

TOSHIBA

**DICOM CONFORMANCE STATEMENT
FOR
DIAGNOSTIC ULTRASOUND SYSTEM**

***Viamo*TM
MODEL SSA-640A V2.2.000**

TOSHIBA MEDICAL SYSTEMS CORPORATION

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1. CONFORMANCE STATEMENT OVERVIEW

Table 1-1 provides an overview of the network services supported by *Viamo™*.

**Table 1-1
NETWORK SERVICES**

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Transfer		
Secondary Capture Image Storage	Yes	No
Ultrasound Image Storage	Yes	No
Ultrasound Multi-frame Image Storage	Yes	No
Storage Commitment		
Storage Commitment Push Model	Yes	No
Workflow Management		
Modality Worklist Information Model – Find	Yes	No
Modality Performed Procedure Step	Yes	No
Print Management		
Basic Grayscale Print Management	Yes	No
Basic Color Print Management	Yes	No

Table 1-2 provides an overview of the Media Storage Application Profiles supported by *Viamo™*.

**Table 1-2
MEDIA SERVICES**

Media Storage Application Profile	Write Files (FSC)	Read Files (FSR)
USB Media		
General Purpose USB Media	Yes	No

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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
ASCE	Association Control Service Element
DIMSE	DICOM Message Service Element
FSC	File-Set Creator
FSR	File-Set Reader
IE	Information Entity
IOD	Information Object Definition
ISO	International Standard Organization
MPPS	Modality Performed Procedure Step
MWM	Modality Worklist Management
PDU	Protocol Data Unit
SCU	Service Class User (DICOM client)
SCP	Service Class Provider (DICOM server)
SOP	Service-Object Pair
UID	Unique Identifier

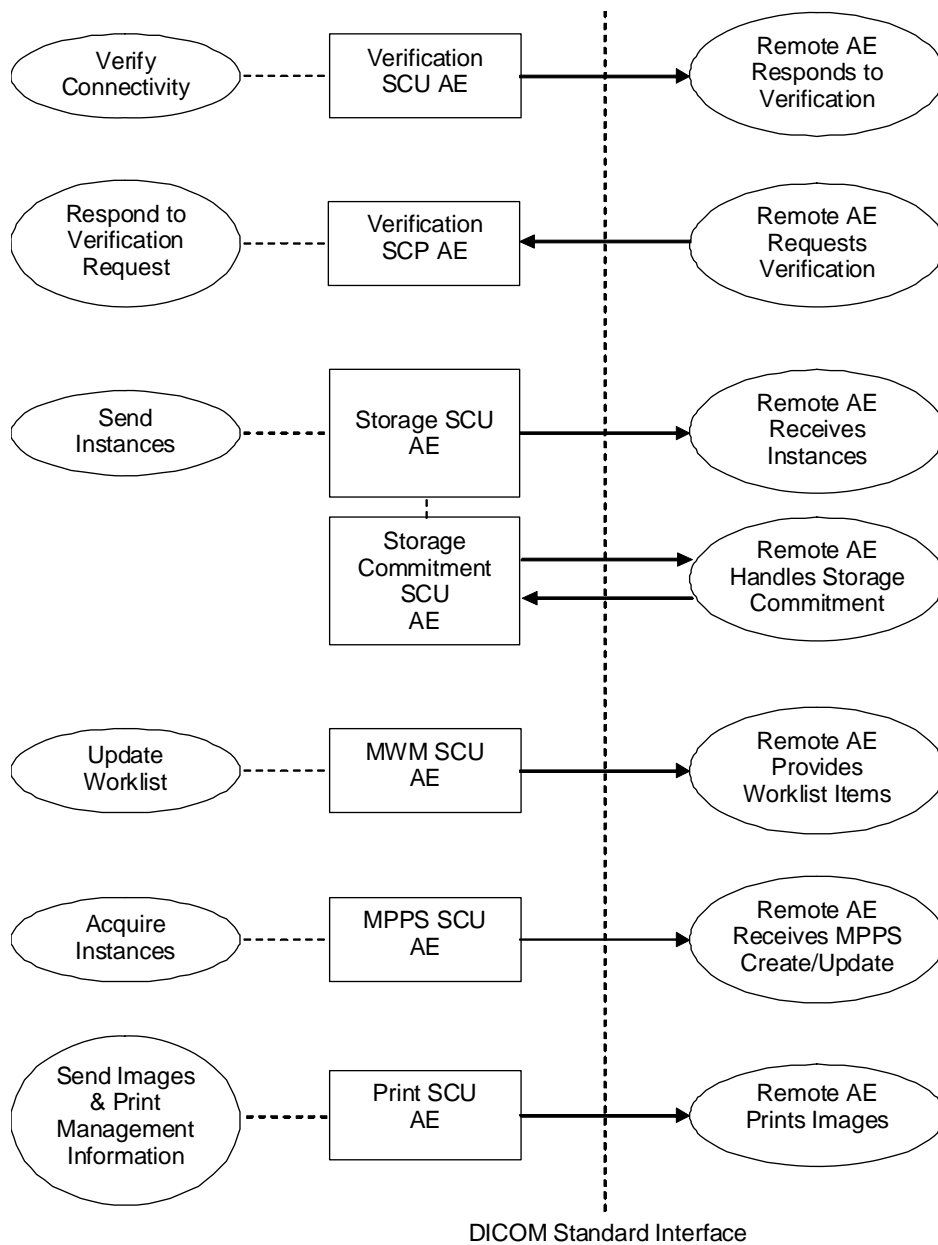
3.4 REFERENCES

[DICOM] Digital Imaging and Communications in Medicine (DICOM), NEMA PS 3.1-3.18, 2007

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 Service Tool.
- 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 instances to a remote AE. It is associated with the local real-world activity “Send Instances”. “Send Instances” is performed upon user request for specific instances selected. If the remote AE is configured as a Storage Commitment SCP AE, the Storage SCU AE will send a storage commitment request to the Storage Commitment SCU AE.
- 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 manually or automatically.
- The MPPS SCU AE sends MPPS information to a remote AE. It is associated with the local real-world activity “Acquire Instances”. When the “Acquire Instances” is performed the MPPS SCU AE creates and updates Modality Performed Procedure Step instances managed by a remote AE. Acquisition of instances will result in automated creation of an MPPS instance. Completion of the MPPS is performed as the result of an operator action.
- 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 a virtual film sheet 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 Service Tool.

4.1.2.2 Functional Definition of Verification SCP AE

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

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 retry this send-job automatically.

4.1.2.4 Functional Definition of Storage Commitment SCU AE

Receiving the storage commitment request from the Storage SCU AE, the Storage Commitment SCU AE will request Storage Commitment and if a commitment is successfully obtained will record this information in the local database.

4.1.2.5 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.

4.1.2.6 Functional Definition of MPPS SCU AE

The MPPS SCU AE performs the creation of an MPPS Instance automatically when the user selects and starts a worklist item. Further updates on the MPPS data can be performed when the user completes the acquisition.

4.1.2.7 Functional Definition of Print SCU 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 sheet 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

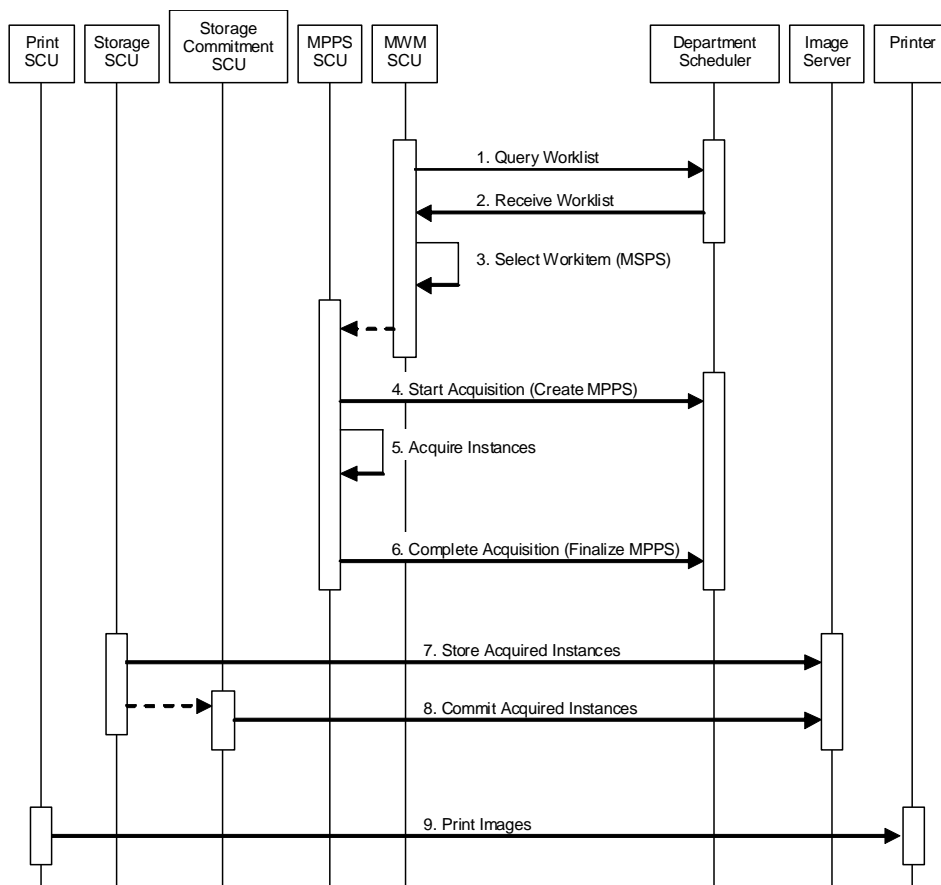


Figure 4.1-2
SEQUENCING CONSTRAINTS

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	1.2.392.200036.9116.6.17.1000.1
Implementation Version Name	TM_VIAMO_1.0

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.

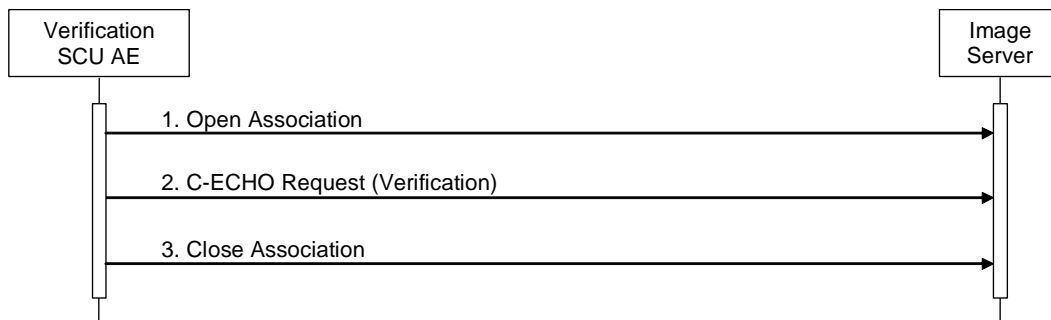


Figure 4.2-1
SEQUENCING OF ACTIVITY – VERIFY CONNECTIVITY

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
Timeout	The association is aborted and the failure reason is logged and reported to the user.
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	Unlimited
---	-----------

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	1.2.392.200036.9116.6.17.1000.1
Implementation Version Name	TM_VIAMO_1.0

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).

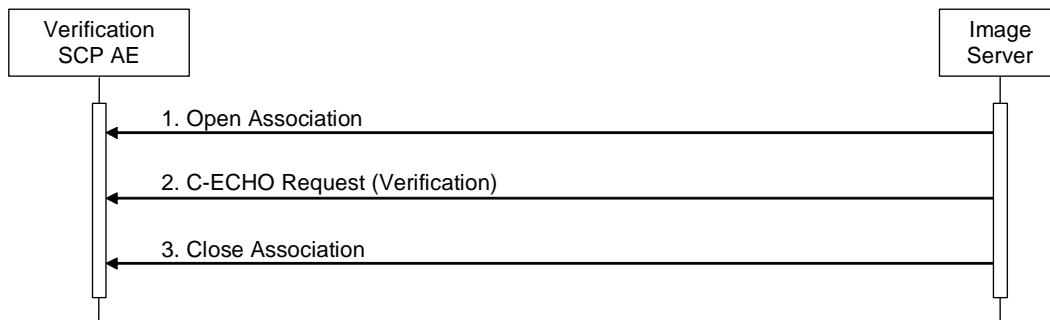


Figure 4.2-2
SEQUENCING OF ACTIVITY – RESPOND TO VERIFICATION REQUEST

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
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Yes	No
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1		
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1		

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 initiates one association at a time for a transfer request.

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	1.2.392.200036.9116.6.17.1000.1
Implementation Version Name	TM_VIAMO_1.0

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 image transfer fails, the Storage SCU AE will retry this send-job automatically.

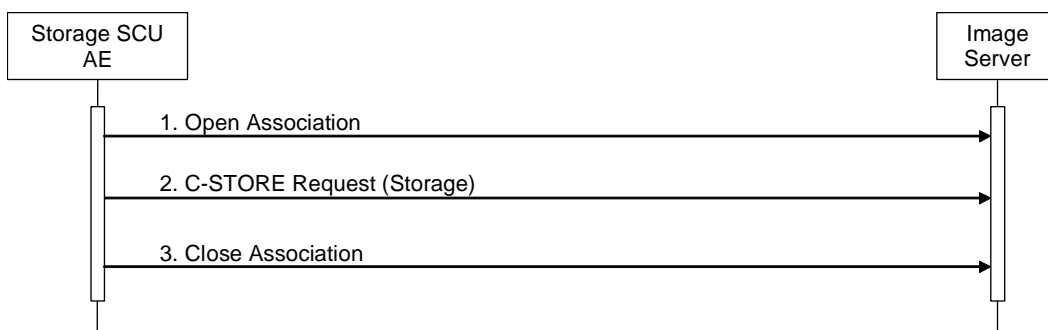


Figure 4.2-3
SEQUENCING OF ACTIVITY – SEND IMAGES

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 will propose 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		
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		

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	A7xx	The association is aborted 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	Data Set does not match SOP Class	A9xx	
Error	Cannot Understand	Cxxx	
Warning	Coercion of Data Elements	B000	
Warning	Data Set does not match SOP Class	B007	
Warning	Elements Discarded	B006	
*	*	Any other status code	

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
Timeout	The association is aborted and 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.
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 retry this send-job automatically. The number of retries is configurable.

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 Storage Commitment SCU AE Specification

4.2.4.1 SOP Classes

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

Table 4.2-24
SOP CLASSES FOR THE STORAGE COMMITMENT SCU AE

SOP Class Name	SOP Class UID	SCU	SCP
Storage Commitment Push Model	1.2.840.10008.1.20.1	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 4.2-25
DICOM APPLICATION CONTEXT FOR THE STORAGE COMMITMENT SCU AE

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

4.2.4.2.2 Number of Associations

The Storage Commitment SCU AE initiates one association at a time.

Table 4.2-26
NUMBER OF ASSOCIATIONS INITIATED FOR THE STORAGE COMMITMENT SCU AE

Maximum number of simultaneous associations	1
---	---

The Storage Commitment SCU AE accepts one association to receive N-EVENT-REPORT notification for the Storage Commitment Push Model SOP Class.

Table 4.2-27
NUMBER OF ASSOCIATIONS ACCEPTED FOR THE STORAGE COMMITMENT SCU AE

Maximum number of simultaneous associations	1
---	---

4.2.4.2.3 Asynchronous Nature

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

Table 4.2-28
ASYNCHRONOUS NATURE FOR THE STORAGE COMMITMENT SCU AE

Maximum number of outstanding asynchronous transactions	1
---	---

4.2.4.2.4 Implementation Identifying Information

The implementation information for the Storage Commitment SCU AE is:

Table 4.2-29
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE STORAGE COMMITMENT SCU AE

Implementation Class UID	1.2.392.200036.9116.6.17.1000.1
Implementation Version Name	TM_VIAMO_1.0

4.2.4.3 Association Initiation Policy

4.2.4.3.1 Activity – Commit Sent Images

4.2.4.3.1.1 Description and Sequencing of Activities

If the remote AE is configured as a Storage Commitment SCP AE, the Storage Commitment SCU AE will, after all images have been sent, transmit a single storage commitment request (N-ACTION). Upon receiving the N-ACTION response the Storage Commitment SCU AE will release the association. The notification of storage commitment (N-EVENT-REPORT) will be received over a separate association.

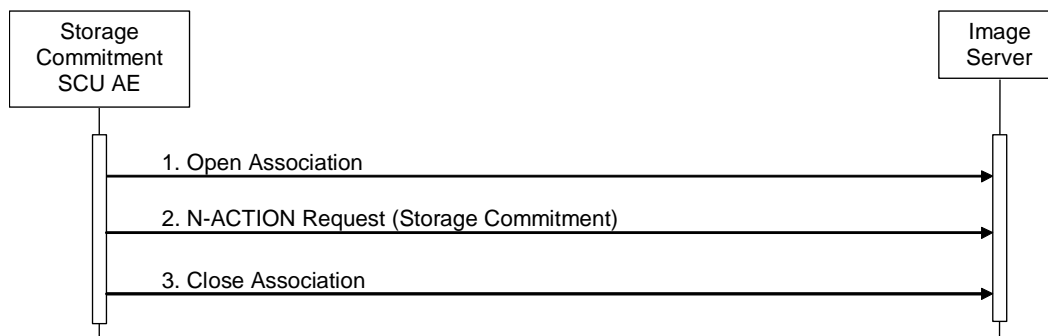


Figure 4.2-4
SEQUENCING OF ACTIVITY – COMMIT SENT IMAGES

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

1. The Storage Commitment SCU AE opens an association with the Image Server.
2. A storage commitment request (N-ACTION) is transmitted to the Image Server to obtain storage commitment of previously transmitted images. The Image Server replies with an N-ACTION response indicating the request has been received and is being processed.
3. The Storage Commitment SCU AE closes the association with the Image Server.

Note: The N-EVENT-REPORT will be sent over a separate association initiated by the Image Server. (see Section 4.2.4.4.1)

4.2.4.3.1.2 Proposed Presentation Contexts

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

**Table 4.2-30
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY COMMIT SENT IMAGES**

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Storage Commitment Push Model	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

A Presentation Context for the Storage Commitment Push Model will only be proposed if the remote AE is configured as a Storage Commitment SCP AE.

4.2.4.3.1.3 SOP Specific Conformance for Storage Commitment SOP Class

4.2.4.3.1.3.1 Storage Commitment Operations (N-ACTION)

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

The Storage Commitment SCU AE will request storage commitment for instances of the Storage SOP Classes if the remote AE is configured as a Storage Commitment SCP AE and a presentation context for the Storage Commitment Push Model has been accepted.

The behavior of Storage SCU Commitment AE when encountering status codes in an N-ACTION response is summarized in the table below:

**Table 4.2-31
STORAGE COMMITMENT N-ACTION RESPONSE STATUS HANDLING BEHAVIOR**

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The request for storage commitment is considered successfully sent. A timer is started which will expire if no N-EVENT-REPORT for the Transaction UID is received within a configurable timeout period.
*	*	Any other status code	The association is aborted and the request for storage commitment is marked as failed.

The behavior of Storage Commitment AE during communication failure is summarized in the table below:

**Table 4.2-32
STORAGE COMMITMENT COMMUNICATION FAILURE BEHAVIOR**

Exception	Behavior
Timeout	The association is aborted and 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.
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.

4.2.4.4 Association Acceptance Policy

4.2.4.4.1 Activity – Receive Storage Commitment Response

4.2.4.4.1.1 Description and Sequencing of Activities

The Storage Commitment SCU AE will accept associations in order to receive responses to a storage commitment request.

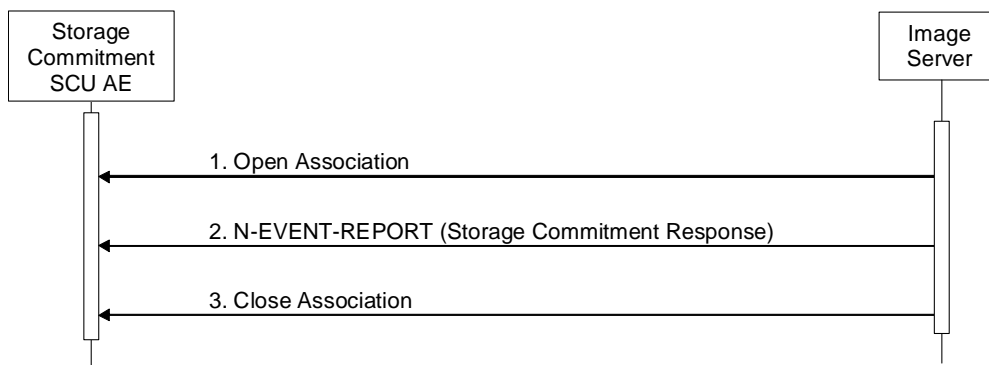


Figure 4.2-5
SEQUENCING OF ACTIVITY - RECEIVE STORAGE COMMITMENT RESPONSE

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

1. The Image Server opens an association with the Storage Commitment SCU AE.
2. The Image Server sends an N-EVENT-REPORT request notifying the Storage SCU AE of the status of a previous storage commitment request. The Storage SCU AE replies with an N-EVENT-REPORT response confirming receipt.
3. The Image Server closes the association with the Storage Commitment SCU AE.

The Storage Commitment SCU AE may reject association attempts as shown in the Table 4.2-14.

4.2.4.4.1.2 Accepted Presentation Contexts

The Storage Commitment SCU AE will accept Presentation Contexts shown in the table below.

**Table 4.2-33
ACCEPTABLE PRESENTATION CONTEXTS FOR
ACTIVITY RECEIVE STORAGE COMMITMENT RESPONSE**

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Storage Commitment Push Model	1.2.840.10008.1.20.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.4.4.1.3 SOP Specific Conformance for Storage Commitment SOP Class

4.2.4.4.1.3.1 Storage Commitment Notifications (N-EVENT-REPORT)

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

The behavior of Storage Commitment SCU AE when receiving Event Types within the N-EVENT-REPORT is summarized in the table below.

**Table 4.2-34
STORAGE COMMITMENT N-EVENT-REPORT BEHAVIOUR**

Event Type Name	Event Type ID	Behavior
Storage Commitment Request Successful	1	The Storage Commitment SCU AE permits the operator(s) to delete the Referenced SOP Instances under Referenced SOP Sequence (0018,1199).
Storage Commitment Request Complete – Failures Exist	2	The Storage Commitment SCU AE requests the Storage SCU AE to send the Referenced SOP Instances under Failed SOP Sequence (0018,1198).

The reasons for returning specific status codes in an N-EVENT-REPORT response are summarized in the table below.

**Table 4.2-35
STORAGE COMMITMENT N-EVENT-REPORT RESPONSE STATUS REASONS**

Service Status	Further Meaning	Status Code	Reasons
Success	Success	0000	The storage commitment result has been successfully received.
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 MWM SCU AE Specification

4.2.5.1 SOP Classes

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

Table 4.2-36
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

4.2.5.2 Association Policies

4.2.5.2.1 General

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

Table 4.2-37
DICOM APPLICATION CONTEXT FOR THE MWM SCU AE

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

4.2.5.2.2 Number of Associations

The MWM SCU AE initiates one association at a time for a worklist request.

Table 4.2-38
NUMBER OF ASSOCIATIONS INITIATED FOR THE MWM SCU AE

Maximum number of simultaneous associations	1
---	---

4.2.5.2.3 Asynchronous Nature

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

Table 4.2-39
ASYNCHRONOUS NATURE FOR THE MWM SCU AE

Maximum number of outstanding asynchronous transactions	1
---	---

4.2.5.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-40
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE MWM SCU AE

Implementation Class UID	1.2.392.200036.9116.6.17.1000.1
Implementation Version Name	TM_VIAMO_1.0

4.2.5.3 Association Initiation Policy

4.2.5.3.1 Activity – Update Worklist

4.2.5.3.1.1 Description and Sequencing of Activities

The request for an “Update Worklist” is initiated by user interaction, i.e. pressing the buttons “Get Worklist” or automatically at the time of patient registration.

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 add or 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.

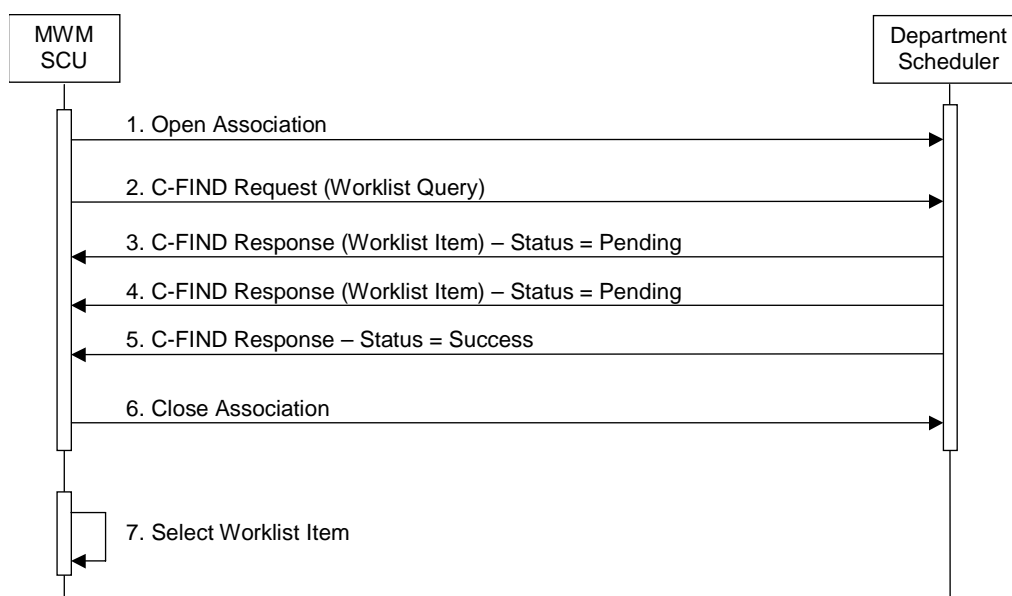


Figure 4.2-6
SEQUENCING OF ACTIVITY – UPDATE WORKLIST

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.
7. The user selects a worklist item from the Worklist and prepares to acquire new instances.

4.2.5.3.1.2 Proposed Presentation Contexts

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

**Table 4.2-41
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	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.5.3.1.3 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 4.2-42
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.
*	*	Any other status code	The association is aborted using A-ABORT and the status meaning is logged.

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

**Table 4.2-43
MODALITY WORKLIST COMMUNICATION FAILURE BEHAVIOR**

Exception	Behavior
Timeout	The association is aborted using A-ABORT and the reason is logged.
Unsupported character sets	
Association aborted by the SCP or network layers	The reason is logged.

Acquired instances will always use the Study Instance UID specified for the Scheduled Procedure Step (if available). If an acquisition is unscheduled, a Study Instance UID will be generated locally.

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

Table 4.2-44
WORKLIST REQUEST IDENTIFIER

Module Name Attribute Name	Tag	VR	M	R	D	IOD
SOP Common						
Specific Character Set	(0008,0005)	CS				X
Scheduled Procedure Step						
Scheduled Procedure Step Sequence	(0040,0100)	SQ				
>Modality	(0008,0060)	CS	S	X	X	X
>Requested Contrast Agent	(0032,1070)	LO		X		
>Scheduled Station AE Title	(0040,0001)	AE	S	X	X	
>Scheduled Procedure Step Start Date	(0040,0002)	DA	S/R	X	X	
>Scheduled Procedure Step Start Time	(0040,0003)	TM	S/R	X	X	
>Scheduled Performing Physician's Name	(0040,0006)	PN		X	X	
>Scheduled Procedure Step Description	(0040,0007)	LO		X	X	
>Scheduled Station Name	(0040,0010)	SH		X		
>Scheduled Procedure Step Location	(0040,0011)	SH		X		
>Scheduled Protocol Code Sequence	(0040,0008)	SQ				
>>Code Value	(0008,0100)	SH		X	X	
>>Coding Scheme Designator	(0008,0102)	SH		X	X	
>>Coding Scheme Version	(0008,0103)	SH		X		
>>Code Meaning	(0008,0104)	LO		X	X	
>Pre-Medication	(0040,0012)	LO		X		
>Scheduled Procedure Step Status	(0040,0020)	CS		X		
>Scheduled Procedure Step ID	(0040,0009)	SH		X	X	
Requested Procedure						
Referenced Study Sequence	(0008,1110)	SQ				
>Referenced SOP Class UID	(0008,1150)	UI		X		
>Referenced SOP Instance UID	(0008,1155)	UI		X		
Study Instance UID	(0020,000D)	UI		X		X
Requested Procedure Description	(0032,1060)	LO		X	X	
Requested Procedure Code Sequence	(0032,1064)	SQ				
>Code Value	(0008,0100)	SH		X	X	
>Coding Scheme Designator	(0008,0102)	SH		X	X	
>Coding Scheme Version	(0008,0103)	SH		X		
>Code Meaning	(0008,0104)	LO		X	X	
Requested Procedure ID	(0040,1001)	SH	S	X	X	
Requested Procedure Priority	(0040,1003)	SH		X		

Patient Transport Arrangements	(0040,1004)	LO		X		
Imaging Service Request						
Accession Number	(0008,0050)	SH	S	X	X	X
Referring Physician's Name	(0008,0090)	PN		X	X	X
Requesting Physician	(0032,1032)	PN		X	X	
Requesting Service	(0032,1033)	LO		X		
Reason for the Imaging Service Request	(0040,2001)	LO		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)	PM		X		
Order Enterer's Location	(0040,2009)	SH		X		
Order Callback Phone Number	(0040,2010)	SH		X		
Placer Order Number	(0040,2016)	LO		X		
Filler Order Number	(0040,2017)	LO		X		
Imaging Service Request Comments	(0040,2400)	LT		X		
Visit Identification						
Institution Name	(0008,0080)	LO		X		
Institution Address	(0008,0081)	LO		X		
Institution Code Sequence	(0008,0082)	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		
Admission ID	(0038,0010)	LO		X		
Issuer of Admission ID	(0038,0011)	LO		X		
Visit Status						
Visit Status ID	(0038,0008)	CS		X		
Current Patient Location	(0038,0300)	LO		X		
Patient's Institution Residence	(0038,0400)	LO		X		
Visit Comments	(0038,4000)	LT		X		
Visit Relationship						
Referenced Patient Sequence	(0008,1120)	SQ				
>Referenced SOP Class UID	(0008,1150)	UI		X		
>Referenced SOP Instance UID	(0008,1155)	UI		X		
Visit Admission						
Referring Physician's Name	(0008,0090)	PN		X	X	X
Referring Physician's Address	(0008,0092)	ST		X		
Referring Physician's Telephone Numbers	(0008,0094)	SH		X		
Admitting Diagnoses Description	(0008,1080)	LO		X		
Admitting Diagnosis Code Sequence	(0008,1084)			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		
Route of Admissions	(0038,0016)	DA		X		
Admitting Date	(0038,0020)	DA		X		
Admitting Time	(0038,0021)	TM		X		
Patient Identification						
Patient's Name	(0010,0010)	PN	W	X	X	X
Patient ID	(0010,0020)	LO	S	X	X	X
Patient Demographic						
Patient's Birth Date	(0010,0030)	DA		X	X	X
Patient's Birth Time	(0010,0032)	TM		X		
Patient's Sex	(0010,0040)	CS		X	X	X
Patient's Insurance Plan Code Sequence	(0010,0050)	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		
Patient's Age	(0010,1010)	AS		X	X	X
Patient's Size	(0010,1020)	DS		X	X	X
Patient's Weight	(0010,1030)	DS		X	X	X
Patient's Address	(0010,1040)	LO		X		
Military Rank	(0010,1080)	LO		X		
Branch of Service	(0010,1081)	LO		X		
Country of Residence	(0010,2150)	LO		X		
Region of Residence	(0010,2152)	LO		X		
Patient's Telephone Numbers	(0010,2154)	SH		X		
Occupation	(0010,2180)	SH		X		
Patient's Religious Preference	(0010,21F0)	LO		X		
Patient Comments	(0010,4000)	LT		X	X	X
Confidentiality constraint on patient data	(0040,3001)	LO		X		
Patient Medical						
Medical Alerts	(0010,2000)	LO		X	X	
Allergies	(0010,2110)	LO		X	X	
Smoking Status	(0010,21A0)	CS		X	X	
Additional Patient History	(0010,21B0)	LT		X	X	
Pregnancy Status	(0010,21C0)	US		X	X	
Last Menstrual Date	(0010,21D0)	DA		X	X	
Special Needs	(0038,0050)	LO		X	X	
Patient State	(0038,0500)	LO		X	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. S: Single Value Matching R: Range Matching W: Wild Card Matching
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.
D:	Displayed keys. An "X" indicates that this worklist attribute is displayed to the user during a patient registration. For example, Patient Name will be displayed when registering the patient prior to an examination.
IOD:	An "X" indicates that this worklist attribute is included into all Object Instances created during performance of the related Procedure Step.

Notes: Specific Character Set (0008,0005) will be created if an extended or replacement character set is used in the matching keys.

Scheduled Performing Physician's Name (0040,0006) will be copied into Performing Physician's Name (0008,1050).

Scheduled Procedure Step Description (0040,0007), or Requested Procedure Description (0032,1060) can be displayed at *Exam Type* when matching the following exam types: Abdomen, Kidney, Tests, Thyroid, Other, TCD, GYN, Breast, Endo Vaginal, OB, Fetal Heart, Neo-General, Neo-Head, Neo-Hip, Adult Heart, Pediatric Heart, Coronary, Carotid, PV Arterial, PV Venous, Digits, and MSK. They can be also configured to correspond to user-defined terms, and it is selectable where to set those terms.

4.2.5.4 Association Acceptance Policy

The MWM SCU AE does not accept associations.

4.2.6 MPPS SCU AE Specification

4.2.6.1 SOP Classes

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

Table 4.2-45
SOP CLASSES FOR THE MPPS SCU AE

SOP Class Name	SOP Class UID	SCU	SCP
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Yes	No

4.2.6.2 Association Policies

4.2.6.2.1 General

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

Table 4.2-46
DICOM APPLICATION CONTEXT FOR THE MPPS SCU AE

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

4.2.6.2.2 Number of Associations

The MPPS SCU AE initiates one association at a time.

Table 4.2-47
NUMBER OF ASSOCIATIONS INITIATED FOR THE MPPS SCU AE

Maximum number of simultaneous associations	1
---	---

4.2.6.2.3 Asynchronous Nature

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

Table 4.2-48
ASYNCHRONOUS NATURE FOR THE MPPS SCU AE

Maximum number of outstanding asynchronous transactions	1
---	---

4.2.6.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-49
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE MPPS SCU AE

Implementation Class UID	1.2.392.200036.9116.6.17.1000.1
Implementation Version Name	TM_VIAMO_1.0

4.2.6.3 Association Initiation Policy

4.2.6.3.1 Activity – Acquire Instances

4.2.6.3.1.1 Description and Sequencing of Activities

The MPPS SCU AE performs the creation of an MPPS instance automatically when the user selects and starts a worklist item. Further updates on the MPPS data can be performed when the user completes the acquisition.

The MPPS SCU AE will initiate an association to issue an:

- N-CREATE request according to the CREATE Modality Performed Procedure Step SOP Instance operation, or an:
- N-SET request to update the contents and state of the MPPS according to the SET Modality Performed Procedure Step Information operation.

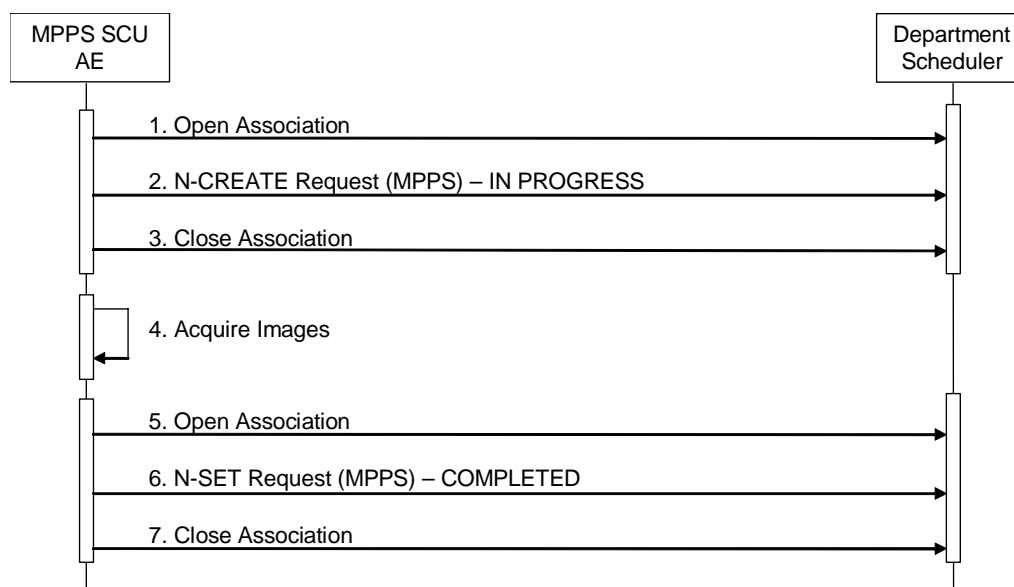


Figure 4.2-7
SEQUENCING OF ACTIVITY – ACQUIRE INSTANCES

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

1. The MPPS SCU AE opens an association with the Department Scheduler
2. The MPPS SCU AE sends an N-CREATE request to the Department Scheduler to create an MPPS instance with status of “IN PROGRESS” and create all necessary attributes. The Department Scheduler acknowledges the MPPS creation with an N-CREATE response (status success).
3. The MPPS SCU AE closes the association with the Department Scheduler.
4. All instances are acquired and stored in the local database.
5. The MPPS SCU AE opens an association with the Department Scheduler.
6. The MPPS SCU AE sends an N-SET request to the Department Scheduler to update the MPPS instance with status of “COMPLETED” and set all necessary attributes. The Department Scheduler acknowledges the MPPS update with an N-SET response (status success).
7. The MPPS SCU AE closes the association with the Department Scheduler.

4.2.6.3.1.2 Proposed Presentation Contexts

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

**Table 4.2-50
PROPOSED PRESENTATION CONTEXTS FOR REAL-WORLD ACTIVITY ACQUIRE INSTANCES**

Presentation Context Table					
Abstract Syntax		Transfer Syntax		Role	Ext. Neg.
Name	UID	Name List	UID List		
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.6.3.1.3 SOP Specific Conformance for MPPS SOP Class

The MPPS SCU AE provides standard conformance to the Modality Performed Procedure Step SOP Class as an SCU.

The behavior of the MPPS SCU AE when encountering status codes in an MPPS N-CREATE or N-SET response is summarized in the table below.

**Table 4.2-51
MPPS N-CREATE / N-SET 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 and the MPPS is marked as failed. The status meaning is logged and reported to the user.

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

**Table 4.2-52
MPPS COMMUNICATION FAILURE BEHAVIOR**

Exception	Behavior
Timeout	The association is aborted and MPPS is marked as failed. The reason is logged and reported to the user.
Association aborted by the SCP or network layers	The MPPS is marked as failed. The reason is logged and reported to the user.

The table below provides a description of the MPPS N-CREATE and N-SET request identifiers sent by the MPPS SCU AE. Empty cells in the N-CREATE and N-SET columns indicate that the attribute is not sent. An "x" indicates that an appropriate value will be sent. A "Zero length" attribute will be sent with zero length.

**Table 4.2-53
MPPS N-CREATE / N-SET REQUEST IDENTIFIER**

Attribute Name	Tag	VR	N-CREATE	N-SET
Specific Character Set	(0008,0005)	CS	Created, if an extended or replacement character set is used.	
Performed Procedure Step Relationship				
Scheduled Step Attributes Sequence	(0040,0270)	SQ	Always set	
>Study Instance UID	(0020,000D)	UI	From Modality Worklist	
>Referenced Study Sequence	(0008,1110)	SQ	Zero length	
>Accession Number	(0008,0050)	SH	From Modality Worklist	
>Requested Procedure ID	(0040,1001)	SH	From Modality Worklist	
>Requested Procedure Description	(0032,1060)	LO	From Modality Worklist	
>Scheduled Procedure Step ID	(0040,0009)	SH	From Modality Worklist	
>Scheduled Procedure Step Description	(0040,0007)	LO	From Modality Worklist	
>Scheduled Protocol Code Sequence	(0040,0008)	SQ	Zero length	
Patient's Name	(0010,0010)	PN	From Modality Worklist or user input	
Patient ID	(0010,0020)	LO	From Modality Worklist or user input	
Patient's Birth Date	(0010,0030)	DA	From Modality Worklist or user input	
Patient's Sex	(0010,0040)	CS	From Modality Worklist or user input	
Referenced Patient Sequence	(0008,1120)	SQ	Zero length	
Performed Procedure Step Information				
Performed Procedure Step ID	(0040,0253)	SH	X	
Performed Station AE Title	(0040,0241)	AE	MPPS AE Title	
Performed Station Name	(0040,0242)	SH	From configuration	
Performed Location	(0040,0243)	SH	Zero length	
Performed Procedure Step Start Date	(0040,0244)	DA	Actual start date	
Performed Procedure Step Start Time	(0040,0245)	TM	Actual start time	
Performed Procedure Step Status	(0040,0252)	CS	IN PROGRESS	COMPLETED
Performed Procedure Step Description	(0040,0254)	LO	X	X
Performed Procedure Type Description	(0040,0255)	LO	Zero length	
Procedure Code Sequence	(0008,1032)	SQ	Zero or more items	Zero or more items
Performed Procedure Step End Date	(0040,0250)	DA	Zero length	Actual end date
Performed Procedure Step End Time	(0040,0251)	TM	Zero length	Actual end time
Image Acquisition Results				
Modality	(0008,0060)	CS	US	
Study ID	(0020,0010)	SH	X	
Performed Protocol Code Sequence	(0040,0260)	SQ	From Modality Worklist	X
Performed Series Sequence	(0040,0340)	SQ	One or more items	One or more items

>Performing Physician's Name	(0008,1050)	PN	From Modality Worklist or user input	X
>Protocol Name	(0018,1030)	LO	X	X
>Operator's Name	(0008,1070)	PN	Zero length	Zero length
>Series Instance UID	(0020,000E)	UI	X	X
>Series Description	(0008,103E)	LO	Zero length	Zero length
>Retrieve AE Title	(0008,0054)	AE	Zero length	Zero length
>Referenced Image Sequence	(0008,1140)	SQ	Zero length	One or more items
>>Referenced SOP Class UID	(0008,1150)	UI		X
>>Referenced SOP Instance UID	(0008,1155)	UI		X
>Referenced Non-Image Composite SOP Instance Sequence	(0040,0220)	SQ	Zero length	Zero length

4.2.6.4 Association Acceptance Policy

The MPPS SCU AE does not accept associations.

4.2.7 Print SCU AE Specification

4.2.7.1 SOP Classes

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

Table 4.2-54
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
Basic Color Print Management Meta	1.2.840.10008.5.1.1.18	Yes	No

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

Table 4.2-55
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
Basic Color Image Box SOP Class	1.2.840.10008.5.1.1.4.1	Yes	No
Printer SOP Class	1.2.840.10008.5.1.1.16	Yes	No

4.2.7.2 Association Policies

4.2.7.2.1 General

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

Table 4.2-56
DICOM APPLICATION CONTEXT FOR THE PRINT SCU AE

Application Context Name	1.2.840.10008.3.1.1.1
--------------------------	-----------------------

4.2.7.2.2 Number of Associations

The Print SCU AE initiates one association at a time.

Table 4.2-57
NUMBER OF ASSOCIATIONS ACCEPTED FOR THE PRINT SCU AE

Maximum number of simultaneous Associations	1
---	---

4.2.7.2.3 Asynchronous Nature

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

Table 4.2-58
ASYNCHRONOUS NATURE FOR THE PRINT SCU AE

Maximum number of outstanding asynchronous transactions	1
---	---

4.2.7.2.4 Implementation Identifying Information

The implementation information for the Print SCU AE is:

**Table 4.2-59
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE PRINT SCU AE**

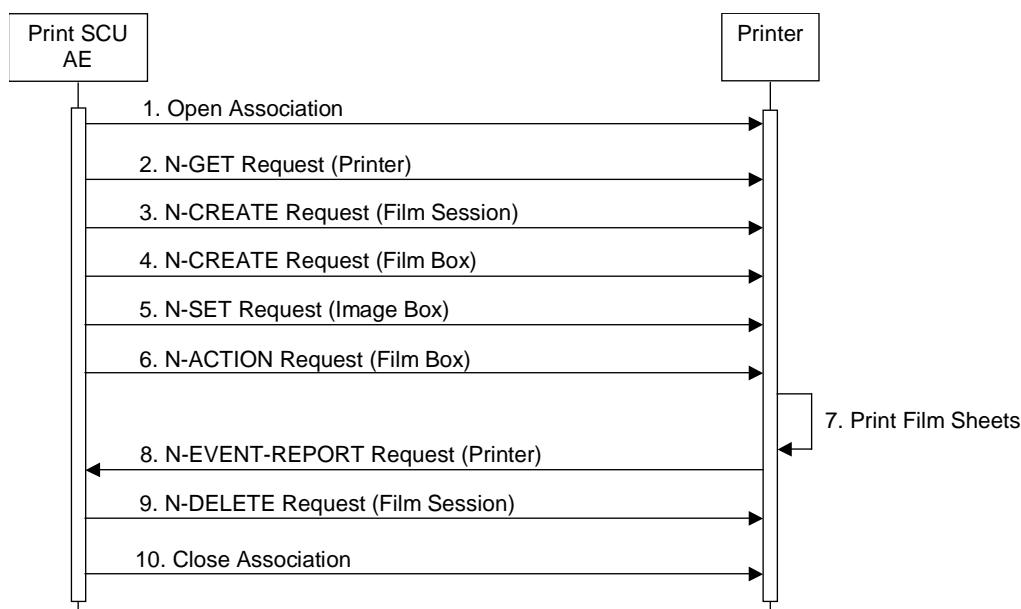
Implementation Class UID	1.2.392.200036.9116.6.17.1000.1
Implementation Version Name	TM_VIAMO_1.0

4.2.7.3 Association Initiation Policy

4.2.7.3.1 Activity – Send Images & Print Management Information

4.2.7.3.1.1 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.

4.2.7.3.1.2 Proposed Presentation Contexts

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

Table 4.2-60
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	1.2.840.10008.1.2	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		
Basic Color Print Management Meta	1.2.840.10008.5.1.1.18	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2		

4.2.7.3.1.3 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 4.2-61
PRINT COMMUNICATION FAILURE BEHAVIOR**

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and 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.
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.

4.2.7.3.1.4 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.

4.2.7.3.1.4.1 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 4.2-62
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.

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

**Table 4.2-63
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.

4.2.7.3.1.4.2 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 4.2-64
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 an N-EVENT-REPORT response are summarized in the table below:

**Table 4.2-65
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).

4.2.7.3.1.5 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.

4.2.7.3.1.5.1 Film Session SOP Class Operations (N-CREATE)

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

Table 4.2-66
FILM SESSION SOP CLASS N-CREATE REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Number of Copies	(2000,0010)	IS	1	ALWAYS	Auto
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 an N-CREATE response is summarized in the table below:

Table 4.2-67
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.

4.2.7.3.1.5.2 Film Session SOP Class Operations (N-DELETE)

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

Table 4.2-68
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.

4.2.7.3.1.6 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.

4.2.7.3.1.6.1 Film Box SOP Class Operations (N-CREATE)

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

**Table 4.2-69
FILM BOX SOP CLASS N-CREATE REQUEST ATTRIBUTES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Display Format	(2010,0010)	CS	STANDARD\1,1	ALWAYS	User
Referenced Film Session Sequence	(2010,0500)	SQ		ALWAYS	Auto
>Referenced SOP Class UID	(0008,1150)	UI	1.2.840.10008.5.1.1.1	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	8INX10IN, 8_5INX11IN, 10INX12IN, 10INX14IN, 11INX14IN, 14INX14IN, 14INX17IN, 11INX17IN, 24CMX24CM, 24CMX30CM, A4 or A3	ALWAYS	User
Magnification Type	(2010,0060)	CS	REPLICATE, BILINEAR, CUBIC or NONE	ALWAYS	User
Border Density	(2010,0100)	CS	BLACK or WHITE	ALWAYS	User
Min Density	(2010,0120)	US	0 .. 9999	ALWAYS	User
Max Density	(2010,0130)	US	0 .. 9999	ALWAYS	User

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

**Table 4.2-70
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.

4.2.7.3.1.6.2 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 an N-ACTION response is summarized in the table below:

**Table 4.2-71
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.	C602	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.	C603	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.	C613	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.

4.2.7.3.1.7 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.

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

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

Table 4.2-72
GRAYSCALE IMAGE BOX SOP CLASS N-SET REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Position	(2020,0010)	US	1	ALWAYS	Auto
Basic Grayscale Image Sequence	(2020,0110)	SQ		ALWAYS	Auto
>Samples Per Pixel	(0028,0002)	US	1	ALWAYS	Auto
>Photometric Interpretation	(0028,0004)	CS	MONOCHROME2	ALWAYS	Auto
>Rows	(0028,0010)	US		ALWAYS	Auto
>Columns	(0028,0011)	US		ALWAYS	Auto
>Pixel Aspect Ratio	(0028,0034)	IS	1\1	ALWAYS	Auto
>Bits Allocated	(0028,0100)	US	8	ALWAYS	Auto
>Bits Stored	(0028,0101)	US	8	ALWAYS	Auto
>High Bit	(0028,0102)	US	7	ALWAYS	Auto
>Pixel Representation	(0028,0103)	US	0	ALWAYS	Auto
>Pixel Data	(7FE0,0010)	OB		ALWAYS	Auto

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

Table 4.2-73
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.	C603	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.	C605	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.	C613	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.

4.2.7.3.1.8 SOP Specific Conformance for the Color Image Box SOP Class

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

— N-SET

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

4.2.7.3.1.8.1 Color Image Box SOP Class Operations (N-SET)

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

**Table 4.2-74
COLOR IMAGE BOX SOP CLASS N-SET REQUEST ATTRIBUTES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Position	(2020,0010)	US	1	ALWAYS	Auto
Basic Color Image Sequence	(2020,0111)	SQ		ALWAYS	Auto
>Samples Per Pixel	(0028,0002)	US	3	ALWAYS	Auto
>Photometric Interpretation	(0028,0004)	CS	RGB	ALWAYS	Auto
>Planar Configuration	(0028,0006)	US	1	ALWAYS	Auto
>Rows	(0028,0010)	US		ALWAYS	Auto
>Columns	(0028,0011)	US		ALWAYS	Auto
>Pixel Aspect Ratio	(0028,0034)	IS	1\1	ALWAYS	Auto
>Bits Allocated	(0028,0100)	US	8	ALWAYS	Auto
>Bits Stored	(0028,0101)	US	8	ALWAYS	Auto
>High Bit	(0028,0102)	US	7	ALWAYS	Auto
>Pixel Representation	(0028,0103)	US	0	ALWAYS	Auto
>Pixel Data	(7FE0,0010)	OB		ALWAYS	Auto

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

**Table 4.2-75
COLOR 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.	C603	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.	C605	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.	C613	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.

4.2.7.4 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 Tool. The Field Service Engineer can configure the TCP Port via the Service Tool.

Note: AE Titles can use alphanumeric characters, "-", ".", and "_", up to 16 characters.

**Table 4.4-1
AE TITLE CONFIGURATION TABLE**

Application Entity	Default AE Title	Default TCP/IP Port
Verification SCU	VERIFYSCU_AE	Not applicable
MWM SCU	MWMSCU_AE	
MPPS SCU	MPPSSCU_AE	
Print SCU	PrintSCU_AE	
Storage SCU	DICOM_LOCAL_SCU	
Storage Commitment SCU	DICOM_LOCAL_SCP	104

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 Tool.

Note: AE Titles can use alphanumeric characters, "-", ".", and "_", up to 16 characters.

4.4.2 Parameters

A large number of parameters related to acquisition and general operation can be configured using the Service Tool. The table below only shows those configuration parameters relevant to DICOM communication. See the Product's Service Manual for details on general configuration capabilities.

**Table 4.4-2
CONFIGURATION PARAMETERS TABLE**

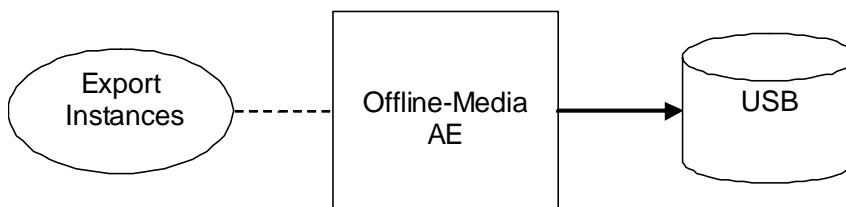
Parameter	Configurable (Yes/No)[Range]	Default Value
General Parameters		
Time-out waiting for an acceptance or rejection response to an association request (Application Level timeout)	No	240 sec
Time-out waiting for a response to an association release request (Application Level timeout)	Yes [0-99999]	20 sec
Time-out waiting for completion of a TCP/IP connect request (Low-level timeout)	No	240 sec
Time-out awaiting a response to a DIMSE request (Low-level timeout)	No	240 sec
Time-out for waiting for data between TCP/IP-packets (Low-level timeout)	No	240 sec

Parameter	Configurable (Yes/No)[Range]	Default Value
Storage SCU Parameters		
Maximum number of simultaneously initiated associations by the Storage SCU AE	No	1
Supported transfer syntaxes (separately configurable for each remote AE)	Yes	Implicit VR Little Endian JPEG Baseline (Process 1)
Number of times a failed send job may be retried	Yes [0-99999]	0
Storage SCU Commitment Parameters		
Maximum number of simultaneously initiated associations by the Storage Commitment SCU AE	No	1
Maximum number of simultaneously accepted associations by the Storage Commitment SCU AE	No	1
Time-out waiting for a Storage Commitment Notification (maximum duration of applicability for a Storage Commitment Transaction UID)	Yes [1-99999](msec, sec, min, hour, month or year)	180 sec
Delay association release after sending a storage commitment request (wait for a storage commitment notification over the same association)	No	0
Modality Worklist SCU Parameters		
Maximum number of simultaneously initiated associations by the MWM SCU AE	No	1
Maximum number of worklist items	Yes [1-9999]	200
Query worklist for specific Scheduled Station AE Title	Yes [Up to 16 Characters]	MWMSCU_AE
Query worklist for specific Modality	Yes [US or blank]	US
Time out between Results (This time-out is activated on a higher priority than General Parameter's time-out values)	Yes [0-999]	20 sec
MPPS SCU Parameters		
Maximum number of simultaneously initiated associations by the MPPS SCU AE	No	1
Number of times a failed send job may be retried	Yes [0-99999]	0
Print SCU Parameters		
Maximum number of simultaneously initiated associations by the Print SCU AE	No	1

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 instances to a USB Storage medium. It is associated with the local real-world activity “Export Instances” 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 instances to an offline USB 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 USB medium.

5.1.3 Sequencing of Real-World Activities

5.1.3.1 Activity – Export Instances

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

The operations for “Export Instances” are described below:

- Step-1: Select the instances on the local storage device to be created to the medium.
- Step-2: Request to copy to the medium.

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	1.2.392.200036.9116.6.17.1000.1
Implementation Version Name	TM_VIAMO_1.0

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
AUG-GEN-USB	Export Instances	FSC	Interchange

5.2.1.1 File Meta Information for the Application Entity

The Source Application Entity Title is always "RMEDIA".

5.2.1.2 Real-World Activities

5.2.1.2.1 Activity – Export Instances

The Offline-Media AE acts as an FSC using the interchange option when requested to export SOP Instances from the local database to a USB medium.

5.2.1.2.1.1 Media Storage Application Profiles

The Offline-Media AE supports the AUG-GEN-USB Application Profiles.

5.2.1.2.1.1.1 Options

The Offline-Media AE supports the SOP Classes and Transfer Syntaxes listed in Table 5.3-1.

5.3 AUGMENTED AND PRIVATE APPLICATION PROFILES

5.3.1 Augmented Application Profiles

5.3.1.1 Augmented Application Profiles – AUG-GEN-USB

5.3.1.1.1 SOP Class Augmentations

The Augmented Application Profiles support the following SOP Classes and Transfer Syntaxes:

**Table 5.3-1
SOP CLASS AUGMENTATIONS**

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
DICOM Media Storage Directory	1.2.840.10008.1.3.10	Explicit VR Little Endian	1.2.840.10008.1.2.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50

5.3.1.1.2 Directory Augmentations

Not applicable.

5.3.1.1.3 Other Augmentations

Not applicable.

5.3.2 Private Application Profiles

Not applicable.

5.4 MEDIA CONFIGURATION

Not applicable.

7. SECURITY

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.

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 Secondary Capture Image transmitted by the Storage SCU AE.

Table 8.1-2 specifies the attributes of an Ultrasound Image transmitted by the Storage SCU AE.

Table 8.1-3 specifies the attributes of an Ultrasound Multi-frame 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
MPPS	the attribute value is the same as that use for Modality Performed Procedure Step
CONFIG	the attribute value source is a configurable parameter

8.1.1.1 SC Image IOD

**Table 8.1-1
IOD OF CREATED SC IMAGE SOP INSTANCES**

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-4	ALWAYS
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-5	ALWAYS
	Patient Study	Table 8.1-6	ALWAYS
	Clinical Trial Study	--	Not Present
Series	General Series	Table 8.1-7	ALWAYS
	Clinical Trial Series	--	Not Present
Equipment	General Equipment	Table 8.1-8	ALWAYS
	SC Equipment	Table 8.1-12	ALWAYS
Image	General Image	Table 8.1-9	ALWAYS
	Image Pixel	Table 8.1-10	ALWAYS
	SC Image	--	Not Present
	Overlay Plane	--	Not Present
	Modality LUT	--	Not Present
	VOI LUT	--	Not Present
	SOP Common	Table 8.1-13	ALWAYS

8.1.1.2 US Image IOD

**Table 8.1-2
IOD OF CREATED US IMAGE SOP INSTANCES**

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-4	ALWAYS
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-5	ALWAYS
	Patient Study	Table 8.1-6	ALWAYS
	Clinical Trial Study	--	Not Present
Series	General Series	Table 8.1-7	ALWAYS
	Clinical Trial Series	--	Not Present
Frame of Reference	Frame of Reference	--	Not Present
	Synchronization	--	Not Present
Equipment	General Equipment	Table 8.1-8	ALWAYS
Image	General Image	Table 8.1-9	ALWAYS
	Image Pixel	Table 8.1-10	ALWAYS
	Contrast/bolus	--	Not Present
	Palette Color Lookup Table	--	Not Present
	US Region Calibration	Table 8.1-11	ALWAYS
	US Image	Table 8.1-14	ALWAYS
	Overlay Plane	--	Not Present
	VOI LUT	--	Not Present
	SOP Common	Table 8.1-15	ALWAYS

8.1.1.3 US Multi-frame Image IOD

Table 8.1-3
IOD OF CREATED US MULTI-FRAME IMAGE SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-4	ALWAYS
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-5	ALWAYS
	Patient Study	Table 8.1-6	ALWAYS
	Clinical Trial Study	--	Not Present
Series	General Series	Table 8.1-7	ALWAYS
	Clinical Trial Series	--	Not Present
Frame of Reference	Frame of Reference	--	Not Present
	Synchronization	--	Not Present
Equipment	General Equipment	Table 8.1-8	ALWAYS
Image	General Image	Table 8.1-9	ALWAYS
	Image Pixel	Table 8.1-10	ALWAYS
	Contrast/bolus	--	Not Present
	Cine	Table 8.1-16	ALWAYS
	Multi-frame	Table 8.1-17	ALWAYS
	Frame Pointers	--	Not Present
	Palette Color Lookup Table	--	Not Present
	US Region Calibration	--	Not Present
	US Image	Table 8.1-18	ALWAYS
	VOI LUT	--	Not Present
	SOP Common	Table 8.1-19	ALWAYS

8.1.1.4 Common Modules

**Table 8.1-4
PATIENT MODULE OF CREATED SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient's Name	(0010,0010)	PN		VNAP	MWL/ USER
Patient ID	(0010,0020)	LO		VNAP	MWL/ USER
Patient's Birth Date	(0010,0030)	DA		VNAP	MWL/ USER
Patient's Sex	(0010,0040)	CS		VNAP	MWL/ USER
Patient Comments	(0010,4000)	LT		ANAP	MWL/ USER

**Table 8.1-5
GENERAL STUDY MODULE OF CREATED SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Study Instance UID	(0020,000D)	UI		ALWAYS	MWL/ AUTO
Study Date	(0008,0020)	DA		ALWAYS	AUTO
Study Time	(0008,0030)	TM		ALWAYS	AUTO
Referring Physician's Name	(0008,0090)	PN		VNAP	MWL/ USER
Study ID	(0020,0010)	SH		ALWAYS	AUTO
Accession Number	(0008,0050)	SH		VNAP	MWL/ USER
Study Description	(0008,1030)	LO		ANAP	MWL/ USER
Study Comments	(0032,4000)	LT	Additional Info from user input will be edited in the following format: <"BSA="BSA Information<LINEFEED> "BloodPressure="Blood Pressure Information<LINEFEED> Additional Info<LINEFEED> "BSAType="BSA Type Information>.	ALWAYS	USER

**Table 8.1-6
PATIENT STUDY MODULE OF CREATED SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient's Age	(0010,1010)	AS		ANAP	AUTO
Patient's Size	(0010,1020)	DS		VNAP	MWL/ USER
Patient's Weight	(0010,1030)	DS		VNAP	MWL/ USER

**Table 8.1-7
GENERAL SERIES MODULE OF CREATED SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	US	ALWAYS	MWL/ AUTO
Series Instance UID	(0020,000E)	UI		ALWAYS	AUTO
Series Number	(0020,0011)	IS		ALWAYS	AUTO
Series Date	(0008,0021)	DA		ALWAYS	AUTO
Series Time	(0008,0031)	TM		ALWAYS	AUTO
Performing Physician's Name	(0008,1050)	PN		ANAP	MWL/ USER
Performed Procedure Step Start Date	(0040,0244)	DA		ANAP	AUTO
Performed Procedure Step Start Time	(0040,0245)	TM		ANAP	AUTO
Performed Procedure Step ID	(0040,0253)	SH		ANAP	MWL
Performed Procedure Step Description	(0040,0254)	LO		ANAP	MWL
Performed Protocol Code Sequence	(0040,0260)	SQ		ANAP	MWL
>Code Value	(0008,0100)	SH		ANAP	AUTO
>Coding Scheme Designator	(0008,0102)	SH		ANAP	AUTO
>Coding Scheme Version	(0008,0103)	SH		ANAP	AUTO
>Code Meaning	(0008,0104)	LO		ANAP	AUTO

**Table 8.1-8
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		ANAP	CONFIG
Manufacturer's Model Name	(0008,1090)	LO	Viamo	ALWAYS	AUTO
Device Serial Number	(0018,1000)	LO		ALWAYS	AUTO
Software Version	(0018,1020)	LO	V2.2	ALWAYS	AUTO

**Table 8.1-9
GENERAL IMAGE MODULE OF CREATED SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Instance Number	(0020,0013)	IS		ALWAYS	AUTO
Patient Orientation	(0020,0020)	CS		EMPTY	AUTO
Content Date	(0008,0023)	DA		ALWAYS	AUTO
Content Time	(0008,0033)	TM		ALWAYS	AUTO
Image Type	(0008,0008)	CS		ALWAYS	AUTO
Acquisition Date	(0008,0022)	DA		ALWAYS	AUTO
Acquisition Time	(0008,0032)	TM		ALWAYS	AUTO
Lossy Image Compression	(0028,2110)	CS		ANAP	AUTO
Lossy Image Compression Ratio	(0028,2112)	DS		ANAP	AUTO

**Table 8.1-10
IMAGE PIXEL MODULE OF CREATED SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples per Pixel	(0028,0002)	US	3	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS	"RGB" or "YBR_FULL_422"	ALWAYS	CONFIG
Planar Configuration	(0028,0006)	US	0	ANAP	AUTO
Rows	(0028,0010)	US	600	ALWAYS	AUTO
Columns	(0028,0011)	US	800	ALWAYS	AUTO
Bits Allocated	(0028,0100)	US	8	ALWAYS	AUTO
Bits Stored	(0028,0101)	US	8	ALWAYS	AUTO
High Bit	(0028,0102)	US	7	ALWAYS	AUTO
Pixel Representation	(0028,0103)	US	0	ALWAYS	AUTO
Pixel Data	(7FE0,0010)	OB or OW		ALWAYS	AUTO

8.1.1.5 US Region Calibration Module

Table 8.1-11
US REGION CALIBRATION MODULE

Attribute Name	Tag	VR	Value	Presence of Value	Source
Sequence of Ultrasound Regions	(0018,6011)	SQ		ALWAYS	AUTO
>Region Spatial Format	(0018,6012)	US		ALWAYS	AUTO
>Region Data Type	(0018,6014)	US		ALWAYS	AUTO
>Region Flags	(0018,6016)	UL		ALWAYS	AUTO
>Region Location Min x0	(0018,6018)	UL		ALWAYS	AUTO
>Region Location Min y0	(0018,601A)	UL		ALWAYS	AUTO
>Region Location Max x1	(0018,601C)	UL		ALWAYS	AUTO
>Region Location Max y1	(0018,601E)	UL		ALWAYS	AUTO
>Reference Pixel x0	(0018,6020)	SL		ALWAYS	AUTO
>Reference Pixel y0	(0018,6022)	SL		ALWAYS	AUTO
>Physical Units X Direction	(0018,6024)	US		ALWAYS	AUTO
>Physical Units Y Direction	(0018,6026)	US		ALWAYS	AUTO
>Reference Pixel Physical Value X	(0018,6028)	FD		ALWAYS	AUTO
>Reference Pixel Physical Value Y	(0018,602A)	FD		ALWAYS	AUTO
>Physical Delta X	(0018,602C)	FD		ALWAYS	AUTO
>Physical Delta Y	(0018,602E)	FD		ALWAYS	AUTO
>Transducer Frequency	(0018,6030)	UL		ANAP	AUTO
>Pulse Repetition Frequency	(0018,6032)	UL		ANAP	AUTO
>Doppler Correction Angle	(0018,6034)	FD		ANAP	AUTO
>Steering Angle	(0018,6036)	FD		ANAP	AUTO
>Doppler Sample Volume X Position	(0018,6038)	UL		ANAP	AUTO
>Doppler Sample Volume Y Position	(0018,603A)	UL		ANAP	AUTO
>TM-Line Position x0	(0018,603C)	UL		ANAP	AUTO
>TM-Line Position y0	(0018,603E)	UL		ANAP	AUTO
>TM-Line Position x1	(0018,6040)	UL		ANAP	AUTO
>TM-Line Position y1	(0018,6042)	UL		ANAP	AUTO

8.1.1.6 SC Image Modules

**Table 8.1-12
SC EQUIPMENT MODULE OF CREATED SC IMAGE SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Conversion Type	(0008,0064)	CS	“DV” (Digitized Video), “DI” (Digital Interface), “DF” (Digitized Film), or “WSD” (Workstation)	ALWAYS	AUTO

**Table 8.1-13
SOP COMMON MODULE OF CREATED SC IMAGE SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character Set	(0008,0008)	CS	ISO_IR 100	ALWAYS	AUTO
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.7	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	Starts with 1.2.392.200036.9116.6.17.	ALWAYS	AUTO

8.1.1.7 US Image Modules

**Table 8.1-14
US IMAGE MODULE OF CREATED US IMAGE SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples per Pixel	(0028,0002)	US	3	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS	“RGB” or “YBR_FULL_422”	ALWAYS	CONFIG
Planar Configuration	(0028,0006)	US	0	ANAP	AUTO
Rows	(0028,0010)	US	600	ALWAYS	AUTO
Columns	(0028,0011)	US	800	ALWAYS	AUTO
Ultrasound Color Data Present	(0028,0014)	US	1	ALWAYS	AUTO
Bits Allocated	(0028,0100)	US	8	ALWAYS	AUTO
Bits Stored	(0028,0101)	US	8	ALWAYS	AUTO
High Bit	(0028,0102)	US	7	ALWAYS	AUTO
Pixel Representation	(0028,0103)	US	0	ALWAYS	AUTO
Pixel Data	(7FE0,0010)	OB or OW		ALWAYS	AUTO

**Table 8.1-15
SOP COMMON MODULE OF CREATED US IMAGE SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character Set	(0008,0008)	CS	ISO_IR 100	ALWAYS	AUTO
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.6.1	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	Starts with 1.2.392.200036.9116.6.17.	ALWAYS	AUTO

8.1.1.8 US Multi-frame Image Modules

**Table 8.1-16
CINE MODULE OF CREATED US MULTI-FRAME IMAGE SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Start Trim	(0008,2142)	IS		ANAP	AUTO
Stop Trim	(0008,2143)	IS		ANAP	AUTO
Recommended Display Frame Rate	(0008,2144)	IS		ANAP	USER
Cine Rate	(0018,0040)	IS		ANAP	USER
Effective Duration	(0018,0072)	DS		ANAP	AUTO
Frame Time	(0018,1063)	DS		ALWAYS	AUTO
Frame Delay	(0018,1066)	DS		ANAP	AUTO
Actual Frame Duration	(0018,1242)	IS		ANAP	AUTO

**Table 8.1-17
MULTI-FRAME MODULE OF CREATED US MULTI-FRAME IMAGE SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Number of Frames	(0028,0008)	IS		ALWAYS	USER
Frame Increment Pointer	(0028,0009)	AT		ALWAYS	AUTO

**Table 8.1-18
US IMAGE MODULE OF CREATED US MULTI-FRAME IMAGE SOP INSTANCES**

Attribute Name	Tag	VR	Value	Presence of Value	Source
Stage Name	(0008,2120)	SH		ANAP	AUTO
Stage Number	(0008,2122)	IS		ANAP	AUTO
Number of Stages	(0008,2124)	IS		ANAP	AUTO
View Name	(0008,2127)	SH		ANAP	AUTO
View Number	(0008,2128)	IS		ANAP	AUTO
Number of Views in Stage	(0008,212A)	IS		ANAP	AUTO
Heart Rate	(0018,1088)	IS		ANAP	AUTO
Samples per Pixel	(0028,0002)	US	3	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS	"RGB" or "YBR_FULL_422"	ALWAYS	AUTO
Planar Configuration	(0028,0006)	US	0	ALWAYS	AUTO
Rows	(0028,0010)	US	600	ALWAYS	AUTO
Columns	(0028,0011)	US	800	ALWAYS	AUTO
Ultrasound Color Data Present	(0028,0014)	US	1	ANAP	AUTO
Bits Allocated	(0028,0100)	US	8	ALWAYS	AUTO
Bits Stored	(0028,0101)	US	8	ALWAYS	AUTO
High Bit	(0028,0102)	US	7	ALWAYS	AUTO
Pixel Representation	(0028,0103)	US	0	ALWAYS	AUTO
Pixel Data	(7FE0,0010)	OB or OW		ALWAYS	AUTO

Table 8.1-19
SOP COMMON MODULE OF CREATED US MULTI-FRAME IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character Set	(0008,0008)	CS	ISO_IR 100	ALWAYS	AUTO
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.3.1	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	Starts with 1.2.392.200036.9116.6.17.	ALWAYS	AUTO

8.1.2 Usage of Attributes from received IOD's

No SOP Class specific fields are required.

8.1.3 Attribute Mapping

Table 8.1-20
ATTRIBUTE MAPPING BETWEEN MODALITY WORKLIST, IMAGE AND MPDS

Modality Worklist	Image IOD	MPDS IOD
Patient Name	Patient Name	Patient Name
Patient ID	Patient ID	Patient ID
Patient's Birth Date	Patient's Birth Date	Patient's Birth Date
Patient's Sex	Patient's Sex	Patient's Sex
Patient's Weight	Patient's Weight	
Referring Physician's Name	Referring Physician's Name	
----	----	Scheduled Step Attributes Sequence
Study Instance UID	Study Instance UID	>Study Instance UID
Referenced Study Sequence	Referenced Study Sequence	>Referenced Study Sequence
Accession Number	Accession Number	>Accession Number
----	Request Attributes Sequence	----
Requested Procedure ID	> Requested Procedure ID	> Requested Procedure ID
Requested Procedure Description		>Requested Procedure Description
Scheduled Procedure Step ID	> Scheduled Procedure Step ID	> Scheduled Procedure Step ID
Scheduled Procedure Step Description	> Scheduled Procedure Step Description	> Scheduled Procedure Step Description
Scheduled Protocol Code Sequence	>Scheduled Protocol Code Sequence	----
----	Performed Protocol Code Sequence	Performed Protocol Code Sequence
----	Study ID	Study ID
----	Performed Procedure Step ID	Performed Procedure Step ID
----	Performed Procedure Step Start Date	Performed Procedure Step Start Date
----	Performed Procedure Step Start Time	Performed Procedure Step Start Time

----	Performed Procedure Step Description	Performed Procedure Step Description
----	Comments on the Performed Procedure Step	Comments on the Performed Procedure Step
----	----	Performed Series Sequence
Scheduled Performing Physician's Name	Performing Physician's Name	>Performing Physician's Name
Requested Procedure Code Sequence	----	Procedure Code Sequence
----	Referenced Study Component Sequence	----
----	>Referenced SOP Class UID	SOP Class UID
----	>Referenced SOP Instance UID	SOP Instance UID
Configurable to be follows; Scheduled Procedure Step Description, or Requested Procedure Description	Protocol Name	Protocol Name

8.1.4 Coerced/Modified Fields

Not applicable.

8.2 DATA DICTIONARY OF PRIVATE ATTRIBUTES

Not applicable.

8.3 CONTROLLED TERMINOLOGY AND TEMPLATES

Not applicable.

8.4 GRAYSCALE IMAGE CONSISTENCY

Not applicable.

8.5 STANDARD EXTENDED/SPECIALIZED/PRIVATE SOP CLASSES

Not applicable.

8.6 PRIVATE TRANSFER SYNTAXES

Not applicable.