No. MIIXR0023EA

TOSHIBA

DICOM CONFORMANCE STATEMENT

FOR

TOSHIBA SURGICAL C-ARM SYSTEM

SXT *series*

Model SXT-2000A

TOSHIBA MEDICAL SYSTEMS CORPORATION

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1. CONFORMANCE STATEMENT OVERVIEW

Table 1-1 provides an overview of the network services supported by SXT series.

Table 1-1
NETWORK SERVICES

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Transfer		
XRF Image Storage	Yes	No
XA Image Storage	Yes	No
Workflow Management		
Modality Worklist Information Model – Find	Yes	No
Print Management		
Basic Grayscale Print Management	Yes	No

Table 1-2 provides an overview of the Media Storage Application Profiles supported by SXT-2000A.

Table 1-2
MEDIA SERVICES

Media Storage Application Profile	Write Files (FSC or FSU)	Read Files (FSR)
Compact Disk – Recordable		
XRF Image CD-R	Yes	Yes
XA Image CD-R	Yes	Yes
General Purpose CD-R	Yes	Yes
DVD		
XRF Image DVD-R	Yes	Yes
XA Image DVD-R	Yes	Yes
General Purpose DVD-R	Yes	Yes

Table 1-3
SUPPORTED IODS, SOP CLASSES AND TRANSFER SYNTAXES

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
Media Storage Directory Storage	1.2.840.10008.1.3.10	Explicit VR Little Endian Uncompressed	1.2.840.10008.1.2.1
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Explicit VR Little Endian Uncompressed	1.2.840.10008.1.2.1
XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Explicit VR Little Endian Uncompressed	1.2.840.10008.1.2.1

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2. TABLE OF CONTENTS

3. INTRODUCTION

3.1 AUDIENCE

This document is intended for hospital staff, health system integrators, software designers or implementers. It is assumed that the reader has a working understanding of DICOM.

3.2 REMARKS

DICOM, by itself, does not guarantee interoperability. However, the Conformance Statement facilitates a first-level validation for interoperability between different applications supporting the same DICOM functionality.

This Conformance Statement is not intended to replace validation with other DICOM equipment to ensure proper exchange of information intended.

The scope of this Conformance Statement is to facilitate communication with Toshiba Medical Systems and other vendors' Medical equipment. The Conformance Statement should be read and understood in conjunction with the DICOM Standard [DICOM]. However, by itself it is not guaranteed to ensure the desired interoperability and a successful interconnectivity.

The user should be aware of the following important issues:

— The comparison of different conformance statements is the first step towards assessing interconnectivity between Toshiba Medical Systems and non- Toshiba Medical Systems equipment.

— Test procedures should be defined to validate the desired level of connectivity.

— The DICOM standard will evolve to meet the users' future requirements. Toshiba Medical Systems is actively involved in developing the standard further and therefore reserves the right to make changes to its products or to discontinue its delivery.

3.3 DEFINITIONS, TERMS AND ABBREVIATIONS

Definitions, terms and abbreviations used in this document are defined within the different parts of the DICOM standard.

Abbreviations and terms are as follows:

AE	Application Entity
AET	Application Entity Title
ASCE	Association Control Service Element
CD-R	Compact Disk Recordable
DIMSE	DICOM Message Service Element
DVD	A trademark of the DVD forum that is not an abbreviation
DVD-R	DVD Recordable
FSC	File-Set Creator
FSU	File-Set Updater
FSR	File-Set Reader
IE	Information Entity
IOD	Information Object Definition
MWM	Modality Worklist Management
R	Required Key Attribute
O	Optional Key Attribute
PDU	Protocol Data Unit
SCU	Service Class User (DICOM client)
SCP	Service Class Provider (DICOM server)
SOP	Service-Object Pair
U	Unique Key Attribute
UID	Unique Identifier

3.4 REFERENCES

[DICOM] Digital Imaging and Communications in Medicine (DICOM), NEMA PS 3.1-3.20, 2011

4. NETWORKING

4.1 IMPLEMENTATION MODEL

4.1.1 Application Data Flow

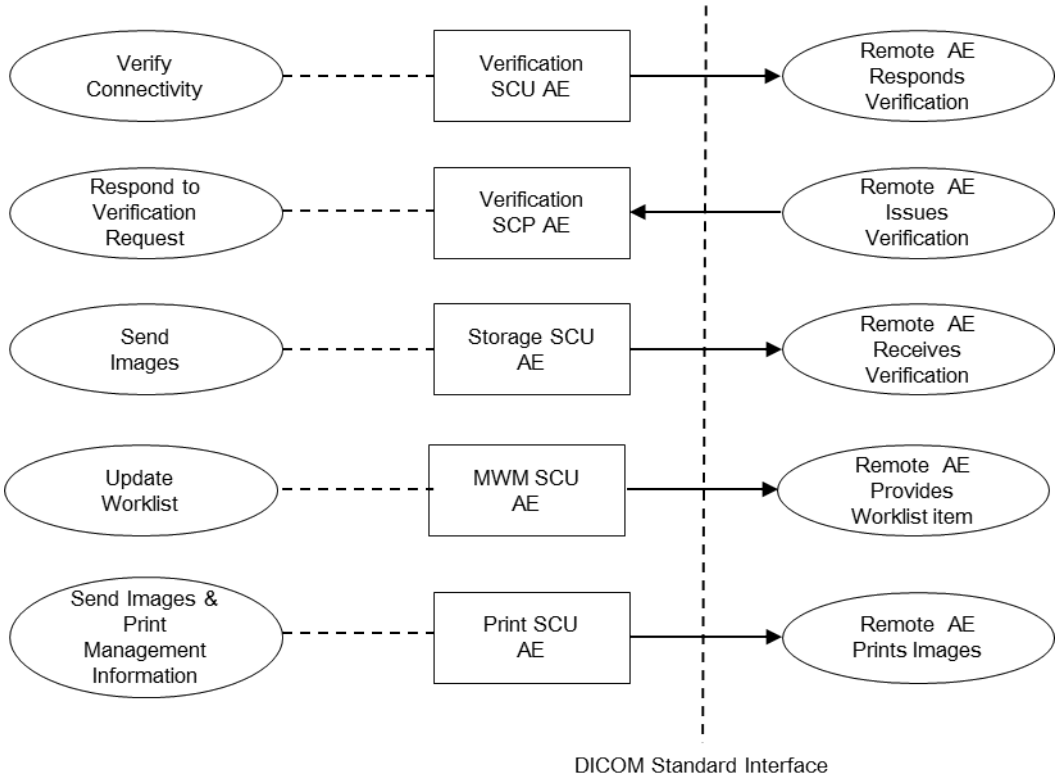

Figure 4.1-1
APPLICATION DATA FLOW DIAGRAM

— The Verification SCU AE issues a C-ECHO to verify a DICOM connection to a remote AE. It is associated with the local real-world activity “Verify Connectivity”. “Verify Connectivity” is performed via the Configuration Menu (for DICOM).

— The Verification SCP AE responds successfully to C-ECHO requests from known AE Titles. It is associated with the local real-world activity “Respond to Verification Request”.

— The Storage SCU AE sends images to a remote AE. It is associated with the local real-world activity “Send Images”. “Send Images” is performed upon user request for specific images selected.

— The MWM SCU AE receives Worklist information from a remote AE. It is associated with the local real-world activity “Update Worklist”. When the “Update Worklist” is performed the MWM SCU AE queries a remote AE for worklist items and provides the set of worklist items matching the query request. ”Update Worklist” is performed as a result of an operator request and an automatic request.

— The Print SCU AE prints images on a remote AE (Printer). It is associated with the local real-world activity “Send Images & Print Management Information”. “Send Images & Print Management Information” creates a print-job within the print queue containing one or more virtual film sheets composed from images selected by the user.

4.1.2 Functional Definition of AEs

4.1.2.1 Functional Definition of Verification SCU AE

The Verification SCU AE issues a C-ECHO to verify a DICOM connection to a remote AE. It is performed via the Configuration Menu(for DICOM). The Verification SCU AE can be issue a C-ECHO to verify a DICOM connection to a remote AE with “ping” function.

4.1.2.2 Functional Definition of Verification SCP AE

The Verification SCP AE responds successfully to C-ECHO requests from known AE Titles, port numbers.

4.1.2.3 Functional Definition of Storage SCU AE

The existence of a send-job queue entry with associated network destination will activate the Storage SCU AE. An Association request is sent to the destination AE and upon successful negotiation of a Presentation Context the image transfer is started. If the image transfer fails, the Storage SCU AE will not retry this send-job automatically.

4.1.2.4 Functional Definition of MWM SCU AE

The MWM SCU AE attempts to download a worklist from a remote node. If the MWM SCU AE establishes an Association to a remote AE, it will transfer patient’s information and worklist items via the open Association. The results will be displayed in a separate list. The patient’s information will be used for the patient registration.

4.1.2.5 Functional Definition of Print AE

The existence of a print-job in the print queue will activate the Print SCU AE. An association is established with the printer and the printer’s status determined. If the printer is operating normally, the film sheets described within the print-job will be printed. If the printer is not operating normally, this print-job can be canceled or restarted by the user operations.

4.1.3 Sequencing of Real-World Activities

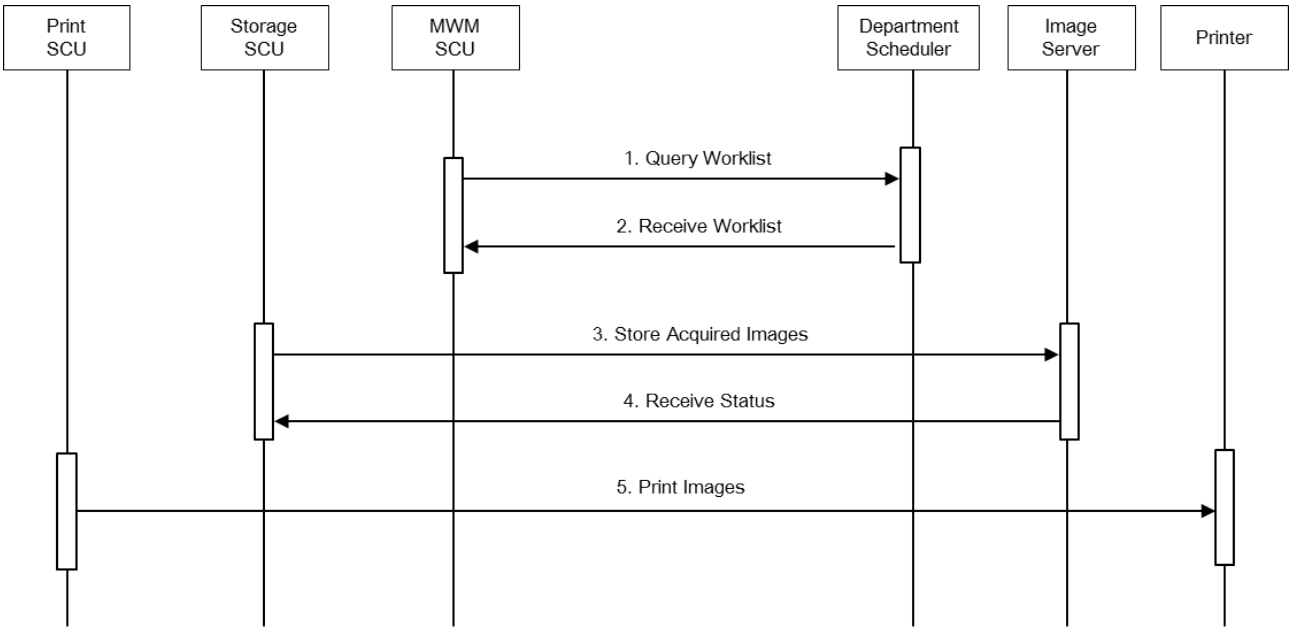

Figure 4.1-2
SEQUENCING CONSTRAINTS

Under typical scheduled workflow conditions the sequencing constraints illustrated in Figure 4.1-2 apply:

1. Query Worklist.
2. Select Workitem from Worklist.
3. Store Acquired Images.
4. Receive status from Storage SCP
5. Print Images.

Other workflow situations (e.g. unscheduled procedure steps) will have other sequencing constraints. Some activities may be omitted according to situations.

4.2 AE SPECIFICATIONS

4.2.1 Verification SCU AE Specification

4.2.1.1 SOP Classes

The Verification SCU AE provides Standard Conformance to the following SOP Classes:

Table 4.2-1
SOP CLASSES FOR THE VERIFICATION SCU AE

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

4.2.1.2 Association Policies

4.2.1.2.1 General

The DICOM standard application context name for DICOM 3.0 is always proposed:

Table 4.2-2
DICOM APPLICATION CONTEXT FOR THE VERIFICATION SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.1.2.2 Number of Associations

The Verification SCU AE initiates one association at a time.

Table 4.2-3
NUMBER OF ASSOCIATIONS INITIATED FOR THE VERIFICATION SCU AE

Maximum number of simultaneous associations	1

4.2.1.2.3 Asynchronous Nature

The Verification SCU AE does not support asynchronous communication (multiple outstanding transactions over a single association).

Table 4.2-4
ASYNCHRONOUS NATURE FOR THE VERIFICATION SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.1.2.4 Implementation Identifying Information

The implementation information for the Verification SCU AE is:

Table 4.2-5
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE VERIFICATION SCU AE

Implementation Class UID	1.2.392.200036.9116.31.3
Implementation Version Name	CXVIEW V1

4.2.1.3 Association Initiation Policy

4.2.1.3.1 Activity – Verify Connectivity

4.2.1.3.1.1 Description and Sequencing of Activities

The Verification SCU AE attempts to initiate a new association in order to issue a verification request (C-ECHO) if needed.

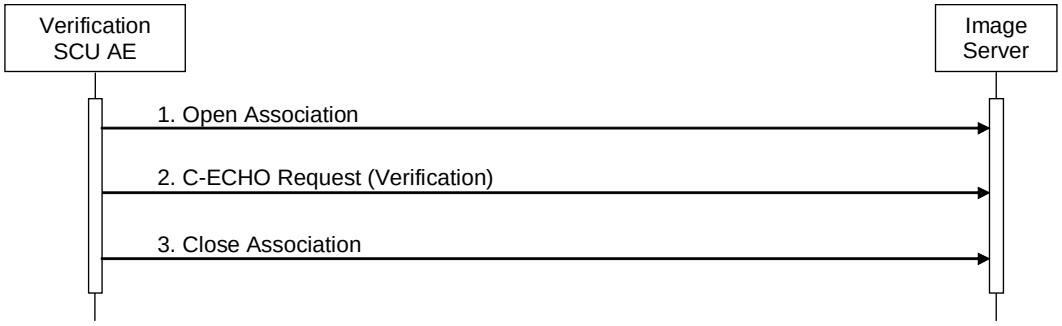

Figure 4.2-1
SEQUENCING OF ACTIVITY – VERIFY CONNECTIVITY

A possible sequence of interactions between the Verification SCU AE and an Image Server (e.g. a storage or archive device supporting the Verification SOP Classes as an SCP) is illustrated in the Figure above:

1. The Verification SCU AE opens an association with the Image Server.
2. The Verification SCU AE issues a verification request (C-ECHO) and the Image Server replies with a C-ECHO response (status success).
3. The Verification SCU AE closes the association with the Image Server.

4.2.1.3.1.2 Proposed Presentation Contexts

The Verification SCU AE will propose the Presentation Contexts shown in the following table:

Table 4.2-6
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY VERIFY CONNECTIVITY

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
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		

4.2.1.3.1.3 SOP Specific Conformance for Verification SOP Class

The Verification SCU AE provides standard conformance to the Verification Service Class as an SCU.

The behavior of Verification SCU AE when encountering status codes in a C-ECHO response is summarized in the table below:

Table 4.2-7
VERIFICATION RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The Verification SCU AE judges the remote AE is present and active on the network.

The behavior of Verification SCU AE during communication failure is summarized in the table below:

Table 4.2-8
VERIFICATION COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Association aborted by the SCP or network layers	The failure reason is logged and reported to the user.

4.2.2 Verification SCP AE Specification

4.2.2.1 SOP Classes

The Verification SCP AE provides Standard Conformance to the following SOP Classes:

Table 4.2-9
SOP CLASSES FOR THE VERIFICATION SCP AE

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

4.2.2.2 Association Policies

4.2.2.2.1 General

The DICOM standard application context name for DICOM 3.0 is always proposed:

Table 4.2-10
DICOM APPLICATION CONTEXT FOR THE VERIFICATION SCP AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.2.2.2 Number of Associations

Table 4.2-11
NUMBER OF ASSOCIATIONS ACCEPTED FOR THE VERIFICATION SCP AE

Maximum number of simultaneous associations	5

4.2.2.2.3 Asynchronous Nature

The Verification SCP AE does not support asynchronous communication (multiple outstanding transactions over a single association).

Table 4.2-12
ASYNCHRONOUS NATURE FOR THE VERIFICATION SCP AE

Maximum number of outstanding asynchronous transactions	1

4.2.2.2.4 Implementation Identifying Information

The implementation information for the Verification SCP AE is:

Table 4.2-13
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE VERIFICATION SCP AE

Implementation Class UID	1.2.392.200036.9116.31.3
Implementation Version Name	CXVIEW V1

4.2.2.3 Association Initiation Policy

The Verification SCP AE does not initiate associations.

4.2.2.4 Association Acceptance Policy

4.2.2.4.1 Activity – Respond to Verification Request

4.2.2.4.1.1 Description and Sequencing of Activities

When the Verification SCP AE accepts an association, it will respond to a verification request (C-ECHO).

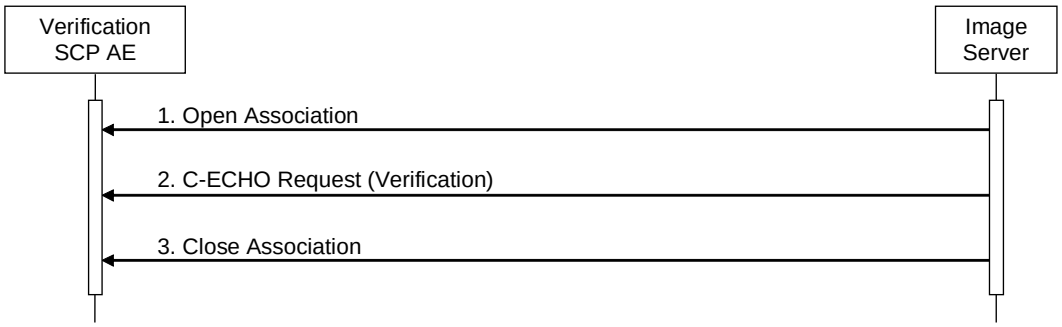

Figure 4.2-2
SEQUENCING OF ACTIVITY – RESPOND TO VERIFICATION REQUEST

A possible sequence of interactions between the Verification SCP AE and an Image Server (e.g. a storage or archive device supporting the Verification SOP Classes as an SCU) is illustrated in the Figure above:

1. The Image Server opens an association with the Verification SCP AE.
2. The Image Server issues a verification request (C-ECHO) and the Verification SCP AE replies with a C-ECHO response (status success).
3. The Image Server closes the association with the Verification SCP AE.

The Verification SCP AE may reject association attempts as shown in the table below. The Result, Source and Reason/Diag columns represent the values returned in the appropriate fields of an ASSOCIATE-RJ PDU (see PS 3.8, Section 9.3.4). The contents of the Source column is abbreviated to save space and the meaning of the abbreviations are:

Table 4.2-14
ASSOCIATION REJECTION REASONS

Result	Source	Reason/Diag	Explanation
1 – rejected-permanent	DICOM UL service-user	3 – calling-AE-title-not-recognized	The association request contained an unrecognized calling AE Title. An association request with the same parameters will not succeed at a later time unless configuration changes are made. This rejection reason normally occurs when the association acceptor has not been configured to recognize the AE Title of the association initiator.
1 – rejected-permanent	DICOM UL service-provider (ASCE related function)	1 – no-reason-given	The association request could not be parsed. An association request with the same format will not succeed at a later time.

4.2.2.4.1.2 Accepted Presentation Contexts

The default behavior of the Verification SCP AE supports the Implicit VR Little Endian and Explicit VR Little Endian transfer syntaxes. If the both transfer syntaxes are proposed per presentation context then the Verification SCP AE will select Explicit VR Little Endian transfer syntax.

Table 4.2-15
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY RESPOND TO VERIFICATION REQUEST

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Verification	1.2.840.10008.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.2.4.1.3 SOP Specific Conformance for Verification SOP Class

The Verification SCP AE provides standard conformance to the Verification Service Class as an SCP.

4.2.3 Storage SCU AE Specification

4.2.3.1 SOP Classes

The Storage SCU AE provides Standard Conformance to the following SOP Classes:

Table 4.2-16
SOP CLASSES FOR THE STORAGE SCU AE

SOP Class Name	SOP Class UID	SCU	SCP
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Yes	No
XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Yes	No

4.2.3.2 Association Policies

4.2.3.2.1 General

The DICOM standard application context name for DICOM 3.0 is always proposed:

Table 4.2-17
DICOM APPLICATION CONTEXT FOR THE STORAGE SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.3.2.2 Number of Associations

The Storage SCU AE can initiate only one association at a time for each destination to which a transfer request is being processed in the active job queue list. Up to two jobs, that images will be sent to the different remote hosts, will be active at a time, the other remains pending until the active job is completed or failed.

Table 4.2-18
NUMBER OF ASSOCIATIONS INITIATED FOR THE STORAGE SCU AE

Maximum number of simultaneous Associations	1

4.2.3.2.3 Asynchronous Nature

The Storage SCU AE does not support asynchronous communication (multiple outstanding transactions over a single Association).

Table 4.2-19
ASYNCHRONOUS NATURE FOR THE STORAGE SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.3.2.4 Implementation Identifying Information

The implementation information for the Storage SCU AE is:

Table 4.2-20
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE STORAGE SCU AE

Implementation Class UID	1.2.392.200036.9116.31.3
Implementation Version Name	CXVIEW V1

4.2.3.3 Association Initiation Policy

4.2.3.3.1 Activity – Send Images

4.2.3.3.1.1 Description and Sequencing of Activities

The Storage SCU AE attempts to initiate a new Association in order to issue a Storage request (C-STORE). If the job contains one image, then single C-STORE request will be issued over one Association. For multiple images, multiple C-STORE requests will be issued over one Associations. If the image transfer fails, the Storage SCU AE will not retry this send-job automatically.

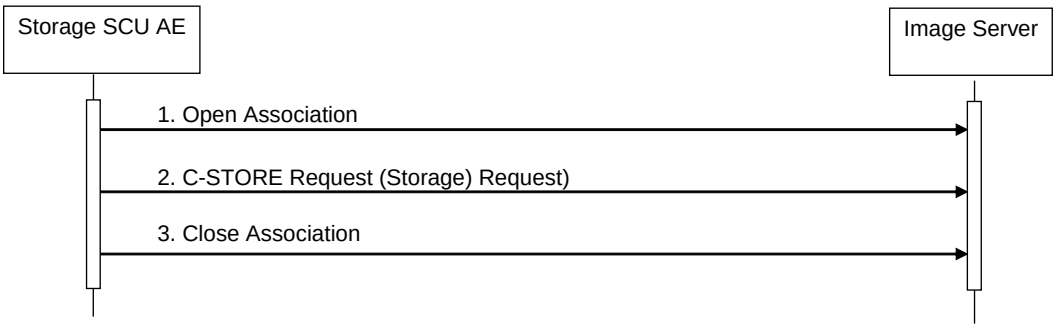

Figure 4.2-3
SEQUENCING OF ACTIVITY – SEND IMAGES

A possible sequence of interactions between the Storage SCU AE and an Image Server (e.g. a storage or archive device supporting the Storage SOP Classes as an SCP) is illustrated in the Figure above:

1. The Storage SCU AE opens an Association with the Image Server.

2. Acquired images are transmitted to the Image Server using a Storage request (C-STORE) and the Image Server replies with a C-STORE response (status success).

3. The Storage SCU AE closes the Association with the Image Server.

4.2.3.3.1.2 Proposed Presentation Contexts

The Storage SCU AE is capable of proposing the Presentation Contexts shown in the following table:

Table 4.2-21
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY SEND IMAGES

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
X-ray RF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.3.3.1.3 SOP Specific Conformance for Storage SOP Classes

The Storage SCU AE provides standard conformance to the Storage Service Class as an SCU.

The behavior of Storage SCU AE when encountering status codes in a C-STORE response is summarized in the Table below:

Table 4.2-22
STORAGE C-STORE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The SCP has successfully stored the SOP Instance. If all SOP Instances in a send job have status success then the job is marked as complete.
Refused	Out of Resources	A7xxH	The Association is aborted using A-ABORT and the send job is marked as failed. The status meaning is logged and the job failure is reported to the user via the job control application. This is a transient failure.
Error	Data Set does not match SOP Class	A9xxH	The Association is aborted using A-ABORT and the send job is marked as failed. The status meaning is logged and the job failure is reported to the user via the job control application.
Error	Cannot Understand	CxxxH	The Association is aborted using A-ABORT and the send job is marked as failed. The status meaning is logged and the job failure is reported to the user via the job control application.
Warning	Coercion of Data Elements	B000H	Image transmission is considered successful if it is configured that the status would be considered successful.
Warning	Data Set does not match SOP Class	B007H	Image transmission is considered successful if it is configured that the status would be considered successful.
Warning	Elements Discarded	B006H	Image transmission is considered successful if it is configured that the status would be considered successful.

*	*	Any other status code.	The Association is aborted using A-ABORT and the send job is marked as failed. The status code is logged and the job failure is reported to the user via the job control application.

The behavior of Storage SCU AE during communication failure is summarized in the Table below:

Table 4.2-23
STORAGE COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Association aborted by the SCP or network layers	The send job is marked as failed. The reason is logged and the job failure is reported to the user via the job control application.

If the image transfer fails, the Storage SCU AE will not retry this send-job automatically.

The contents of Image Storage SOP Instances created by the Storage SCU AE conform to the DICOM Image IOD definitions and are described in section 8.1.

4.2.4 MWM SCU AE Specification

4.2.4.1 SOP Classes

The MWM SCU AE provides Standard Conformance to the following SOP Classes:

Table 4.2-26
SOP CLASSES FOR THE MWM SCU AE

SOP Class Name	SOP Class UID	SCU	SCP
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	Yes	No

4.2.4.2 Association Policies

4.2.4.2.1 General

The DICOM standard application context name for DICOM 3.0 is always proposed:

Table 4.2-27
DICOM APPLICATION CONTEXT FOR THE MWM SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.4.2.2 Number of Associations

The MWM SCU AE initiates one Association at a time for a Worklist request.

Table 4.2-28
NUMBER OF ASSOCIATIONS INITIATED FOR THE MWM SCU AE

Maximum number of simultaneous Associations	1

4.2.4.2.3 Asynchronous Nature

The MWM SCU AE does not support asynchronous communication (multiple outstanding transactions over a single Association).

Table 4.2-29
ASYNCHRONOUS NATURE FOR THE MWM SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.4.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-30
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE MWM SCU AE

Implementation Class UID	1.2.392.200036.9116.31.3
Implementation Version Name	CXVIEW V1

4.2.4.3 Association Initiation Policy

4.2.4.3.1 Activity – Update Worklist

4.2.4.3.1.1 Description and Sequencing of Activities

The request for a “Update Worklist” is initiated by user interaction, i.e. pressing the buttons “Get” at the time of previous “Update Worklist”.

Upon initiation of the request, the MWM SCU AE will build an Identifier for the C-FIND request, will initiate an association to send the request and will wait for Worklist responses. After retrieval of all responses, the MWM SCU AE will access the local database to update patient demographic data. The results will be displayed in a separate list.

The MWM SCU AE will initiate an Association in order to issue a C-FIND request according to the Modality Worklist Information Model.

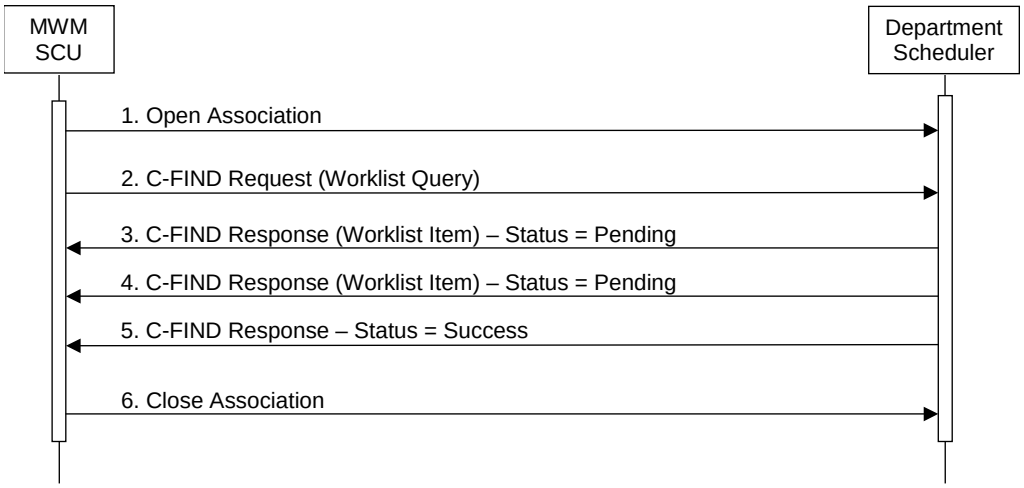

Figure 4.2-4
SEQUENCING OF ACTIVITY – UPDATE WORKLIST

A possible sequence of interactions between the MWM SCU AE and a Department Scheduler (e.g. a device such as a RIS or HIS which supports the Modality Worklist SOP Class as an SCP) is illustrated in the Figure above:

1. The MWM SCU AE opens an association with the Department Scheduler
2. The MWM SCU AE sends a C-FIND request to the Department Scheduler containing the Worklist Query attributes.
3. The Department Scheduler returns a C-FIND response containing the requested attributes of the first matching Worklist Item.
4. The Department Scheduler returns another C-FIND response containing the requested attributes of the second matching Worklist Item.
5. The Department Scheduler returns another C-FIND response with status Success indicating that no further matching Worklist Items exist. This example assumes that only 2 Worklist items match the Worklist Query.
6. The MWM SCU AE closes the association with the Department Scheduler.

4.2.4.3.1.2 Proposed Presentation Contexts

The MWM SCU AE will propose Presentation Contexts as shown in the following table:

Table 4.2-31
Proposed Presentation Contexts for Activity Update Worklist

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None

4.2.4.3.1.3 SOP Specific Conformance for Modality Worklist SOP Class

The MWM SCU AE provides standard conformance to the Modality Worklist SOP Class as an SCU.

The behavior of the MWM SCU when encountering status codes in a Modality Worklist C-FIND response is summarized in the Table below.

Table 4.2-32
Modality Worklist C-FIND Response Status Handling Behavior

Service Status	Further Meaning	Status Code	Behavior
Success	Matching is complete	0000	The SCP has completed the matches. Worklist items are available for display or further processing.
Refused	Out of Resources	A700H	The Association is aborted using A-ABORT and the worklist query is marked as failed. The status meaning is logged and reported to the user if an interactive query. Any additional error information in the Response will be logged.
Failed	Identifier does not match SOP Class	A900H	The Association is aborted using A-ABORT and the worklist query is marked as failed. The status meaning is logged and reported to the user if an interactive query. Any additional error information in the Response will be logged.
Failed	Unable to Process	CxxxH	The Association is aborted using A-ABORT and the worklist query is marked as failed. The status meaning is logged and reported to the user if an interactive query. Any additional error information in the Response will be logged.
Cancel	Matching terminated due to Cancel request	FE00H	If the query was cancelled due to too may worklist items then the SCP has completed the matches. Worklist items are available for display or further processing. Otherwise, the Association is aborted using A-ABORT and the worklist query is marked as failed. The status meaning is logged and reported to the user if an interactive query.
Pending	Matches are continuing	FF00H	The worklist item contained in the Identifier is collected for later display or further processing.
Pending	Matches are continuing – Warning that one or more Optional Keys were not supported	FF01H	The worklist item contained in the Identifier is collected for later display or further processing. The status meaning is logged only once for each C-FIND operation.
*	*	Any other status code.	The Association is aborted using A-ABORT and the worklist is marked as failed. The status meaning is logged and reported to the user if an interactive query. Any additional error information in the Response will be logged.

The behavior of the MWM SCU AE during communication failure is summarized in the Table below.

Table 4.2-33
MODALITY WORKLIST COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Association aborted by the SCP or network layers	The worklist query is marked as failed. The reason is logged and reported to the user if an interactive query.

The Table below provides a description of the MWM SCU AE Worklist Request Identifier and specifies the attributes that are copied into the images. Unexpected attributes returned in a C-FIND response are ignored.

Table 4.2-34
WORKLIST REQUEST IDENTIFIER

Module Name Attribute Name	Tag	VR	M	R	D	IOD
SOP Common						
Specific Character Set	(0008,0005)	CS		x		x
Timezone Offset From UTC	(0008,0201)	SH		x		
Scheduled Procedure Step						
Scheduled Procedure Step Sequence	(0040,0100)	SQ		x		
> Scheduled Station AE Title	(0040,0001)	AE	S	x		
> Scheduled Station Name	(0040,0010)	LO		x		
> Scheduled Procedure Step Location	(0040,0011)	SH		x		
> Scheduled Procedure Step Start Date	(0040,0002)	DA	S, R	x		
> Scheduled Procedure Step Start Time	(0040,0003)	TM		x		
> Scheduled Procedure Step End Date	(0040,0004)	DA		x		
> Scheduled Procedure Step End Time	(0040,0005)	TM		x		
> Scheduled Performing Physician's Name	(0040,0006)	PN		x		x
> Scheduled Procedure Step Description	(0040,0007)	SH		x		
> Scheduled Protocol Code Sequence	(0040,0008)	SQ		x		
> > Code Value	(0008,0100)	SH		x		
> > Coding Scheme Designator	(0008,0102)	SH		x		
> > Coding Scheme Version	(0008,0103)	SH		x		
> > Code Meaning	(0008,0104)	LO		x		
> Scheduled Procedure Step ID	(0040,0009)	SH		x		
> Scheduled Procedure Step Status	(0040,0020)	CS		x		
> Comments on Scheduled Procedure Step	(0040,0400)	LT		x		
> Modality	(0008,0060)	CS	S	x	x	x
> Requested Contrast Agent	(0032,1070)	LO		x		
> Pre-Medication	(0040,0012)	LO		x		
Requested Procedure						

Requested Procedure ID	(0040,1001)	SH	x	x	x	x
Reason for the Requested Procedure	(0040,1002)	LO		x		
Requested Procedure Comments	(0040,1400)	LT		x		
Requested Procedure Code Sequence	(0032,1064)	SQ		x		
> Code Value	(0008,0100)	SH		x		
> Coding Scheme Designator	(0008,0102)	SH		x		
> Coding Scheme Version	(0008,0103)	SH		x		
> Code Meaning	(0008,0104)	LO		x		
Referenced Study Sequence	(0008,1110)	SQ		x		
> Referenced SOP Class UID	(0008,1150)	UI		x		
> Referenced SOP Instance UID	(0008,1155)	UI		x		
Requested Procedure Description	(0032,1060)	LO		x		
Study Instance UID	(0020,000D)	UI		x	x	x
Requested Procedure Priority	(0040,1003)	SH		x		
Patient Transport Arrangements	(0040,1004)	LO		x		
Requested Procedure Location	(0040,1005)	LO		x		
Confidentiality Code	(0040,1008)	LO		x		
Reporting Priority	(0040,1009)	SH		x		
Names of Intended Recipients of Results	(0040,1010)	PN		x		
Imaging Service Request						
Reason for the Imaging Service Request	(0040,2001)	LO		x		
Imaging Service Request Comments	(0040,2400)	LT		x		
Requesting Physician	(0032,1032)	PN		x		
Referring Physician's Name	(0008,0090)	PN		x	x	x
Requesting Service	(0032,1033)	LO		x		
Accession Number	(0008,0050)	SH	x	x	x	x
Issue Date of Imaging Service Request	(0040,2004)	DA		x		
Issue Time of Imaging Service Request	(0040,2005)	TM		x		
Order Entered By	(0040,2008)	PN		x		
Order Enters Location	(0040,2009)	SH		x		
Order Callback Phone Number	(0040,2010)	SH		x		
Placer Order Number / Imaging Service Request	(0040,2016)	LO		x		
Filter Order Number / Imaging Service Request	(0040,2017)	LO		x		
Visit Relationship						
Referenced Patient Sequence	(0008,1120)	SQ		x		
> Referenced SOP Class UID	(0008,1150)	UI		x		
> Referenced SOP Instance UID	(0008,1155)	UI		x		
Visit Identification						
Institution Name	(0008,0080)	LO		x		x
Institution Address	(0008,0081)	ST		x		
Admission ID	(0038,0010)	LO		x		
Issuer of Admission ID	(0038,0011)	LO		x		
Visit Status						
Visit Status ID	(0038,0008)	CS				
Current Patient Location	(0038,0300)	LO		x		
Patient's Institution Residence	(0038,0400)	LO				
Visit Comments	(0038,4000)	LT				
Visit Admission						
Route of Admissions	(0038,0016)	LO		x		
Admitting Date	(0038,0020)	DA		x		
Admitting Time	(0038,0021)	TM		x		
Patient Identification						

Patient's Name	(0010,0010)	PN	x	x	x	x
Patient ID	(0010,0020)	LO	x	x	x	x
Issuer of Patient ID	(0010,0021)	LO		x		
Other Patient IDs	(0010,1000)	LO		x		
Other Patient Names	(0010,1001)	PN		x		
Patient's Birth Name	(0010,1005)	PN		x		
Patient's Mother's Birth Name	(0010,1060)	PN		x		
Medical Record Locator	(0010,1090)	LO		x		
Patient Demographic						
Patient's Age	(0010,1010)	AS		x	x	
Occupation	(0010,2180)	SH		x		
Confidentiality Constraint Description on patient data	(0040,3001)	LO		x		
Patient's Birth Date	(0010,0030)	DA	x	x	x	x
Patient's Birth Time	(0010,0032)	TM		x		
Patient's Sex	(0010,0040)	CS	x	x	x	x
Patient's Size	(0010,1020)	DS		x		
Patient's Weight	(0010,1030)	DS		x		
Patient's Address	(0010,1040)	LO		x		
Military Rank	(0010,1080)	LO		x		
Branch of Service	(0010,1081)	LO		x		
Country Residence	(0010,2150)	LO		x		
Region of Residence	(0010,2152)	LO		x		
Patient's Telephone Number	(0010,2154)	SH		x		
Ethnic Group	(0010,2160)	SH		x		
Patient's Religious Reference	(0010,21F0)	LO		x		
Patient Comment	(0010,4000)	LT		x		x
Patient Medical						
Medical Alerts	(0010,2000)	LO		x		
Contrast Allergies	(0010,2110)	LO		x		
Smoking Status	(0010,21A0)	CS		x		
Additional Patient History	(0010,21B0)	LT		x		
Pregnancy Status	(0010,21C0)	US		x		
Last Menstrual Date	(0010,21D0)	DA		x		
Special Needs	(0038,0050)	LO		x		
Patient State	(0038,0500)	LO		x		

The above table should be read as follows:

Module Name: The name of the associated module for supported worklist attributes.

Attribute Name: Attributes supported to build the MWM SCU AE Worklist Request Identifier.

Tag: DICOM tag for this attribute.

VR: DICOM VR for this attribute.

M: Matching keys for (automatic) Worklist Update. An "S" will indicate that the MWM SCU AE will supply an attribute value for Single Value Matching, a "R" will indicates Range Matching and an "x" will indicates Wildcard Matching. This setting can be selected the device user interface. The system's default setting is described in the above table.

R: Return keys. An "x" will indicate that the MWM SCU AE will supply this attribute as Return Key with zero length for Universal Matching. This setting can be configured using the service tool. The system's default setting is described in the above table.

D: Displayed keys. An "x" indicates that this worklist attribute is displayed to the user during a patient registration dialog. For example, Patient Name will be displayed when registering the patient prior to an examination. This setting can be configured using the service tool. The system's default setting is described in the above table.

IOD: An "x" indicates that this Worklist attribute is included into all Object Instances

created during performance of the related Procedure Step. This setting can be configured using the service tool. The system’s default setting is described in the above table

4.2.4.4 Association Acceptance Policy

The MWM SCU AE does not accept Associations.

4.2.5 Print SCU AE Specification

4.2.5.1 SOP Classes

The Print SCU AE provides Standard Conformance to the following Meta SOP Classes:

Table 4.2-63
META SOP CLASSES FOR THE PRINT SCU AE

SOP Class Name	SOP Class UID	SCU	SCP
Basic Grayscale Print Management Meta	1.2.840.10008.5.1.1.9	Yes	No

The above Meta SOP Classes are defined by the following set of supported SOP Classes:

Table 4.2-64
SOP CLASSES FOR THE PRINT SCU AE

SOP Class Name	SOP Class UID	SCU	SCP
Basic Film Session SOP Class	1.2.840.10008.5.1.1.1	Yes	No
Basic Film Box SOP Class	1.2.840.10008.5.1.1.2	Yes	No
Basic Grayscale Image Box SOP Class	1.2.840.10008.5.1.1.4	Yes	No
Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No
Print Job SOP Class	1.2.840.10008.5.1.1.14	Yes	No

4.2.5.2 Association Policies

4.2.5.2.1 General

The DICOM standard application context name for DICOM 3.0 is always proposed:

Table 4.2-65
DICOM APPLICATION CONTEXT FOR THE PRINT SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.5.2.2 Number of Associations

The Print SCU AE can initiate up to two Associations at a time.

Table 4.2-66
NUMBER OF ASSOCIATIONS ACCEPTED FOR THE PRINT SCU AE

Maximum number of simultaneous Associations	1

4.2.5.2.3 Asynchronous Nature

The Print SCU AE does not support asynchronous communication (multiple outstanding transactions over a single Association).

Table 4.2-67
ASYNCHRONOUS NATURE FOR THE PRINT SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.5.2.4 Implementation Identifying Information

The implementation information for the Print SCU AE is:

Table 4.2-68
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE PRINT SCU AE

Implementation Class UID	1.2.392.200036.9116.31.3
Implementation Version Name	CXVIEW V1

4.2.5.3 Association Initiation Policy

4.2.5.3.1 Activity – Send Images & Print Management Information

4.2.5.3.1.1 Description and Sequencing of Activities

A user composes images onto film sheets and requests them to be sent to a specific hardcopy device. The user can select the desired film format and number of copies.

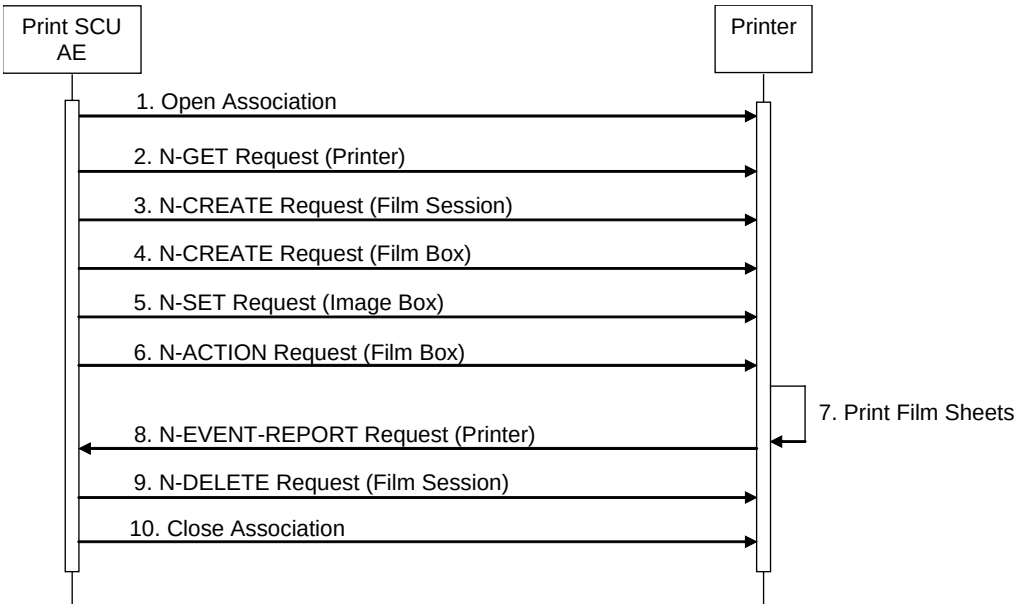

Figure 4.2-8
SEQUENCING OF ACTIVITY – SEND IMAGES & PRINT MANAGEMENT INFORMATION

A typical sequence of DIMSE messages sent over an association between the Print SCU AE and a Printer is illustrated in the Figure above:

1. The Print SCU AE opens an Association with the Printer.
2. N-GET on the Printer SOP Class is used to obtain current printer status information.
3. N-CREATE on the Film Session SOP Class creates a Film Session.
4. N-CREATE on the Film Box SOP Class creates a Film Box linked to the Film Session.
5. N-SET on the Image Box SOP Class transfers the contents of the film sheet to the printer.
6. N-ACTION on the Film Box SOP Class instructs the Printer to print the Film Box.
7. The Printer prints the requested number of film sheets.
8. The Printer asynchronously reports its status via N-EVENT-REPORT notification (Printer SOP Class). The printer can send this message at any time. The Print SCU AE does not require the N-EVENT-REPORT to be sent. The Print SCU AE is capable of receiving an N-EVENT-REPORT notification at any time during an association.
9. N-DELETE on the Film Session SOP Class deletes the complete Film Session SOP Instance hierarchy.
10. The Print SCU AE closes the Association with the Printer.

4.2.5.3.1.2 Proposed Presentation Contexts

The Print SCU AE is capable of proposing the Presentation Contexts shown in the Table below:

Table 4.2-69
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY
SEND IMAGES & PRINT MANAGEMENT INFORMATION

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Basic Grayscale Print Management Meta	1.2.840.10008.5.1.1.9	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None

4.2.5.3.1.3 Common SOP Specific Conformance for all Print SOP Classes

The general behavior of the Print SCU AE during communication failure is summarized in the Table below. This behavior is common for all SOP Classes supported by the Print SCU AE.

Table 4.2-70
PRINT COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Association aborted by the SCP or network layers	The print-job is marked as failed. The reason is logged and the job failure is reported to the user via the job control application.

4.2.5.3.1.4 SOP Specific Conformance for Printer SOP Class

The Print SCU AE supports the following DIMSE operations and notifications for the Printer SOP Class:

— N-GET
— N-EVENT-REPORT

Details of the supported attributes and status handling behavior are described in the following subsections.

4.2.5.3.1.4.1 Printer SOP Class Operations (N-GET)

The Print SCU AE uses the Printer SOP Class N-GET operation to obtain information about the current printer status. The attributes obtained via N-GET are listed in the Table below:

Table 4.2-71
PRINTER SOP CLASS N-GET REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Printer Status	(2110,0010)	CS	Provided by Printer	ALWAYS	Printer
Printer Status Info	(2110,0020)	CS	Provided by Printer	ALWAYS	Printer

The Printer Status information is evaluated as follows:

1. If Printer status (2110,0010) is NORMAL, the print-job continues to be printed.

2. If Printer status (2110,0010) is FAILURE, the print-job is marked as failed. The contents of Printer Status Info (2110,0020) is logged and reported to the user via the job control application.

3. If Printer status (2110,0010) is WARNING, the print-job continues to be printed. The contents of Printer Status Info (2110,0020) is logged and reported to the user via the job control application.

1. If Printer status (2110,0010) is empty, the print-job continues to be printed. The contents of Printer Status Info (2110,0020) is logged as NOT READY and reported to the user via the job control application.

The behavior of The Print SCU AE when encountering status codes in a N-GET response is summarized in the Table below:

Table 4.2-72
PRINTER SOP CLASS N-GET RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The request to get printer status information was success.
*	*	Any other status code.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.

4.2.5.3.1.4.2 Printer SOP Class Notifications (N-EVENT-REPORT)

The Print SCU AE is capable of receiving an N-EVENT-REPORT request at any time during an association.

The behavior of The Print SCU AE when receiving Event Types within the N-EVENT-REPORT is summarized in the Table below:

Table 4.2-73
PRINTER SOP CLASS N-EVENT-REPORT BEHAVIOUR

Event Type Name	Event Type ID	Behavior
Normal	1	The print-job continues to be printed.
Warning	2	The print-job continues to be printed. The contents of Printer Status Info (2110,0020) is logged and reported to the user via the job-control application.
Failure	3	The print-job is marked as failed. The contents of Printer Status Info (2110,0020) is logged and reported to the user via the job-control application.
*	*	An invalid Event Type ID will cause a status code of 0113H to be returned in a N-EVENT-REPORT response.

The reasons for returning specific status codes in a N-EVENT-REPORT response are summarized in the Table below:

Table 4.2-74
PRINTER SOP CLASS N-EVENT-REPORT RESPONSE STATUS REASONS

Service Status	Further Meaning	Status Code	Reasons
Success	Success	0000	The notification event has been successfully received.
Failure	No Such Event Type	0113H	An invalid Event Type ID was supplied in the N-EVENT-REPORT request.
Failure	Processing Failure	0110H	An internal error occurred during processing of the N-EVENT-REPORT. A short description of the error will be returned in Error Comment (0000,0902).

4.2.5.3.1.5 SOP Specific Conformance for the Film Session SOP Class

The Print SCU AE supports the following DIMSE operations for the Film Session SOP Class:

— N-CREATE
— N-DELETE

Details of the supported attributes and status handling behavior are described in the following subsections.

4.2.5.3.1.5.1 Film Session SOP Class Operations (N-CREATE)

The attributes supplied in an N-CREATE Request are listed in the Table below:

Table 4.2-75
FILM SESSION SOP CLASS N-CREATE REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Number of Copies	(2000,0010)	IS	1 .. 99	ALWAYS	User
Print Priority	(2000,0020)	CS	LOW, MED or HIGH	ALWAYS	User
Medium Type	(2000,0030)	CS	BLUE FILM, CLEAR FILM or PAPER	ALWAYS	User
Film Destination	(2000,0040)	CS	MAGAZINE or PROCESSOR	ALWAYS	User

*:The behavior of The Print SCU AE when encountering status codes in a N-CREATE response is summarized in the Table below:

Table 4.2-76
FILM SESSION SOP CLASS N-CREATE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The SCP has completed the operation successfully.
Warning	Attribute Value Out of Range	0116H	The N-CREATE operation is considered successful if it is configured that the status would be considered successful.
Warning	Attribute List Error	0107H	The N-CREATE operation is considered successful if it is configured that the status would be considered successful.
*	*	Any other status code.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.

4.2.5.3.1.5.2 Film Session SOP Class Operations (N-DELETE)

The behavior of The Print SCU AE when encountering status codes in a N-DELETE response is summarized in the Table below:

Table 4.2-77
PRINTER SOP CLASS N-DELETE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The SCP has completed the operation successfully.
*	*	Any other status code.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.

4.2.5.3.1.6 SOP Specific Conformance for the Film Box SOP Class

The Print SCU AE supports the following DIMSE operations for the Film Box SOP Class:

— N-CREATE
— N-ACTION

Details of the supported attributes and status handling behavior are described in the following subsections.

4.2.5.3.1.6.1 Film Box SOP Class Operations (N-CREATE)

The attributes supplied in an N-CREATE Request are listed in the Table below:

Table 4.2-78
FILM BOX SOP CLASS N-CREATE REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Display Format	(2010,0010)	CS	User configurable. Default is STANDARD\1,1	ALWAYS	User
Referenced Film Session Sequence	(2010,0500)	SQ		ALWAYS	Auto
>Referenced SOP Class UID	(0008,1150)	UI	1.2.840.10008.5.1.1.2	ALWAYS	Auto
>Referenced SOP Instance UID	(0008,1155)	UI	From created Film Session SOP Instance	ALWAYS	Auto
Film Orientation	(2010,0040)	CS	PORTRAIT or LANDSCAPE	ALWAYS	User
Film Size ID	(2010,0050)	CS	ser configurable. The printer defines default. User values = 8INX10IN 10INX12IN 10INX14IN 11INX14IN 14INX14IN 14INX17IN	ALWAYS	User
Magnification Type	(2010,0060)	CS	REPLICATE, BILINEAR, CUBIC or NONE	ALWAYS	User
Min Density	(2010,0120)	US	User configurable. 0 .. 9999	ALWAYS	User
Max Density	(2010,0130)	US	User configurable. 0 .. 9999	ALWAYS	User

The behavior of the Print SCU AE when encountering status codes in a N-CREATE response is summarized in the Table below:

Table 4.2-79
FILM BOX SOP CLASS N-CREATE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The SCP has completed the operation successfully.
Warning	Requested Min Density or Max Density outside of printer's operating range	B605H	The N-CREATE operation is considered successful if it is configured that the status would be considered successful.

*	*	Any other status code.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.

4.2.5.3.1.6.2 Film Box SOP Class Operations (N-ACTION)

An N-ACTION Request is issued to instruct the Print SCP to print the contents of the Film Box. The Action Reply argument in an N-ACTION response is not evaluated.

The behavior of The Print SCU AE when encountering status codes in a N-ACTION response is summarized in the Table below:

Table 4.2-80
FILM BOX SOP CLASS N-ACTION RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The SCP has completed the operation successfully. The film has been accepted for printing.
Warning	Film Box SOP Instance hierarchy does not contain Image Box SOP Instances (empty page)	B603H	The N-ACTION operation is considered successful if it is configured that the status would be considered successful.
Warning	Image size is larger than Image Box size. The image has been demagnified.	B604H	The N-ACTION operation is considered successful if it is configured that the status would be considered successful.
Warning	Image size is larger than Image Box size. The image has been cropped to fit.	B609H	The N-ACTION operation is considered successful if it is configured that the status would be considered successful.
Warning	Image size or Combined Print Image Size is larger than Image Box size. The image or combined Print Image has been decimated to fit.	B60AH	The N-ACTION operation is considered successful if it is configured that the status would be considered successful.
Failure	Unable to create Print Job SOP Instance; print queue is full.	C602H	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.
Failure	Image size is larger than Image Box size.	C603H	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.
Failure	Combined Print Image Size is larger than Image Box size.	C613H	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.
*	*	Any other status code.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.

4.2.5.3.1.7 SOP Specific Conformance for the Grayscale Image Box SOP Class

The Print SCU AE supports the following DIMSE operations for the Grayscale Image Box SOP Class:

— N-SET

Details of the supported attributes and status handling behavior are described in the following subsections.

4.2.5.3.1.7.1 Grayscale Image Box SOP Class Operations (N-SET)

The attributes supplied in an N-SET Request are listed in the Table below:

Table 4.2-81
GRAYSCALE IMAGE BOX SOP CLASS N-SET REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Position	(2020,0010)	US	Based on the image display format.	ALWAYS	Auto
Polarity	(2020,0020)	CS	NORMAL, REVERSE	ALWAYS	User
Basic Grayscale Image Sequence	(2020,0110)	SQ	Sequence	ALWAYS	Auto
>Samples Per Pixel	(0028,0002)	US	1	ALWAYS	Auto
>Photometric Interpretation	(0028,0004)	CS	MONOCHROME2	ALWAYS	Auto
>Rows	(0028,0010)	US	Configuration	ALWAYS	Auto
>Columns	(0028,0011)	US	Configuration	ALWAYS	Auto
>Pixel Aspect Ratio	(0028,0034)	IS	Configuration	ANAP	Auto
>Bits Allocated	(0028,0100)	US	Configuration	ALWAYS	Auto
>Bits Stored	(0028,0101)	US	Configuration	ALWAYS	Auto
>High Bit	(0028,0102)	US	Configuration	ALWAYS	Auto
>Pixel Representation	(0028,0103)	US	0 which represents Unsigned integer.	ALWAYS	Auto
>Pixel Data	(7FE0,0010)	OB		ALWAYS	Auto

The behavior of the Print SCU AE when encountering status codes in a N-SET response is summarized in the Table below:

Table 4.2-82
GRAYSCALE IMAGE BOX SOP CLASS N-SET RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The SCP has completed the operation successfully. Image successfully stored in Image Box.
Warning	Image size is larger than Image Box size. The image has been demagnified.	B604H	The N-SET operation is considered successful if it is configured that the status would be considered successful.
Warning	Requested Min Density or Max Density outside of printer's operating range.	B605H	The N-SET operation is considered successful if it is configured that the status would be considered successful.
Warning	Image size is larger than Image Box size. The image has been cropped to fit.	B609H	The N-SET operation is considered successful if it is configured that the status would be considered successful.
Warning	Image size or Combined Print Image Size is larger than Image Box size. The image or combined Print Image has been decimated to fit.	B60AH	The N-SET operation is considered successful if it is configured that the status would be considered successful.
Failure	Image size is larger than Image Box size.	C603H	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.
Failure	Insufficient memory in printer to store the image.	C605H	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.
Failure	Combined Print Image Size is larger than Image Box size.	C613H	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.
*	*	Any other status code.	The Association is aborted using A-ABORT and the print-job is marked as failed. The status meaning is logged and reported to the user.

4.2.5.4 Association Acceptance Policy

The Print SCU AE does not accept Associations.

4.3 NETWORK INTERFACES

4.3.1 Physical Network Interface

This Product supports a single network interface. One of the following physical network interfaces will be available depending on installed hardware options:

Table 4.3-1
SUPPORTED PHYSICAL NETWORK INTERFACES

Ethernet 1000baseT
Ethernet 100baseT
Ethernet 10baseT

4.3.2 Additional Protocols

None.

4.4 CONFIGURATION

4.4.1 AE Title/Presentation Address Mapping

4.4.1.1 Local AE Titles

All local applications use the AE Titles and TCP/IP Ports configured via the Service/Installation. The Field Service Engineer can configure the TCP Port via the Service/Installation.

Table 4.4-1
AE TITLE CONFIGURATION TABLE

Application Entity	Default AE Title	Default TCP/IP Port
Verification SCP	VERIFY_SCP	104
Verification SCU	VERIFY_SCU	Not Applicable
MWM SCU	WORKLIST_SCU	
Print SCU	PRINT_SCU	
Storage SCU	STORAGE_SCU	

4.4.1.2 Remote AE Title/Presentation Address Mapping

The AE Titles, host names and port numbers of remote applications are configured using the Service/Installation.

5. MEDIA INTERCHANGE

5.1 IMPLEMENTATION MODEL

5.1.1 Application Data Flow

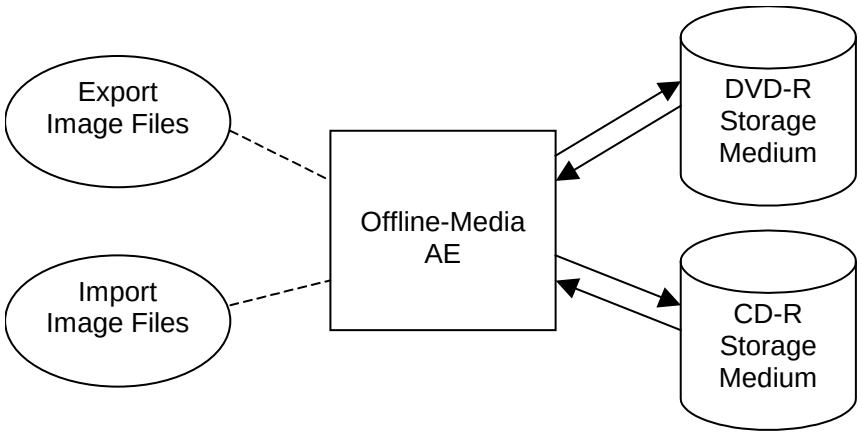

Figure 5.1-1
APPLICATION DATA FLOW DIAGRAM FOR MEDIA STORAGE

— The Offline-Media AE exports image files to a CD-R or a DVD-R Storage medium. It is associated with the local real-world activity “Export Image Files” performed upon user request.

— The Offline-Media AE imports image files from a CD-R or a DVD-R Storage medium. It is associated with the local real-world activity “Import Image Files” performed upon user request.

5.1.2 Functional Definition of AEs

5.1.2.1 Functional Definition of Offline-Media AE

The Offline-Media AE is performed upon user request for selected studies /series/images to/from an offline DICOM CD-R or DVD-R medium. It therefore performs the following tasks:

Export:

— Builds DICOM Information Objects.

— Creates a DICOMDIR file that represents the contents of the DICOM Information Objects to be recorded.

— Records DICOM Information Objects and the DICOMDIR file to the CD-R or the DVD-R medium.

Import:

— Reads the DICOMDIR file that represents the contents of the data as recorded.

— Displays the ordered list of studies/series/images, identifying information.

— Loads the selected studies/series/images from a CD-R or a DVD-R medium and displays them on the screen.

Note: The Offline-Media AE can update files created by the product itself.

5.1.3 Sequencing of Real-World Activities

5.1.3.1 Activity - Export Image Files

5.1.3.1.1 Activity-Export Image Files to CD-R

Operator requests to create new File-set(s) onto a new CD-R. The requests are placed in a queue and are executed in the background.

The operations for “Export Image Files” are described below:

Step-1: Select the instance(s), series or studies on the local storage device to be created to the CD-R medium.

Step-2: Select the image archiving.

Step-3: Select the Virtual CD device as a destination.

Step-4: Request to copy to the CD-R.

5.1.3.1.2 Activity-Export Image Files to DVD-R

Operator requests to create File-set(s) onto a new DVD-R. The requests are placed in a queue and are executed in the background.

The operations for “Export Image Files” are described below:

Step-1: Select the instance(s), series or studies on the local storage device to be created to the DVD-R medium.

Step-2: Select the image archiving.

Step-3: Select the DVD device as a destination.

Step-4: Request to copy to the DVD-R.

5.1.3.2 Activity - Import Image Files

Operator requests to retrieve File-set(s) on the CD-R or the DVD-R. The requests are placed in a queue and are executed in the background.

The operations for “Import Image Files” are described below:

Step-1: Select the XA, RF Image(s), series or studies on the medium to be retrieved to the local storage device.

Step-2: Select the data retrieval.

Step-3: Select the local storage device as a destination.

5.1.4 File Meta Information for Implementation Class and Version

The implementation information written to the File Meta Header in each file is:

Table 5.1-1
DICOM IMPLEMENTATION CLASS AND VERSION FOR MEDIA STORAGE

File Meta Information Version	1
Implementation Class UID	1.2.392.200036.9116.31.3
Implementation Version Name	CXVIEW V1

5.2 AE SPECIFICATIONS

5.2.1 Offline-Media AE Specification

The Offline-Media AE provides standard conformance to the DICOM Interchange Option of the Media Storage Service Class. The Application Profiles and roles are listed below:

Table 5.2-1
APPLICATION PROFILES, ACTIVITIES AND ROLES FOR OFFLINE-MEDIA

Application Profiles Supported	Real World Activity	Role	SC Option
STD-GEN-CD, STD-GEN-DVD	Export Image Files	FSC	Interchange
STD-GEN-CD, STD-GEN-DVD	Import Image Files	FSR	Interchange

In case of DVD-R medium, the Application Profiles described above are provisionally adopted.

5.2.1.1 File Meta Information for the Application Entity

The Offline-Media AE does not set the Source Application Entity Title.

5.2.1.2 Real-World Activities

5.2.1.2.1 Activity – Export Image Files

The Offline-Media AE acts as an FSC using the interchange option when requested to export SOP Instances from the local database to a STD-GEN-CD, or a STD-GEN-DVD medium.

5.2.1.2.1.1 Media Storage Application Profiles

The Offline-Media AE supports the STD-GEN-CD and the STD-GEN-DVD Application Profile.

5.2.1.2.1.1.1 Options

The Offline-Media AE supports the SOP Classes and Transfer Syntaxes listed in the Table below for the STD-GEN-CD, the STD-GEN-DVD Application Profile as an FSC.

Table 5.2-2
IODS, SOP CLASSES AND TRANSFER SYNTAXES FOR THE STD-GEN-CD AND THE STD-GEN-DVD PROFILE

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
Basic Directory	1.2.840.10008.1.3.10	Explicit VR Little Endian Uncompressed	1.2.840.10008.1.2.1
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Explicit VR Little Endian Uncompressed	1.2.840.10008.1.2.1
XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Explicit VR Little Endian Uncompressed	1.2.840.10008.1.2.1

5.2.1.2.2 Activity – Import Image Files

The Offline-Media AE acts as an FSR using the interchange option when requested to import SOP Instances from a CD-R or a DVD-R medium to the local database.

5.2.1.2.2.1 Media Storage Application Profiles

The Offline-Media AE supports the STD-GEN-CD and the STD-GEN-DVD Application Profile.

5.2.1.2.2.1.1 Options

The Offline-Media AE supports the SOP Classes and Transfer Syntaxes listed in the Table below for the STD-GEN-CD and the STD-GEN-DVD Application Profile as an FSR.

Table 5.2-3
IODS, SOP CLASSES AND TRANSFER SYNTAXES FOR THE STD-GEN-CD AND THE STD-GEN-DVD PROFILE (FSR)

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
Basic Directory	1.2.840.10008.1.3.10	Explicit VR Little Endian Uncompressed	1.2.840.10008.1.2.1
XA Image Storage	1.2.840.10008.5.1.4.1.1.12.1	Explicit VR Little Endian Uncompressed	1.2.840.10008.1.2.1
XRF Image Storage	1.2.840.10008.5.1.4.1.1.12.2	Explicit VR Little Endian Uncompressed	1.2.840.10008.1.2.1

5.3 MEDIA CONFIGURATION

Not applicable to the Offline-Media AE.

6. SUPPORT OF CHARACTER SETS

This product supports the following character sets:

- ISO-IR 100 (Latin alphabet No.1) Supplementary set of ISO 8859

Character sets ISO-IR 100 can be set to the tags listed in the Table below;

Table 6.1-1
Tag lists for ISO-IR 100

Attribute Name	Tag	VR
Referring Physician's Name	(0008,0090)	PN
Performing Physician's Name	(0008,1050)	PN
Operators' Name	(0008,1070)	PN
Patient's Name	(0010,0010)	PN

7. SECURTIY

This product does not support any specific security measures.

It is assumed that the product is used within a secured environment. It is assumed that a secured environment includes at a minimum:

a. Firewall or router protections to ensure that only approved external hosts have network access to the product.

b. Firewall or router protections to ensure that the product only has network access to approved external hosts and services.

c. Any communication with external hosts and services outside the locally secured environment use appropriate secure network channels (e.g. such as a Virtual Private Network (VPN))

Other network security procedures such as automated intrusion detection may be appropriate in some environments. Additional security features may be established by the local security policy and are beyond the scope of this conformance statement.

8. ANNEXES

8.1 IOD CONTENTS

8.1.1 Created SOP Instances

Table 8.1-1 specifies the attributes of a XA,RF Image transmitted by the Storage SCU AE.

The following tables use a number of abbreviations. The abbreviations used in the “Presence of …” column are:

VNAP	Value Not Always Present (attribute sent zero length if no value is present)
ANAP	Attribute Not Always Present
ALWAYS	Always Present
EMPTY	Attribute is sent without a value

The abbreviations used in the “Source” column:

MWL	the attribute value source Modality Worklist
USER	the attribute value source is from User input
AUTO	the attribute value is generated automatically
CONFIG	the attribute value source is a configurable parameter

8.1.1.1 XA Image IOD

Table 8.1-1
IOD OF CREATED XA IMAGE SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-3	ALWAYS
Study	General Study	Table 8.1-4	ALWAYS
Series	General Series	Table 8.1-5	ALWAYS
Equipment	General Equipment	Table 8.1-6	ALWAYS
Image	General Image	Table 8.1-7	ALWAYS
	Image Pixel	Table 8.1-8	ALWAYS
	Cine	Table 8.1-9	ANAP. Used when Cine run was created
	Multi-frame	Table 8.1-10	ANAP. Used when Cine run was created
	X-ray Image	Table 8.1-11	ALWAYS
	X-ray Acquisition	Table 8.1-12	ALWAYS
	XA Positioner	Table 8.1-13	ALWAYS
	Overlay Plane	Table 8.1-15	ANAP. Used when overlay requested by user in DICOM Store configuration and overlay available.
	VOI LUT	Table 8.1-16	ALWAYS
	SOP Common	Table 8.1-17	ALWAYS

8.1.1.2 RF Image IOD

Table 8.1-2
IOD OF CREATED RF IMAGE SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-3	ALWAYS
Study	General Study	Table 8.1-4	ALWAYS
Series	General Series	Table 8.1-5	ALWAYS
Equipment	General Equipment	Table 8.1-6	ALWAYS
Image	General Image	Table 8.1-7	ALWAYS
	Image Pixel	Table 8.1-8	ALWAYS
	Cine	Table 8.1-9	ANAP. Used when Cine run was created
	Multi-frame	Table 8.1-10	ANAP. Used when Cine run was created
	X-ray Image	Table 8.1-11	ALWAYS
	X-ray Acquisition	Table 8.1-12	ALWAYS
	XRF Positioner	Table 8.1-14	ALWAYS
	Overlay Plane	Table 8.1-15	ANAP. Used when overlay requested by user in DICOM Store configuration and overlay available.
	VOI LUT	Table 8.1-16	ALWAYS
	SOP Common	Table 8.1-18	ALWAYS

8.1.1.3 Common Modules

Table 8.1-3
PATIENT MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient's Name	(0010,0010)	PN	From Modality Worklist or user input. Values supplied via Modality Worklist will be entered as received. Maximum 64 characters.	ALWAYS	MWL/ USER
Patient ID	(0010,0020)	LO	From Modality Worklist or user input. Maximum 64 characters.	ALWAYS	MWL/ USER
Patient's Birth Date	(0010,0030)	DA	From Modality Worklist or user input	VNAP	MWL/ USER
Patient's Sex	(0010,0040)	CS	From Modality Worklist or user input	ALWAYS	MWL/ USER
Patient's Age	(0010,1010)	AS	Calculated from DoB input on base of actual Date	ALWAYS	AUTO
Patient Comments	(0010,4000)	LT	From User Input. Maximum 1024 characters.	ANAP	MWL/ USER

Table 8.1-4
GENERAL STUDY MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Study Instance UID	(0020,000D)	UI	From Modality Worklist or generated by device	ALWAYS	MWL/ AUTO
Study Date	(0008,0020)	DA	<yyyymmdd>	ALWAYS	AUTO
Study Time	(0008,0030)	TM	<hhmmss>	ALWAYS	AUTO
Referring Physician's Name	(0008,0090)	PN	From Modality Worklist	VNAP	MWL/ USER
Study ID	(0020,0010)	SH	Requested Procedure ID from Worklist or User Input	ALWAYS	MWL/ USER
Accession Number	(0008,0050)	SH	From Modality Worklist or user input	VNAP	MWL/ USER
Study Description	(0008,1030)	LO	From Modality Worklist or user input	VNAP	MWL/ USER

Table 8.1-5
GENERAL SERIES MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	XA, RF	ALWAYS	AUTO
Series Instance UID	(0020,000E)	UI	Generated by device	ALWAYS	AUTO
Series Number	(0020,0011)	IS	Generated by device	ALWAYS	AUTO
Series Date	(0008,0021)	DA	<yyyymmdd>	ALWAYS	AUTO
Series Time	(0008,0031)	TM	<hhmmss>	ALWAYS	AUTO
Performing Physician's Name	(0008,1050)	PN	user input or From Modality Worklist	ANAP	USER
Series Description	(0008,103E)	LO	user input	ANAP	USER
Operator's Name	(0008,1070)	PN	Operator field in Study list. Maximum 64 characters.	ANAP	USER
Body Part Examined	(0018,0015)	CS	user input	ANAP	USER

Table 8.1-6
GENERAL EQUIPMENT MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Manufacturer	(0008,0070)	LO	TOSHIBA_MEC	ALWAYS	AUTO
Institution Name	(0008,0080)	LO	From Configuration	ALWAYS	CONFIG
Institution Address	(0008,0081)	ST	From Configuration	VNAP	CONFIG
Station Name	(0008,1010)	SH	From Configuration	ALWAYS	CONFIG
Institution Department Name	(0008,1040)	LO	From Configuration	VNAP	CONFIG
Manufacturer's Model Name	(0008,1090)	LO	SXT-2000A	ALWAYS	AUTO
Software Version(s)	(0018,1020)	LO	From Configuration	VNAP	CONFIG

Table 8.1-7
GENERAL IMAGE MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Instance Number	(0020,0013)	IS	Generated by device	ALWAYS	AUTO
Content Date	(0008,0023)	DA	<yyyymmdd>	ALWAYS	AUTO
Content Time	(0008,0033)	TM	<hhmmss>	ALWAYS	AUTO
Image Type	(0008,0008)	CS	Set to “ORIGINAL\PRIMARY \SINGLE PLANE”.	ALWAYS	AUTO
Acquisition Number	(0020,0012)	IS	Generated by device	ALWAYS	AUTO
Patient Orientation	(0020,0020)	CS		VNAP	EMPTY
Acquisition Date	(0008,0022)	DA	<yyyymmdd>	ALWAYS	AUTO
Acquisition Time	(0008,0032)	TM	<hhmmss>	ALWAYS	AUTO
Quality Control Image	(0028,0300)	CS	Set to “NO” when RF and XA objects stored.	ALWAYS	AUTO
Burned In Annotation	(0028,0301)	CS	Set to “NO” when RF and XA objects stored.	ALWAYS	AUTO

Table 8.1-8
IMAGE PIXEL MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples per Pixel	(0028,0002)	US	1	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS	MONOCHROME2	ALWAYS	AUTO
Rows	(0028,0010)	US	Generated by device	ALWAYS	AUTO
Columns	(0028,0011)	US	Generated by device	ALWAYS	AUTO
Bits Allocated	(0028,0100)	US	Generated by device	ALWAYS	AUTO
Bits Stored	(0028,0101)	US	Generated by device	ALWAYS	AUTO
High Bit	(0028,0102)	US	Generated by device	ALWAYS	AUTO
Pixel Representation	(0028,0103)	US	0	ALWAYS	AUTO
Pixel Spacing	(0028,0030)	DS	Generated by device	ALWAYS	AUTO
Pixel Data	(7FE0,0010)	OB	Generated by device	ALWAYS	AUTO

Table 8.1-9
CINE MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Frame Time	(0018,1063)	DS	Set when Angiography or fluoroscopy recording is performed	ANAP	AUTO
Start Trim	(0008,2142)	IS	Set to the frame rate of during acquisition.	ANAP	AUTO
Stop Trim	(0008,2143)	IS	Set to the frame rate of during acquisition.	ANAP	AUTO
Recommended Display Frame Rate	(0008,2144)	IS	Set to the frame rate of during acquisition.	ANAP	AUTO

Cine Rate	(0018,0040)	IS	Set to the frame rate of during acquisition.	ANAP	AUTO

Table 8.1-10
MULTI FRAME MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Number of Frames	(0028,0008)	IS	Generated by device	ALWAYS	AUTO
Frame Incremental Pointer	(0028,0009)	AT	0x00280008/0x00181063	ALWAYS	AUTO

8.1.1.4 X-RAY Image Modules

Table 8.1-11
X-RAY IMAGE MODULE OF CREATED XA, RF IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Type	(0008,0008)	DS	ORIGINAL\PRIMARY\SINGLE PLANE	ALWAYS	AUTO
Pixel Intensity Relationship	(0028,1040)	DS	LIN	ALWAYS	AUTO
Samples per Pixel	(0028,0002)	DS	1	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	DS	MONOCHROME2	ALWAYS	AUTO
Bits Allocated	(0028,0100)	US	Generated by device	ALWAYS	AUTO
Bits Stored	(0028,0101)	US	Generated by device	ALWAYS	AUTO
High Bit	(0028,0102)	US	Generated by device	ALWAYS	AUTO
Pixel Representation	(0028,0103)	US	0	ALWAYS	AUTO
Calibration Image	(0050,0004)	CS	NO	ANAP	AUTO

Table 8.1-12
X-RAY ACQUISITION MODULE OF CREATED XA, RF IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
KVP	(0018,0060)	DS	Generated by device	ALWAYS	AUTO
Radiation Setting	(0018,1155)	CS	Generated by device	ALWAYS	AUTO
X-Ray Tube Current	(0018,1151)	IS	Generated by device	ALWAYS	AUTO
X-Ray Tube Current in µAs	(0018,8151)	DS	Generated by device	ALWAYS	AUTO
Exposure Time	(0018,1150)	IS	Generated by device	ALWAYS	AUTO
Exposure Time in µAs	(0018,8150)	DS	Generated by device	ALWAYS	AUTO
Exposure	(0018,1152)	IS	Generated by device	ALWAYS	AUTO
Exposure in µAs	(0018,1153)	IS	Generated by device	ALWAYS	AUTO
Grid	(0018,1166)	CS	Generated by device	ALWAYS	AUTO
Imager Pixel Spacing	(0018,1164)	DS	Generated by device	ALWAYS	AUTO

Image Area Dose Product	(0018,115E)	DS	Generated by device	ANAP	AUTO

Table 8.1-13
POSITIONER MODULE OF CREATED XA IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Distance Source to Detector	(0018,1110)	DS	Generated by device	ALWAYS	AUTO
Estimated Radiographic Magnification Factor	(0018,1114)	DS	Generated by device	VNAP	AUTO
Positioner Motion	(0018,1500)	CS	STATIC/DYNAMIC	ALWAYS	AUTO
Positioner Primary Angle	(0018,1510)	DS		VNAP	EMPTY
Positioner Secondary Angle	(0018,1511)	DS		VNAP	EMPTY
Positioner Primary Angle Increment	(0018,1520)	DS		VNAP	EMPTY
Positioner Secondary Angle Increment	(0018,1521)	DS		VNAP	EMPTY

Table 8.1-14
POSITIONER MODULE OF CREATED XRF IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Distance Source to Detector	(0018,1110)	DS	Generated by device	ALWAYS	AUTO
Estimated Radiographic Magnification Factor	(0018,1114)	DS	Generated by device	ALWAYS	AUTO

Table 8.1-15
OVERLAY MODULE OF CREATED XA, RF IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Overlay Rows	(60xx,0010)	US	Generated by device	ANAP	AUTO
Overlay Columns	(60xx,0011)	US	Generated by device	ANAP	AUTO
Overlay Type	(60xx,0040)	CS	Value set to “G “.	ANAP	AUTO
Overlay Origin	(60xx,0050)	SS	1,1	ANAP	AUTO
Overlay Bits Allocated	(60xx,0100)	US	1	ANAP	AUTO
Overlay Bit Position	(60xx,0102)	US	0	ANAP	AUTO
Overlay Data	(60xx,3000)	OB		ANAP	AUTO

*The 6000 group overlay is the Patient information. The Patient information setup screen controls what is displayed and is user configurable.
The 6002 group overlay is the Annotation information markers, comments, and measurements. These overlays are only applicable to the XA and RF objects.
The device does not support multi-frame overlays.

Table 8.1-16
VOI/LUT MODULE OF CREATED XA, RF IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Window Center	(0028,1050)	DS	Generated by device	ANAP	AUTO
Window Width	(0028,1051)	DS	Generated by device	ANAP	AUTO

Table 8.1-17
SOP COMMON MODULE OF CREATED XA IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character set	(0008,0005)	CS	Refer to Section 6	ANAP	CONFIG
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.12.1	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	Generated by device	ALWAYS	AUTO

Table 8.1-18
SOP COMMON MODULE OF CREATED RF IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character set	(0008,0005)	CS	Refer to Section 6	ANAP	CONFIG
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.12.2	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	Generated by device	ALWAYS	AUTO

8.1.2 Usage of Attributes from received IOD's

No SOP Class specific fields are required.

8.1.3 Attribute Mapping

The tables below show the relationships between attributes received via Modality Worklist, stored in acquired
images.
The cell content conventions should be read as follows:

Copy from: <DICOM attribute>: The source as specified in the referenced DICOM attribute will be used instead of using the DICOM attribute of the same row as the source.

Table 8.1-19
ATTRIBUTE MAPPING BETWEEN MODALITY WORKLIST, IMAGE

Attribute Name	Tag	Modality Worklist	Image IOD
Scheduled Performing Physician's Name	(0040,0006)	Source	-
Requested Procedure ID	(0040,1001)	Source	-
Performing Physician's Name	(0008,1050)	-	Copy from: Scheduled Performing Physician's Name (0040,0006).
Study ID	(0020,0010)	-	Copy from: Requested Procedure ID (0040,1001).

8.1.4 Coerced/Modified Fields

Not applicable to this product

8.2 DATA DICTIONARY OF PRIVATE ATTRIBUTES

Not applicable.

8.3 CONTROLLED TERMINOLOGY AND TEMPLATES

Not applicable to this product

8.4 GRAYSCALE IMAGE CONSISTENCY

Not applicable to this product

8.5 STANDARD EXTENDED/SPECIALIZED/PRIVATE SOP CLASSES

Not applicable to this product

8.6 PRIVATE TRANSFER SYNTAXES

Not applicable to this product

8.7 CREATE A NEW SOP INSTANCE UID

If any tag(s) are modified, issue a new SOP Instance UID.

E