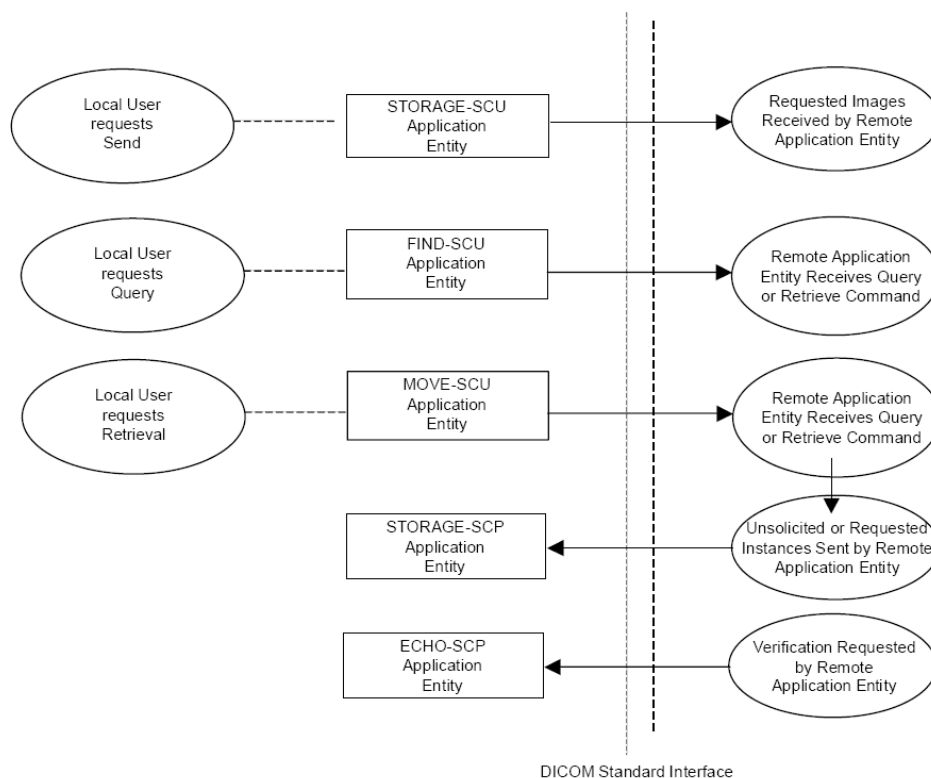
Alma WORKSTATION can send to print filmbox in film printers who support DicomPrint standard:

SOP Classes Name	Sop Class UID	SCU	SCP
Basic Film Session	1.2.840.10008.5.1.1.1	Yes	No
Basic Film Box	1.2.840.10008.5.1.1.2	Yes	No
Basic Gray Image Box	1.2.840.10008.5.1.1.4	Yes	No
Basic Annotation Box	1.2.840.10008.5.1.1.15	Yes	No

2. Network

2.1. Implementation model

The application Alma WORKSTATION provides user interface, internal database and network listener that handle the incoming connections.



The implemented services are the following:

- Echo-SCU: Asks for verification to the remote server
- Find-SCU: Queries list of studies and series
- Move-SCU: Request to receive studies

- Storage-SCU: Sends images and other composite instances
- Echo-SCP: Responds to verification requests
- Storage-SCP: Receives incoming images and other composite instances.

All SCP activities are performed asynchronously in the background and not dependent on any sequencing.

All SCU activities are sequentially initiated in the user interface, and another activity may not be initiated until the prior activity has completed.

3. AE Specifications

3.1. ECHO-SCU

3.1.1. SOP Classes

ECHO-SCU provide Standard Conformance to the following SOP Class(es):

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

3.1.2. Association Policies

3.1.2.1. General

ECHO-SCU initiates but never accepts associations.

Maximum PDU size received	Unlimited
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3.1.2.2. Number of Associations

Maximum Number of simultaneous associations	1
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3.1.2.3. Asynchronous Nature

ECHO-SCU will only allow a single outstanding operation on an Association. Therefore, ECHO-SCU will not perform asynchronous operations window negotiation.

3.1.2.4. Implementation Identifying Information

Implementation Class UID	Implementation Version Name
1.2.826.0.1.3680043.2.403.1.40.1.2.0.18418	RAIMDicom_1.2

3.1.3. Association Initiation Policy

ECHO-SCU attempts to initiate a new association for each verification that attempts.

3.2. ECHO-SCP

3.2.1. SOP Classes

ECHO-SCP provide Standard Conformance to the following SOP Class(es):

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

3.2.2. Association Policies

3.2.2.1. General

ECHO-SCP accepts but never initiates associations.

Maximum PDU size received	Unlimited
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3.2.2.2. Number of Associations

Maximum Number of simultaneous associations	Unlimited
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3.2.2.3. Asynchronous Nature

ECHO-SCP will only allow a single outstanding operation on an Association. Therefore, ECHO-SCP will not perform asynchronous operations window negotiation.

3.2.2.4. Implementation Identifying Information

Implementation Class UID	Implementation Version Name
1.2.826.0.1.3680043.2.403.1.40.1.2.0.18418	RAIMDicom_1.2

3.2.2.5. Association Initiation Policy

ECHO-SCP does not initiate associations.

3.2.2.6. Association Acceptance Policy

When the ECHO SCP accepts an association, an answer is send.

3.3. FIND-SCU

3.3.1. SOP Classes

FIND-SCU provides Standard Conformance to the following SOP Class(es):

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

3.3.2. Association Policies

3.3.2.1. General

FIND–SCU initiates but never accepts associations.

Maximum PDU size received	131072
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3.3.2.2. Number of Associations

Maximum Number of simultaneous associations	1
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3.3.2.3. Asynchronous Nature

FIND–SCU will only allow a single outstanding operation on an Association. Therefore, ECHO–SCU will not perform asynchronous operations window negotiation.

3.3.2.4. Implementation Identifying Information

Implementation Class UID	Implementation Version Name
1.2.826.0.1.3680043.2.403.1.40.1.2.0.18418	RAIMDicom_1.2

3.3.3. Association Initiation Policy

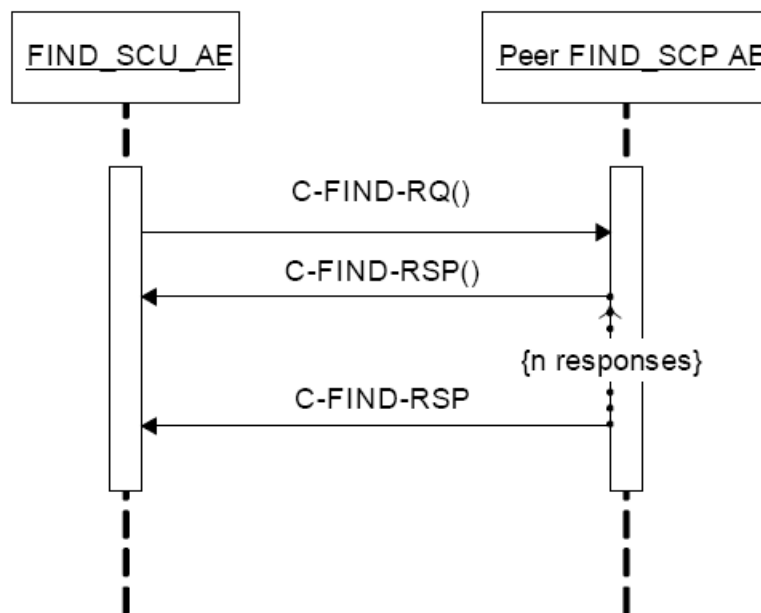
FIND–SCU attempts to initiate a new association when user performs the query action from the user interface.

3.3.4. Activity – Query Remote AE

FIND_SCU attempts to initiate a new association when the user performs the query action from the user interface.

3.3.4.1. Description and Sequencing of Activities

A Single attempt will be made to query the remote AE. If the query fails, for any reason, no retry will be performed.



3.3.4.2. 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

3.3.4.3. SOP Specific Conformance to C-FIND SOP Class

Study Level	Tag	Search key	Answer key
Study Date	(0008, 0020)	Y	Y
Study Time	(0008, 0030)	Y	Y
Accession Number	(0008, 0050)	Y	Y
Modality in Studies	(0008, 0061)	Y	Y
Referring Physician's Name	(0008, 0090)	Y	Y
Study Description	(0008, 1030)	Y	Y
Patient Name	(0010, 0010)	Y	Y
Patient ID	(0010, 0020)	Y	Y

Patient Birth Date	(0010, 0030)	""	Y
Patient Sex	(0010, 0040)	""	Y
Study ID	(0020, 0010)	Y	Y
Number of Study Related Series	(0020, 1206)	""	Y
Number of Study Related Instances	(0020, 1208)	""	Y
Modality	(0008, 0060)	""	Y
Series Number	(0020, 0011)	""	Y
Study Instance UID	(0020, 000D)	Y	Y
Series Instances UID	(0020, 000E)		Y
Number of Series Related Instances	(0020, 1209)		Y
> Requested Procedure ID	(0040, 1001)		Y
> Scheduled Procedure Step ID	(0040, 0009)		Y

Composite Object Instance Level	Tag	Search key	Answer key
SOP Instance UID	(0008, 0018)		Y
Instance Number	(0020, 0013)		Y

3.4. MOVE-SCU

3.4.1. SOP Classes

MOVE-SCU provides Standard Conformance to the following SOP Class(es):

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

3.4.2. Association Policies

3.4.2.1. General

MOVE-SCU initiates but never accepts associations

Maximum PDU size received	131072
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3.4.2.2. Number of Associations

Maximum Number of simultaneous associations	1
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3.4.2.3. Synchronism

MOVE-SCU allows only one association at the same time but the software will control more than one association at the same time to allow multiple downloading.

3.4.2.4. Implementation Identifying Information

Implementation Class UID	Implementation Version Name
1.2.826.0.1.3680043.2.403.1.40.1.2.0.18418	RAIMDicom_1.2

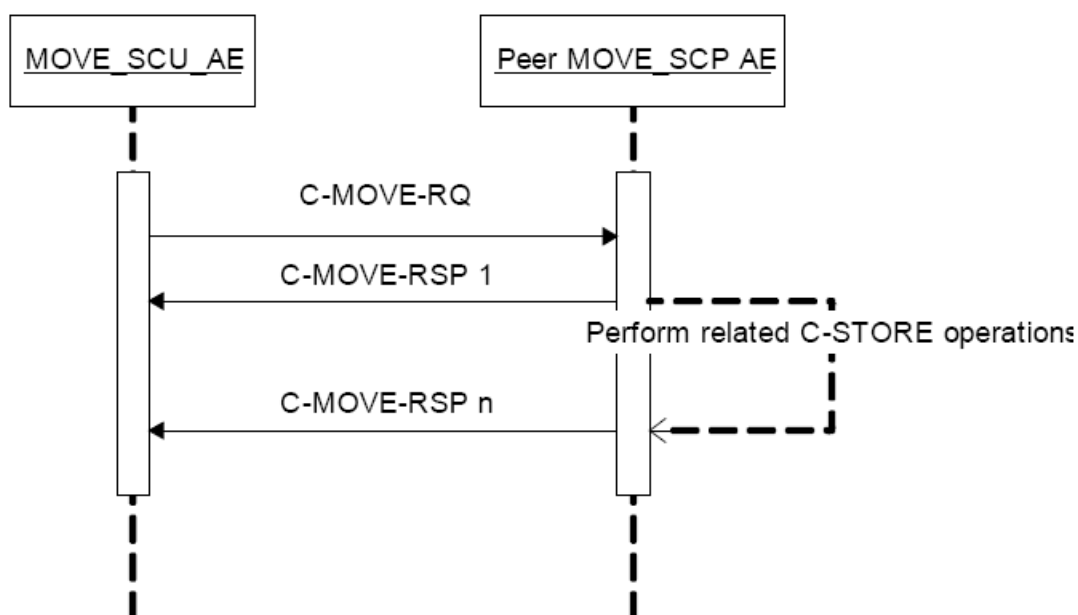
3.4.3. Association Initiation Policy

MOVE-SCU attempts to initiate a new association when user performs the retrieve action from the user interface.

3.4.4. Activity – Retrieve Remote AE

3.4.4.1. Description and sequence of activities

For the study selected, a single attempt will be made to retrieve it from the selected remote AE. If the query fails, for any reason, no retry will be performed.



3.4.4.2. Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
Study Root Query/Retrieve Information Model – FIND	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None

3.4.4.3. SOP Specific Conformance to C–MOVE SOP Class

Name	Tag	Valor
Query/Retrieve Level	(0008,0052)	IMAGE
Study Instance UID	(0020,000D)	Unique value for single-value match
Series Instance UID	(0020,000E)	Unique value for single-value match
SOP Instance UID	(0008,0018)	Single value, zero length value or list of UIDs

3.5. STORE–SCU

3.5.1. SOP Classes

This Application Entity provides Standard Conformance to the following SOP Class(es):

SOP Classes Name	Sop Class UID	SCU	SCP
Computed Radiography Image Storage	1.2.840.10008.5.1.4.1.1.1	Yes	No
Digital X-Ray Image Storage– For Presentation	1.2.840.10008.5.1.4.1.1.1.1	Yes	No
Digital X-Ray Image Storage– For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	Yes	No
Digital Mammography X-Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.2	Yes	No
Digital Mammography X-Ray Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	Yes	No

SOP Classes Name	Sop Class UID	SCU	SCP
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Yes	No
Ultrasound Multi-frame Image Storage (Retired)	1.2.840.10008.5.1.4.1.1.3	Yes	No
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	No
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Yes	No
MR Spectroscopy Storage	1.2.840.10008.5.1.4.1.1.4.2	Yes	No
X-Ray Angiographic Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Yes	No
X-Ray Radiofluoroscopic Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Yes	No
Nuclear Medicine Image Storage	1.2.840.10008.5.1.4.1.1.20	Yes	No
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	Yes	No

3.5.2. Association Policies

3.5.2.1. General

STORE SCU initiates but never accepts associations. The DICOM standard application context name for DICOM 3.0 is always proposed.

Maximum PDU size received	131072
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3.5.2.2. Number of Associations

Maximum PDU size Maximum Number of simultaneous associations received	Unlimited
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3.5.2.3. Asynchronous Nature

Application does not support asynchronous communication (multiple outstanding transactions over a single Association).

Maximum number of outstanding asynchronous transactions	1
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3.5.2.4. Implementation Identifying Association

Implementation Class UID	Implementation Version Name
1.2.826.0.1.3680043.2.403.1.40.1.2.0.18418	RAIMDicom_1.2

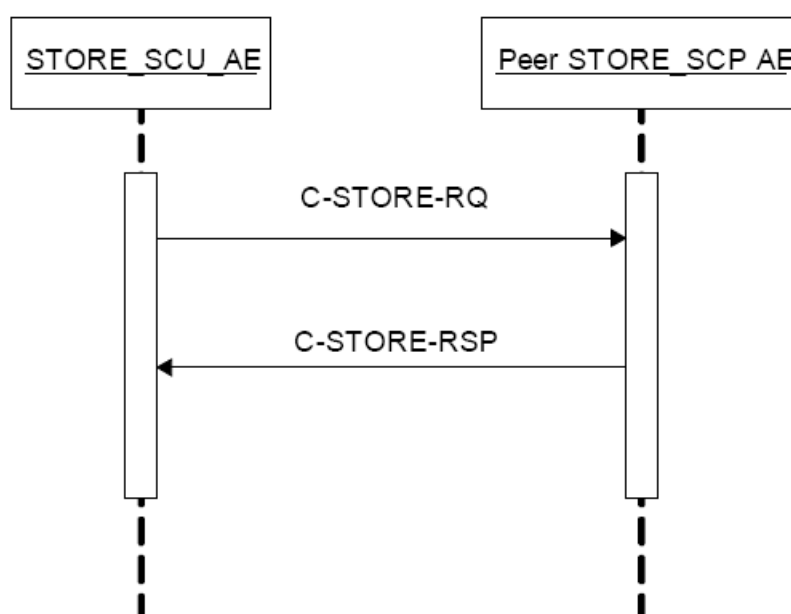
3.5.2.5. Association Initiation Policy

STORE-SCU attempts to initiate a new association when user performs the query action from the user interface.

3.5.2.6. Activity – Send Storage Request to Remote AE

3.5.2.7. Description and Sequencing of Activities

For each instance to be transferred, a single attempt will be made to transmit it to the selected remote AE. If the send fails, for whatever reason, no retry will be performed, and an attempt will be made to send the next instance.



3.5.2.8. Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
See SOP Classes Names and UID's Table		Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50	SCU	None
		JPEG Extended (Process 2&4)	1.2.840.10008.1.2.4.51	SCU	None

	JPEG Lossless (Process 14)	1.2.840.10008.1.2.4.57	SCU	None
	JPEG Lossless (Process 14, Selection Value 1)	1.2.840.10008.1.2.4.70	SCU	None
	JPEG 2000	1.2.840.10008.1.2.4.91	SCU	None

3.6. STORE-SCP

3.6.1. SOP Classes

STORAGE-SCP provide Standard Conformance to the following SOP Class(es):

SOP Classes Name	Sop Class UID	SCU	SCP
CR Image Storage	1.2.840.10008.5.1.4.1.1.1	No	Yes
Digital X-Ray Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.1	No	Yes
Digital X-Ray Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.1.1	No	Yes
Digital Mammography Image Storage – For Presentation	1.2.840.10008.5.1.4.1.1.1.2	No	Yes
Digital Mammography Image Storage – For Processing	1.2.840.10008.5.1.4.1.1.1.2.1	No	Yes
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	No	Yes
RF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	No	Yes
XA BiPlane Image Storage	1.2.840.10008.5.1.4.1.1.12.3	No	Yes
Positron Emission Tomography Image Storage	1.2.840.10008.5.1.4.1.1.128	No	Yes
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	No	Yes
NM Image Storage	1.2.840.10008.5.1.4.1.1.20	No	Yes
US Multiframe Image Storage	1.2.840.10008.5.1.4.1.1.3.1	No	Yes
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	No	Yes
RT Image Storage	1.2.840.10008.5.1.4.1.1.481.1	No	Yes
RT Dose Storage	1.2.840.10008.5.1.4.1.1.481.2	No	Yes

SOP Classes Name	Sop Class UID	SCU	SCP
RT Structure Set Storage	1.2.840.10008.5.1.4.1.1.481.3	No	Yes
RT Beams Treatment Record Storage	1.2.840.10008.5.1.4.1.1.481.4	No	Yes
RT Plan Storage	1.2.840.10008.5.1.4.1.1.481.5	No	Yes
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	No	Yes
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	No	Yes
VL Endoscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.1	No	Yes
VL Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.2	No	Yes
VL Slide-Coordinates Microscopic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.3	No	Yes
VL Photographic Image Storage	1.2.840.10008.5.1.4.1.1.77.1.4	No	Yes
12-lead ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.1	No	Yes
General ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.2	No	Yes
Ambulatory ECG Waveform Storage	1.2.840.10008.5.1.4.1.1.9.1.3	No	Yes
Hemodynamic Waveform Storage	1.2.840.10008.5.1.4.1.1.9.2.	No	Yes
Cardiac Electrophysiology Storage	1.2.840.10008.5.1.4.1.1.9.3.1	No	Yes
Digital Intra-oral X-Ray Image Storage - For Presentation	1.2.840.10008.5.1.4.1.1.1.3	No	Yes
Digital Intra-oral X-Ray Image Storage - For Processing	1.2.840.10008.5.1.4.1.1.1.3.1	No	Yes

3.6.2. Association Policies

3.6.2.1. General

STORE_SCP allows only one operation per Association. No asynchronous operation window negotiation is performed.

Maximum PDU size received	131072
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3.6.2.2. Number of Associations

Maximum Number of simultaneous associations	5
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3.6.2.3. Asynchronous Nature

STORE_SCP allows only one operation per Association. No asynchronous operation window negotiation is performed.

3.6.2.4. Implementation Identifying Information

Implementation Class UID	Implementation Version Name
1.2.826.0.1.3680043.2.403.1.40.1.2.0.18418	RAIMDicom_1.2

3.6.2.5. Association Initiation Policy

This Application Entity initiates no association.

3.6.2.6. Association Acceptance Policy

When STORAGE_SCP accepts an association, it responds to storage requests.

3.6.2.7. Activity – Receive Storage Request

3.6.2.8. Description and Sequencing of Activities

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, it is discarded.

3.6.2.9. Accepted Presentation Contexts

Presentation Context Table					
Abstract syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
See SOP Classes Names and UID's Table		Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None

3.6.2.10. SOP Specific Conformance

Service Status Further	Significado del código de Status
A7xx	Denied: Out of resources
A9xx	Error Data Set does not match with SOP Class

Cxxx	Cannot be processed
B000	Warning Incoherence in the elements
B007	Data Set does not match SOP Class
B006	Discarded elements
0000	Correct

3.7. PRINT-SCU

3.7.1. SOP Classes

PRINT-SCU provides the *Conformance* with the following SOP Class(es):

SOP Classes Name	Sop Class UID	SCU	SCP
Verification SOP Class	1.2.840.10008.1.1	Yes	No
Basic Grayscale Print Management Meta SOP Class	1.2.840.10008.5.1.1.9	Yes	No
Presentation LUT SOP Class	1.2.840.10008.5.1.1.23	Yes	No
Printer Configuration	1.2.840.10008.5.1.1.16.376	Yes	No
Print Job	1.2.840.10008.5.1.1.14	Yes	No

3.7.2. Association Policies

3.7.2.1. General

PRINT-SCU initiates but never accepts associations

Maximum PDU size received	131072
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3.7.2.2. Number of Associations

Maximum Number of simultaneous associations (initiated)	Unlimited
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3.7.2.3. Asynchronous Nature

Application does not support asynchronous communication (multiple outstanding transactions over a single Association).

Maximum number of outstanding asynchronous transactions	1
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3.7.2.4. Implementation Identifying Association

Implementation Class UID	Implementation Version Name
1.2.826.0.1.3680043.2.403.1.40.1.2.0.18418	RAIMDicom_1.2

3.7.3. Association Initiation Policy

PRINT–SCU attempts to initiate a new association when user performs the query action from the user interface.

3.7.4. Activity – Send DICOM Print Request to Remote AE

3.7.4.1. Description and Sequencing of Activities

For each instance to be transferred, a single attempt will be made to transmit it to the selected remote AE. If the send fails, for whatever reason, no retry will be performed, and an attempt will be made to send the next instance

3.7.4.2. Proposed Presentation Contexts

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Extended Negotiation
Name	UID	Name	UID		
See SOP Classes Names and UID's Table		Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCU	None

3.8. Media Storage AE

The standard specifies only CD–R, but Alma WORKSTATION can export/import studies from any storage media, as HD, CD–R, DVD–R, etc.

3.8.1. Create

Alma WORKSTATION allows export in different storage media to allow other systems to access data. Alma WORKSTATION has implemented File-Set Creator that allows creating a multiple index and save the selected studies.

3.8.1.1. Activity: Save studies with DICOMDIR

The software will create a DICOMDIR file to allow other systems a fast access to the stored data.

3.8.1.2. DICOMDIR Tree

The export will be in the next folder tree:

File	Folder	Patient Folder	Study Folder	Series Folder	Image File
.\ DICOMDIR					
.\	FileSet\	<patientId_1>\	0\	0\	0
.\	...	...	...	...	1
.\	...	...	...	...	...
.\	...	...	...	1\	2
.\	...	...	...	1\	3
.\	...	...	...	...	...
.\	...	...	1\	0\	4
.\	...	...	...	0\	5
.\	...	...	...	...	...
.\	...	<patientId_2>	0\	0\	6
...	...	...	...	...	...

3.8.2. Read

Alma WORKSTATION allows import information and data from stored data acting as a File-Set Reader and storing the information in the software.

3.8.2.1. Activity: Import studies with DICOMDIR

Alma WORKSTATION scans the folder or media storage looking for a DICOMDIR file that allows to know all the information saved in the media. The user can import the information to the system.

4. Configuration

4.1. AE Title / Presentation Address Mapping

To ensure unique identification within the network the hostname should be used as part of the AE Titles. This string can be up to 16 characters long and must not contain any extended characters as DICOM Standard specify in 3.5.

4.2. DICOM Verification

The Verification Services uses the AE configuration of the DICOM Service that is checked with C-ECHO message. So other systems could check the software with an C-ECHO message, as the software can verify other systems with the same system.

4.3. DICOM Storage AE Title

The DICOM Storage application provides the application entity title with fixed name but configurable by number. If port cannot be open at start, the software will notify user that retrieve option will be disabled. Firewalls or other software should allow software to wait for connections.

4.4. DICOM Query/Retrieve AE Title

The DICOM Query/Retrieve application uses the same application entity title as the DICOM Storage AE. Firewalls or other software should allow software to establish connections.

4.5. DICOM Transfer syntaxes

The DICOM Transfer syntaxes supported by software can be configured in xml file.

4.6. Grayscale Standard Display Function

The software provides some methods to modify the Grayscale Standard Display Function as it's specified in the DICOM PS 3.14. A photometer is required to measure luminance from a set of files and introducing them to the software a new Grayscale Standard Display Function will be loaded.