No. MIIUS0034EA

TOSHIBA

DICOM CONFORMANCE STATEMENT

FOR

DIAGNOSTIC ULTRASOUND SYSTEM

MODEL SSA-680A *Xario*™ *XG* V1.00

(DICOM KIT USDI-770A AND USDI-772B)

TOSHIBA MEDICAL SYSTEMS CORPORATION

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1. CONFORMANCE STATEMENT OVERVIEW

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

Table 1-1
NETWORK SERVICES

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Transfer		
Secondary Capture Image Storage	Yes	Yes
Ultrasound Image Storage (retired)	Yes	Yes
Ultrasound Image Storage	Yes	Yes
Ultrasound Multi-frame Image Storage	Yes	Yes
Basic Text SR Storage	Yes*	Yes
Enhanced SR Storage	Yes*	No
Key Object Selection Document Storage	Yes*	No
Toshiba US Private Data Storage	Yes	Yes
Storage Commitment		
Storage Commitment Push Model	Yes	No
Query/Retrieve		
Study Root Q/R Information Model – Find	Yes*	No
Study Root Q/R Information Model – Move	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

*USDI-772B must be installed.

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

Table 1-2
MEDIA SERVICES

Media Storage Application Profile	Write Files (FSC)	Read Files (FSR)
Compact Disk – Recordable		
US Image CD	Yes	Yes
DVD Plus Recordable		
US Image DVD	Yes	Yes

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2. TABLE OF CONTENTS

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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
CD-R	Compact Disk Recordable
DIMSE	DICOM Message Service Element
DVD	A trademark of the DVD forum that is not an abbreviation
DVD+R	DVD Plus Recordable
FSC	File-Set Creator
FSR	File-Set Reader
IE	Information Entity
IOD	Information Object Definition
ISO	International Standard Organization
MPPS	Modality Performed Procedure Step
MSPS	Modality Scheduled 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, 2006

4. NETWORKING

4.1 IMPLEMENTATION MODEL

4.1.1 Application Data Flow

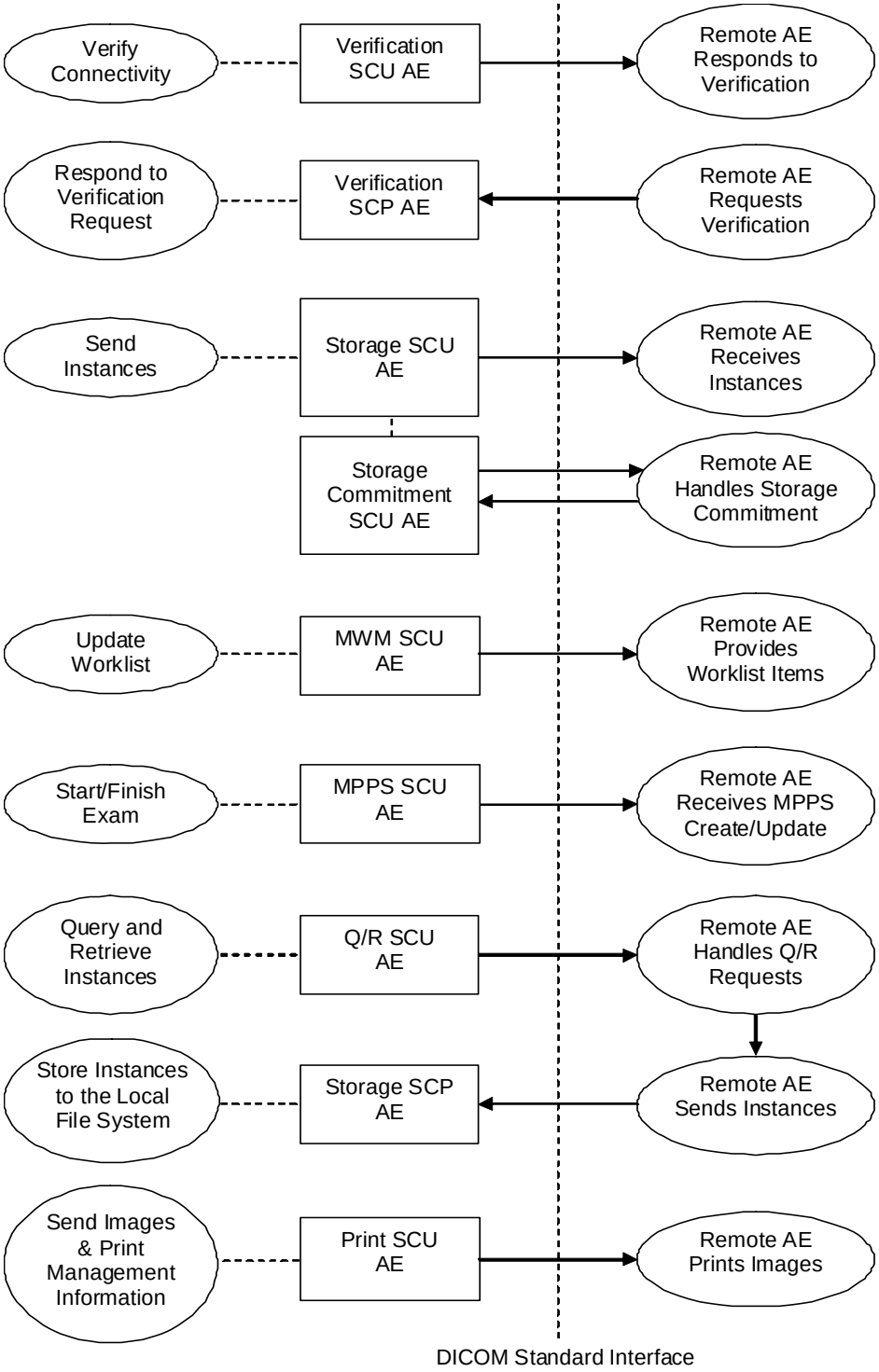

Figure 4.1-1
APPLICATION DATA FLOW DIAGRAM

- 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.
- 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.
- 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 “Start/Finish Exam”. When the “Start/Finish Exam” is performed the MPPS SCU AE creates and updates Modality Performed Procedure Step instances managed by a remote AE. Start of exam will result in automated creation of an MPPS Instance. Completion of the MPPS is performed as the result of an operator action.
- The Q/R SCU AE queries a remote AE for lists of studies and retrieves selected studies. It is associated with the local real-world activity “Query and Retrieve Instances”.
- The Storage SCP AE receives incoming instances. It is associated with the local real-world activity “Store Instances to the Local File System”. “Store Instances to the Local File System” stores the received instances to the local file system.
- The Print SCU AE prints images on a remote AE (Printer). It is associated with the local real-world activity “Send Images & Print Management Information”. “Send Images & Print Management Information” creates a print-job within the print queue containing one or more virtual film sheets composed from images selected by the user.

4.1.2 Functional Definition of AEs

4.1.2.1 Functional Definition of Verification SCU AE

The Verification SCU AE issues a C-ECHO to verify a DICOM connection to a remote AE. It is performed via the 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. 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.

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 Q/R SCU AE

The Q/R SCU AE is activated when the user selects a remote node to query and enters some key information, Patient's Name, Patient ID and/or Study Date. The user can select studies to be retrieved. The images will be received at the Storage SCP AE.

4.1.2.8 Functional Definition of Storage SCP AE

The Storage SCP AE waits for another application to connect at the presentation address configured for its AE Title. The Storage SCP AE will accept associations with Presentation Contexts for SOP Classes of the Storage Service Classes. Any images received on such Presentation Contexts will be stored to the local file system.

4.1.2.9 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 sheets described within the print-job will be printed. If the printer is not operating normally, this print-job can be canceled or restarted by the user operations.

4.1.3 Sequencing of Real-World Activities

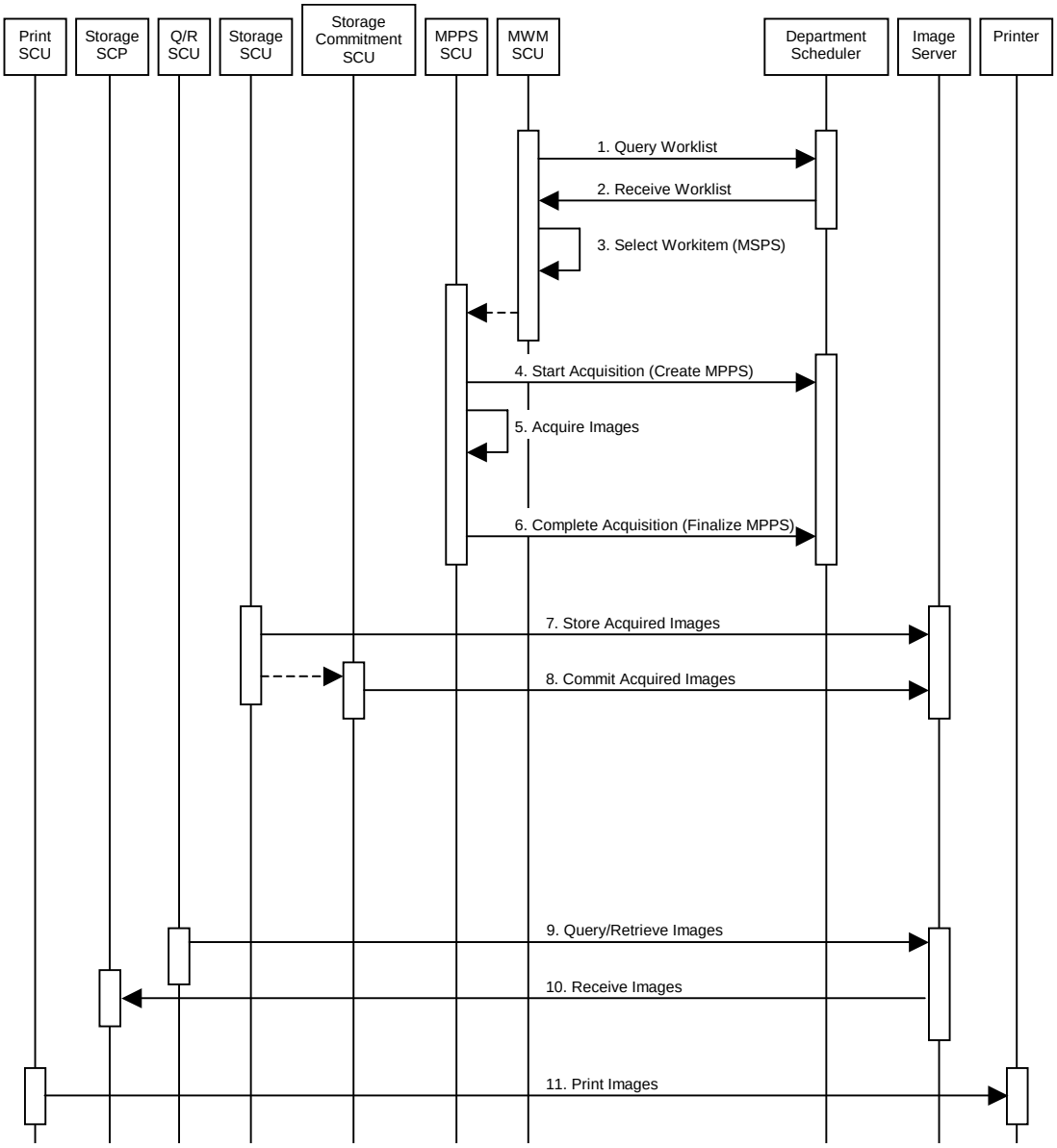

Figure 4.1-2
SEQUENCING CONSTRAINTS

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

1. Query Worklist
2. Receive Worklist of Modality Scheduled Procedure Steps (MSPS)
3. Select Workitem (MSPS) from Worklist
4. Start Acquisition and Create MPPS
5. Acquire Images
6. Complete Acquisition and Finalize MPPS
7. Store Acquired Images
8. Commit Acquired Images
9. Query/Retrieve Images
10. Receive Images
11. Print Images

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

4.2 AE SPECIFICATIONS

4.2.1 Verification SCU AE Specification

4.2.1.1 SOP Classes

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

Table 4.2-1
SOP CLASSES FOR THE VERIFICATION SCU AE

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

4.2.1.2 Association Policies

4.2.1.2.1 General

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

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

Application Context Name	1.2.840.10008.3.1.1.1

4.2.1.2.2 Number of Associations

The Verification SCU AE initiates one association at a time.

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

Maximum number of simultaneous associations	1

4.2.1.2.3 Asynchronous Nature

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

Table 4.2-4
ASYNCHRONOUS NATURE FOR THE VERIFICATION SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.1.2.4 Implementation Identifying Information

The implementation information for the Verification SCU AE is:

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

Implementation Class UID	1.2.392.200036.9116.7.8.10.46.6.1.1.1
Implementation Version Name	TM_APLIO_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.

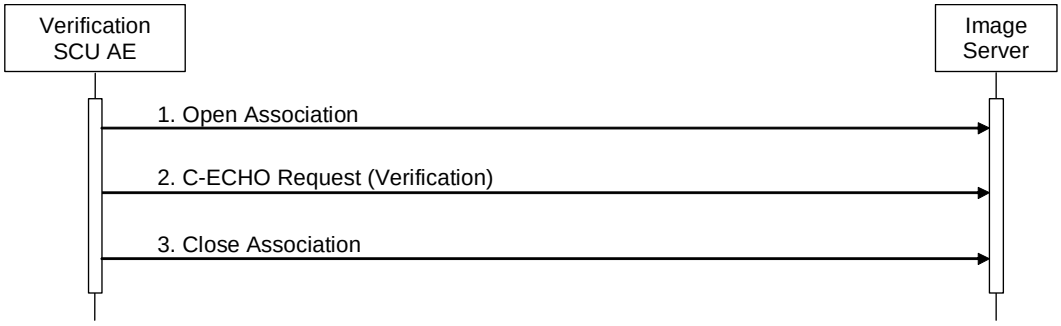

Figure 4.2-1
SEQUENCING OF ACTIVITY – VERIFY CONNECTIVITY

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 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.

4.2.2 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	1.2.392.200036.9116.7.8.10.46.6.1.1.1
Implementation Version Name	TM_APLIO_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).

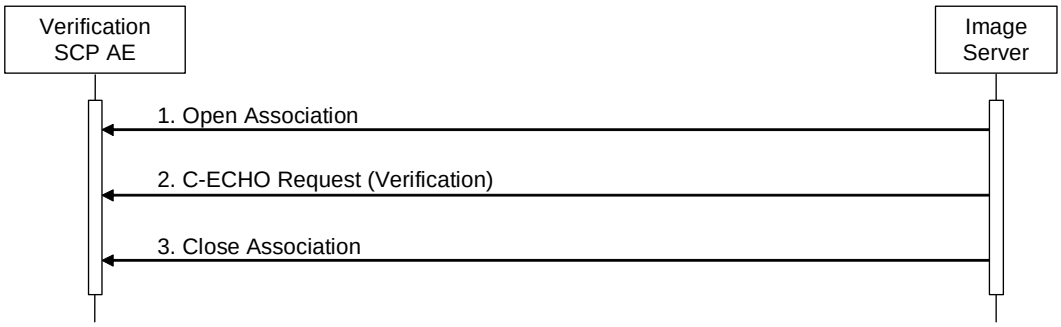

Figure 4.2-2
SEQUENCING OF ACTIVITY – RESPOND TO VERIFICATION REQUEST

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 (retired)	1.2.840.10008.5.1.4.1.1.6		
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		
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11		
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22		
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59		
Toshiba US Private Data Storage	1.2.392.200036.9116.7.8.1.1.1		

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 can initiate up to three associations at a time for each destination to which a transfer request is being processed in the active job queue list. Up to three jobs, that images will be sent to the different remote hosts, will be active at a time, the other remains pending until the active job is completed or failed.

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

Maximum number of simultaneous associations	3

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	1.2.392.200036.9116.7.8.10.46.6.1.1.1
Implementation Version Name	TM_APLIO_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 job contains multiple images then multiple C-STORE requests will be issued over the same association. If the image transfer fails, the Storage SCU AE will retry this send-job automatically.

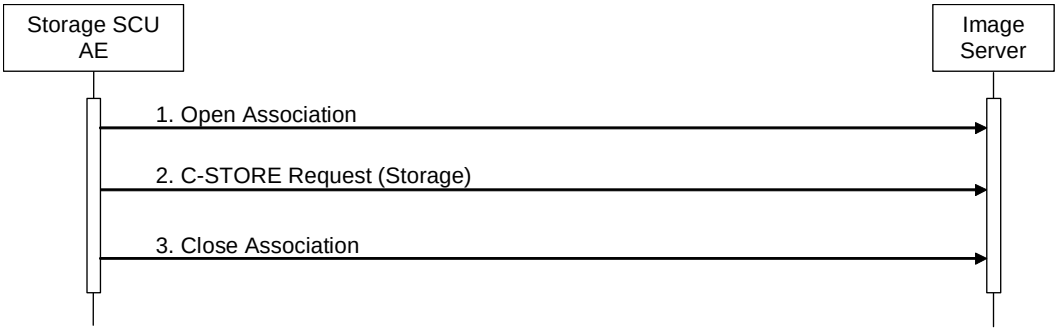

Figure 4.2-3
SEQUENCING OF ACTIVITY – SEND IMAGES

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		
		RLE Lossless	1.2.840.10008.1.2.5		
Ultrasound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.6	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		
		RLE Lossless	1.2.840.10008.1.2.5		
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		
		RLE Lossless	1.2.840.10008.1.2.5		
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		
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Key Object Selection Document Storage	1.2.840.10008.5.1.4.1.1.88.59	Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Toshiba US Private Data Storage	1.2.392.200036.9116.7.8.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.3.3.1.3 SOP Specific Conformance for Storage SOP Classes

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

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

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

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The SCP has successfully stored the SOP Instance. If all SOP Instances in a send job have status success then the job is marked as complete.
Refused	Out of Resources	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 can initiate up to three associations at a time.

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

Maximum number of simultaneous associations	3

The Storage Commitment SCU AE accepts associations to receive N-EVENT-REPORT notifications 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	3

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	1.2.392.200036.9116.7.8.10.46.6.1.1.1
Implementation Version Name	TM_APLIO_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.

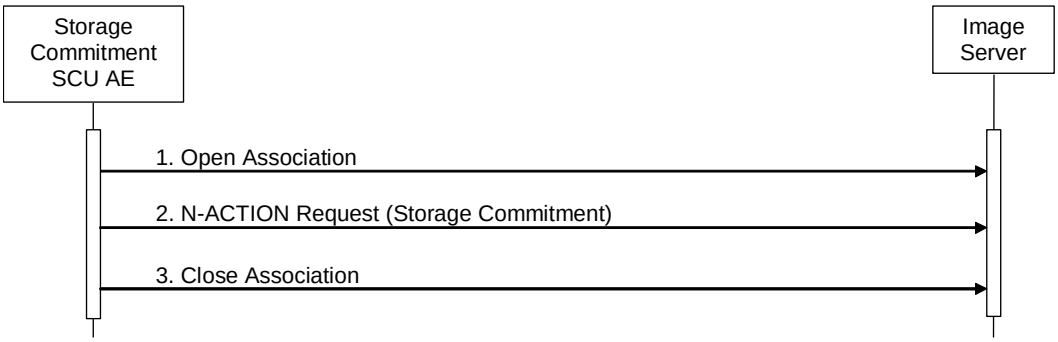

Figure 4.2-4
SEQUENCING OF ACTIVITY – COMMIT SENT IMAGES

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 a 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.

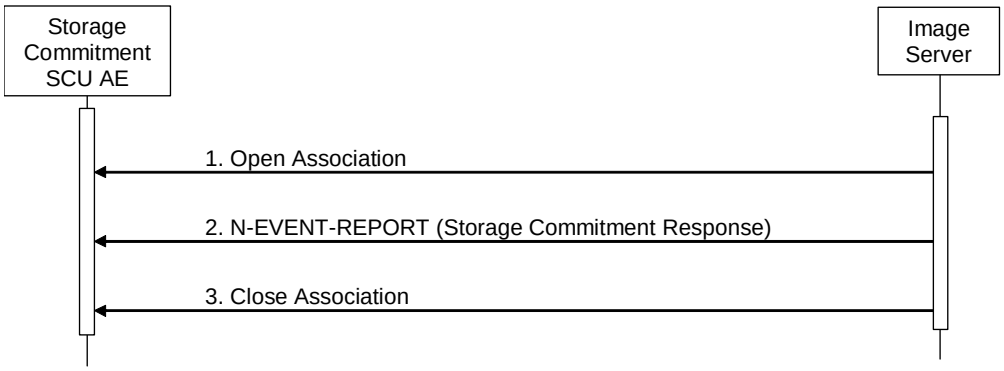

Figure 4.2-5
SEQUENCING OF ACTIVITY - RECEIVE STORAGE COMMITMENT RESPONSE

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), or deletes the Instances from the local database automatically.
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 a 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	1.2.392.200036.9116.7.8.10.46.6.1.1.1
Implementation Version Name	TM_APLIO_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 “Refresh” 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.

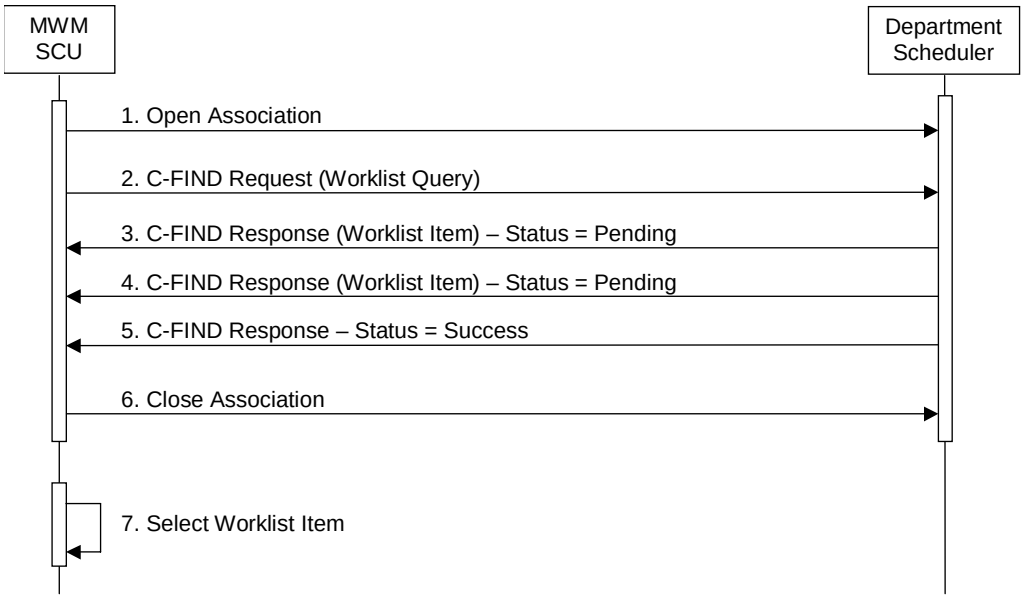

Figure 4.2-6
SEQUENCING OF ACTIVITY – UPDATE WORKLIST

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 images.

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	SCU	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.
Refused	Out of Resources	A700	The association is aborted using A-ABORT and the status meaning is logged.
Failed	Identifier does not match SOP Class	A900	
Failed	Unable to Process	Cxxx	
Cancel	Matching terminated due to Cancel request	FE00	If the query was cancelled due to too many worklist items then the SCP has completed the matches. Worklist items are available for display or further processing. The status meaning is logged.
Pending	Matches are continuing	FF00	The association is aborted using A-ABORT and the worklist item contained in the Identifier is collected for later display or further processing.
Pending	Matches are continuing – Warning that one or more Optional Keys were not supported	FF01	
*	*	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 images 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 images. 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 Module						
Specific Character Set	(0008,0005)	CS		x		x
Scheduled Procedure Step Module						
Scheduled Procedure Step Sequence	(0040,0100)	SQ		x		
>Modality	(0008,0060)	CS	S	x	x	x
>Requested Contrast Agent	(0032,1070)	LO		x		x
>Scheduled Station AE Title	(0040,0001)	AE	S	x	x	x
>Scheduled Procedure Step Start Date	(0040,0002)	DA	R	x	x	x
>Scheduled Procedure Step Start Time	(0040,0003)	TM	R	x	x	x
>Scheduled Procedure Step End Date	(0040,0004)	DA		x		x
>Scheduled Procedure Step End Time	(0040,0005)	TM		x		x
>Scheduled Performing Physician's Name	(0040,0006)	PN		x	x	x
>Scheduled Procedure Step Description	(0040,0007)	SH		x	x	
>Scheduled Protocol Code Sequence	(0040,0008)	SQ		x		
>Scheduled Procedure Step ID	(0040,0009)	SH		x		
>Scheduled Station Name	(0040,0010)	LO		x		
>Scheduled Procedure Step Location	(0040,0011)	SH		x		x
>Pre-Medication	(0040,0012)	CS		x		
>Scheduled Procedure Step Status	(0040,0020)	LO				
>Comments on Scheduled Procedure Step	(0040,0400)	LT		x		
Requested Procedure Module						
Referenced Study Sequence	(0008,1110)	SQ		x		x
Study Instance UID	(0020,000D)	UI		x		x
Requested Procedure Description	(0032,1060)	LO		x	x	x
Requested Procedure Code Sequence	(0032,1064)	SQ		x		
Requested Procedure ID	(0040,1001)	SH	S	x	x	x
Reason for the Requested Procedure	(0040,1002)	LO		x		
Requested Procedure Priority	(0040,1003)	SH		x		
Patient Transport Arrangements	(0040,1004)	LO		x		
Requested Procedure Location	(0040,1005)	LO		x		
Placer Order Number / Procedure	(0040,1006)	SH		x		
Filler Order Number / Procedure	(0040,1007)	SH		x		
Confidentiality Code	(0040,1008)	LO		x		
Reporting Priority	(0040,1009)	SH		x		
Names of Intended Recipients of Results	(0040,1010)	PN		x		
Requested Procedure Comments	(0040,1400)	LT		x		
Imaging Service Request Module						
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		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		
Placer Order Number / Imaging Service Request	(0040,2006)	SH		x		
Filler Order Number / Imaging Service Request	(0040,2007)	SH		x		
Order Entered By	(0040,2008)	PN		x		
Order Enters Location	(0040,2009)	SH		x		
Order Callback Phone Number	(0040,2010)	SH		x		
Imaging Service Request Comments	(0040,2400)	LT		x		
Visit Relationship Module						
Referenced Patient Sequence	(0008,1120)	SQ		x		x

Visit Identification Module						
Institution Name	(0008,0080)	LO				
Institution Address	(0008,0081)	ST				
Institution Code Sequence	(0008,0082)	SQ				
Admission ID	(0038,0010)	LO		x		
Issuer of Admission ID	(0038,0011)	LO				
Visit Status Module						
Visit Status ID	(0038,0008)	CS				
Current Patient Location	(0038,0300)	LO		x		
Patient's Institution Residence	(0038,0400)	LO		x	x	
Visit Comments	(0038,4000)	LT				
Visit Admission Module						
Referring Physician's Address	(0008,0092)	ST				
Referring Physician's Telephone Number	(0008,0094)	SH				
Admitting Diagnosis Description	(0008,1080)	LO				
Admitting Diagnosis Code Sequence	(0008,1084)	SQ				
Route of Admissions	(0038,0016)	LO				
Admitting Date	(0038,0020)	DA				
Admitting Time	(0038,0021)	TM				
Patient Relationship Module						
Referenced Visit Sequence	(0008,1125)	SQ				
Referenced Patient Alias Sequence	(0038,0004)	SQ				
Patient Identification Module						
Patient's Name	(0010,0010)	PN	W	x	x	x
Patient ID	(0010,0020)	LO	S	x	x	x
Issuer of Patient ID	(0010,0021)	LO				
Other Patient IDs	(0010,1000)	LO				x
Other Patient Names	(0010,1001)	PN				
Patient's Birth Name	(0010,1005)	PN				
Patient's Mother's Birth Name	(0010,1060)	PN				
Medical Record Locator	(0010,1090)	LO				
Patient Demographic Module						
Patient's Birth Date	(0010,0030)	DA		x	x	x
Patient's Birth Time	(0010,0032)	TM				
Patient's Sex	(0010,0040)	CS		x	x	x
Patient's Insurance Plan Code Sequence	(0010,0050)	SQ				
Patient's Age	(0010,1010)	AS			x	
Patient's Size	(0010,1020)	DS			x	x
Patient's Weight	(0010,1030)	DS		x	x	x
Patient's Address	(0010,1040)	LO				
Military Rank	(0010,1080)	LO				
Brach of Service	(0010,1081)	LO				
Country Residence	(0010,2150)	LO				
Region of Residence	(0010,2152)	LO				
Patient's Telephone Number	(0010,2154)	SH				
Ethnic Group	(0010,2160)	SH				x
Occupation	(0010,2180)	SH				
Patient's Religious Reference	(0010,21F0)	LO				
Patient Comments	(0010,4000)	LT			x	x
Patient Data Confidentiality Constraint Description	(0040,3001)	LO		x		x
Patient Medical Module						
Medical Alerts	(0010,2000)	LO		x		x
Contrast Allergies	(0010,2110)	LO		x		x
Smoking Status	(0010,21A0)	CS				
Additional Patient History	(0010,21B0)	LT				x
Pregnancy Status	(0010,21C0)	US		x		x
Last Menstrual Date	(0010,21D0)	DA				
Special Needs	(0038,0050)	LO		x		x
Patient State	(0038,0500)	LO		x		x

Other Attributes						
Study Description Study Comments	(0008,1030) (0032,4000)	LO LT			x x	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.

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: Patient’s Institution Residence (0038,0400) will be displayed as *In Patient* or *Out Patient* when matching the following string: Inpatient or Outpatient.

In the default setting, Study Description (0008,1030) will be displayed at *Exam Type* when matching the following exam types: Abdomen, Carotid, Thyroid, Breast, OB, GYN, Endo-Vaginal, Fetal Heart, Adult Heart, Pediatric Heart, Coronary, TCD, Neo-Head, Neo-General, Neo-Hip, PV Venous, PV Arterial, Digits, MSK, Prostate, Kidney, Testes, OTHER, or M-TEE. They can be also configured to correspond to user-defined terms, and it is selectable where to set those terms: Study Description (0008,1030), Scheduled Procedure Step Description (0040,0007), or Requested Procedure Description (0032,1060).

Study Comments (0032,4000) will be displayed at *Additional Info*.

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	1.2.392.200036.9116.7.8.10.46.6.1.1.1
Implementation Version Name	TM_APLIO_1.0

4.2.6.3 Association Initiation Policy

4.2.6.3.1 Activity – Acquire Images

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 acuisition.

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.

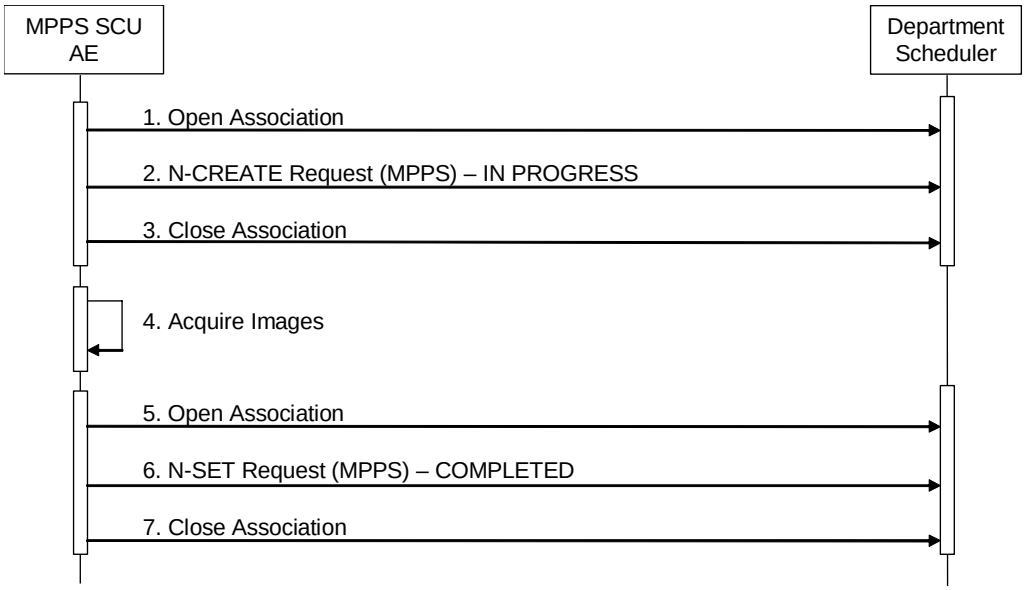

Figure 4.2-7
SEQUENCING OF ACTIVITY – ACQUIRE IMAGES

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 images 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 IMAGES

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	SCU	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.
Failure	Processing Failure – Performed Procedure Step Object may no longer be updated	0110H	The association is aborted and the MPPS is marked as failed. The status meaning is logged and reported to the user.
Warning	Attribute Value Out of Range	0116H	
*	*	Any other status code	

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
Modality	(0008,0060)	CS	US	
Procedure Code Sequence	(0008,1032)	SQ	Zero length	Zero length
Referenced Patient Sequence	(0008,1120)	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.	
Study ID	(0020,0010)	SH	Automatically created.	
Performed Station AE Title	(0040,0241)	AE	MPPS AE Title	
Performed Station Name	(0040,0242)	SH	Zero length	
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 End Date	(0040,0250)	DA	Zero length	Actual end date
Performed Procedure Step End Time	(0040,0251)	TM	Zero length	Actual end time
Performed Procedure Step Status	(0040,0252)	CS	IN PROGRESS	COMPLETED
Performed Procedure Step ID	(0040,0253)	SH	Automatically created.	
Performed Procedure Step Description	(0040,0254)	LO	Zero length	Zero length
Performed Procedure Type Description	(0040,0255)	LO	Zero length	Zero length
Performed Protocol Code Sequence	(0040,0260)	SQ	Zero length	Zero length
Scheduled Step Attributes Sequence	(0040,0270)	SQ	Always set	
>Accession Number	(0008,0050)	SH	From Modality Worklist or user input.	
>Referenced Study Sequence	(0008,1110)	SQ	Zero length	
>Study Instance UID	(0020,000D)	UI	From Modality Worklist	
>Requested Procedure Description	(0032,1060)	LO	From Modality Worklist or user input.	
>Scheduled Procedure Step Description	(0040,0007)	LO	From Modality Worklist or user input.	
>Scheduled Protocol Code Sequence	(0040,0008)	SQ	Zero length	
>Scheduled Procedure Step ID	(0040,0009)	SH	From Modality Worklist	
>Requested Procedure ID	(0040,1001)	SH	From Modality Worklist or user input.	
Performed Series Sequence	(0040,0340)	SQ	One or more items	One or more items
>Retrieve AE Title	(0008,0054)	AE	Zero length	Zero length
>Series Description	(0008,103E)	LO	Zero length	Zero length
>Performing Physician's Name	(0008,1050)	PN	x	x
>Operator's Name	(0008,1070)	PN	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
>Protocol Name	(0018,1030)	LO	x	x
>Series Instance UID	(0020,000E)	UI	x	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 Q/R SCU AE Specification

4.2.7.1 SOP Classes

The Q/R SCU AE provides Standard Conformance to the following SOP Classes:

Table 4.2-54
SOP CLASSES FOR THE Q/R SCU AE

SOP Class Name	SOP Class UID	SCU	SCP
Study Root Q/R Information Model – Find	1.2.840.10008.5.1.4.1.2.2.1	Yes	No
Study Root Q/R Information Model – Move	1.2.840.10008.5.1.4.1.2.2.2		

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 4.2-55
DICOM APPLICATION CONTEXT FOR THE Q/R SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.7.2.2 Number of Associations

The Q/R SCU AE can initiate up to three associations at a time.

Table 4.2-56
NUMBER OF ASSOCIATIONS INITIATED FOR THE Q/R SCU AE

Maximum number of simultaneous associations	3

4.2.7.2.3 Asynchronous Nature

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

Table 4.2-57
ASYNCHRONOUS NATURE FOR THE Q/R SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.7.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-58
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE Q/R SCU AE

Implementation Class UID	1.2.392.200036.9116.7.8.10.46.6.1.1.1
Implementation Version Name	TM_APLIO_1.0

4.2.7.3 Association Initiation Policy

4.2.7.3.1 Activity – Query and Retrieve Images

4.2.7.3.1.1 Description and Sequencing of Activities

The Q/R SCU AE is activated when the user selects a remote node to query and enters some key information, Patient's Name, Patient ID and/or Study Date. The user can select studies, series and images to be retrieved. The images will be received at the Storage SCP AE.

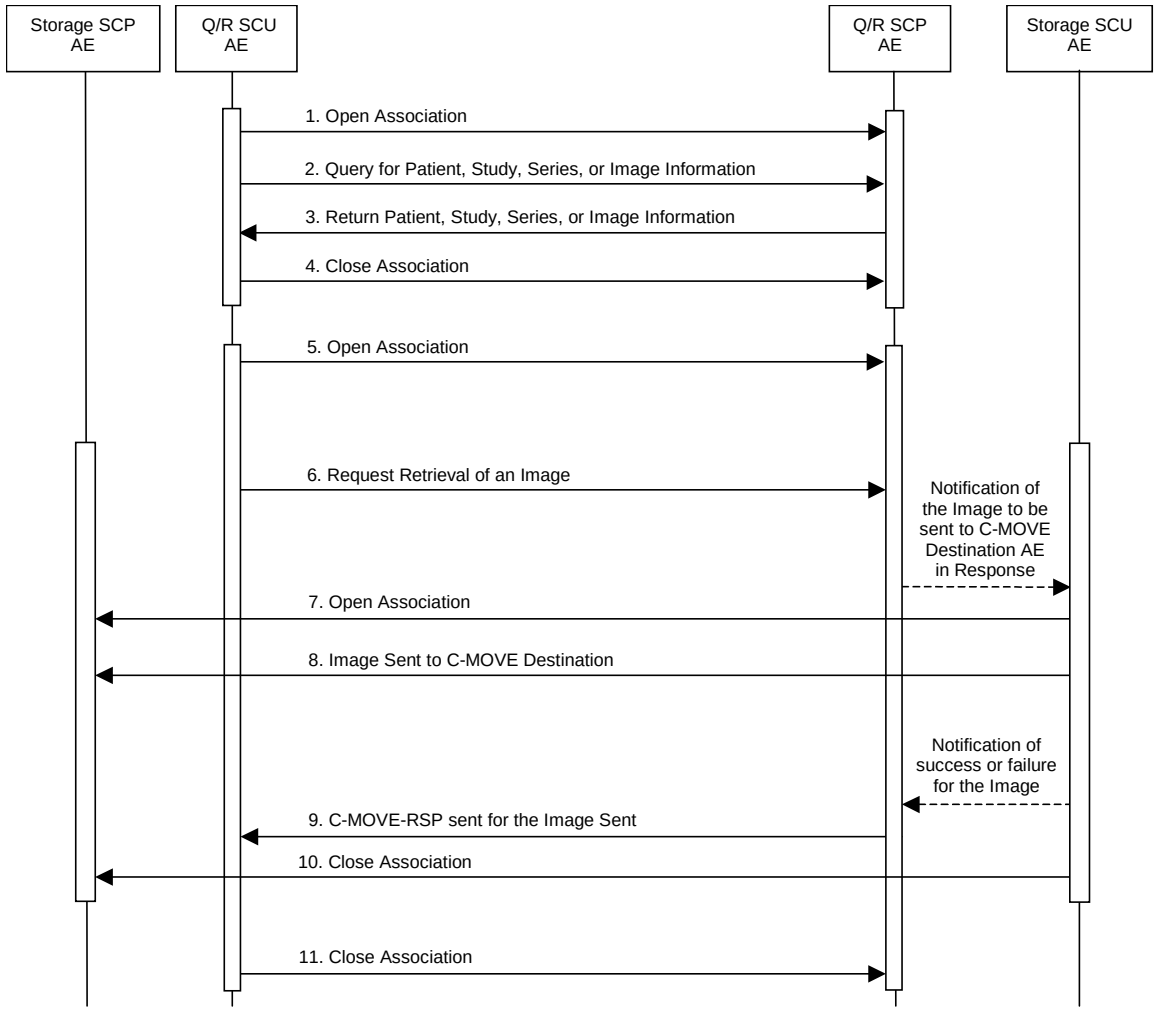

Figure 4.2-8
SEQUENCING OF ACTIVITY – QUERY AND RETRIEVE IMAGES

The following sequencing constraints illustrated in the Figure above:

1. The Q/R SCU AE opens an association with the Q/R SCP AE.
2. The Q/R SCU AE sends a C-FIND-RQ Message
3. The Q/R SCP AE returns a C-FIND-RSP Message to the Q/R SCU AE with matching information. A C-FIND-RSP is sent for each entity matching the identifier specified in the C-FIND-RQ. A final C-FIND-RSP is sent indicating that the matching is complete.
4. The Q/R SCU AE closes the association.
5. The Q/R SCU AE opens an association with the Q/R SCP AE.
6. The Q/R SCU AE sends a C-MOVE-RQ Message. The Q/R SCP AE notifies the Storage SCU AE to send the Composite SOP Instances to the peer C-MOVE Destination AE as indicated in the C-MOVE-RQ.
7. The Storage SCU AE opens an association with the C-MOVE Destination AE.
8. The Storage SCU AE sends images to the C-MOVE Destination AE. The Storage SCU AE indicates to the Q/R SCP AE whether the transfer succeeded or failed.
9. The Q/R SCP AE then returns a C-MOVE-RSP indicating this success or failure.
10. The Storage SCU AE closes the association.
11. The Q/R SCU AE closes the association.

4.2.7.3.1.2 Proposed Presentation Contexts

The Q/R SCU AE will propose Presentation Contexts shown in the following table:

Table 4.2-59
PROPOSED PRESENTATION CONTEXTS FOR REAL-WORLD ACTIVITY QUERY AND RETRIEVE IMAGES

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Study Root Q/R Information Model – Find	1.2.840.10008.5.1.4.1.2.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Study Root Q/R Information Model – Move	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.7.3.1.3 SOP Specific Conformance for Q/R Find SOP Classes

The Q/R SCU AE provides standard conformance to the Query/Retrieve Find SOP Classes as an SCU.

The behavior of the Q/R SCU AE when encountering status codes in a Q/R C-FIND response is summarized in the table below:

Table 4.2-60
THE Q/R SCU AE C-FIND RESPONSE STATUS BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Matching is complete	0000	The SCP has completed the matches. Worklist items are available for display or further processing.
Refused	Out of Resources	A700	The association is aborted and the worklist query is marked as failed. The status meaning is logged and reported to the user.
Failed	Identifier does not match SOP Class	A900	
Failed	Unable to Process	Cxxx	The association is aborted using A-ABORT and the worklist query is marked as failed. The status meaning is logged and reported to the user.
Cancel	Matching terminated due to Cancel request	FE00	
Pending	Matches are continuing	FF00	
Pending	Matches are continuing – Warning that one or more Optional Keys were not supported	FF01	
*	*	Any other status code	

The behavior of the Q/R SCU AE during communication failure is summarized in the table below.

Table 4.2-61
Q/R FIND COMMUNICATION FAILURE BEHAVIOR

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

All queries are initiated at the highest level of the information model (the STUDY level), and then for each response received, recursively repeated at the next lower levels (the SERIES and then IMAGE levels), in order to completely elucidate the “tree” of instances available on the remote AE.

The table below provides a description of the Q/R SCU AE C-FIND Request Identifier.

Table 4.2-62
STUDY ROOT REQUEST IDENTIFIER FOR C-FIND

Name	Tag	Types of Matching
Study Level		
Study Date	(0008,0020)	U
Study Time	(0008,0030)	U
Accession Number	(0008,0050)	U
Study Description	(0008,1030)	U
Patient’s Name	(0010,0010)	*
Patient’s ID	(0010,0020)	*
Patient's Sex	(0010,0040)	U
Study Instance UID	(0020,000D)	UNIQUE
Study ID	(0020,0010)	U
Series Level		
Series Date	(0008,0021)	U
Series Time	(0008,0031)	U
Modality	(0008,0060)	U
Series Description	(0008,103E)	U
Series Instance UID	(0020,000E)	UNIQUE
Series Number	(0020,0011)	U

Types of Matching:

The types of Matching supported by the Q/R SCU AE. An "S" indicates the identifier attribute uses Single Value Matching, an “*” indicates wildcard matching, and a ‘U’ indicates Universal Matching. “UNIQUE” indicates that this is the Unique Key for that query level, in which case Universal Matching or Single Value Matching is used depending on the query level.

4.2.7.3.1.4 SOP Specific Conformance for Q/R Move SOP Classes

The Q/R SCU AE provides standard conformance to the Query/Retrieve Move SOP Classes as an SCU.

The behavior of the Q/R SCU AE when encountering status codes in a Q/R C-MOVE response is summarized in the table below:

Table 4.2-63
THE Q/R SCU AE C-MOVE RESPONSE STATUS BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Sub-operations complete – No Failures	0000	The Storage SCP AE has successfully received the SOP Instance. If all SOP Instances in a move job have status success then the job is marked as complete.
Refused	Out of Resources – Unable to calculate number of matches	A701	The association is aborted using A-ABORT and the move job is marked as failed. The status meaning is logged and the job failure is reported to the user via the job control application.
	Out of Resources – Unable to perform sub-operations	A702	
	Move destination unknown	A801	
Failed	Identifier does not match SOP Class	A900	
Warning	Sub-operations complete but one or more failures.	B000	The association is aborted and the move job is marked as failed. The status meaning is logged and the job failure is reported to the user via the job control application.

The behavior of the Q/R SCU AE during communication failure is summarized in the table below.

Table 4.2-64
Q/R MOVE COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The association is aborted using A-ABORT and the retrieve is marked as failed. The reason is logged and reported to the user if an interactive query.
Association aborted by the SCP or network layers	The retrieve is marked as failed. The reason is logged and reported to the user if an interactive query.

The system requests Image Level Move only.

4.2.7.4 Association Acceptance Policy

The Q/R SCU AE does not accept associations.

4.2.8 Storage SCP AE Specification

4.2.8.1 SOP Classes

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

Table 4.2-65
SOP CLASSES FOR THE STORAGE SCP AE

SOP Class Name	SOP Class UID	SCU	SCP
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	No	Yes
Ultrasound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.6		
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		
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11		
Toshiba US Private Data Storage	1.2.392.200036.9116.7.8.1.1.1		

4.2.8.2 Association Policies

4.2.8.2.1 General

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

Table 4.2-66
DICOM APPLICATION CONTEXT FOR THE STORAGE SCP AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.8.2.2 Number of Associations

The Storage SCP AE can support up to seven associations at a time.

Table 4.2-67
NUMBER OF ASSOCIATIONS ACCEPTED FOR THE STORAGE SCP AE

Maximum number of simultaneous associations	7

4.2.8.2.3 Asynchronous Nature

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

Table 4.2-68
ASYNCHRONOUS NATURE FOR THE STORAGE SCP AE

Maximum number of outstanding asynchronous transactions	1

4.2.8.2.4 Implementation Identifying Information

The implementation information for the Storage SCP AE is:

Table 4.2-69
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE STORAGE SCP AE

Implementation Class UID	1.2.392.200036.9116.7.8.10.46.6.1.1.1
Implementation Version Name	TM_APLIO_1.0

4.2.8.3 Association Initiation Policy

The Storage SCP AE does not initiate associations.

4.2.8.4 Association Acceptance Policy

The Storage SCP AE accepts associations only if they have valid Presentation Contexts. If none of the requested Presentation Contexts are accepted then the association request itself is rejected. It can be configured to only accept associations with certain hosts (using TCP/IP address) and/or AE Titles.

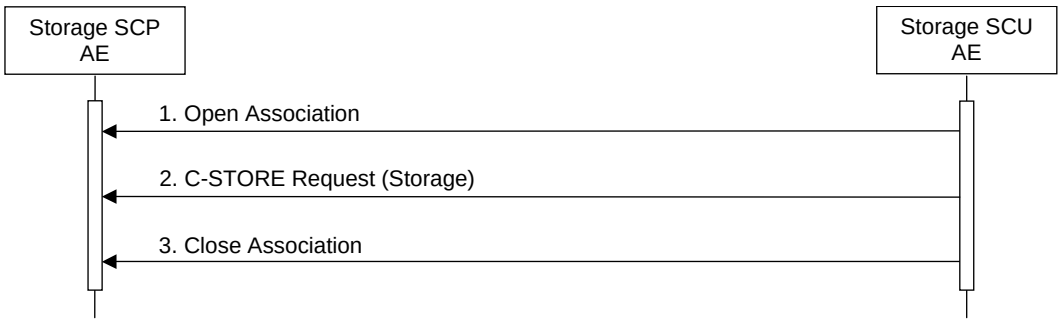

Figure 4.2-9
SEQUENCING OF ACTIVITY – STORE IMAGES TO THE LOCAL FILE SYSTEM

A possible sequence of interactions between the Storage SCP AE and a Storage SCU AE is illustrated in the Figure above:

1. The Storage SCU AE opens an association with the Storage SCP AE.
2. The Storage SCU AE sends images to the Storage SCP AE using a storage request (C-STORE) and the Storage SCP AE replies with a C-STORE response (status success).
3. The Storage SCU AE closes the association with the Storage SCP AE.

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

4.2.8.4.1.1 Accepted Presentation Contexts

The default behavior of the Storage 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 Storage SCP AE will select Explicit VR Little Endian Transfer Syntax.

Any of the presentation contexts shown in the following table are acceptable to the Storage SCP AE.

Table 4.2-70
ACCEPTED PRESENTATION CONTEXTS BY THE STORAGE SCP AE

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	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50		
		RLE Lossless	1.2.840.10008.1.2.5		
Ultrasound Image Storage (retired)	1.2.840.10008.5.1.4.1.1.6	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		
		RLE Lossless	1.2.840.10008.1.2.5		
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		
		RLE Lossless	1.2.840.10008.1.2.5		
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		
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	Implicit VR Little Endian	1.2.840.10008.1.2		
		Explicit VR Little Endian	1.2.840.10008.1.2.1		
Toshiba US Private Data Storage	1.2.392.200036.9116.7.8.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.8.4.1.2 SOP Specific Conformance for Storage SOP Classes

The associated Activity with the Storage service is the storage of medical image data received over the network on a designated hard disk. The Storage SCP AE will return a failure status if it is unable to store the images on to the hard disk.

The Storage SCP AE is Level 0 conformant as a Storage SCP.

Table 4.2-71
THE STORAGE SCP AE C-STORE RESPONSE STATUS RETURN REASONS

Service Status	Further Meaning	Status Code	Reason
Success	Success	0000	The Composite SOP Instance was successfully received, verified, and stored in the system database.
Refused	Out of Resources	A700	Indicates that there was not enough local resources.
Error	Cannot Understand	C000	Indicates that the Storage SCP AE cannot parse the Data Set into Elements. (e.g. when receiving unsupported character sets)

4.2.9 Print SCU AE Specification

4.2.9.1 SOP Classes

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

Table 4.2-72
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 4.2-73
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

4.2.9.2 Association Policies

4.2.9.2.1 General

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

Table 4.2-74
DICOM APPLICATION CONTEXT FOR THE PRINT SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.9.2.2 Number of Associations

The Print SCU AE can initiate up to five associations at a time.

Table 4.2-75
NUMBER OF ASSOCIATIONS INITIATED FOR THE PRINT SCU AE

Maximum number of simultaneous associations	5

4.2.9.2.3 Asynchronous Nature

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

Table 4.2-76
ASYNCHRONOUS NATURE FOR THE PRINT SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.9.2.4 Implementation Identifying Information

The implementation information for the Print SCU AE is:

Table 4.2-77
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE PRINT SCU AE

Implementation Class UID	1.2.392.200036.9116.7.8.10.46.6.1.1.1
Implementation Version Name	TM_APLIO_1.0

4.2.9.3 Association Initiation Policy

4.2.9.3.1 Activity – Send Images & Print Management Information

4.2.9.3.1.1 Description and Sequencing of Activities

4.2.9.3.1.1.1 Send Images & Print Management Information

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.

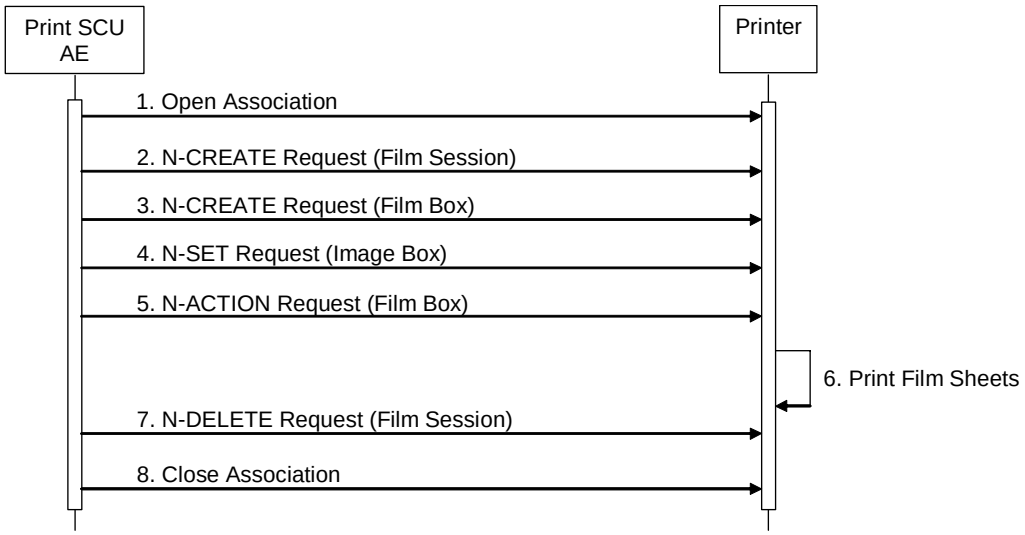

Figure 4.2-10
SEQUENCING OF ACTIVITY – SEND IMAGES & PRINT MANAGEMENT INFORMATION

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-CREATE on the Film Session SOP Class creates a Film Session.
3. N-CREATE on the Film Box SOP Class creates a Film Box linked to the Film Session.
4. N-SET on the Image Box SOP Class transfers the contents of the film sheet to the printer.
5. N-ACTION on the Film Box SOP Class instructs the Printer to print the Film Box.
6. The Printer prints the requested number of film sheets.
7. N-DELETE on the Film Session SOP Class deletes the complete Film Session SOP Instance hierarchy.
8. The Print SCU AE closes the association with the Printer.

4.2.9.3.1.1.2 Polling

The Print SCU AE automatically obtains current printer status information at 5-minute intervals. The status is marked as “READY” or “NOT READY”.

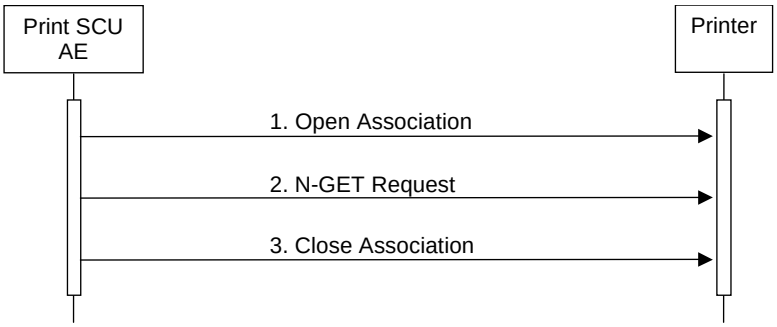

Figure 4.2-11
SEQUENCING OF ACTIVITY – POLLING

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. The Print SCU AE closes the association with the Printer.

4.2.9.3.1.2 Proposed Presentation Contexts

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

Table 4.2-78
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 Little Endian	1.2.840.10008.1.2.1		
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 Little Endian	1.2.840.10008.1.2.1		
Print Job SOP Class	1.2.840.10008.5.1.1.14	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1		

4.2.9.3.1.3 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 4.2-79
PRINT COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The association is aborted 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.

4.2.9.3.1.4 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

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

4.2.9.3.1.4.1 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 4.2-80
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, *READY* is displayed in the job control application.
2. If Printer Status (2110,0010) is FAILURE or WARNING, *NOT READY* is displayed and the contents of Printer Status Info (2110,0020) is logged.

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

Table 4.2-81
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 and the status meaning is logged and reported to the user.

4.2.9.3.1.5 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.

4.2.9.3.1.5.1 Film Session SOP Class Operations (N-CREATE)

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

Table 4.2-82
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 a N-CREATE response is summarized in the table below:

Table 4.2-83
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.
Warning	Attribute List Error	0107H	
*	*	Any other status code	The association is aborted and the print-job is marked as failed. The status meaning is logged and reported to the user.

4.2.9.3.1.5.2 Film Session SOP Class Operations (N-DELETE)

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

Table 4.2-84
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 and the print-job is marked as failed. The status meaning is logged and reported to the user.

4.2.9.3.1.6 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.

4.2.9.3.1.6.1 Film Box SOP Class Operations (N-CREATE)

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

Table 4.2-85
FILM BOX SOP CLASS N-CREATE REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Display Format	(2010,0010)	ST	STANDARD\1,1	ALWAYS	AUTO
Film Orientation	(2010,0040)	CS	PORTRAIT or LANDSCAPE	ALWAYS	AUTO
Film Size ID	(2010,0050)	CS	8INX10IN, 10INX12IN, 10INX14IN, 11INX14IN, 14INX14IN, or 14INX17IN	ALWAYS	USER
Magnification Type	(2010,0060)	CS	REPLICATE, BILINEAR, CUBIC or NONE	ALWAYS	USER
Min Density	(2010,0120)	US	20	ALWAYS	AUTO
Max Density	(2010,0130)	US	200 .. 320	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

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

Table 4.2-86
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	B605	The N-CREATE operation is considered successful.
*	*	Any other status code	The association is aborted and the print-job is marked as failed. The status meaning is logged and reported to the user.

4.2.9.3.1.6.2 Film Box SOP Class Operations (N-ACTION)

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

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

Table 4.2-87
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).	B603	The N-ACTION operation is considered successful.
Warning	Image size is larger than Image Box size. The image has been demagnified.	B604	
Warning	Image size is larger than Image Box size. The image has been cropped to fit.	B609	The association is aborted and the print-job is marked as failed. The status meaning is logged and reported to the user.
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.	B60A	
Failure	Unable to create Print Job SOP Instance; print queue is full.	C602	
Failure	Image size is larger than Image Box size.	C603	
Failure	Combined Print Image Size is larger than Image Box size.	C613	
*	*	Any other status code	

4.2.9.3.1.7 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.

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

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

Table 4.2-88
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)	OW		ALWAYS	AUTO

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

Table 4.2-89
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.	B604	The N-SET operation is considered successful.
Warning	Requested Min Density or Max Density outside of printer's operating range.	B605	
Warning	Image size is larger than Image Box size. The image has been cropped to fit.	B609	The association is aborted and the print-job is marked as failed. The status meaning is logged and reported to the user.
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.	B60A	
Failure	Image size is larger than Image Box size.	C603	
Failure	Insufficient memory in printer to store the image.	C605	
Failure	Combined Print Image Size is larger than Image Box size.	C613	
*	*	Any other status code	

4.2.9.3.1.8 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.

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

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

Table 4.2-90
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	0	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)	OW		ALWAYS	AUTO

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

Table 4.2-91
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.	B604	The N-SET operation is considered successful.
Warning	Requested Min Density or Max Density outside of printer's operating range.	B605	
Warning	Image size is larger than Image Box size. The image has been cropped to fit.	B609	The association is aborted and the print-job is marked as failed. The status meaning is logged and reported to the user.
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.	B60A	
Failure	Image size is larger than Image Box size.	C603	
Failure	Insufficient memory in printer to store the image.	C605	
Failure	Combined Print Image Size is larger than Image Box size.	C613	
*	*	Any other status code	

4.2.9.4 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 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: Up to 16 characters (alphanumeric characters, “-”, “.”, and “_”) can be used in the AE Titles.

Table 4.4-1
AE TITLE CONFIGURATION TABLE

Application Entity	Default AE Title	Default TCP/IP Port
Storage SCP	aplio	2000
Storage Commitment SCU		
Storage SCU		Not Applicable
Q/R SCU		
MPPS SCU		
MWM SCU	aplio	
Print SCU	aplio	

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: Up to 16 characters (alphanumeric characters, “-”, “.”, and “_”) can be used in the AE Titles.

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)	No	240 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	3
Supported transfer syntaxes (separately configurable for each remote AE)	Yes	Implicit VR Little Endian Explicit VR Little Endian
Number of times a failed send job may be retried	Yes	3
Storage Commitment SCU Parameters		
Maximum number of simultaneously initiated associations by the Storage Commitment SCU AE	No	3
Maximum number of simultaneously accepted associations by the Storage Commitment SCU AE	No	3
Storage Commitment SCU time-out waiting for a response to an N-ACTIION-RQ	Yes	600 sec
Delay association release after sending a storage commitment request (wait for a storage commitment notification over the same association)	No	0 sec
Modality Worklist SCU Parameters		
Maximum number of simultaneously initiated associations by the MWM SCU AE	No	1
Supported transfer syntaxes for MWM	No	Implicit VR Little Endian Explicit VR Little Endian
Modality Worklist SCU time-out waiting for the final response to a C-FIND-RQ	Yes	60 sec
Maximum number of worklist items	Yes [1-200]	200
Query worklist for specific Scheduled Station AE Title	Yes	aplio
Query worklist for specific Modality	Yes	US
MPPS SCU Parameters		
Maximum number of simultaneously initiated associations by the MPPS SCU AE	No	1
Supported transfer syntaxes for MPPS	No	Implicit VR Little Endian Explicit VR Little Endian
Storage SCP parameters		
Maximum number of simultaneously accepted associations by the Storage SCP AE	No	3
Print SCU Parameters		
Maximum number of simultaneously initiated associations by the Print SCU AE	No	5
Supported transfer syntaxes for Print	No	Implicit VR Little Endian Explicit VR Little Endian
Print SCU time-out waiting for a response to an N-CREATE-RQ	No	60 sec
Print SCU time-out waiting for a response to an N-DELETE-RQ	No	60 sec
Print SCU time-out waiting for a response to an N-SET-RQ	No	240 sec
Print SCU time-out waiting for a response to an N-ACTION-RQ	No	240 sec

5. MEDIA INTERCHANGE

5.1 IMPLEMENTATION MODEL

5.1.1 Application Data Flow

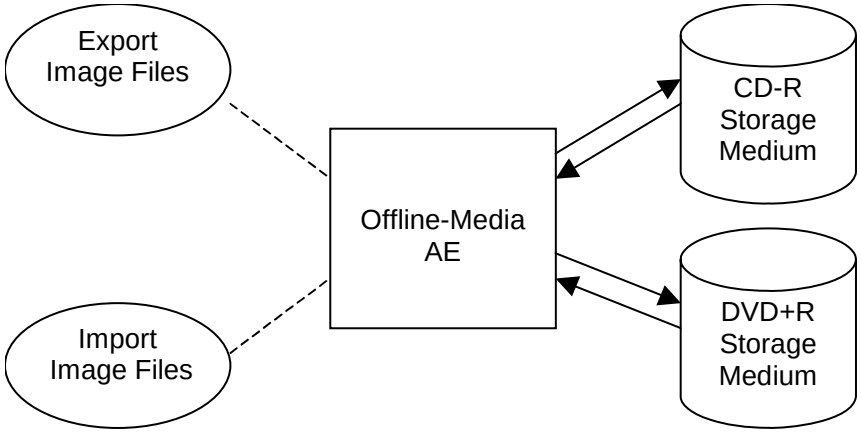

Figure 5.1-1
APPLICATION DATA FLOW DIAGRAM FOR MEDIA STORAGE

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

5.1.2 Functional Definition of AEs

5.1.2.1 Functional Definition of Offline-Media AE

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

Export:
- — Builds DICOM Information Objects.
- — Creates a DICOMDIR file that represents the contents of the DICOM Information Objects to be recorded.
- — Records DICOM Information Objects and the DICOMDIR file to the CD-R or the DVD+R medium.

Import:
- — Reads the DICOMDIR file that represents the contents of the data as recorded.
- — Displays the ordered list of studies/images, identifying information.
- — Loads the selected studies/images from the CD-R or the DVD+R medium and displays them on the screen.

Note: The Offline-Media AE can export/import files created by the product itself.

5.1.3 Sequencing of Real-World Activities

5.1.3.1 Activity – Export Image Files

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

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

Step-1: Select the studies on the local storage device to be created to the CD-R or the DVD+R medium.
Step-2: Select the image archiving.
Step-3: Select the virtual device as a destination.
Step-4: Request to copy to the CD-R or the DVD+R.

5.1.3.2 Activity – Import Image Files

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

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

Step-1: Select the studies on the medium to be retrieved to the local storage device.
Step-2: Select the data retrieval.
Step-3: Request to copy to the local storage device.

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	1.2.392.200036.9116.7.8.10.46.6.1.1.1
Implementation Version Name	TM_APLIO_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-US-ID-MF-CD, AUG-US-ID-MF-DVD	Export Image Files	FSC	Interchange
	Import Image Files	FSR	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 Image Files

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

5.2.1.2.2 Activity – Import Image Files

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

5.3 AUGMENTED AND PRIVATE APPLICATION PROFILES

5.3.1 Augmented Application Profiles

5.3.1.1 Augmented Application Profiles – AUG-US-ID-MF-CD & AUG-US-ID-MF-DVD

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	Explicit VR Little Endian	1.2.840.10008.1.2.1
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
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
Basic Text SR Storage	1.2.840.10008.5.1.4.1.1.88.11	Explicit VR Little Endian	1.2.840.10008.1.2.1
Toshiba US Private Data Storage	1.2.392.200036.9116.7.8.1.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1

5.3.1.1.2 Directory Augmentations

Not applicable to this product.

5.3.1.1.3 Other Augmentations

Not applicable to this product.

5.3.2 Private Application Profiles

Not applicable to this product.

5.4 MEDIA CONFIGURATION

Not applicable to the Offline-Media AE.

6. SUPPORT OF CHARACTER SETS

This product supports ISO-IR 100 (Latin alphabet No.1) Supplementary set of ISO8859.

Notes: If the Storage SCP AE receives images that contain characters from unsupported character sets, it will respond with “Cannot Understand” to the C-STORE request.

If the MWM SCU AE receives worklist items that contain characters from unsupported character sets, it may abort the association using A-ABORT.

7. SECURTIY

This product does not support any specific security measures.

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

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

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

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.

Table 8.1-4 specifies the attributes of a Basic Text SR transmitted by the Storage SCU AE.

Table 8.1-5 specifies the attributes of an Enhanced SR transmitted by the Storage SCU

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 8.1-6	ALWAYS
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-7	ALWAYS
	Patient Study	Table 8.1-8	ALWAYS
	Clinical Trial Study	--	Not Present
Series	General Series	Table 8.1-9	ALWAYS
	Clinical Trial Series	--	Not Present
Equipment	General Equipment	Table 8.1-10	ALWAYS
	SC Equipment	Table 8.1-17	ALWAYS
Image	General Image	Table 8.1-11	ALWAYS
	Image Pixel	Table 8.1-12	ALWAYS
	SC Image	Table 8.1-18	Not Present
	Overlay Plane	--	Not Present
	Modality LUT	--	Not Present
	VOI LUT	--	Not Present
	SOP Common	Table 8.1-19	ALWAYS
	Private Application	Table 8.1-20	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 8.1-6	ALWAYS
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-7	ALWAYS
	Patient Study	Table 8.1-8	ALWAYS
	Clinical Trial Study	--	Not Present
Series	General Series	Table 8.1-9	ALWAYS
	Clinical Trial Series	--	Not Present
Frame of Reference	Frame of Reference	--	Not Present
	Synchronization	--	Not Present
Equipment	General Equipment	Table 8.1-10	ALWAYS
Image	General Image	Table 8.1-11	ALWAYS
	Image Pixel	Table 8.1-12	ALWAYS
	Contrast/bolus	--	Not Present
	Palette Color Lookup Table	--	Not Present
	US Region Calibration	Table 8.1-13, Table 8.1-14, Table 8.1-15, Table 8.1-16	ALWAYS
	US Image	Table 8.1-21	ALWAYS
	Overlay Plane	--	Not Present
	VOI LUT	--	Not Present
	SOP Common	Table 8.1-22	ALWAYS
	Private Application	Table 8.1-23	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 8.1-6	ALWAYS
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-7	ALWAYS
	Patient Study	Table 8.1-8	ALWAYS
	Clinical Trial Study	--	Not Present
Series	General Series	Table 8.1-9	ALWAYS
	Clinical Trial Series	--	Not Present
Frame of Reference	Frame of Reference	--	Not Present
	Synchronization	--	Not Present
Equipment	General Equipment	Table 8.1-10	ALWAYS
Image	General Image	Table 8.1-11	ALWAYS
	Image Pixel	Table 8.1-12	ALWAYS
	Contrast/bolus	--	Not Present
	Cine	Table 8.1-24	ALWAYS
	Multi-frame	Table 8.1-25	ALWAYS
	Frame Pointers	--	Not Present
	Palette Color Lookup Table	--	Not Present
	US Region Calibration	Table 8.1-13, Table 8.1-14, Table 8.1-15, Table 8.1-16	ALWAYS
	US Image	Table 8.1-26	ALWAYS
	VOI LUT	--	Not Present
	SOP Common	Table 8.1-27	ALWAYS
	Private Application	Table 8.1-28	ALWAYS

8.1.1.4 Basic Text SR IOD

Table 8.1-4
IOD OF CREATED BASIC TEXT SR SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-6	ALWAYS
	Specimen Identification	--	Not Present
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-7	ALWAYS
	Patient Study	Table 8.1-8	ALWAYS
	Clinical Trial Study	--	Not Present
Series	SR Document Series	Table 8.1-29	ALWAYS
	Clinical Trial Series	--	Not Present
Equipment	General Equipment	Table 8.1-10	ALWAYS
Document	SR Document General	Table 8.1-30	ALWAYS
	SR Document Content	Table 8.1-31	ALWAYS
	SOP Common	Table 8.1-32	ALWAYS
	Private Application	Table 8.1-33	ALWAYS

8.1.1.5 Enhanced SR IOD

Table 8.1-5
IOD OF CREATED ENHANCED SR SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-6	ALWAYS
	Specimen Identification	--	Not Present
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-7	ALWAYS
	Patient Study	Table 8.1-8	ALWAYS
	Clinical Trial Study	--	Not Present
Series	SR Document Series	Table 8.1-34	ALWAYS
	Clinical Trial Series	--	Not Present
Equipment	General Equipment	Table 8.1-10	ALWAYS
Document	SR Document General	Table 8.1-35	ALWAYS
	SR Document Content	Table 8.1-36, Table 8.1-37, Table 8.1-38	ALWAYS
	SOP Common	Table 8.1-39	ALWAYS
	Private Application	Table 8.1-40	ALWAYS

8.1.1.6 Common Modules

Table 8.1-6
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	"18581118" will be entered if no value is present.	ALWAYS	MWL/ USER
Patient's Sex	(0010,0040)	CS		VNAP	MWL/ USER
Patient Comments	(0010,4000)	LT	Values supplied via Modality Worklist will be entered at *Comment*. Comment from Modality Worklist or user input will be edited in the following format: <"Insurance="Health Insurance Information<LINEFEED> Comment>.	ALWAYS	MWL*/ USER
Referenced Patient Sequence	(0008,1120)	SQ		VNAP	MWL
>Referenced SOP Class UID	(0008,1150)	UI		VNAP	MWL
>Referenced SOP Instance UID	(0008,1155)	UI		VNAP	MWL

*(0010,4000) is not included in Return Keys.

Table 8.1-7
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	See Table 4.2-44 Notes	ALWAYS	MWL*/ USER
Study Comments	(0032,4000)	LT	Values supplied via Modality Worklist will be entered at *Additional Info*. Additional Info from Modality Worklist or 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	MWL*/ USER
Referenced Study Sequence	(0008,1110)	SQ		VNAP	MWL
>Referenced SOP Class UID	(0008,1150)	UI		VNAP	MWL
>Referenced SOP Instance UID	(0008,1155)	UI		VNAP	MWL

*(0008,1030) and (0032,4000) is not included in Return Keys.

Table 8.1-8
PATIENT STUDY MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Admitting Diagnosis Description	(0008,1080)	LO		EMPTY	AUTO
Patient's Size	(0010,1020)	DS		VNAP	MWL*/ USER
Patient's Weight	(0010,1030)	DS		VNAP	MWL/ AUTO

*(0010,1020) is not included in Return Keys.

Table 8.1-9
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		ANAP	AUTO
Series Time	(0008,0031)	TM		ANAP	AUTO
Performing Physician's Name	(0008,1050)	PN		VNAP	MWL/ USER
Operator's Name	(0008,1070)	PN		VNAP	USER
Request Attributes Sequence	(0040,0275)	SQ		ANAP	AUTO
>Requested Procedure ID	(0040,1001)	SH		VNAP	MWL
>Scheduled Procedure Step ID	(0040,0009)	SH		VNAP	MWL
>Scheduled Procedure Step Description	(0040,0007)	LO	See Table 4.2-44 Notes	VNAP	MWL

Table 8.1-10
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		ALWAYS	CONFIG
Institutional Department Name	(0008,1040)	LO		VNAP	USER
Manufacturer's Model Name	(0008,1090)	LO	XarioXG	ALWAYS	AUTO
Device Serial Number	(0018,1000)	LO		ALWAYS	AUTO
Software Version	(0018,1020)	LO	V10.00	ALWAYS	AUTO

Table 8.1-11
GENERAL IMAGE MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Instance Number	(0020,0013)	IS	SC/US/Multi-frame: ALWAYS Private: Not Present	ANAP	AUTO
Patient Orientation	(0020,0020)	CS		ANAP	AUTO
Content Date	(0008,0023)	DA		ALWAYS	AUTO
Content Time	(0008,0033)	TM		ALWAYS	AUTO
Image Type	(0008,0008)	CS	Value 1: Pixel Data Characteristics "ORIGINAL" or "DERIVED" Value 2: Patient Exam Characteristics "PRIMARY" or "SECONDARY" Value 3: System Defined Term "US IMAGE", "US 3D IMAGE" (if the SC image is 3D/4D screen shot), or "US_4D_LIVE"	ANAP	AUTO
Acquisition Date	(0008,0022)	DA		ALWAYS	AUTO
Acquisition Time	(0008,0032)	TM		ALWAYS	AUTO
Derivation Description	(0008,2111)	ST		ANAP	AUTO
Image Comments	(0020,4000)	LT		ANAP	AUTO
Lossy Image Compression	(0028,2110)	CS		ANAP	AUTO
Lossy Image Compression Ratio	(0028,2112)	DS		ANAP	AUTO

Table 8.1-12
IMAGE PIXEL MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples per Pixel	(0028,0002)	US	3 or 1	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS	"RGB", "YBR_FULL", "YBR_FULL422", "YBR_PARTIAL_422", or "MONOCHROME2" Note: if "MONOCHROME2", then - (0028,0002) 1 - (0028,0006) Not Present	ALWAYS	CONFIG
Planar Configuration	(0028,0006)	US	0 or 1	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

8.1.1.7 US Region Calibration Module

Table 8.1-13
US REGION CALIBRATION MODULE B-MODE

Attribute Name	Tag	VR	Value	Presence of Value	Source
Sequence of Ultrasound Regions	(0018,6011)	SQ		ALWAYS	AUTO
>Region Spatial Format	(0018,6012)	US	1	ALWAYS	AUTO
>Region Data Type	(0018,6014)	US	1	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		ALWAYS	AUTO
>Steering Angle	(0018,6036)	FD		ANAP	AUTO

Table 8.1-14
US REGION CALIBRATION MODULE BC-MODE

Attribute Name	Tag	VR	Value	Presence of Value	Source
Sequence of Ultrasound Regions	(0018,6011)	SQ		ALWAYS	AUTO
>Region Spatial Format	(0018,6012)	US	1	ALWAYS	AUTO
>Region Data Type	(0018,6014)	US	2	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		ALWAYS	AUTO
>Pulse Repetition Frequency	(0018,6032)	UL		ALWAYS	AUTO
>Steering Angle	(0018,6036)	FD		ANAP	AUTO

Table 8.1-15
US REGION CALIBRATION MODULE D-MODE

Attribute Name	Tag	VR	Value	Presence of Value	Source
Sequence of Ultrasound Regions	(0018,6011)	SQ		ALWAYS	AUTO
>Region Spatial Format	(0018,6012)	US	3	ALWAYS	AUTO
>Region Data Type	(0018,6014)	US	3 or 4	ALWAYS	USER
>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		ALWAYS	AUTO
>Pulse Repetition Frequency	(0018,6032)	UL		ALWAYS	AUTO
>Doppler Correction Angle	(0018,6034)	FD		ALWAYS	AUTO
>Steering Angle	(0018,6036)	FD		ALWAYS	AUTO
>Doppler Sample Volume X Position	(0018,6038)	UL		ALWAYS	AUTO
>Doppler Sample Volume Y Position	(0018,603A)	UL		ALWAYS	AUTO
>TM-Line Position x0	(0018,603C)	UL		ALWAYS	AUTO
>TM-Line Position y0	(0018,603E)	UL		ALWAYS	AUTO
>TM-Line Position x1	(0018,6040)	UL		ALWAYS	AUTO
>TM-Line Position y1	(0018,6042)	UL		ALWAYS	AUTO

Table 8.1-16
US REGION CALIBRATION MODULE M-MODE

Attribute Name	Tag	VR	Value	Presence of Value	Source
Sequence of Ultrasound Regions	(0018,6011)	SQ		ALWAYS	AUTO
>Region Spatial Format	(0018,6012)	US	2	ALWAYS	AUTO
>Region Data Type	(0018,6014)	US	1	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		ALWAYS	AUTO
>TM-Line Position x0	(0018,603C)	UL		ALWAYS	AUTO
>TM-Line Position y0	(0018,603E)	UL		ALWAYS	AUTO
>TM-Line Position x1	(0018,6040)	UL		ALWAYS	AUTO
>TM-Line Position y1	(0018,6042)	UL		ALWAYS	AUTO

8.1.1.8 SC Image Modules

Table 8.1-17
SC EQUIPMENT MODULE OF CREATED SC IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Conversion Type	(0028,0064)	CS	“DV” (Digitized Video), “DI” (Digital Interface), “DF” (Digitized Film), or “WSD” (Workstation)	ALWAYS	AUTO

Table 8.1-18
SC IMAGE MODULE OF CREATED SC IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Date of Secondary Capture	(0018,1012)	DA		Not Present	
Time of Secondary Capture	(0018,1014)	TM		Not Present	

Table 8.1-19
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		ALWAYS	AUTO

Table 8.1-20
PRIVATE APPLICATION MODULE OF CREATED SC IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Private Creator	(0029,0010)	LO	PMTF INFORMATION DATA	ALWAYS	AUTO
PMTF Information 1	(0029,1031)	LO		ALWAYS	AUTO
PMTF Information 2	(0029,1032)	UL		ALWAYS	AUTO
PMTF Information 3	(0029,1033)	UL	0	ALWAYS	AUTO
PMTF Information 4	(0029,1034)	CS	DB TO DICOM	ALWAYS	AUTO

8.1.1.9 US Image Modules

Table 8.1-21
US IMAGE MODULE OF CREATED US IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Transducer Type	(0018,6031)	CS		ALWAYS	AUTO
Samples per Pixel	(0028,0002)	US	3 or 1	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS	"RGB", "YBR_FULL", "YBR_FULL422", "YBR_PARTIAL_422", or "MONOCHROME2" Note: if "MONOCHROME2", then - (0028,0002) 1 - (0028,0006) Not Present - (0028,0014) 0	ALWAYS	CONFIG
Planar Configuration	(0028,0006)	US	0 or 1	ANAP	AUTO
Rows	(0028,0010)	US	600 or 537	ALWAYS	USER
Columns	(0028,0011)	US	800 or 716	ALWAYS	USER
Ultrasound Color Data Present	(0028,0014)	US	1 or 0	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 8.1-22
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		ALWAYS	AUTO

Table 8.1-23
PRIVATE APPLICATION MODULE OF CREATED US IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Private Creator	(0029,0010)	LO	TOSHIBA MDW HEADER	ALWAYS	AUTO
Application Header Type	(0029,1008)	CS	TUS_IMAGE or TUS_ASQ	ALWAYS	AUTO
Application Header Version	(0029,1009)	LO	1.00 or 1.0	ALWAYS	AUTO
Application Header Data	(0029,1010)	OB		ALWAYS	AUTO
Private Creator	(0029,0011)	LO	PMTF INFORMATION DATA	ALWAYS	AUTO
PMTF Information 1	(0029,1131)	LO		ALWAYS	AUTO
PMTF Information 2	(0029,1132)	UL		ALWAYS	AUTO
PMTF Information 3	(0029,1133)	UL	0	ALWAYS	AUTO
PMTF Information 4	(0029,1134)	CS	DB TO DICOM	ALWAYS	AUTO

8.1.1.10 US Multi-frame Image Modules

Table 8.1-24
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 8.1-25
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 8.1-26
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	(0008,1088)	IS		ANAP	AUTO
Transducer Type	(0018,6031)	CS		ALWAYS	AUTO
Samples per Pixel	(0028,0002)	US	3	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS	YBR_FULL422	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		ALWAYS	AUTO

Table 8.1-27
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		ALWAYS	AUTO

Table 8.1-28
PRIVATE APPLICATION MODULE OF CREATED US MULTI-FRAME IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Private Creator	(0029,0010)	LO	TOSHIBA MDW NON-IMAGE	ALWAYS	AUTO
Application Header Type	(0029,1008)	CS	TUS_CLIP, TSB_STRESS_CLIP, or US_4D_CLIP	ALWAYS	AUTO
Application Header Version	(0029,1009)	LO	1.00	ALWAYS	AUTO
Private Creator	(0029,0011)	LO	PMTF INFORMATION DATA	ALWAYS	AUTO
PMTF Information 1	(0029,1131)	LO		ALWAYS	AUTO
PMTF Information 2	(0029,1132)	UL		ALWAYS	AUTO
PMTF Information 3	(0029,1133)	UL	0	ALWAYS	AUTO
PMTF Information 4	(0029,1134)	CS	DB TO DICOM	ALWAYS	AUTO
Private Creator	(0029,0012)	LO	TOSHIBA MDW HEADER	ANAP	AUTO
Application Header Type	(0029,1208)	CS	TUS_CLIP or US_4D_CLIP	ANAP	AUTO
Application Header Version	(0029,1209)	LO	1	ANAP	AUTO
Application Header Data	(0029,1210)	OB		ANAP	AUTO

8.1.1.11 Basic Text SR Modules

Table 8.1-29
SR DOCUMENT SERIES MODULE OF CREATED BASIC TEXT SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	SR	ALWAYS	AUTO
Referenced Study Component Sequence	(0008,1111)	SQ		VNAP	AUTO
Series Instance UID	(0020,000E)	UI		ALWAYS	AUTO
Series Number	(0020,0011)	IS		ALWAYS	AUTO

Table 8.1-30
SR DOCUMENT GENERAL MODULE OF CREATED BASIC TEXT SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Content Date	(0008,0023)	DA		ALWAYS	AUTO
Content Time	(0008,0033)	TM		ALWAYS	AUTO
Instance Number	(0020,0013)	IS		ALWAYS	AUTO
Referenced Request Sequence	(0040,A370)	SQ		VNAP	AUTO
>Accession Number	(0008,0050)	SH		VNAP	MWL/ USER
>Referenced Study Sequence	(0008,1110)	SQ		VNAP	MWL
>Study Instance UID	(0020,000D)	UI		VNAP	MWL/ AUTO
>Requested Procedure Description	(0032,1060)	LO	See Table 4.2-44 Notes	VNAP	MWL/ USER
>Requested Procedure Code Sequence	(0032,1064)	SQ		VNAP	MWL
>Requested Procedure ID	(0040,1001)	SH		VNAP	MWL/ USER
>Placer Order Number/Imaging Service Request	(0040,2016)	LO		VNAP	MWL
>Filler Order Number/Imaging Service Request	(0040,2017)	LO		VNAP	MWL
Performed Procedure Code Sequence	(0040,A372)	SQ		ALWAYS	AUTO
Current Requested Procedure Evidence Sequence	(0040,A375)	SQ		VNAP	AUTO
>Referenced Series Sequence	(0008,1115)	SQ		VNAP	AUTO
>>Referenced SOP Sequence	(0008,1199)	SQ		VNAP	AUTO
>>>Referenced SOP Class UID	(0008,1150)	UI		VNAP	AUTO
>>>Referenced SOP Instance UID	(0008,1155)	UI		VNAP	AUTO
>>Series Instance UID	(0020,000E)	UI		ALWAYS	AUTO
>Study Instance UID	(0020,000D)	UI		VNAP	MWL/ AUTO
Completion Flag	(0040,A491)	CS	COMPLETE	ALWAYS	AUTO
Verification Flag	(0040,A493)	CS	UNVERIFIED	ALWAYS	AUTO

Table 8.1-31
SR DOCUMENT CONTENT MODULE OF CREATED BASIC TEXT SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>Code Value	(0008,0100)	SH	V5000001	ALWAYS	AUTO
>Coding Scheme Designator	(0008,0102)	SH	TSBUS	ALWAYS	AUTO
>Code Meaning	(0008,0104)	LO	APLIO_BASIC_REPORT	ALWAYS	AUTO
Continuity of Content	(0040,A050)	CS	SEPARATE	ALWAYS	AUTO
Content sequence	(0040,A730)	SQ		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	TEXT	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	V5000002	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	TSBUS	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	ORIGINAL_XML_DATA	ALWAYS	AUTO
>Text Value	(0040,A160)	UT	Measurement Result	ALWAYS	AUTO

Table 8.1-32
SOP COMMON MODULE OF CREATED BASIC TEXT SR 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	1.2.840.10008.5.1.4.1.1.88.11	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI		ALWAYS	AUTO

Table 8.1-33
PRIVATE APPLICATION MODULE OF CREATED BASIC TEXT SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Private Creator	(0029,0010)	LO	TOSHIBA MDW NON-IMAGE	ALWAYS	AUTO
Application Header Type	(0029,1008)	CS	TSB_BASIC_SR	ALWAYS	AUTO
Application Header Version	(0029,1009)	LO	1.00	ALWAYS	AUTO
Application Header Data	(0029,1020)	OB		ALWAYS	AUTO
Private Creator	(0029,0011)	LO	PMTF INFORMATION DATA	ALWAYS	AUTO
PMTF Information 1	(0029,1131)	LO		ALWAYS	AUTO
PMTF Information 2	(0029,1132)	UL		ALWAYS	AUTO
PMTF Information 3	(0029,1133)	UL	0	ALWAYS	AUTO
PMTF Information 4	(0029,1134)	CS	DB TO DICOM	ALWAYS	AUTO

8.1.1.12 Enhanced SR Modules

Table 8.1-34
SR DOCUMENT SERIES MODULE OF CREATED ENHANCED SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	SR	ALWAYS	AUTO
Referenced Study Component Sequence	(0008,1111)	SQ		VNAP	AUTO
Series Instance UID	(0020,000E)	UI		ALWAYS	AUTO
Series Number	(0020,0011)	IS		ALWAYS	AUTO

Table 8.1-35
SR DOCUMENT GENERAL MODULE OF CREATED ENHANCED SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Content Date	(0008,0023)	DA		ALWAYS	AUTO
Content Time	(0008,0033)	TM		ALWAYS	AUTO
Instance Number	(0020,0013)	IS		ALWAYS	AUTO
Referenced Request Sequence	(0040,A370)	SQ		VNAP	AUTO
>Accession Number	(0008,0050)	SH		VNAP	MWL/ USER
>Referenced Study Sequence	(0008,1110)	SQ		VNAP	MWL
>Study Instance UID	(0020,000D)	UI		VNAP	MWL/ AUTO
>Requested Procedure Description	(0032,1060)	LO	See Table 4.2-44 Notes	VNAP	MWL/ USER
>Requested Procedure Code Sequence	(0032,1064)	SQ		VNAP	MWL
>Requested Procedure ID	(0040,1001)	SH		VNAP	MWL/ USER
>Placer Order Number/Imaging Service Request	(0040,2016)	LO		VNAP	MWL
>Filler Order Number/Imaging Service Request	(0040,2017)	LO		VNAP	MWL
Performed Procedure Code Sequence	(0040,A372)	SQ		ALWAYS	AUTO
Current Requested Procedure Evidence Sequence	(0040,A375)	SQ		VNAP	AUTO
>Referenced Series Sequence	(0008,1115)	SQ		VNAP	AUTO
>>Referenced SOP Sequence	(0008,1199)	SQ		VNAP	AUTO
>>>Referenced SOP Class UID	(0008,1150)	UI		VNAP	AUTO
>>>Referenced SOP Instance UID	(0008,1155)	UI		VNAP	AUTO
>>Series Instance UID	(0020,000E)	UI		ALWAYS	AUTO
>Study Instance UID	(0020,000D)	UI		VNAP	MWL/ AUTO
Completion Flag	(0040,A491)	CS	COMPLETE	ALWAYS	AUTO
Verification Flag	(0040,A493)	CS	UNVERIFIED	ALWAYS	AUTO

Table 8.1-36
SR DOCUMENT CONTENT MODULE OF CREATED ENHANCED SR SOP INSTANCES FOR ECHOCARDIOGRAPHY PROCEDURE REPORT TEMPLATE

Attribute Name	Tag	VR	Value	Presence of Value	Source
Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>Code Value	(0008,0100)	SH	125200	ALWAYS	AUTO
>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>Code Meaning	(0008,0104)	LO	Adult Echocardiography Procedure Report	ALWAYS	AUTO
Continuity of Content	(0040,A050)	CS	SEPARATE	ALWAYS	AUTO
Content Template Sequence	(0040,A504)	SQ		ALWAYS	AUTO
Template Identifier	(0040,DB00)	CS	5200	ALWAYS	AUTO
Mapping Resource	(0008,0105)	CS	DCMR	ALWAYS	AUTO
Content sequence	(0040,A730)	SQ		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121049	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Language of Content Item and descendants	ALWAYS	AUTO
>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	HAS OBS CONTEXT	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121007	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121118	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Patient Characteristics	ALWAYS	AUTO
>Content sequence	(0040,A730)	SQ		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	121033	ALWAYS	AUTO

>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Subject Age	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	121032	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Subject Sex	ALWAYS	AUTO
>>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	8867-4	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Heart Rate	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	F-008EC	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Systolic Blood Pressure	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	F-008ED	ALWAYS	AUTO

>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Diastolic Blood Pressure	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	8277-6	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Body Surface Area	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	111028	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Image Library	ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	IMAGE	ALWAYS	AUTO
Referenced SOP Sequence	(0008,1199)	SQ		ALWAYS	AUTO
>Referenced SOP Class UID	(0008,1150)	UI		ALWAYS	AUTO
>Referenced SOP Instance UID	(0008,1155)	UI		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONATINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121070	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Findings	ALWAYS	AUTO
>Content sequence	(0040,A730)	SQ		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	G-C0E3	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Finding Site	ALWAYS	AUTO
>>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO

>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	125007	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Measurement Group	ALWAYS	AUTO
>>Content sequence	(0040,A730)	SQ		ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH	R-4089A	ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Cardiac Cycle Point	ALWAYS	AUTO
>>>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH	111031	ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Image view	ALWAYS	AUTO
>>>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Measurement name or description	ALWAYS	AUTO
>>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH	G-C036	ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO

>>>>Code Meaning	(0008,0104)	LO	Measurement Method	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Method	ALWAYS	AUTO

Table 8.1-37
SR DOCUMENT CONTENT MODULE OF CREATED ENHANCED SR SOP INSTANCES FOR VASCULAR ULTRASOUND REPORT TEMPLATE

Attribute Name	Tag	VR	Value	Presence of Value	Source
Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>Code Value	(0008,0100)	SH	125100	ALWAYS	AUTO
>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>Code Meaning	(0008,0104)	LO	Vascular Ultrasound Procedure Report	ALWAYS	AUTO
Continuity of Content	(0040,A050)	CS	SEPARATE	ALWAYS	AUTO
Content Template Sequence	(0040,A504)	SQ		ALWAYS	AUTO
Template Identifier	(0040,DB00)	CS	5100	ALWAYS	AUTO
Mapping Resource	(0008,0105)	CS	DCMR	ALWAYS	AUTO
Content sequence	(0040,A730)	SQ		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121049	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Language of Content Item and descendants	ALWAYS	AUTO
>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	HAS OBS CONTEXT	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Observation Context	ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121118	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO

>>Code Meaning	(0008,0104)	LO	Patient Characteristics	ALWAYS	AUTO
>Content sequence	(0040,A730)	SQ		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	121033	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Subject Age	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	121032	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Subject Sex	ALWAYS	AUTO
>>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	8867-4	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Heart Rate	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	F-008EC	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Systolic Blood Pressure	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO

>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	F-008ED	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Diastolic Blood Pressure	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	111028	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Image Library	ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	IMAGE	ALWAYS	AUTO
>Referenced SOP Sequence	(0008,1199)	SQ		ALWAYS	AUTO
>>Referenced SOP Class UID	(0008,1150)	UI		ALWAYS	AUTO
>>Referenced SOP Instance UID	(0008,1155)	UI		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONATINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121070	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Findings	ALWAYS	AUTO
>Content sequence	(0040,A730)	SQ		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	G-C0E3	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Finding Site	ALWAYS	AUTO
>>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO

>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Anatomy Ratio measurement	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CONATINER	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Extra cranial Artery in defined CID 12104	ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH	G-A1F8	ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Topographical Modifier	ALWAYS	AUTO
>>>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH	125101	ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Vessel branch	ALWAYS	AUTO
>>>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO

Table 8.1-38
SR DOCUMENT CONTENT MODULE OF CREATED ENHANCED SR SOP INSTANCES FOR OB-GYN ULTRASOUND PROCEDURE REPORT TEMPLATE

Attribute Name	Tag	VR	Value	Presence of Value	Source
Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>Code Value	(0008,0100)	SH	125000	ALWAYS	AUTO
>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>Code Meaning	(0008,0104)	LO	OB-GYN Ultrasound Procedure Report	ALWAYS	AUTO
Continuity of Content	(0040,A050)	CS	SEPARATE	ALWAYS	AUTO
Content Template Sequence	(0040,A504)	SQ		ALWAYS	AUTO
Template Identifier	(0040,DB00)	CS	5000	ALWAYS	AUTO
Mapping Resource	(0008,0105)	CS	DCMR	ALWAYS	AUTO
Content sequence	(0040,A730)	SQ		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121049	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Language of Content Item and descendants	ALWAYS	AUTO
>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	HAS OBS CONTEXT	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121007	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Device	ALWAYS	AUTO
>Concept Code Sequence	(0040,A160)	SQ		ALWAYS	AUTO
>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121118	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Patient Characteristics	ALWAYS	AUTO
>Content sequence	(0040,A730)	SQ		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	TEXT	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	121106	ALWAYS	AUTO

>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Comment	ALWAYS	AUTO
>>Text Value	(0040,A160)	UT		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	8302-2	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Patient Height	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	29463-7	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Patient Weight	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	11996-6	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Gravida	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	11977-6	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Para	ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO

>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	111028	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Image Library	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	IMAGE	ALWAYS	AUTO
>>Referenced SOP Sequence	(0008,1199)	SQ		ALWAYS	AUTO
>>>Referenced SOP Class UID	(0008,1150)	UI		ALWAYS	AUTO
>>>Referenced SOP Instance UID	(0008,1155)	UI		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121111	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Summary	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	DATE	ALWAYS	AUTO
>>Date	(0040,A121)	DA		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	125008	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Fetus Summary	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS OBS CONTEXT	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	TEXT	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	11951-1	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Fetus ID	ALWAYS	AUTO
>>Text Value	(0040,A160)	UT		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO

>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	G-C036	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Measurement Method	ALWAYS	AUTO
>>Concept Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	125001	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Fetal Biometry Ratios	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS OBS CONTEXT	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	TEXT	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	11951-1	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Fetus ID	ALWAYS	AUTO
>>Text Value	(0040,A160)	UT		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	125002	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Fetal Biometry	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS OBS CONTEXT	ALWAYS	AUTO

>>Value Type	(0040,A040)	CS	TEXT	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	11951-1	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Fetus ID	ALWAYS	AUTO
>>Text Value	(0040,A160)	UT		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	125005	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Biometry Group	ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>>Relationship Type	(0040,A010)	CS	INFERRED FROM	ALWAYS	AUTO
>>>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>>Concept Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	125003	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Fetal Long Bones	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS OBS CONTEXT	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	TEXT	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	11951-1	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Fetus ID	ALWAYS	AUTO

>>Text Value	(0040,A160)	UT		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	125005	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Biometry Group	ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>>Relationship Type	(0040,A010)	CS	INFERRED FROM	ALWAYS	AUTO
>>>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>>Concept Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	125004	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Fetal Cranium	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS OBS CONTEXT	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	TEXT	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	11951-1	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Fetus ID	ALWAYS	AUTO
>>Text Value	(0040,A160)	UT		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	125005	ALWAYS	AUTO

>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Biometry Group	ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>>Relationship Type	(0040,A010)	CS	INFERRED FROM	ALWAYS	AUTO
>>>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>>Concept Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121070	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Findings	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	G-C0E3	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Finding Site	ALWAYS	AUTO
>>Concept Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH	11627-7	ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Amniotic Fluid Index	ALWAYS	AUTO

>>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	125009	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Early Gestation	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS OBS CONTEXT	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	TEXT	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	11951-1	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Fetus ID	ALWAYS	AUTO
>>Text Value	(0040,A160)	UT		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	125005	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Biometry Group	ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>>Relationship Type	(0040,A010)	CS	INFERRED FROM	ALWAYS	AUTO
>>>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>>Concept Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO

>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121070	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Findings	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	G-C0E3	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Finding Site	ALWAYS	AUTO
>>Concept Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	HAS OBS CONTEXT	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	TEXT	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH	11951-1	ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH	LN	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Fetus ID	ALWAYS	AUTO
>>>Text Value	(0040,A160)	UT		ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>Code Value	(0008,0100)	SH	121070	ALWAYS	AUTO

>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Findings	ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH	G-C0E3	ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	Finding Site	ALWAYS	AUTO
>>Concept Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>Value Type	(0040,A040)	CS	CONTAINER	ALWAYS	AUTO
>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	HAS CONCEPT MOD	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	CODE	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH	G-C171	ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Laterality	ALWAYS	AUTO
>>>Relationship Type	(0040,A010)	CS	CONTAINS	ALWAYS	AUTO
>>>Value Type	(0040,A040)	CS	NUM	ALWAYS	AUTO
>>>Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH		ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO
>>>Measured Value Sequence	(0040,A300)	SQ		ALWAYS	AUTO
>>>>Numeric Value	(0040,A30A)	DA		ALWAYS	AUTO
>>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>>Code value	(0008,0100)	SH		ALWAYS	AUTO
>>>>>Coding Scheme designator	(0008,0102)	SH		ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO		ALWAYS	AUTO

Table 8.1-39
SOP COMMON MODULE OF CREATED ENHANCED SR 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	1.2.840.10008.5.1.4.1.1.88.22	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI		ALWAYS	AUTO

Table 8.1-40
PRIVATE APPLICATION MODULE OF CREATED ENHANCED SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Private Creator	(0029,0010)	LO	TOSHIBA MDW NON-IMAGE	ALWAYS	AUTO
Application Header Type	(0029,1008)	CS	TSB_BASIC_SR	ALWAYS	AUTO
Application Header Version	(0029,1009)	LO	1.00	ALWAYS	AUTO
Application Header Data	(0029,1020)	OB		ALWAYS	AUTO
Private Creator	(0029,0011)	LO	PMTF INFORMATION DATA	ALWAYS	AUTO
PMTF Information 1	(0029,1131)	LO		ALWAYS	AUTO
PMTF Information 2	(0029,1132)	UL		ALWAYS	AUTO
PMTF Information 3	(0029,1133)	UL	0	ALWAYS	AUTO
PMTF Information 4	(0029,1134)	CS	DB TO DICOM	ALWAYS	AUTO
Private Creator	(7015,0060)	LO	TOSHIBA ENCRYPTED SR DATA	ALWAYS	AUTO
Toshiba US Private Data	(7015,6000)	OB		ALWAYS	AUTO

8.1.2 Usage of Attributes from received IOD's

No SOP Class specific fields are required.

8.1.3 Attribute Mapping

The relationships between attributes received via Modality Worklist, stored in acquired images and communicated via MPPS are summarized in Table 8.1-41.

Table 8.1-41
ATTRIBUTE MAPPING BETWEEN MODALITY WORKLIST, IMAGE AND MPPS

Modality Worklist	Image IOD	MPPS IOD
--	--	Scheduled Step Attribute 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
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
Requested Procedure Description		
Requested Procedure Code Sequence	Requested Procedure Code Sequence	Requested Procedure Code Sequence
--	Referenced Study Component Sequence	--
--	>Referenced SOP Class UID	SOP Class UID
--	>Referenced SOP Instance UID	SOP Instance UID
--	Protocol Name	Protocol Name
Patient Name	Patient Name	Patient Name
Patient's ID	Patient's ID	Patient's ID
Patient's Birth Date	Patient's Birth Date	Patient's Birth Date
Patient's Sex	Patient's Sex	Patient's Sex
Referring Physician's Name	Referring Physician's Name	--

8.1.4 Coerced/Modified Fields

Not applicable to this product.

8.2 DATA DICTIONARY OF PRIVATE ATTRIBUTES

This product reserves private attribute values in the groups 0029, 7015, and 7FE1.
The private attributes added to created SOP instances or directory records are listed in the following table;

Table 8.2-1
DATA DICTIONARY OF PRIVATE ATTRIBUTES

Tag	Attribute Name	VR	VM
(0029,00xx)	Private Creator	LO	1
(0029,xx08)	Application Header Type	CS	1
(0029,xx09)	Application Header Version	LO	1
(0029,xx10)	Application Header Data	OB	1
(0029,xx20)	Application Header Data	OB	1
(0029,xx31)	PMTF Information 1	LO	1
(0029,xx32)	PMTF Information 2	UL	1
(0029,xx33)	PMTF Information 3	UL	1
(0029,xx34)	PMTF Information 4	CS	1
(7015,00xx)	Private Creator	LO	1
(7015,xx00)	Toshiba US Private Data	OB	1
(7FE1,00xx)	Private Creator	LO	1
(7FE1,xx10)	Toshiba US Private Data	OB	1

8.3 CONTROLLED TERMINOLOGY AND TEMPLATES

Not applicable to this product.

8.4 GRAYSCALE IMAGE CONSISTENCY

Not applicable to this product.

8.5 STANDARD EXTENDED/SPECIALIZED/PRIVATE SOP CLASSES

8.5.1 Private SOP Class - Toshiba US Private Data Storage

Table 8.5-1
IOD OF CREATED TOSHIBA US PRIVATE DATA SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-6	ALWAYS
Study	General Study	Table 8.1-7	ALWAYS
	Patient Study	Table 8.1-8	ALWAYS
Series	General Series	Table 8.1-9	ALWAYS
Equipment	General Equipment	Table 8.1-10	ALWAYS
Image	General Image	Table 8.1-11	ALWAYS
	SOP Common	Table 8.5-2	ALWAYS
	Private Application	Table 8.5-3	ALWAYS

Table 8.5-2
SOP COMMON MODULE OF CREATED TOSHIBA US PRIVATE DATA 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	1.2.392.200036.9116.7.8.1.1.1	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI		ALWAYS	AUTO

Table 8.5-3
PRIVATE APPLICATION MODULE OF CREATED TOSHIBA US PRIVATE DATA SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Private Creator	(0029,0010)	LO	TOSHIBA MDW NON-IMAGE	ALWAYS	AUTO
Application Header Type	(0029,1008)	CS	US 3D VOLUME, TSB_STRESS, TSB_RAW, TSB_BASIC_SR, US_4D_LIVE, or US_4D_CLIP	ALWAYS	AUTO
Application Header Version	(0029,1009)	LO	“5.00” for US 3D VOLUME, “1.30” for TSB_RAW, or “1.00” for the rest	ALWAYS	AUTO
Application Header Data	(0029,1010)	OB		ALWAYS	AUTO
Private Creator	(0029,0011)	LO	PMTF INFORMATION DATA	ALWAYS	AUTO
PMTF Information 1	(0029,1131)	LO		ALWAYS	AUTO
PMTF Information 2	(0029,1132)	UL		ALWAYS	AUTO
PMTF Information 3	(0029,1133)	UL	0	ALWAYS	AUTO
PMTF Information 4	(0029,1134)	CS	DB TO DICOM	ALWAYS	AUTO
Private Creator	(0029,0012)	LO	TOSHIBA MDW HEADER	ANAP	AUTO
Application Header Type	(0029,1208)	CS	US 3D VOLUME, TSB_RAW, US_4D_LIVE, or US_4D_CLIP	ANAP	AUTO
Application Header Version	(0029,1209)	LO	1	ANAP	AUTO
Application Header Data	(0029,1210)	OB		ANAP	AUTO
Private Creator	(7FE1,0010)	LO	TOSHIBA MDW NON-IMAGE	ALWAYS	AUTO
Toshiba US Private Data	(7FE1,1010)	OB		ALWAYS	AUTO

8.6 PRIVATE TRANSFER SYNTAXES

Not applicable to this product.