No. MIIUS0039EAA

TOSHIBA

DICOM CONFORMANCE STATEMENT

FOR

DIAGNOSTIC ULTRASOUND SYSTEM

Aplio ARTIDA™

MODEL SSH-880CV V2.00

TOSHIBA MEDICAL SYSTEMS CORPORATION

Trademarks

IMPORTANT!

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1. CONFORMANCE STATEMENT OVERVIEW

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

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	Yes	Yes
Ultrasound Multi-frame Image Storage	Yes	Yes
Enhanced SR 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

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

Table 1-2
MEDIA SERVICES

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

USB Media		
General Purpose USB Media	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

FSU File-Set Updater

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

USB Universal Serial Bus

3.4 REFERENCES

[DICOM] Digital Imaging and Communications in Medicine (DICOM), NEMA PS 3.1-3.18, 2008

4. NETWORKING

4.1 IMPLEMENTATION MODEL

4.1.1 Application Data Flow

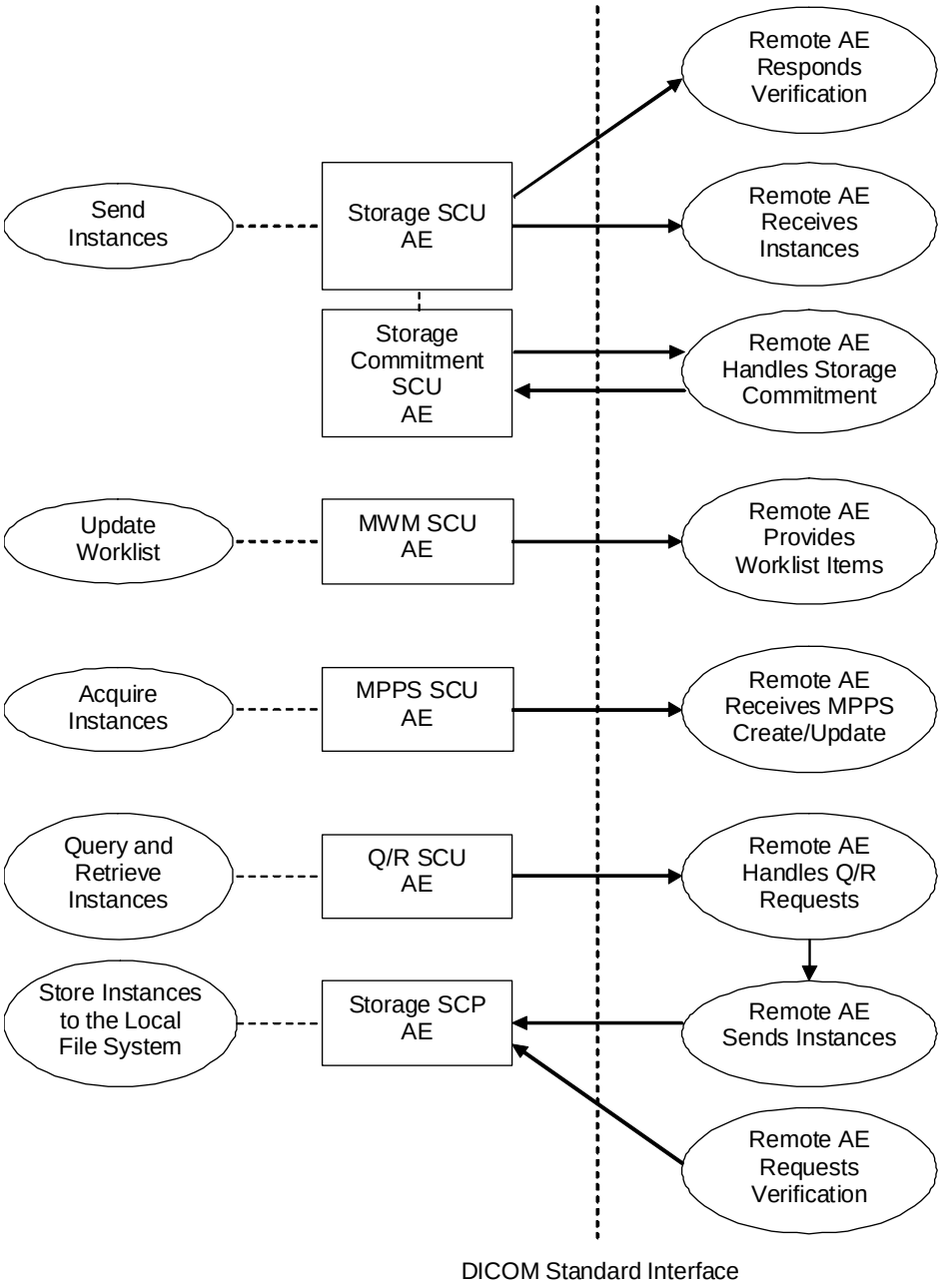

Figure 4.1-1
APPLICATION DATA FLOW DIAGRAM

— The Storage SCU AE sends instances to a remote AE. It is associated with the local real-world activity “Send Instances”. “Send Instances” is performed upon user request for specific instances selected. If the remote AE is configured as a Storage Commitment SCP AE, the Storage SCU AE will send a storage commitment request to the Storage Commitment SCU AE. The Storage SCU AE can also issue C-ECHO requests as a Verification SCU.

— 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 “Acquire Instances”. When the “Acquire Instances” is performed the MPPS SCU AE creates and updates Modality Performed Procedure Step instances managed by a remote AE. Acquisition of instances will result in automated creation of an MPPS instance. Completion of the MPPS is performed as the result of an operator action.

— The 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 Storage SCP AE can also respond to C-ECHO requests as a Verification SCP.

4.1.2 Functional Definition of AEs

4.1.2.1 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 instance transfer is started. If the instance 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. The Storage SCU AE can also issue C-ECHO requests as a Verification SCU for service purposes when a remote AE is configured.

4.1.2.2 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.

4.1.2.3 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.

4.1.2.4 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.

4.1.2.5 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 instances will be received at the Storage SCP AE.

4.1.2.6 Functional Definition of Storage SCP AE

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

4.1.3 Sequencing of Real-World Activities

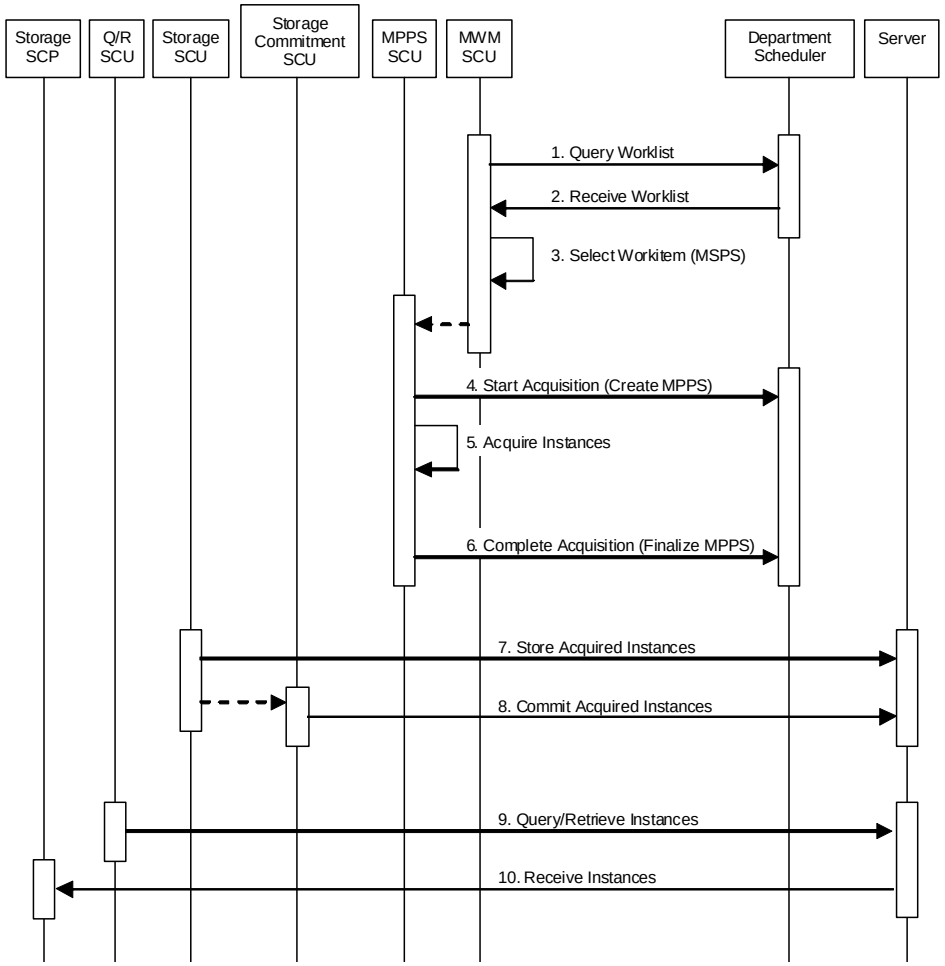

Figure 4.1-2
SEQUENCING CONSTRAINTS

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 Instances
6. Complete Acquisition and Finalize MPPS
7. Store Acquired Instances
8. Commit Acquired Instances
9. Query/Retrieve Instances
10. Retrieve Instances

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 Storage SCU AE Specification

4.2.1.1 SOP Classes

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

Table 4.2-1
SOP CLASSES FOR THE STORAGE SCU AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification	1.2.840.10008.1.1	Yes	No
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7		
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		
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22		

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 STORAGE SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.1.2.2 Number of Associations

The Storage SCU AE can initiate up to ten associations at a time for each destination to which a transfer request is being processed in the active job queue list. Up to ten jobs, that instances 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 4.2-3
NUMBER OF ASSOCIATIONS INITIATED FOR THE STORAGE SCU AE

Maximum number of simultaneous associations	10

4.2.1.2.3 Asynchronous Nature

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

Table 4.2-4
ASYNCHRONOUS NATURE FOR THE STORAGE SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.1.2.4 Implementation Identifying Information

The implementation information for the Storage SCU AE is:

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

Implementation Class UID	1.2.392.200036.9116.6.15.1000.1
Implementation Version Name	TM_ARTIDA_1.0

4.2.1.3 Association Initiation Policy

4.2.1.3.1 Activity – Send Instances

4.2.1.3.1.1 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 instances then multiple C-STORE requests will be issued over the same association. If the instance transfer fails, the Storage SCU AE will retry this send-job automatically.

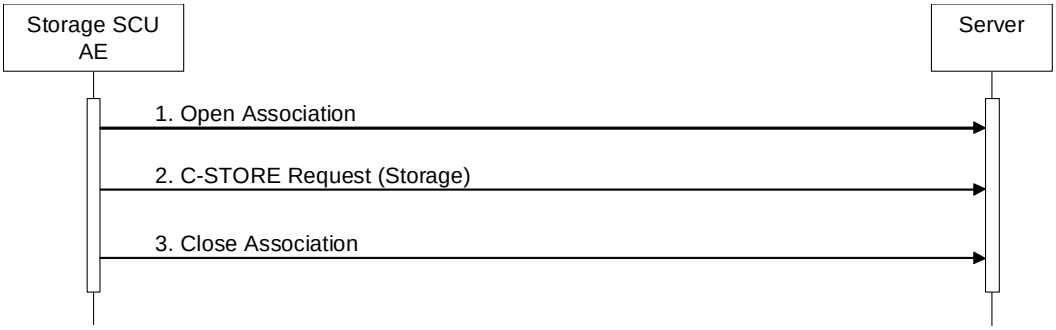

Figure 4.2-1
SEQUENCING OF ACTIVITY – SEND INSTANCES

A possible sequence of interactions between the Storage SCU AE and a 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 Server.
2. Acquired instances are transmitted to the Server using a storage request (C-STORE) and the Server replies with a C-STORE response (status success).
3. The Storage SCU AE closes the association with the Server.

4.2.1.3.1.2 Proposed Presentation Contexts

The Storage SCU AE will propose the Presentation Contexts in the following table that shows a Presentation Context Item a row:

Table 4.2-6
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY SEND INSTANCES

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 Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50	SCU	None
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70	SCU	None
SC Image Storage	1.2.840.10008.5.1.4.1.1.7	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50	SCU	None
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70	SCU	None
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
US Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None
US 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	SCU	None
US Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70	SCU	None
US Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	RLE Lossless	1.2.840.10008.1.2.5	SCU	None
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None

4.2.1.3.1.3 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 4.2-7
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.
*	*	Any other status code	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.

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

Table 4.2-8
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 instance transfer fails, the Storage SCU AE will retry this send-job automatically.

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

4.2.2 Storage Commitment SCU AE Specification

4.2.2.1 SOP Classes

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

Table 4.2-9
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

4.2.2.2 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 STORAGE COMMITMENT SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.2.2.2 Number of Associations

The Storage Commitment SCU AE can initiate up to ten associations at a time.

Table 4.2-11
NUMBER OF ASSOCIATIONS INITIATED FOR THE STORAGE COMMITMENT SCU AE

Maximum number of simultaneous associations	10

The Storage Commitment SCU AE accepts associations to receive N-EVENT-REPORT notifications for the Storage Commitment Push Model SOP Class.

Table 4.2-12
NUMBER OF ASSOCIATIONS ACCEPTED FOR THE STORAGE COMMITMENT SCU AE

Maximum number of simultaneous associations	10

4.2.2.2.3 Asynchronous Nature

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

Table 4.2-13
ASYNCHRONOUS NATURE FOR THE STORAGE COMMITMENT SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.2.2.4 Implementation Identifying Information

The implementation information for the Storage Commitment SCU AE is:

Table 4.2-14
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE STORAGE COMMITMENT SCU AE

Implementation Class UID	1.2.392.200036.9116.6.15.1000.1
Implementation Version Name	TM_ARTIDA_1.0

4.2.2.3 Association Initiation Policy

4.2.2.3.1 Activity – Commit Sent Instances

4.2.2.3.1.1 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 instances 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.

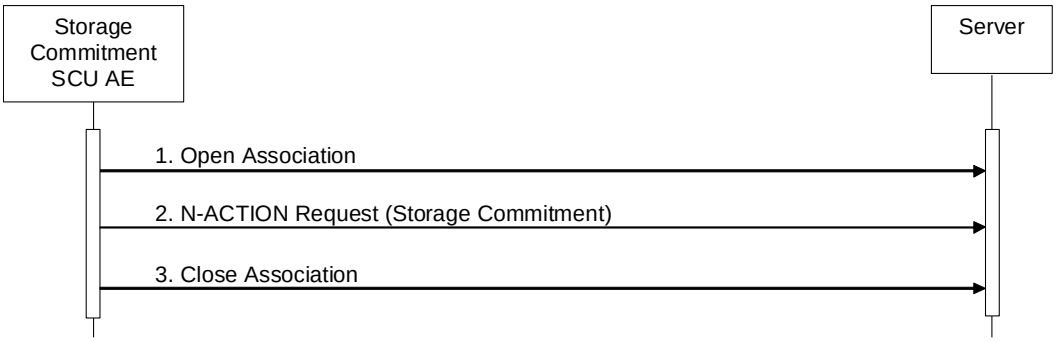

Figure 4.2-2
SEQUENCING OF ACTIVITY – COMMIT SENT INSTANCES

A possible sequence of interactions between the Storage Commitment SCU AE and a 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 Server.
2. A storage commitment request (N-ACTION) is transmitted to the Server to obtain storage commitment of previously transmitted instances. The 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 Server.

Note: The N-EVENT-REPORT will be sent over a separate association initiated by the Server. (see Section 4.2.2.4.1)

4.2.2.3.1.2 Proposed Presentation Contexts

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

Table 4.2-15
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY COMMIT SENT INSTANCES

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.

4.2.2.3.1.3 SOP Specific Conformance for Storage Commitment SOP Class

4.2.2.3.1.3.1 Storage Commitment Operations (N-ACTION)

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

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

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

Table 4.2-16
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 4.2-17
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.

4.2.2.4 Association Acceptance Policy

4.2.2.4.1 Activity – Receive Storage Commitment Response

4.2.2.4.1.1 Description and Sequencing of Activities

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

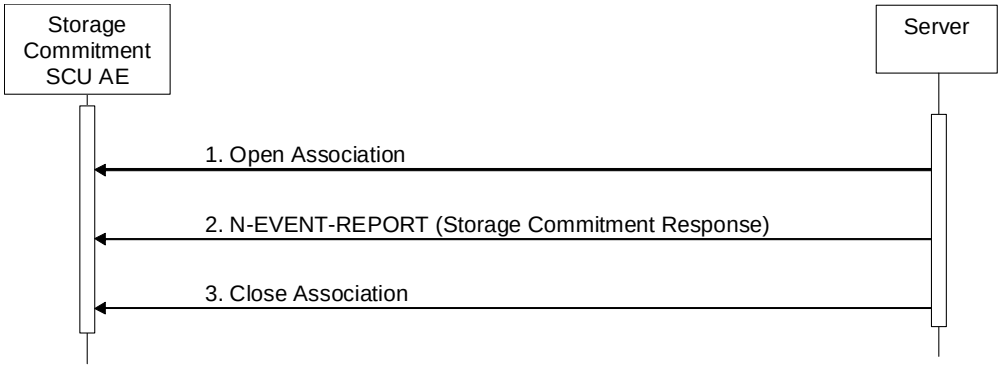

Figure 4.2-3
SEQUENCING OF ACTIVITY - RECEIVE STORAGE COMMITMENT RESPONSE

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

1. The Server opens an association with the Storage Commitment SCU AE.
2. The 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 Server closes the association with the Storage Commitment SCU AE.

The Storage Commitment SCU 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 PS3.8, Section 9.3.4).

Table 4.2-18
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 Storage Commitment SCU AE will accept Presentation Contexts shown in the table below.

Table 4.2-19
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		

4.2.2.4.1.3 SOP Specific Conformance for Storage Commitment SOP Class

4.2.2.4.1.3.1 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 4.2-20
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 4.2-21
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).

4.2.3 MWM SCU AE Specification

4.2.3.1 SOP Classes

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

Table 4.2-22
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

4.2.3.2 Association Policies

4.2.3.2.1 General

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

Table 4.2-23
DICOM APPLICATION CONTEXT FOR THE MWM SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.3.2.2 Number of Associations

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

Table 4.2-24
NUMBER OF ASSOCIATIONS INITIATED FOR THE MWM SCU AE

Maximum number of simultaneous associations	1

4.2.3.2.3 Asynchronous Nature

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

Table 4.2-25
ASYNCHRONOUS NATURE FOR THE MWM SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.3.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-26
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE MWM SCU AE

Implementation Class UID	1.2.392.200036.9116.6.15.1000.1
Implementation Version Name	TM_ARTIDA_1.0

4.2.3.3 Association Initiation Policy

4.2.3.3.1 Activity – Update Worklist

4.2.3.3.1.1 Description and Sequencing of Activities

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

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

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

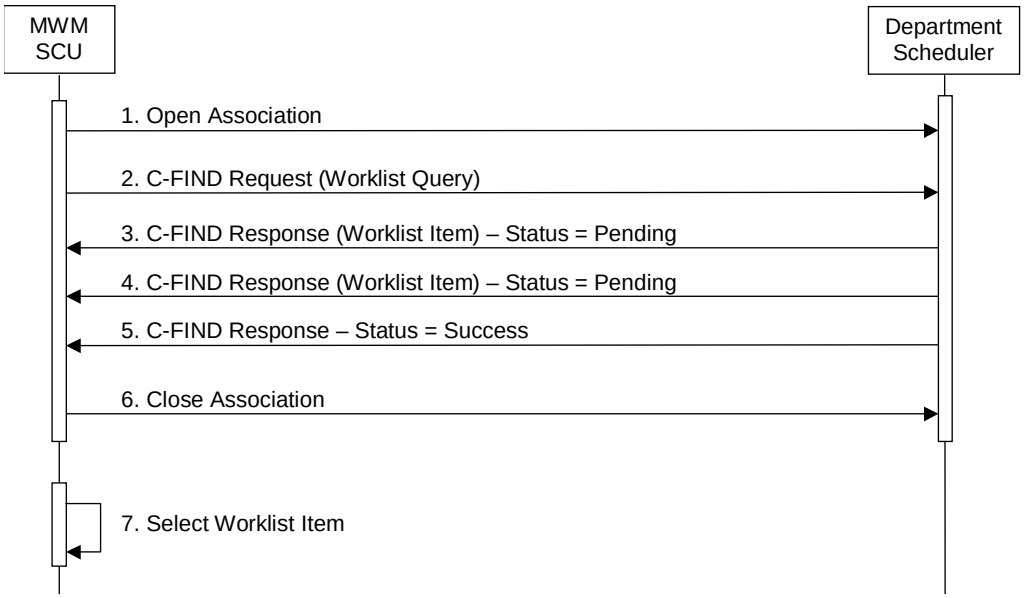

Figure 4.2-4
SEQUENCING OF ACTIVITY – UPDATE WORKLIST

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

1. The MWM SCU AE opens an association with the Department Scheduler
2. The MWM SCU AE sends a C-FIND request to the Department Scheduler containing the Worklist Query attributes.
3. The Department Scheduler returns a C-FIND response containing the requested attributes of the first matching worklist item.
4. The Department Scheduler returns another C-FIND response containing the requested attributes of the second matching worklist item.
5. The Department Scheduler returns another C-FIND response with status Success indicating that no further matching worklist items exist. This example assumes that only 2 worklist items match the Worklist Query.
6. The MWM SCU AE closes the association with the Department Scheduler.
7. The user selects a worklist item from the Worklist and prepares to acquire new instances.

4.2.3.3.1.2 Proposed Presentation Contexts

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

Table 4.2-27
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		

4.2.3.3.1.3 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 4.2-28
MODALITY WORKLIST C-FIND RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Matching is complete	0000	The SCP has completed the matches. Worklist items are available for display or further processing.
*	*	Any other status code	The association is aborted using A-ABORT and the status meaning is logged.

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

Table 4.2-29
MODALITY WORKLIST COMMUNICATION FAILURE BEHAVIOR

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

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

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

Table 4.2-30
WORKLIST REQUEST IDENTIFIER

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

Requested Procedure Priority	(0040,1003)	SH		x		
Patient Transport Arrangements	(0040,1004)	LO		x		
Imaging Service Request						
Accession Number	(0008,0050)	SH	S	x	x	x
Referring Physician's Name	(0008,0090)	PN		x	x	x
Requesting Physician	(0032,1032)	PN		x	x	x
Visit Identification						
Admission ID	(0038,0010)	LO		x		
Visit Status						
Current Patient Location	(0038,0300)	LO		x		
Patient's Institution Residence	(0038,0400)	LO		x	x	
Visit Relationship						
Referenced Patient Sequence	(0008,1120)	SQ				
>Referenced SOP Class UID	(0008,1150)	UI		x		
>Referenced SOP Instance UID	(0008,1155)	UI		x		

Patient Identification						
Patient's Name	(0010,0010)	PN	W	x	x	x
Patient ID	(0010,0020)	LO	S	x	x	x
Patient Demographic						
Patient's Birth Date	(0010,0030)	DA		x	x	x
Patient's Sex	(0010,0040)	CS		x	x	x
Patient's Size	(0010,1020)	DS		x	x	x
Patient's Weight	(0010,1030)	DS		x	x	x
Patient Comments	(0010,4000)	LT		x	x	x
Confidentiality constraint on patient data	(0040,3001)	LO		x		x
Patient Medical						
Medical Alerts	(0010,2000)	LO		x		x
Allergies	(0010,2110)	LO		x		x
Pregnancy Status	(0010,21C0)	US		x		x
Special Needs	(0038,0050)	LO		x		x
Patient State	(0038,0500)	LO		x		x
Other Attributes						
Study Description	(0008,1030)	LO		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. This setting can be configured using the service tool.

D: Displayed keys. An "x" indicates that this worklist attribute is displayed to the user during a patient registration. For example, Patient Name will be displayed when registering the patient prior to an examination.

IOD: An "x" indicates that this worklist attribute is included into all Object Instances created during performance of the related Procedure Step.

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

Scheduled Performing Physician's Name (0040,1006) will be copied into Performing Physician's Name (0008,1050).

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: Adult Heart, Pediatric Heart, Coronary, M-TEE, PV Arterial, PV Venous, Carotid, Digits, or OTHER. 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).

4.2.3.4 Association Acceptance Policy

The MWM SCU AE does not accept associations.

4.2.4 MPPS SCU AE Specification

4.2.4.1 SOP Classes

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

Table 4.2-31
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

4.2.4.2 Association Policies

4.2.4.2.1 General

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

Table 4.2-32
DICOM APPLICATION CONTEXT FOR THE MPPS SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.4.2.2 Number of Associations

The MPPS SCU AE initiates one association at a time.

Table 4.2-33
NUMBER OF ASSOCIATIONS INITIATED FOR THE MPPS SCU AE

Maximum number of simultaneous associations	1

4.2.4.2.3 Asynchronous Nature

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

Table 4.2-34
ASYNCHRONOUS NATURE FOR THE MPPS SCU AE

Maximum number of outstanding asynchronous transactions	1

4.2.4.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-35
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE MPPS SCU AE

Implementation Class UID	1.2.392.200036.9116.6.15.1000.1
Implementation Version Name	TM_ARTIDA_1.0

4.2.4.3 Association Initiation Policy

4.2.4.3.1 Activity – Acquire Instances

4.2.4.3.1.1 Description and Sequencing of Activities

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

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

— N-CREATE request according to the CREATE Modality Performed Procedure Step SOP Instance operation, or an:

— N-SET request to update the contents and state of the MPPS according to the SET Modality Performed Procedure Step Information operation.

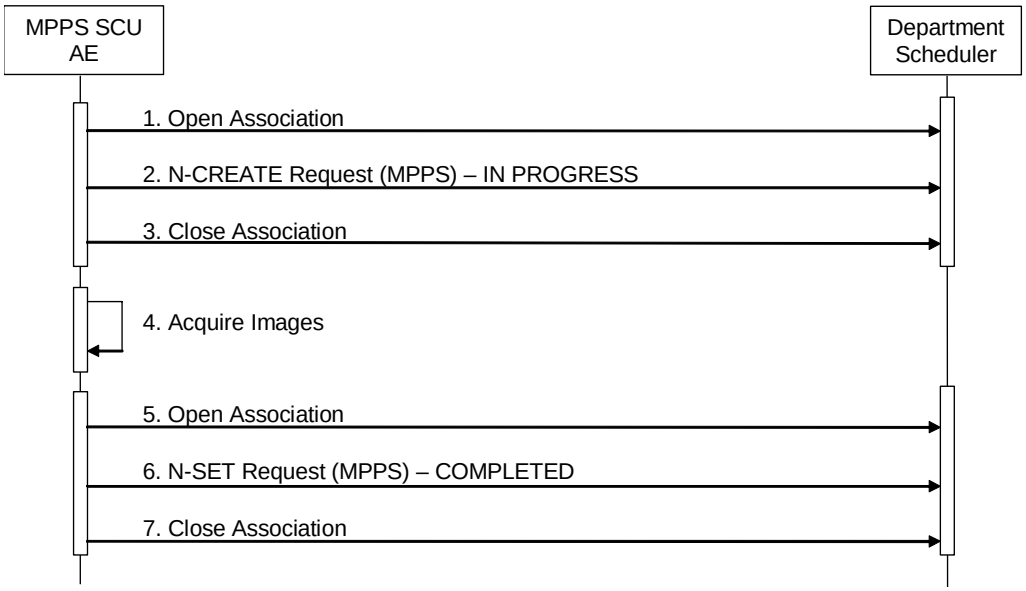

Figure 4.2-5
SEQUENCING OF ACTIVITY – ACQUIRE INSTANCES

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

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

7. The MPPS SCU AE closes the association with the Department Scheduler.

4.2.4.3.1.2 Proposed Presentation Contexts

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

Table 4.2-36
PROPOSED PRESENTATION CONTEXTS FOR REAL-WORLD ACTIVITY ACQUIRE INSTANCES

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

4.2.4.3.1.3 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 4.2-37
MPPS N-CREATE / N-SET RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Status Code	Behavior
Success	Success	0000	The SCP has completed the operation successfully.
*	*	Any other status code	The association is aborted and the MPPS is marked as failed. The status meaning is logged and reported to the user.

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

Table 4.2-38
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 4.2-39
MPPS N-CREATE / N-SET REQUEST IDENTIFIER

Attribute Name	Tag	VR	N-CREATE	N-SET
Specific Character Set	(0008,0005)	CS	Created, if an extended or replacement character set is used.	
Performed Procedure Step Relationship				
Scheduled Step Attributes Sequence	(0040,0270)	SQ	Always set	
>Study Instance UID	(0020,000D)	UI	From Modality Worklist	
>Referenced Study Sequence	(0008,1110)	SQ	From Modality Worklist	
>>Referenced SOP Class UID	(0008,1150)	UI	From Modality Worklist	
>>Referenced SOP Instance UID	(0008,1155)	UI	From Modality Worklist	
>Accession Number	(0008,0050)	SH	From Modality Worklist	
>Placer Order Number/Imaging Service Request	(0040,2016)	LO	Zero length	
>Filler Order Number/Imaging Service Request	(0040,2017)	LO	Zero length	
>Requested Procedure ID	(0040,1001)	SH	From Modality Worklist	
>Requested Procedure Description	(0032,1060)	LO	From Modality Worklist	
>Scheduled Procedure Step ID	(0040,0009)	SH	From Modality Worklist	
>Scheduled Procedure Step Description	(0040,0007)	LO	From Modality Worklist	
>Scheduled Protocol Code Sequence	(0040,0008)	SQ	From Modality Worklist	
Patient's Name	(0010,0010)	PN	From Modality Worklist or user input	
Patient ID	(0010,0020)	LO	From Modality Worklist or user input	
Patient's Birth Date	(0010,0030)	DA	From Modality Worklist or user input	
Patient's Sex	(0010,0040)	CS	From Modality Worklist or user input	
Referenced Patient Sequence	(0008,1120)	SQ	From Modality Worklist	
>Referenced SOP Class UID	(0008,1150)	UI	From Modality Worklist	
>Referenced SOP Instance UID	(0008,1155)	UI	From Modality Worklist	
Performed Procedure Step Information				
Performed Procedure Step ID	(0040,0253)	SH	x	
Performed Station AE Title	(0040,0241)	AE	MPPS AE Title	
Performed Station Name	(0040,0242)	SH	From configuration	
Performed Location	(0040,0243)	SH	Zero length	
Performed Procedure Step Start Date	(0040,0244)	DA	Actual start date	
Performed Procedure Step Start Time	(0040,0245)	TM	Actual start time	
Performed Procedure Step Status	(0040,0252)	CS	IN PROGRESS	COMPLETED or DISCONTINUED
Performed Procedure Step Description	(0040,0254)	LO	x	

Performed Procedure Type Description	(0040,0255)	LO	Zero length	
Procedure Code Sequence	(0008,1032)	SQ	Zero or more items	Zero or more items
Performed Procedure Step End Date	(0040,0250)	DA	Zero length	Actual end date
Performed Procedure Step End Time	(0040,0251)	TM	Zero length	Actual end time
Image Acquisition Results				
Modality	(0008,0060)	CS	US	
Study ID	(0020,0010)	SH	x	
Performed Protocol Code Sequence	(0040,0260)	SQ	Zero or more items	Zero or more items
Performed Series Sequence	(0040,0340)	SQ	One or more items	One or more items
>Performing Physician's Name	(0008,1050)	PN	From Modality Worklist or user input	x
>Protocol Name	(0018,1030)	LO	x	x
>Operator's Name	(0008,1070)	PN	Zero length	Zero length
>Series Instance UID	(0020,000E)	UI	x	x
>Series Description	(0008,103E)	LO	Zero length	Zero length
>Retrieve AE Title	(0008,0054)	AE	Zero length	Zero length
>Referenced Image Sequence	(0008,1140)	SQ	Zero or more items	One or more items
>>Referenced SOP Class UID	(0008,1150)	UI	x	x
>>Referenced SOP Instance UID	(0008,1155)	UI	x	x
>Referenced Non-Image Composite SOP Instance Sequence	(0040,0220)	SQ	Zero length	Zero length

4.2.4.4 Association Acceptance Policy

The MPPS SCU AE does not accept associations.

4.2.5 Q/R SCU AE Specification

4.2.5.1 SOP Classes

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

Table 4.2-40
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		

4.2.5.2 Association Policies

4.2.5.2.1 General

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

Table 4.2-41
DICOM APPLICATION CONTEXT FOR THE Q/R SCU AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.5.2.2 Number of Associations

The Q/R SCU AE initiates up to one association at a time.

Table 4.2-42
NUMBER OF ASSOCIATIONS INITIATED FOR THE Q/R SCU AE

Maximum number of simultaneous associations	1

4.2.5.2.3 Asynchronous Nature

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

Table 4.2-43
ASYNCHRONOUS NATURE FOR THE Q/R 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 4.2-44
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE Q/R SCU AE

Implementation Class UID	1.2.392.200036.9116.6.15.1000.1
Implementation Version Name	TM_ARTIDA_1.0

4.2.5.3 Association Initiation Policy

4.2.5.3.1 Activity – Query and Retrieve Instances

4.2.5.3.1.1 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 series to be retrieved. The instances will be received at the Storage SCP AE.

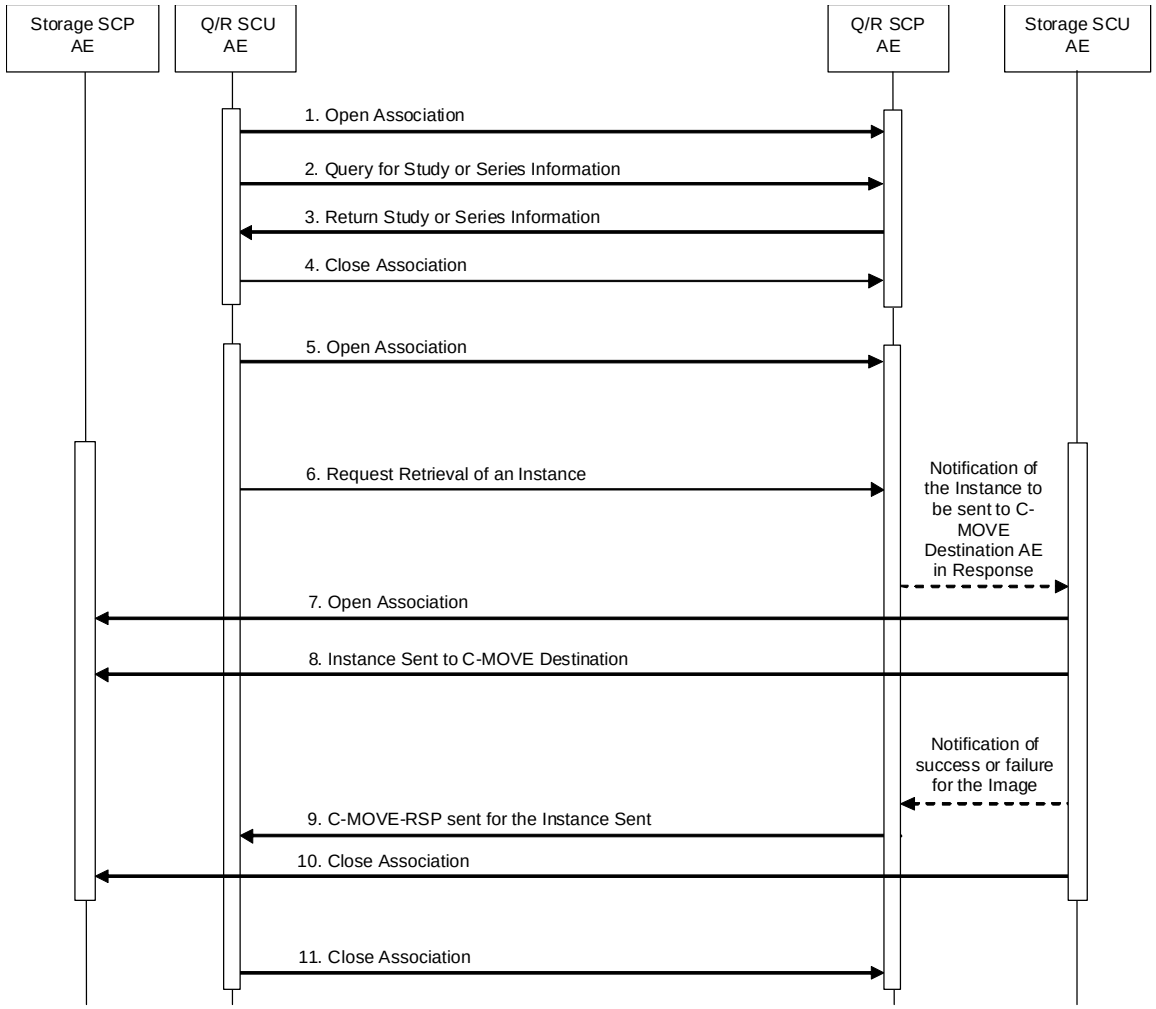

Figure 4.2-6
SEQUENCING OF ACTIVITY – QUERY AND RETRIEVE INSTANCES

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 instances 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.

4.2.5.3.1.2 Proposed Presentation Contexts

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

Table 4.2-45
PROPOSED PRESENTATION CONTEXTS FOR REAL-WORLD ACTIVITY QUERY AND RETRIEVE INSTANCES

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		

4.2.5.3.1.3 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 4.2-46
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. Study or Series information items are available for display or further processing.
*	*	Any other status code	The association is aborted using A-ABORT and the Study or Series information is marked as failed. The status meaning is logged and reported to the user.

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

Table 4.2-47
Q/R FIND COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The association is aborted and the study or series query is marked as failed. The reason is logged and reported to the user.
Association aborted by the SCP or network layers	The study or series 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), 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 4.2-48
STUDY ROOT REQUEST IDENTIFIER FOR C-FIND

Name	Tag	Types of Matching
Study Level		
Study Date	(0008,0020)	U, R
Study Time	(0008,0030)	U
Accession Number	(0008,0050)	S, U
Patient’s Name	(0010,0010)	*, U
Patient ID	(0010,0020)	*, U
Study ID	(0020,0010)	U
Study Instance UID	(0020,000D)	UNIQUE
Modalities in Study	(0008,0061)	U
Series Level		
Modality	(0008,0060)	U
Series Number	(0020,0011)	U
Series Instance UID	(0020,000E)	UNIQUE

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 “R” indicates Range 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.

4.2.5.3.1.4 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 4.2-49
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.
*	*	Any other status code	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.

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

Table 4.2-50
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.

4.2.5.4 Association Acceptance Policy

The Q/R SCU AE does not accept associations.

4.2.6 Storage SCP AE Specification

4.2.6.1 SOP Classes

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

Table 4.2-51
SOP CLASSES FOR THE STORAGE SCP AE

SOP Class Name	SOP Class UID	SCU	SCP
Verification	1.2.840.10008.1.1	No	Yes
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7		
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		
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22		

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 4.2-52
DICOM APPLICATION CONTEXT FOR THE STORAGE SCP AE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.6.2.2 Number of Associations

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

Table 4.2-53
NUMBER OF ASSOCIATIONS ACCEPTED FOR THE STORAGE SCP AE

Maximum number of simultaneous associations	10

4.2.6.2.3 Asynchronous Nature

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

Table 4.2-54
ASYNCHRONOUS NATURE FOR THE STORAGE SCP AE

Maximum number of outstanding asynchronous transactions	1

4.2.6.2.4 Implementation Identifying Information

The implementation information for the Storage SCP AE is:

Table 4.2-55
DICOM IMPLEMENTATION CLASS AND VERSION FOR THE STORAGE SCP AE

Implementation Class UID	1.2.392.200036.9116.6.15.1000.1
Implementation Version Name	TM_ARTIDA_1.0

4.2.6.3 Association Initiation Policy

The Storage SCP AE does not initiate associations.

4.2.6.4 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.

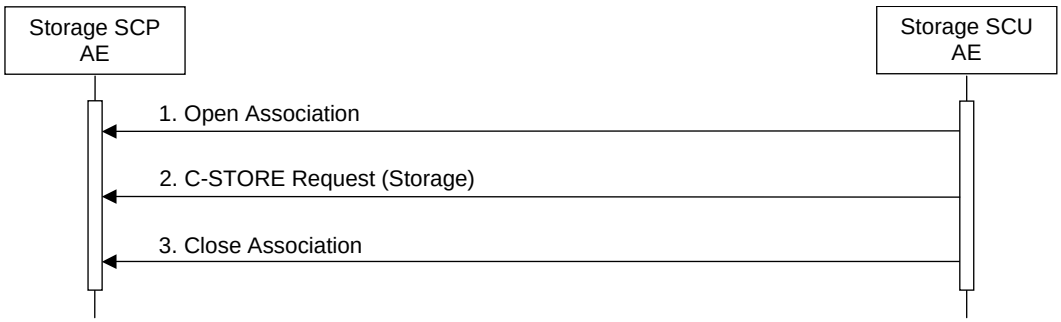

Figure 4.2-7
SEQUENCING OF ACTIVITY – STORE IMAGES TO THE LOCAL FILE SYSTEM

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 4.2-18.

4.2.6.4.1.1 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 4.2-56
ACCEPTED PRESENTATION CONTEXTS BY THE STORAGE SCP AE

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		
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	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		
		JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70		
		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		
		JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70		
		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		
		JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70		
		RLE Lossless	1.2.840.10008.1.2.5		
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		

4.2.6.4.1.2 SOP Specific Conformance for Storage SOP Classes

The associated Activity with the Storage service is the storage of medical 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 instances on to the hard disk.

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

Table 4.2-57
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)

4.3 NETWORK INTERFACES

4.3.1 Physical Network Interface

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

Table 4.3-1
SUPPORTED PHYSICAL NETWORK INTERFACES

Ethernet 1000baseT
Ethernet 100baseT
Ethernet 10baseT

4.3.2 Additional Protocols

None.

4.4 CONFIGURATION

4.4.1 AE Title/Presentation Address Mapping

4.4.1.1 Local AE Titles

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

Note: 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
MWM SCU	MWMSCU_AE	Not Applicable
MPPS SCU	MPPSSCU_AE	
Q/R SCU	DICOM_LOCAL_SCU	
Storage SCU		
Storage SCP	DICOM_LOCAL_SCP	104
Storage Commitment SCU		

4.4.1.2 Remote AE Title/Presentation Address Mapping

The AE Titles, host names and port numbers of remote applications are configured using the service 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)	Default Value
General Parameters		
Maximum PDU send/receive size	Yes	28 Kbytes
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

Parameter	Configurable (Yes/No)	Default Value
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)	Default Value
Storage SCU Parameters		
Maximum number of simultaneously initiated associations by the Storage SCU AE	No	10
Number of times a failed send job may be retried	No	Forever, until the job succeeds or user cancels it.
Storage Commitment SCU Parameters		
Maximum number of simultaneously initiated associations by the Storage Commitment SCU AE	No	10
Maximum number of simultaneously accepted associations by the Storage Commitment SCU AE	No	10
Time-out waiting for a Storage Commitment Notification (maximum duration of applicability for a Storage Commitment Transaction UID)	Yes	180 sec
Delay association release after sending a storage commitment request (wait for a storage commitment notification over the same association)	No	0
Modality Worklist SCU Parameters		
Maximum number of simultaneously initiated associations by the MWM SCU AE	No	1
Modality Worklist SCU time-out waiting for the final response to a C-FIND-RQ	Yes	60 sec
Maximum number of worklist items	Yes	200
Query worklist for specific Scheduled Station AE Title	Yes	MWMSCU_AE
Query worklist for specific Modality	Yes	US
MPPS SCU Parameters		
Maximum number of simultaneously initiated associations by the MPPS SCU AE	No	1
Number of times a failed send job may be retried	No	Forever, until the job succeeds or user cancels it.
Q/R SCU Parameters		
Maximum number of simultaneously initiated associations by the Q/R SCU AE	No	1
Maximum number of matching entries	No	5000

Parameter	Configurable (Yes/No)	Default Value
Storage SCP Parameters		
Maximum number of simultaneously initiated associations by the Storage SCP AE	No	10

5. MEDIA INTERCHANGE

5.1 IMPLEMENTATION MODEL

5.1.1 Application Data Flow

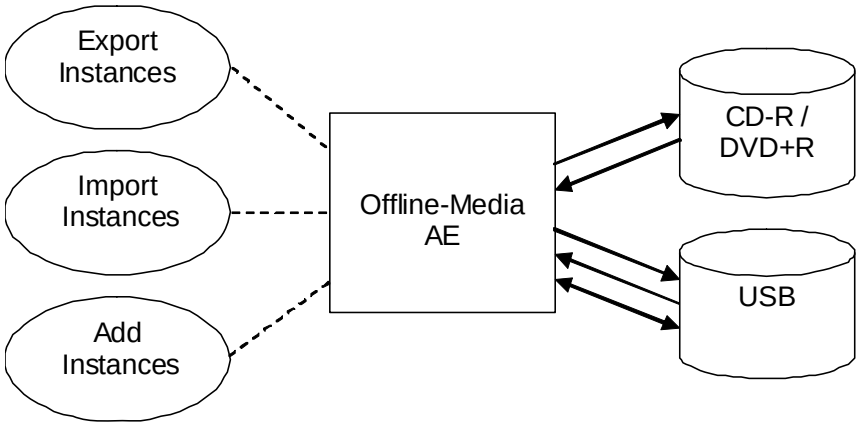

Figure 5.1-1
APPLICATION DATA FLOW DIAGRAM FOR MEDIA STORAGE

— The Offline-Media AE exports instances to a CD-R, DVD+R or USB Storage medium. It is associated with the local real-world activity “Export Instances” performed upon user request.

— The Offline-Media AE imports instances from a CD-R, DVD+R or USB Storage medium. It is associated with the local real-world activity “Import Instances” performed upon user request.

— The Offline-Media AE updates instances from a USB Storage medium. It is associated with the local real-world activity “Add Instances” performed upon user request.

5.1.2 Functional Definition of AEs

5.1.2.1 Functional Definition of Offline-Media AE

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

Export:

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

Import:

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

Addition:

- Reads a File-set of the USB medium and writes it to the local storage device.
- Adds the instances to the File-set, then writes it to the medium.
- Modifies the DICOMDIR file.

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

5.1.3 Sequencing of Real-World Activities

5.1.3.1 Activity – Export Instances

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

The operations for “Export Instances” are described below:

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

5.1.3.2 Activity – Import Instances

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

The operations for “Import Instances” are described below:

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

5.1.3.3 Activity – Add Instances

Operator requests to add new objects to an already existing File-set on the USB medium. The requests are placed in a queue and are executed in the background.

The operations for “Add Instances” are described below:

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

5.1.4 File Meta Information for Implementation Class and Version

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

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

File Meta Information Version	1
Implementation Class UID	1.2.392.200036.9116.6.15.1000.1
Implementation Version Name	TM_ARTIDA_1.0

5.2 AE SPECIFICATIONS

5.2.1 Offline-Media AE Specification

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

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

Application Profiles Supported	Real World Activity	Role	SC Option
AUG-GEN-CD, AUG-GEN-DVD	Export Instances	FSC	Interchange
	Import Instances	FSR	Interchange
AUG-GEN-USB	Export Instances	FSC	Interchange
	Import Instances	FSR	Interchange
	Add Instances	FSU	Interchange

5.2.1.1 File Meta Information for the Application Entity

The Source Application Entity Title is the local AE title of Storage SCP.

5.2.1.2 Real-World Activities

5.2.1.2.1 Activity – Export Instances

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

5.2.1.2.1.1 Media Storage Application Profiles

The Offline-Media AE supports the AUG-GEN-CD, AUG-GEN-DVD and AUG-GEN-USB Application Profiles.

5.2.1.2.1.1.1 Options

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

5.2.1.2.2 Activity – Import Instances

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

5.2.1.2.2.1 Media Storage Application Profiles

The Offline-Media AE supports the AUG-GEN-CD, AUG-GEN-DVD and AUG-GEN-USB Application Profiles.

5.2.1.2.2.1.1 Options

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

5.2.1.2.3 Activity – Add Instances

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

5.2.1.2.3.1 Media Storage Application Profiles

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

5.2.1.2.3.1.1 Options

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

5.3 AUGMENTED AND PRIVATE APPLICATION PROFILES

5.3.1 Augmented Application Profiles

5.3.1.1 Augmented Application Profiles – AUG-GEN-CD, AUG-GEN-DVD and AUG-GEN-USB

5.3.1.1.1 SOP Class Augmentations

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

Table 5.3-1
SOP CLASS AUGMENTATIONS

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
DICOM Media Storage Directory	1.2.840.10008.1.3.10	Explicit VR Little Endian	1.2.840.10008.1.2.1
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Explicit VR Little Endian	1.2.840.10008.1.2.1
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
		JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70
		RLE Lossless	1.2.840.10008.1.2.5
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
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
		JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70
		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	Explicit VR Little Endian	1.2.840.10008.1.2.1
		JPEG Baseline (Process 1)	1.2.840.10008.1.2.4.50
		JPEG Lossless, Non-Hierarchical, First-Order Prediction	1.2.840.10008.1.2.4.70
		RLE Lossless	1.2.840.10008.1.2.5
Enhanced SR Storage	1.2.840.10008.5.1.4.1.1.88.22	Explicit VR Little Endian	1.2.840.10008.1.2.1

5.3.1.1.2 Directory Augmentations

Not applicable.

5.3.1.1.3 Other Augmentations

Not applicable.

5.3.2 Private Application Profiles

Not applicable.

5.4 MEDIA CONFIGURATION

Not applicable.

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 instances 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 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 8.1-5	ALWAYS
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-6	ALWAYS
	Patient Study	Table 8.1-7	ALWAYS
	Clinical Trial Study	--	Not Present
Series	General Series	Table 8.1-8	ALWAYS
	Clinical Trial Series	--	Not Present
Equipment	General Equipment	Table 8.1-9	ALWAYS
	SC Equipment	Table 8.1-14	ALWAYS
Image	General Image	Table 8.1-10	ALWAYS
	Image Pixel	Table 8.1-11	ALWAYS
	SC Image	Table 8.1-15	Not Present
	Overlay Plane	--	Not Present
	Modality LUT	--	Not Present
	VOI LUT	--	Not Present
	SOP Common	Table 8.1-16	ALWAYS
	Private Application	Table 8.1-12	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 8.1-5	ALWAYS
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-6	ALWAYS
	Patient Study	Table 8.1-7	ALWAYS
	Clinical Trial Study	--	Not Present
Series	General Series	Table 8.1-8	ALWAYS
	Clinical Trial Series	--	Not Present
Frame of Reference	Frame of Reference	--	Not Present
	Synchronization	--	Not Present
Equipment	General Equipment	Table 8.1-9	ALWAYS
Image	General Image	Table 8.1-10	ALWAYS
	Image Pixel	Table 8.1-11	ALWAYS
	Contrast/bolus	--	Not Present
	Palette Color Lookup Table	--	Not Present
	US Region Calibration	Table 8.1-13	ALWAYS
	US Image	Table 8.1-17	ALWAYS
	Overlay Plane	--	Not Present
	VOI LUT	--	Not Present
	SOP Common	Table 8.1-18	ALWAYS
	Private Application	Table 8.1-12	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 8.1-5	ALWAYS
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-6	ALWAYS
	Patient Study	Table 8.1-7	ALWAYS
	Clinical Trial Study	--	Not Present
Series	General Series	Table 8.1-8	ALWAYS
	Clinical Trial Series	--	Not Present
Frame of Reference	Frame of Reference	--	Not Present
	Synchronization	--	Not Present
Equipment	General Equipment	Table 8.1-9	ALWAYS
Image	General Image	Table 8.1-10	ALWAYS
	Image Pixel	Table 8.1-11	ALWAYS
	Contrast/bolus	--	Not Present
	Cine	Table 8.1-19	ALWAYS
	Multi-frame	Table 8.1-20	ALWAYS
	Frame Pointers	--	Not Present
	Palette Color Lookup Table	--	Not Present
	US Region Calibration	Table 8.1-13	ALWAYS
	US Image	Table 8.1-21	ALWAYS
	VOI LUT	--	Not Present
	SOP Common	Table 8.1-22	ALWAYS
	Private Application	Table 8.1-12	ALWAYS

8.1.1.4 Enhanced SR IOD

Table 8.1-4
IOD OF CREATED ENHANCED SR SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-5	ALWAYS
	Specimen Identification	--	Not Present
	Clinical Trial Subject	--	Not Present
Study	General Study	Table 8.1-6	ALWAYS
	Patient Study	Table 8.1-7	ALWAYS
	Clinical Trial Study	--	Not Present
Series	SR Document Series	Table 8.1-23	ALWAYS
	Clinical Trial Series	--	Not Present
Equipment	General Equipment	Table 8.1-9	ALWAYS
Document	SR Document General	Table 8.1-24	ALWAYS
	SR Document Content	Table 8.1-25	ALWAYS
	SOP Common	Table 8.1-47	ALWAYS
	Private Application	Table 8.1-12	ALWAYS

8.1.1.5 Common Modules

Table 8.1-5
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		ALWAYS	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
Ethnic Group	(0010,2160)	SH		VNAP	MWL/ USER
Patient Comments	(0010,4000)	LT	Values supplied via Modality Worklist will be entered at *Patient Comment*. Comment from Modality Worklist or user input will be edited in the following format: <"Insurance="Health Insurance Information<LINEFEED> Comment>.	ALWAYS	MWL/ USER

Table 8.1-6
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 4.2-30 Notes	ALWAYS	MWL*/ USER
Study Comments	(0032,4000)	LT	Additional Info from user input will be edited in the following format: <"BSA="BSA Information<LINEFEED> "BSAType="BSA Type Information>.	ALWAYS	MWL/ USER
Referenced Study Sequence	(0008,1110)	SQ		ANAP	MWL
>Referenced SOP Class UID	(0008,1150)	UI		ANAP	MWL
>Referenced SOP Instance UID	(0008,1155)	UI		ANAP	MWL

Table 8.1-7
PATIENT STUDY MODULE OF CREATED SOP INSTANCES

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

Table 8.1-8
GENERAL SERIES MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	US	ALWAYS	AUTO
Series Instance UID	(0020,000E)	UI		ALWAYS	AUTO
Series Number	(0020,0011)	IS		ALWAYS	AUTO
Series Date	(0008,0021)	DA		ALWAYS	AUTO
Series Time	(0008,0031)	TM		ALWAYS	AUTO
Performing Physician's Name	(0008,1050)	PN		VNAP	MWL/ USER
Protocol Name	(0018,1030)	LO		ALWAYS	AUTO
Series Description	(0018,103E)	LO	Blood Pressure from user input will be edited in the following format: <"BloodPressure="Blood Pressure Information>.	ANAP	AUTO
Operator's Name	(0008,1070)	PN		VNAP	USER
Referenced Performed Procedure Step Sequence	(0008,1111)	SQ		ANAP	MWL
>Referenced SOP Class UID	(0008,1150)	UI		ANAP	MWL
>Referenced SOP Instance UID	(0008,1155)	UI		ANAP	MWL
Request Attributes Sequence	(0040,0275)	SQ		ANAP	MWL
>Requested Procedure ID	(0040,1001)	SH		ANAP	MWL
>Scheduled Procedure Step ID	(0040,0009)	SH		ANAP	MWL
>Scheduled Procedure Step Description	(0040,0007)	LO	See Table 4.2-30 Notes	ANAP	MWL
>Scheduled Protocol Code Sequence	(0040,0008)	SQ		ANAP	MWL
Performed Procedure Step ID	(0040,0253)	SH		ANAP	AUTO
Performed Procedure Step Start Date	(0040,0244)	DA		ANAP	AUTO
Performed Procedure Step Start Time	(0040,0245)	TM		ANAP	AUTO

Performed Procedure Step Description	(0040,0254)	LO		ANAP	MWL
Performed Protocol Code Sequence	(0040,0260)	SQ		ANAP	MWL
>Code Value	(0008,0100)	SH		ANAP	AUTO
>Coding Scheme Designator	(0008,0102)	SH		ANAP	AUTO
>Coding Scheme Version	(0008,0103)	SH		ANAP	AUTO
>Code Meaning	(0008,0104)	LO		ANAP	AUTO

Table 8.1-9
GENERAL EQUIPMENT MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Manufacturer	(0008,0070)	LO	TOSHIBA_MEC_US	ALWAYS	AUTO
Institution Name	(0008,0080)	LO		ALWAYS	CONFIG
Institution Address	(0008,0081)	ST		ALWAYS	CONFIG
Station Name	(0008,1010)	SH		ALWAYS	CONFIG
Institutional Department Name	(0008,1040)	LO		ALWAYS	CONFIG
Manufacturer's Model Name	(0008,1090)	LO	SSH-880CV	ALWAYS	AUTO
Device Serial Number	(0018,1000)	LO		ALWAYS	AUTO
Software Version	(0018,1020)	LO	AA_V1.60*R000	ALWAYS	AUTO

Table 8.1-10
GENERAL IMAGE MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Instance Number	(0020,0013)	IS		ALWAYS	AUTO
Patient Orientation	(0020,0020)	CS		EMPTY	AUTO
Content Date	(0008,0023)	DA		ALWAYS	AUTO
Content Time	(0008,0033)	TM		ALWAYS	AUTO
Image Type	(0008,0008)	CS	Value 1: Pixel Data Characteristics "ORIGINAL" or "DERIVED" Value 2: Patient Exam Characteristics "PRIMARY" or "SECONDARY" Value 3: System Defined Term	ANAP	AUTO
Acquisition Date	(0008,0022)	DA		ALWAYS	AUTO
Acquisition Time	(0008,0032)	TM		ALWAYS	AUTO
Derivation Description	(0008,2111)	ST		ANAP	AUTO
Burned In Annotation	(0028,0301)	CS		ALWAYS	AUTO
Lossy Image Compression	(0028,2110)	CS		ANAP	AUTO
Lossy Image Compression Ratio	(0028,2112)	DS		ANAP	AUTO

Table 8.1-11
IMAGE PIXEL MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples per Pixel	(0028,0002)	US		ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS		ALWAYS	CONFIG
Planar Configuration	(0028,0006)	US		ANAP	AUTO

Rows	(0028,0010)	US	720 or 1024	ALWAYS	AUTO
Columns	(0028,0011)	US	960 or 1280	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 8.1-12
PRIVATE APPLICATION MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Private Creator	(0029,00xx)	LO		ALWAYS	AUTO
Application Header Type	(0029,xx08)	CS		ALWAYS	AUTO
Application Header Version	(0029,xx09)	LO		ALWAYS	AUTO
Application Header Data	(0029,xx10)	OB		ALWAYS	AUTO
Application Header Type	(0029,xx89)	LO		ALWAYS	AUTO
Application Header Data	(0029,xx90)	OB		ALWAYS	AUTO
Private Creator	(7015,00xx)	LO		ALWAYS	AUTO
Application Header Data	(7015,xx60)	OB		ANAP	AUTO
Application Header Sequence	(7015,xx73)	SQ		ALWAYS	AUTO

8.1.1.6 US Region Calibration Module

Table 8.1-13
US REGION CALIBRATION MODULE

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

8.1.1.7 SC Image Modules

Table 8.1-14
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 8.1-15
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 8.1-16
SOP COMMON MODULE OF CREATED SC IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character Set	(0008,0005)	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

8.1.1.8 US Image Modules

Table 8.1-17
US IMAGE MODULE OF CREATED US IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Transducer Data	(0018,5010)	LO		ALWAYS	AUTO
Focus Depth	(0018,5012)	DS		ALWAYS	AUTO
Mechanical Index	(0018,5022)	DS		ALWAYS	AUTO
Bone Thermal Index	(0018,5024)	DS		ALWAYS	AUTO
Soft Tissue Thermal Index	(0018,5027)	DS		ALWAYS	AUTO
Depth of Scan Field	(0018,5050)	IS		ALWAYS	AUTO
Transducer Type	(0018,6031)	CS		ALWAYS	AUTO
Samples per Pixel	(0028,0002)	US		ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS		ALWAYS	CONFIG
Planar Configuration	(0028,0006)	US		ANAP	AUTO
Rows	(0028,0010)	US	720	ALWAYS	USER
Columns	(0028,0011)	US	960	ALWAYS	USER
Ultrasound Color Data Present	(0028,0014)	US		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 8.1-18
SOP COMMON MODULE OF CREATED US IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character Set	(0008,0005)	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

8.1.1.9 US Multi-frame Image Modules

Table 8.1-19
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 8.1-20
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 8.1-21
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 Data	(0018,5010)	LO		ALWAYS	AUTO
Focus Depth	(0018,5012)	DS		ALWAYS	AUTO
Mechanical Index	(0018,5022)	DS		ALWAYS	AUTO
Bone Thermal Index	(0018,5024)	DS		ALWAYS	AUTO
Soft Tissue Thermal Index	(0018,5027)	DS		ALWAYS	AUTO

Depth of Scan Field	(0018,5050)	IS		ALWAYS	AUTO
Transducer Type	(0018,6031)	CS		ALWAYS	AUTO
Samples per Pixel	(0028,0002)	US		ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS		ALWAYS	AUTO
Planar Configuration	(0028,0006)	US		ALWAYS	AUTO
Rows	(0028,0010)	US	660 or 720	ALWAYS	AUTO
Columns	(0028,0011)	US	416, 480 or 960	ALWAYS	AUTO
Ultrasound Color Data Present	(0028,0014)	US		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
Stage Code Sequence	(0040,000A)	SQ		ANAP	AUTO
>Code Value	(0008,0100)	SH		ANAP	AUTO
>Coding Scheme Designator	(0008,0102)	SH		ANAP	AUTO
>Coding Scheme Version	(0008,0103)	SH		ANAP	AUTO
>Code Meaning	(0008,0104)	LO		ANAP	AUTO
View Code Sequence	(0054,0220)	SQ		ANAP	AUTO
>Code Value	(0008,0100)	SH		ANAP	AUTO
>Coding Scheme Designator	(0008,0102)	SH		ANAP	AUTO
>Coding Scheme Version	(0008,0103)	SH		ANAP	AUTO
>Code Meaning	(0008,0104)	LO		ANAP	AUTO
Pixel Data	(7FE0,0010)	OB		ALWAYS	AUTO

Table 8.1-22
SOP COMMON MODULE OF CREATED US MULTI-FRAME IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character Set	(0008,0005)	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

8.1.1.10 Enhanced SR Modules

Table 8.1-23
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 8.1-24
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 4.2-30 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 8.1-25
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,A168)	SQ		ALWAYS	AUTO
>>Code value	(0008,0100)	SH	eng	ALWAYS	AUTO
>>Coding Scheme designator	(0008,0102)	SH	ISO0639-2	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	English	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	121005	ALWAYS	AUTO
>>Coding Scheme designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Observer Type	ALWAYS	AUTO
>Concept Code Sequence	(0040,A168)	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
>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
>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	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
>>>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
>>>Numeric Value	(0040,A30A)	DA		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,A168)	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
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH	“{H.B.}/min”	ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH	UCUM	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Heart beat per minute	ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		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
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH	mm[Hg]	ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH	UCUM	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	“mmHg”	ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		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
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH	mm[Hg]	ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH	UCUM	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	“mmHg”	ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	DA		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
>>>Measured Units Code Sequence	(0040,08EA)	SQ		ALWAYS	AUTO
>>>>Code value	(0008,0100)	SH	cm2	ALWAYS	AUTO
>>>>Coding Scheme designator	(0008,0102)	SH	UCUM	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	“Square centimeter”	ALWAYS	AUTO
>>>Numeric Value	(0040,A30A)	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	111028	ALWAYS	AUTO
>>Coding Scheme Designator	(0008,0102)	SH	DCM	ALWAYS	AUTO
>>Code Meaning	(0008,0104)	LO	Image Library	ALWAYS	AUTO

>Continuity of Content	(0040,A050)	CS	SEPARATE	ALWAYS	AUTO
>Content sequence	(0040,A730)	SQ		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	IMAGE	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
>Continuity of Content	(0040,A050)	CS	SEPARATE	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,A168)	SQ		ALWAYS	AUTO
>>>Code value	(0008,0100)	SH	Cd.Vlu / Cd.Dsgn / Cd.Mean	ALWAYS	AUTO
>>>Coding Scheme designator	(0008,0102)	SH	SRT / T-32600 / Left Ventricle	ALWAYS	AUTO
>>>Code Meaning	(0008,0104)	LO	SRT / T-32300 / Left Atrium SRT / T-32500 / Right Ventricle SRT / T-35400 / Aortic Valve SRT / T-35300 / Mitral Valve SRT / T-48581 / Pulmonary Venous Structure SRT / T-35100 / Tricuspid Valve SRT / T-35200 / Pulmonic Valve TSBus / 3270000 / Right Coronary Artery TSBus / 3270001 / Left Anterior Descending Coronary Artery	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
>>Continuity of Content	(0040,A050)	CS	SEPARATE	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-0373	ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH	SRT	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	Image Mode	ALWAYS	AUTO
>>>Concept Code Sequence	(0040,A168)	SQ		ALWAYS	AUTO
>>>>Code Value	(0008,0100)	SH	Cd.Vlu / Cd.Dsgn / Cd.Mean	ALWAYS	AUTO
>>>>Coding Scheme Designator	(0008,0102)	SH	SRT / G-03A2 / 2D mode	ALWAYS	AUTO
>>>>Code Meaning	(0008,0104)	LO	SRT / G-0394 / M mode TSBus / 03210001 / Doppler mode	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
>>>>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
>>>>Numeric Value	(0040,A30A)	DA		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-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	Cd.Vlu	Cd.Dsgn	Cd.Mean	ALWAYS	AUTO
>>>>>Coding Scheme Designator	(0008,0102)	SH	DCM	125204	Area-Length Biplane	ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO	DCM	125205	Area-Length Single Plane	ALWAYS	AUTO
			DCM	125206	Cube Method		
			DCM	125207	Method of Disks, Biplane		
			DCM	125208	Method of Disks, Single Plane		
			DCM	125209	Teichholz		
			DCM	125210	Area by Pressure Half-Time		
			DCM	125215	Continuity Equation by Velocity Time Integral		
			DCM	125216	Proximal Isovelocity Surface Area		
			DCM	125218	Simplified Bernoulli		
			DCM	125221	Left Ventricle Mass by M-mode		
			DCM	125222	Left Ventricle Mass by Truncated Ellipse		
			TSBus	03500000	Bullet Method		
			TSBus	0317000A	Gibson Method		
>>>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	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,A168)	SQ				ALWAYS	AUTO

>>>>>Code value	(0008,0100)	SH	Cd.Vlu	Cd.Dsgn	Cd.Mean	ALWAYS	AUTO
>>>>>Coding Scheme designator	(0008,0102)	SH	SRT	F-32010	Diastole	ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO	SRT	F-32011	End Diastole	ALWAYS	AUTO
			SRT	F-32020	Systole		
			DCM	109070	End Systole		
>>>>Relationship Type	(0040,A010)	CS	ACQ 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	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,A168)	SQ				ALWAYS	AUTO
>>>>>Code value	(0008,0100)	SH	Cd.Vlu	Cd.Dsgn	Cd.Mean	ALWAYS	AUTO
>>>>>Coding Scheme designator	(0008,0102)	SH	SRT	G-A19B	Apical two chamber	ALWAYS	AUTO
>>>>>Code Meaning	(0008,0104)	LO	SRT	G-A19C	Apical four chamber	ALWAYS	AUTO

Following Figure 8.1-1 shows same meanings as Table 8.1-25 SR Document content module as more graphical and structural.

TID 5200 – Echocardiography Procedure Report

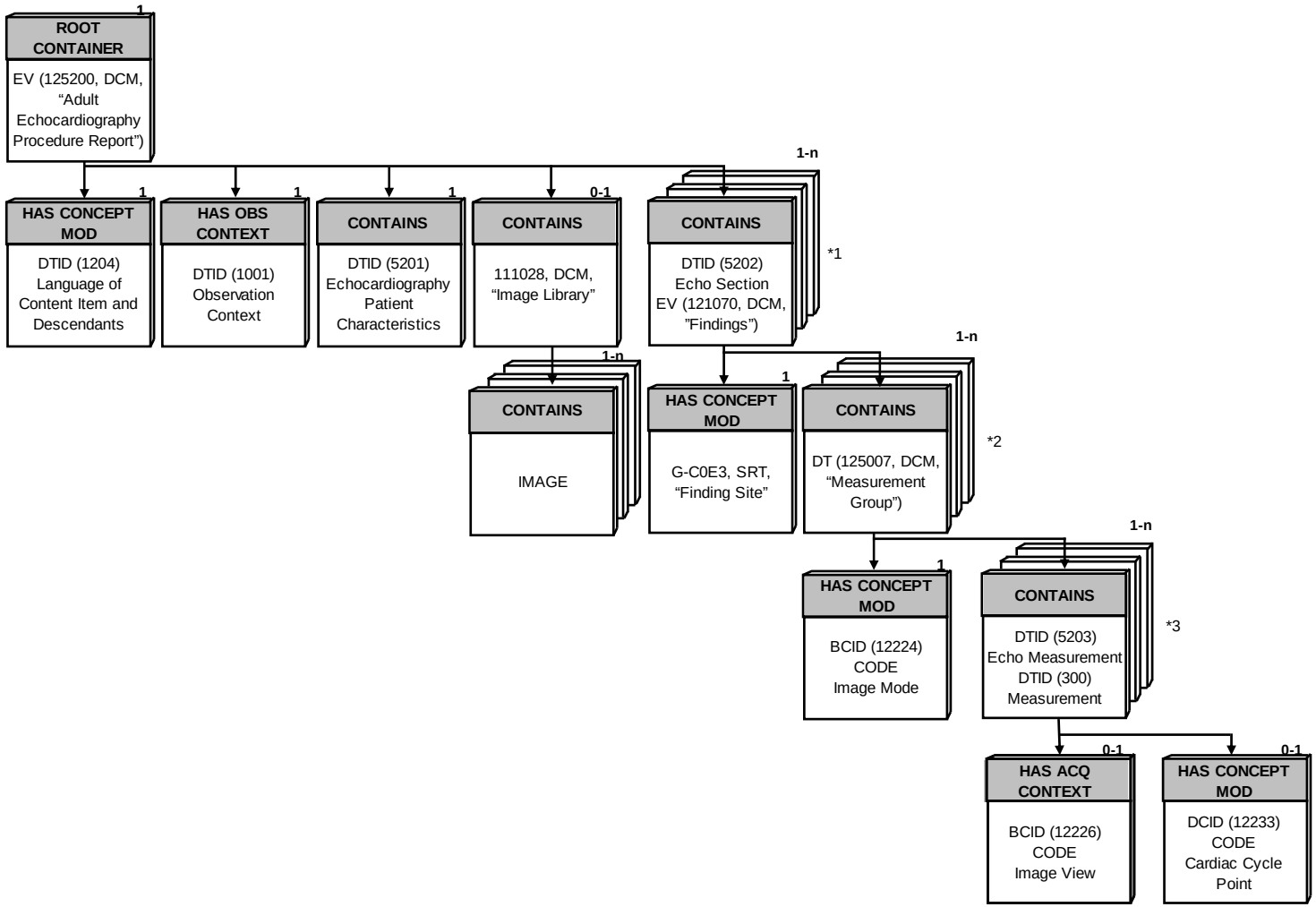

Figure 8.1-1 TID 5200 – Echocardiography Procedure Report

*1 DTID (5202) Echo Section may be multiple depending on findings for instance Left Ventricle, Right Ventricle, Left Atrium, and so on.
*2 DT (125007, DCM, "Measurement Group") may be multiple depending on Toshiba Measurements Table 8.1-26 to 46.
*3 DTID (5203) Echo Measurement may be multiple depending on the number of measurement items.

Each “Label” means a unique identifier of measurement result on the Toshiba Ultrasound System.

Some measurements may overlap a “Label”. It means “Label” is unique within a measurement.

Table 8.1-26 to 46 shows the relationship between Toshiba unique identifiers “Label” and DICOM tags structures.

Table 8.1-26 Cardiac 2D-Mode LV measurement (MOD Simpson method)

Label Toshiba Measurements Identifier	DICOM SR Representations																		
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Image View			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
LVAd2	SRT	G-0375	Left Ventricular Diastolic Area	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
LVLd2	LN	18077-8	Left Ventricle diastolic major axis	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
EDV2	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber				DCM	125208	Method of Disks, Single Plane
LVAs2	SRT	G-0374	Left Ventricular systolic Area	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	DCM	109070	End Systole	DCM	125208	Method of Disks, Single Plane
LVLs2	LN	18076-0	Left Ventricle systolic major axis	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	DCM	109070	End Systole	DCM	125208	Method of Disks, Single Plane
ESV2	LN	18148-7	Left Ventricular End Systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber				DCM	125208	Method of Disks, Single Plane
LVAd4	SRT	G-0375	Left Ventricular Diastolic Area	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
LVLd4	LN	18077-8	Left Ventricle diastolic major axis	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
EDV4	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber				DCM	125208	Method of Disks, Single Plane
LVAs4	SRT	G-0374	Left Ventricular systolic Area	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	DCM	109070	End Systole	DCM	125208	Method of Disks, Single Plane
LVLs4	LN	18076-0	Left Ventricle systolic major axis	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	DCM	109070	End Systole	DCM	125208	Method of Disks, Single Plane
ESV4	LN	18148-7	Left Ventricular End Systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber				DCM	125208	Method of Disks, Single Plane
LAa4	TSBus	03010002	Left Atrium Area	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
LAd4	TSBus	03010003	Left Atrium major axis	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
LAV4	TSBus	03010004	Left Atrium Volume	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
LAa2	TSBus	03010002	Left Atrium Area	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
LAd2	TSBus	03010003	Left Atrium major axis	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
LAV2	TSBus	03010004	Left Atrium Volume	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
LA W	TSBus	03010005	Left Atrirum Width	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode				SRT	F-32011	End Diastole			
LA H	TSBus	03010006	Left Atrirum Height	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode				SRT	F-32011	End Diastole			
LA D	TSBus	03010007	Left Atrirum Depth	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode				SRT	F-32011	End Diastole			
HR	LN	8867-4	Heart rate															
EDV	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode							DCM	125207	Method of Disks, Biplane
ESV	LN	18148-7	Left Ventricular End Systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode							DCM	125207	Method of Disks, Biplane
SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				SRT	F-32020	Systole	DCM	125207	Method of Disks, Biplane
CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				SRT	F-32020	Systole	DCM	125207	Method of Disks, Biplane
EF	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode							DCM	125207	Method of Disks, Biplane
SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				SRT	F-32020	Systole	DCM	125207	Method of Disks, Biplane
CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				SRT	F-32020	Systole	DCM	125207	Method of Disks, Biplane
SV4	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	SRT	F-32020	Systole	DCM	125208	Method of Disks, Single Plane
CO4	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	SRT	F-32020	Systole	DCM	125208	Method of Disks, Single Plane
EF4	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber				DCM	125208	Method of Disks, Single Plane
SI4	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	SRT	F-32020	Systole	DCM	125208	Method of Disks, Single Plane
CI4	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	SRT	F-32020	Systole	DCM	125208	Method of Disks, Single Plane
SV2	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	SRT	F-32020	Systole	DCM	125208	Method of Disks, Single Plane
CO2	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	SRT	F-32020	Systole	DCM	125208	Method of Disks, Single Plane
EF2	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber				DCM	125208	Method of Disks, Single Plane
SI2	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	SRT	F-32020	Systole	DCM	125208	Method of Disks, Single Plane
CI2	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	SRT	F-32020	Systole	DCM	125208	Method of Disks, Single Plane
LVLd Diff	TSBus	03010000	LV_Ldiff_d_BPMOD	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				SRT	F-32011	End Diastole			
LVLs Diff	TSBus	03010001	LV_Ldiff_s_BPMOD	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	109070	End Systole			
LAV	TSBus	0301000B	Left Atrium Volume Biplane Method of Disks.	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode				SRT	F-32011	End Diastole	DCM	125207	Method of Disks, Biplane
LAVI	TSBus	0301000C	Left Atrium Volume Index	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode				SRT	F-32011	End Diastole			
LAVI2	TSBus	0301000D	Left Atrium Volume Index	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode	SRT	G-A19B	Apical two chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
LAVI4	TSBus	0301000E	Left Atrium Volume Index	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode	SRT	G-A19C	Apical four chamber	SRT	F-32011	End Diastole	DCM	125208	Method of Disks, Single Plane
LA_Vol	TSBus	0301000F	Left Atrium Volume 3 axis method	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode				SRT	F-32011	End Diastole			
LA_VI	TSBus	0301000C	Left Atrium Volume Index	SRT	T-32300	Left Atrium	SRT	G-03A2	2D mode				SRT	F-32011	End Diastole			

Table 8.1-27 Cardiac 2D-Mode LV measurement (Teichholz method)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
RVD	LN	20304-2	Right Ventricular Internal Diastolic Dimension	SRT	T-32500	Right Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125209	Teichholz
IVSTd	LN	18154-5	Interventricular Septum Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125209	Teichholz
LVIDd	LN	29436-3	Left Ventricle Internal End Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125209	Teichholz
LVPWTd	LN	18152-9	Left Ventricle Posterior Wall Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125209	Teichholz
IVSTs	LN	18158-6	Interventricular Septum Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125209	Teichholz
LVIDs	LN	29438-9	Left Ventricle Internal Systolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125209	Teichholz
LVPWTs	LN	18156-0	Left Ventricle Posterior Wall Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125209	Teichholz
HR	LN	8867-4	Heart rate												
EDV	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125209	Teichholz
ESV	LN	18148-7	Left Ventricular End Systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125209	Teichholz
SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125209	Teichholz
CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125209	Teichholz
EF	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125209	Teichholz
FS	LN	18051-3	Left Ventricular Fractional Shortening	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125209	Teichholz
SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125209	Teichholz
CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125209	Teichholz
LV MASSd	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125209	Teichholz
LV MASSs	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125209	Teichholz
LV MASSd Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125209	Teichholz
LV MASSs Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125209	Teichholz

Table 8.1-28 Cardiac 2D-Mode LV measurement (Cube method)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
RVD	LN	20304-2	Right Ventricular Internal Diastolic Dimension	SRT	T-32500	Right Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125206	Cube Method
IVSTd	LN	18154-5	Interventricular Septum Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125206	Cube Method
LVIDd	LN	29436-3	Left Ventricle Internal End Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125206	Cube Method
LVPWTd	LN	18152-9	Left Ventricle Posterior Wall Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125206	Cube Method
IVSTs	LN	18158-6	Interventricular Septum Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125206	Cube Method
LVIDs	LN	29438-9	Left Ventricle Internal Systolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125206	Cube Method
LVPWTs	LN	18156-0	Left Ventricle Posterior Wall Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125206	Cube Method
HR	LN	8867-4	Heart rate												
EDV	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125206	Cube Method
ESV	LN	18148-7	Left Ventricular End Systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125206	Cube Method
SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125206	Cube Method
CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125206	Cube Method
EF	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125206	Cube Method
FS	LN	18051-3	Left Ventricular Fractional Shortening	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125206	Cube Method
SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125206	Cube Method
CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125206	Cube Method
LV MASSd	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125206	Cube Method
LV MASSs	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125206	Cube Method
LV MASSd Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125206	Cube Method
LV MASSs Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125206	Cube Method

Table 8.1-29 Cardiac 2D-Mode LV measurement (Gibson method)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
RVD	LN	20304-2	Right Ventricular Internal Diastolic Dimension	SRT	T-32500	Right Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	TSBus	0317000A	Gibson Method
IVSTd	LN	18154-5	Interventricular Septum Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	TSBus	0317000A	Gibson Method
LVIDd	LN	29436-3	Left Ventricle Internal End Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				TSBus	0317000A	Gibson Method
LVPWTd	LN	18152-9	Left Ventricle Posterior Wall Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	TSBus	0317000A	Gibson Method
IVSTs	LN	18158-6	Interventricular Septum Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	TSBus	0317000A	Gibson Method
LVIDs	LN	29438-9	Left Ventricle Internal Systolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	TSBus	0317000A	Gibson Method
LVPWTs	LN	18156-0	Left Ventricle Posterior Wall Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	TSBus	0317000A	Gibson Method
HR	LN	8867-4	Heart rate												
EDV	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				TSBus	0317000A	Gibson Method
ESV	LN	18148-7	Left Ventricular End Systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				TSBus	0317000A	Gibson Method
SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	TSBus	0317000A	Gibson Method
CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	TSBus	0317000A	Gibson Method
EF	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				TSBus	0317000A	Gibson Method
FS	LN	18051-3	Left Ventricular Fractional Shortening	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				TSBus	0317000A	Gibson Method
SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	TSBus	0317000A	Gibson Method
CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	TSBus	0317000A	Gibson Method
LV MASSd	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	TSBus	0317000A	Gibson Method
LV MASSs	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	TSBus	0317000A	Gibson Method
LV MASSd Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	TSBus	0317000A	Gibson Method
LV MASSs Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	TSBus	0317000A	Gibson Method

Table 8.1-30 Cardiac 2D-Mode LV measurement (Single plane method)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
LVALd	SRT	G-0375	Left Ventricular Diastolic Area	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125205	Area-Length Single Plane
LVALs	SRT	G-0374	Left Ventricular Systolic Area	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125205	Area-Length Single Plane
LVLd	LN	18077-8	Left Ventricle diastolic major axis	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125205	Area-Length Single Plane
LVLS	LN	18076-0	Left Ventricle systolic major axis	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125205	Area-Length Single Plane
HR	LN	8867-4	Heart Rate												
EDV	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125205	Area-Length Single Plane
ESV	LN	18148-7	Left Ventricular End systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125205	Area-Length Single Plane
SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125205	Area-Length Single Plane
CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125205	Area-Length Single Plane
EF	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125205	Area-Length Single Plane
SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125205	Area-Length Single Plane
CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125205	Area-Length Single Plane

Table 8.1-31 Cardiac 2D-Mode LV measurement (Biplane method)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
LVALd	LN	G-0375	Left Ventricular Diastolic Area	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125204	Area-Length Biplane
LVAMd	LN	G-0375	Left Ventricular Diastolic Area	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	DCM	125204	Area-Length Biplane
LVIDd	LN	29436-3	Left Ventricle Internal End Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125204	Area-Length Biplane
LVALs	SRT	G-0374	Left Ventricular Systolic Area	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125204	Area-Length Biplane
LVAMs	SRT	G-0374	Left Ventricular Systolic Area	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125204	Area-Length Biplane
LVIDs	LN	29438-9	Left Ventricle Internal Systolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	DCM	125204	Area-Length Biplane
HR	LN	8867-4	Heart rate												
EDV	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125204	Area-Length Biplane
ESV	LN	18148-7	Left Ventricular End Systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125204	Area-Length Biplane
SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125204	Area-Length Biplane
CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125204	Area-Length Biplane
EF	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				DCM	125204	Area-Length Biplane
SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125204	Area-Length Biplane
CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	DCM	125204	Area-Length Biplane

Table 8.1-32 Cardiac 2D-Mode LV measurement (Bullet method)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
LVAMd	LN	29436-3	Left Ventricle Internal End Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				TSBus	03500000	Bullet Method
LVLd	LN	18077-8	Left Ventricle diastolic major axis	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32011	End Diastole	TSBus	03500000	Bullet Method
LVAMs	LN	29438-9	Left Ventricle Internal Systolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	TSBus	03500000	Bullet Method
LVLs	LN	18076-0	Left Ventricle systolic major axis	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	DCM	109070	End Systole	TSBus	03500000	Bullet Method
HR	LN	8867-4	Heart Rate												
EDV	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				TSBus	03500000	Bullet Method
ESV	LN	18148-7	Left Ventricular End systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				TSBus	03500000	Bullet Method
SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	TSBus	03500000	Bullet Method
CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	TSBus	03500000	Bullet Method
EF	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode				TSBus	03500000	Bullet Method
SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	TSBus	03500000	Bullet Method
CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-03A2	2D mode	SRT	F-32020	Systole	TSBus	03500000	Bullet Method

Table 8.1-33 Cardiac M-Mode Aortic valve measurement

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
Ao Diam	LN	18015-8	Aortic Root Diameter	SRT	T-35400	Aortic Valve	SRT	G-0394	M mode	DCM	109070	End Systole			
LA Diam	TSBus	030D0001	Left atrial diameter	SRT	T-35400	Aortic Valve	SRT	G-0394	M mode	SRT	F-32011	End Diastole			
ET	LN	18041-4	Aortic Valve Ejection Time	SRT	T-35400	Aortic Valve	SRT	G-0394	M mode	SRT	F-32020	Systole			
AoV Diam	LN	17996-0	Aortic Valve Cusp Separation	SRT	T-35400	Aortic Valve	SRT	G-0394	M mode	DCM	109070	End Systole			
LA/Ao	LN	17985-3	Left Atrium to Aortic Root Ratio	SRT	T-35400	Aortic Valve	SRT	G-0394	M mode						

Table 8.1-34 Cardiac M-Mode Mitral valve measurement

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
EPSS	LN	18036-4	Mitral Valve EPSS, E wave	SRT	T-35300	Mitral Valve	SRT	G-0394	M mode						
EF Slope	LN	18040-6	Mitral Valve E-F Slope by M-Mode	SRT	T-35300	Mitral Valve	SRT	G-0394	M mode						
CE Amp	TSBus	030F0002	E-wave amplitude	SRT	T-35300	Mitral Valve	SRT	G-0394	M mode						
CA Amp	TSBus	030F0003	A-wave amplitude	SRT	T-35300	Mitral Valve	SRT	G-0394	M mode						
DE Amp	TSBus	030F0001	DE-wave amplitude	SRT	T-35300	Mitral Valve	SRT	G-0394	M mode						
DE Slope	TSBus	030F0000	Mitral valve opening rate	SRT	T-35300	Mitral Valve	SRT	G-0394	M mode						
CA/CE	LN	18038-0	Mitral Valve E to A Ratio	SRT	T-35300	Mitral Valve	SRT	G-0394	M mode						

Table 8.1-35 Cardiac M-Mode LV measurement (Teichholz method)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
RVD	SRT	20304-2	Right Ventricular Internal Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125209	Teichholz
IVSTd	LN	18154-5	Interventricular Septum Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125209	Teichholz
LVIDd	LN	29436-3	Left Ventricle Internal End Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125209	Teichholz
LVPWTd	LN	18152-9	Left Ventricle Posterior Wall Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125209	Teichholz
IVSTs	LN	18158-6	Interventricular Septum Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125209	Teichholz
LVIDs	LN	29438-9	Left Ventricle Internal Systolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125209	Teichholz
LVPWTs	LN	18156-0	Left Ventricle Posterior Wall Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125209	Teichholz
ET	DCM	122211	Left Ventricular ejection time	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	DCM	125209	Teichholz
HR	LN	8867-4	Heart rate										DCM	125209	Teichholz
EDV	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125209	Teichholz
ESV	LN	18148-7	Left Ventricular End Systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125209	Teichholz
SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	DCM	125209	Teichholz
CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	DCM	125209	Teichholz
EF	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125209	Teichholz
FS	LN	18051-3	Left Ventricular Fractional Shortening	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125209	Teichholz
SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	DCM	125209	Teichholz
CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	DCM	125209	Teichholz
MVCF	TSBus	031B0000	M_LV_MVCFS	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125209	Teichholz
LV MASSd	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125221	Left Ventricle Mass by M-mode
LV MASSd Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125221	Left Ventricle Mass by M-mode
LV MASSs	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125221	Left Ventricle Mass by M-mode
LV MASSs Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125221	Left Ventricle Mass by M-mode

Table 8.1-36 Cardiac M-Mode LV measurement (Cube method)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
RVD	SRT	20304-2	Right Ventricular Internal Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125206	Cube Method
IVSTd	LN	18154-5	Interventricular Septum Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125206	Cube Method
LVIDd	LN	29436-3	Left Ventricle Internal End Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125206	Cube Method
LVPWTd	LN	18152-9	Left Ventricle Posterior Wall Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125206	Cube Method
IVSTs	LN	18158-6	Interventricular Septum Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125206	Cube Method
LVIDs	LN	29438-9	Left Ventricle Internal Systolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125206	Cube Method
LVPWTs	LN	18156-0	Left Ventricle Posterior Wall Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125206	Cube Method
ET	DCM	122211	Left Ventricular ejection time	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	DCM	125206	Cube Method
HR	LN	8867-4	Heart rate										DCM	125206	Cube Method
EDV	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125206	Cube Method
ESV	LN	18148-7	Left Ventricular End Systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125206	Cube Method
SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	DCM	125206	Cube Method
CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	DCM	125206	Cube Method
EF	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125206	Cube Method
FS	LN	18051-3	Left Ventricular Fractional Shortening	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125206	Cube Method
SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	DCM	125206	Cube Method
CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	DCM	125206	Cube Method
MVCF	TSBus	031B0000	M_LV_MVCFS	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				DCM	125206	Cube Method
LV MASSd	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125221	Left Ventricle Mass by M-mode
LV MASSd Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125221	Left Ventricle Mass by M-mode
LV MASSs	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125221	Left Ventricle Mass by M-mode
LV MASSs Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125221	Left Ventricle Mass by M-mode

Table 8.1-37 Cardiac M-Mode LV measurement (Gibson method)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
RVD	SRT	20304-2	Right Ventricular Internal Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	TSBus	0317000A	Gibson Method
IVSTd	LN	18154-5	Interventricular Septum Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	TSBus	0317000A	Gibson Method
LVIDd	LN	29436-3	Left Ventricle Internal End Diastolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				TSBus	0317000A	Gibson Method
LVPWTd	LN	18152-9	Left Ventricle Posterior Wall Diastolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	TSBus	0317000A	Gibson Method
IVSTs	LN	18158-6	Interventricular Septum Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	TSBus	0317000A	Gibson Method
LVIDs	LN	29438-9	Left Ventricle Internal Systolic Dimension	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	TSBus	0317000A	Gibson Method
LVPWTs	LN	18156-0	Left Ventricle Posterior Wall Systolic Thickness	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	TSBus	0317000A	Gibson Method
ET	DCM	122211	Left Ventricular ejection time	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	TSBus	0317000A	Gibson Method
HR	LN	8867-4	Heart rate										TSBus	0317000A	Gibson Method
EDV	LN	18026-5	Left Ventricular End Diastolic Volume	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				TSBus	0317000A	Gibson Method
ESV	LN	18148-7	Left Ventricular End Systolic Volume	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				TSBus	0317000A	Gibson Method
SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	TSBus	0317000A	Gibson Method
CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	TSBus	0317000A	Gibson Method
EF	LN	18043-0	Left Ventricular Ejection Fraction	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				TSBus	0317000A	Gibson Method
FS	LN	18051-3	Left Ventricular Fractional Shortening	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				TSBus	0317000A	Gibson Method
SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	TSBus	0317000A	Gibson Method
CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32020	Systole	TSBus	0317000A	Gibson Method
MVCF	TSBus	031B0000	M_LV_MVCFS	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode				TSBus	0317000A	Gibson Method
LV MASSd	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125221	Left Ventricle Mass by M-mode
LV MASSd Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	SRT	F-32011	End Diastole	DCM	125221	Left Ventricle Mass by M-mode
LV MASSs	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125221	Left Ventricle Mass by M-mode
LV MASSs Index	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle	SRT	G-0394	M mode	DCM	109070	End Systole	DCM	125221	Left Ventricle Mass by M-mode

Table 8.1-38 Cardiac Doppler-Mode Aortic Valve measurement

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
AoV VTI	LN	20354-7	Velocity Time Integral	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
AoV VM	LN	20352-1	Mean Velocity	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
AoV VP	LN	11726-7	Peak Velocity	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
AoV MPG	LN	20256-4	Mean Gradient	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125218	Simplified Bernoulli
AoV PPG	LN	20247-3	Peak Gradient	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125218	Simplified Bernoulli
LVOT VTI	LN	20354-7	Velocity Time Integral	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
LVOT VM	LN	20352-1	Mean Velocity	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
LVOT VP	LN	11726-7	Peak Velocity	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
LVOT MPG	LN	20256-4	Mean Gradient	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125218	Simplified Bernoulli
LVOT PPG	LN	20247-3	Peak Gradient	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125218	Simplified Bernoulli
LVOT Diam	SRT	G-038F	Cardiovascular Orifice Diameter	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	DCM	109070	End Systole			
AcT	LN	20168-1	Accelaration Time	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode						
ET	LN	18041-4	Aortic Valve Ejection Time	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
AoV Vel	LN	11653-3	End Diastolic Velocity	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode						
AoV PG	LN	20247-3	Peak Gradient	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125218	Simplified Bernoulli
LVOT Vel	LN	11653-3	End Diastolic Velocity	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode						
LVOT PG	LN	20247-3	Peak Gradient	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125218	Simplified Bernoulli
AR VM	LN	20352-1	Mean Velocity	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
AR VP	LN	11726-7	Peak Velocity	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
AR MPG	LN	20256-4	Mean Gradient	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125218	Simplified Bernoulli
AR PPG	LN	20247-3	Peak Gradient	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125218	Simplified Bernoulli
AR Vmax	TSBus	03070006	AR Vmax	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
AR Ved	TSBus	03070007	AR Ved	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
Time	LN	20217-6	Deceleration Time	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
DecelRate	LN	20216-8	Deceleration Slope	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
AR PGmax	TSBus	03070008	AR PGmax	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125218	Simplified Bernoulli
AR PGed	TSBus	03070009	AR PGed	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125218	Simplified Bernoulli
Ao Diam	LN	18015-8	Aortic Root diameter	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	DCM	109070	End Systole			
LA Diam	TSBus	0307000A	LA Diam	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32011	End Diastole			
HR	LN	8867-4	Heart Rate												
LVOT SV	SRT	F-32120	Stroke volume	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
LVOT CO	SRT	F-32100	Cardiac Output	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
LVOT SI	SRT	F-00078	Stroke Index	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
LVOT CI	SRT	F-32110	Cardiac Index	SRT	T-32600	Left Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
AoV Area	SRT	F-0231F	Aortic valve Area	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125215	Continuity Equation by Velocity Time Integral
AoV Area Index	TSBus	03070000	AoV Area Index	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode				DCM	125215	Continuity Equation by Velocity Time Integral
LA/Ao	LN	17985-3	Left Atrium to Aortic Root Ratio	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode						
PHT	LN	20280-4	Pressure Half Time	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode						
Qp/Qs (SV)	TSBus	03070004	Qp/Qs (SV)	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode						
Qp/Qs (CO)	TSBus	03070005	Qp/Qs (CO)	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode						
AcT/ET	SRT	G-0382	Ratio ofAortic Valve Accelaraton Time to Ejection Time	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode						
RF (AoV)	SRT	G-0390	Regurgitant Fraction	SRT	T-35300	Aortic Valve	TSBus	03210001	Doppler mode						
R Vol (AoV)	TSBus	0309000D	Regurgitation volume	SRT	T-35300	Aortic Valve	TSBus	03210001	Doppler mode						
LVOT/AoV (VP)	TSBus	03070001	LVOT/AoV (VP)	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
LVOT/AoV (VTI)	TSBus	03070002	LVOT/AoV (VTI)	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
LVOT/AoV (Vel)	TSBus	03070003	LVOT/AoV (Vel)	SRT	T-35400	Aortic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			

Table 8.1-39 Cardiac Doppler-Mode Mitral Valve measurement

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
E Vel	LN	18037-2	Mitral Valve E-wave Peak Velocity	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
A Vel	LN	17978-8	Mitral Valve A-wave Peak Velocity	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
DcT	SRT	G-0384	Mitral Valve E-wave Decelaration Time	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
E' Vel	LN	18037-2	Mitral Valve E-Wave Peak Velocity	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
A' Vel	LN	17978-8	Mitral Valve A-wave Peak Velocity	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
E Dur	TSBus	03090001	Mitral Valve E-wave duration	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
A Dur	SRT	G-0385	Mitral Valve A-Wave duration	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
IVRT	TSBus	03090002	Isovelocity relaxation time	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode						
MV VTI	LN	20354-7	Velocity Time Integral	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
MV VP	LN	11726-7	Peak Velocity	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
MV VM	LN	20352-1	Mean Velocity	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
MV PPG	LN	20247-3	Peak Gradient	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125218	Simplified Bernoulli
MV MPG	LN	20256-4	Mean Gradient	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125218	Simplified Bernoulli
MV DistA	SRT	G-038F	Cardiovascular Orifice Diameter	SRT	T-35300	Mitral Valve	SRT	G-03A2	2D mode	SRT	F-32010	Diastole			
MV DistB	SRT	G-038F	Cardiovascular Orifice Diameter	SRT	T-35300	Mitral Valve	SRT	G-03A2	2D mode	SRT	F-32010	Diastole			
MV Area (2D)	SRT	F-02320	Mitral valve Area	SRT	T-35300	Mitral Valve	SRT	G-03A2	2D mode	SRT	F-32010	Diastole	DCM	125220	Planimetry
HR	LN	8867-4	Heart Rate												
PHT	LN	20280-4	Pressure half time	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125210	Area by Pressure Half-Time
dP/dt	LN	18035-6	Mitral Regurgitation dP/dt derived from Mitral Reg. velocity	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
dt	TSBus	03090005	D_MV_RRiseTime_s_MCR_TIME	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
Vel1	TSBus	03090006	D_MV_RRiseTime_s_MCR_VELOCITY_1	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
Vel2	TSBus	03090007	D_MV_RRiseTime_s_MCR_VELOCITY_2	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
dP/dt	LN	18035-6	Mitral Regurgitation dP/dt derived from Mitral Reg. velocity	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
dt	TSBus	03090008	D_MV_DPDTM1M3_s_MCR_TIME	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
Vel1	TSBus	03090009	D_MV_DPDTM1M3_s_MCR_VELOCITY_1	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
Vel2	TSBus	0309000A	D_MV_DPDTM1M3_s_MCR_VELOCITY_2	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
E/A	LN	18038-0	Mitral Valve E to A Ratio	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
A/E	TSBus	03090000	MV_AERatio	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
E/E'	TSBus	0309000B	Mitral Valve E to E' Ratio	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
MV SV	SRT	F-32120	Stroke volume	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
MV CO	SRT	F-32100	Cardiac Output	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
MV SI	SRT	F-00078	Stroke Index	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
MV CI	SRT	F-32110	Cardiac Index	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
MVArea PHT	LN	20280-4	Pressure Half-Time	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
dP/dt	LN	18035-6	Mitral Regurgitation dP/dt derived from Mitral Reg. velocity	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
RF (MV)	SRT	G-0390	Regurgitant Fraction	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode						
R Vol (MV)	TSBus	0309000D	Regurgitation volume	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode						
Diff A Dur	TSBus	0309000C	Diff A Dur	SRT	T-35300	Mitral Valve	TSBus	03210001	Doppler mode						

Table 8.1-40 Cardiac Doppler-Mode Pulmonary vein blood flow waveform measurement

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
S1 Vel	TSBus	03130001	S1-wave velocity	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
S2 Vel	LN	29450-4	Pulmonary Vein Systolic Peak Velocity	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
D Vel	LN	29451-2	Pulmonary Vein Diastolic Peak Velocity	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
DcT	LN	20217-6	Deceleration time	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
PVA Vel	TSBus	03130002	AR-wave velocity	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode						
PVA Dur	SRT	G-038B	Pulmonary Vein A-wave Duration	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode						
S VTI	SRT	G-038C	Pulmonary Vein S-wave Velocity Time Integral	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
D VTI	SRT	G-038D	Pulmonary Vein D-wave Velocity Time Integral	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
S/D	LN	29452-0	Pulmonary Vein Systolic to Diastolic Ratio	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode						
Sys.Fract	TSBus	03130000	PVein_SF	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode						
Diff A Dur	TSBus	0313000C	A Dur (MV) – PVA Dur	SRT	T-48581	Pulmonary Venous Structure	TSBus	03210001	Doppler mode						

Table 8.1-41 Cardiac Doppler-Mode Tricus measurement

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
TV E Vel	LN	18031-5	Tricuspid Valve E Wave Peak velocity	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
TV A Vel	LN	18030-7	Tricuspid Valve A Wave Peak velocity	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
TV DcT	LN	20217-6	Deceleration Time	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
TV VTI	LN	20354-7	Velocity Time Integral	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
TV VP	LN	11726-7	Peak Velocity	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
TV VM	LN	20352-1	Mean Velocity	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
TV PPG	LN	20247-3	Peak Gradient	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125218	Simplified Bernoulli
TV MPG	LN	20256-4	Mean Gradient	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125218	Simplified Bernoulli
TR VTI	LN	20354-7	Velocity Time Integral	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
TR VP	LN	11726-7	Peak Velocity	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
TR VM	LN	20352-1	Mean Velocity	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
TR PPG	LN	20247-3	Peak Gradient	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125218	Simplified Bernoulli
TR MPG	LN	20256-4	Mean Gradient	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125218	Simplified Bernoulli
TR Vmax	TSBus	03150001	MaximumTricuspid Valve regurgitation velocity	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
TR PGmax	TSBus	03150002	MaximumTricuspid Valve regurgitation pressure gradient	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
RA Press	SRT	F-03DE9	Right Atrial Pressure	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode						
RVs Press	SRT	F-03DFE	Right Ventricular Systolic Pressure	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode						
E/A	LN	18039-8	Tricuspid Valve E to A ratio	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode						
A/E	TSBus	03150000	Tricuspid Valve A to E ratio	SRT	T-35100	Tricuspid Valve	TSBus	03210001	Doppler mode						

Table 8.1-42 Cardiac Doppler-Mode Pulmonary valve measurement

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
PV VTI	LN	20354-7	Velocity Time Integral	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
PV VP	LN	11726-7	Peak Velocity	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
PV VM	LN	20352-1	Mean Velocity	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
PV PPG	LN	20247-3	Peak Gradient	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125218	Simplified Bernoulli
PV MPG	LN	20256-4	Mean Gradient	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole	DCM	125218	Simplified Bernoulli
PV Diam	SRT	M-02550	Diameter	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
HR	LN	8867-4	Heart rate												
RV PEP	TSBus	030B0002	Doppler-mode time measurement	SRT	T-32500	Right Ventricle	TSBus	03210001	Doppler mode						
RV AcT	LN	20168-1	Acceleration Time	SRT	T-32500	Right Ventricle	TSBus	03210001	Doppler mode						
RV ET	DCM	122213	Right Ventricular Ejection Time	SRT	T-32500	Right Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
PR VTI	LN	20354-7	Velocity time integral	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
PR VP	LN	11726-7	Peak Velocity	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
PR VM	LN	20352-1	Mean Velocity	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole			
PR PPG	LN	20247-3	Peak Gradient	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125218	Simplified Bernoulli
PR MPG	LN	20256-4	Mean Gradient	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32010	Diastole	DCM	125218	Simplified Bernoulli
PR Ved	LN	11653-3	End Diastolic Velocity	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode						
PR PGed	TSBus	030B0003	Pressure gradient on PV regurgitation waveform	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32011	End Diastole			
RA Press	SRT	F-03DE9	Right Atrial Pressure	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode						
AcT/ET	SRT	G-0388	Ratio ofPulmonic Valve Accelaration Time to Ejection Time	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode						
STI	TSBus	030B0000	P_HT_STI	SRT	T-32500	Right Ventricle	TSBus	03210001	Doppler mode						
PV SV	SRT	F-32120	Stroke Volume	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
PV CO	SRT	F-32100	Cardiac Output	SRT	T-32500	Right Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
PV SI	SRT	F-00078	Stroke Index	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
PV CI	SRT	F-32110	Cardiac Index	SRT	T-32500	Right Ventricle	TSBus	03210001	Doppler mode	SRT	F-32020	Systole			
Qp/Qs (SV)	TSBus	030B0004	HRT_ShuntFlow	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode						
Qp/Qs (CO)	TSBus	030B0005	HRT_ShuntFlowCO	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode						
PAs Press	TSBus	030B0001	P_HT_PAPed	SRT	T-35200	Pulmonic Valve	TSBus	03210001	Doppler mode						

Table 8.1-43 Extra Measurements LV Mass AL (Area-Length)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
A epi	TSBus	03400006	Epicardium area	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			
A endo	TSBus	03400007	Endocardium area	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			
LVL	LN	18077-8	Left Ventricle diastolic major axis	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			
t	TSBus	03400001	myocardial thickness	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			
LV Mass	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			
MassIdx	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			

Table 8.1-44 Extra Measurements LV Mass TE (Truncated Ellipsoid)

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
A epi	TSBus	03400006	Epicardium area	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			
A endo	TSBus	03400007	Endocardium area	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			
a	TSBus	03230000	B_LV_LenSMA_d	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			
d	TSBus	03230003	B_LV_LenTSMA_d	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			
t	TSBus	03400001	myocardial thickness	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole	DCM	125222	Left Ventricle Mass by Truncated Ellipse
LV Mass	LN	18087-7	Left Ventricle Mass	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole	DCM	125222	Left Ventricle Mass by Truncated Ellipse
MassIdx	SRT	G-037F	Left Ventricular Index of Myocardial Performance	SRT	T-32600	Left Ventricle				SRT	F-32011	End Diastole			

Table 8.1-45 Extra Measurements PISA

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
Radius	TSBus	03250001	Radius	SRT	T-32600	Left Ventricle									
Alias Vel	TSBus	03250002	Alias velocity	SRT	T-32600	Left Ventricle									
VP	LN	11726-7	Peak Velocity	SRT	T-32600	Left Ventricle									
VTI	LN	20354-7	Velocity Time Integral	SRT	T-32600	Left Ventricle									
PPG	DCM	122198	Gradient Pressure, Peak	SRT	T-32600	Left Ventricle							DCM	125218	Simplified Bernoulli
MPG	DCM	122197	Gadient Pressure,Aaverage	SRT	T-32600	Left Ventricle							DCM	125218	Simplified Bernoulli
Flow Rate	LN	34141-2	Peak Instantaneous Flow Rate	SRT	T-32600	Left Ventricle									
EOArea	TSBus	03250003	Effective Opening area	SRT	T-32600	Left Ventricle							DCM	125216	Proximal Isovelocity Surface Area
FlowVol	LN	33878-0	Volume flow	SRT	T-32600	Left Ventricle									

Table 8.1-46 Extra Measurements Coronary

Label Toshiba Measurements Identifier	DICOM SR Representations														
	TID (5203) Echo Measurement $Measurement			TID (5202) Echo Section Finding Site			TID (5202) Echo Section TID (5203) Echo Measurement Image Mode			TID (5203) Echo Measurement Cardiac Cycle Point			DTID (300) Measurement Measurement Method		
	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning	(0008, 0102) Cd Scheme Design.	(0008, 0100) Cd. Value	(0008, 0104) Code Meaning
RCA Base Vel	TSBus	0327000B	Flow velocity before loading	TSBus	3270000	Right Coronary Artery									
RCA Hyper Vel	TSBus	0327000C	Flow velocity after loading	TSBus	3270000	Right Coronary Artery									
RCA VP base	LN	11726-7	Peak Velocity	TSBus	3270000	Right Coronary Artery									
RCA VM base	LN	11692-1	Time averaged peak velocity	TSBus	3270000	Right Coronary Artery									
RCA DcT	LN	20217-6	Deceleration time	TSBus	3270000	Right Coronary Artery									
RCA PHT	LN	20280-4	Pressure half time	TSBus	3270000	Right Coronary Artery									
RCA CFR Vel	TSBus	0327000D	Vel hyper/Vel base	TSBus	3270000	Right Coronary Artery									
RCA CFR VP	TSBus	0327000E	VP hyper/VP base	TSBus	3270000	Right Coronary Artery									
RCA CFR VM	TSBus	0327000F	VM hyper/VM base	TSBus	3270000	Right Coronary Artery									
LCA Base Vel	TSBus	0327000B	Flow velocity before loading	TSBus	3270001	Left Anterior Descending Coronary Artery									
LCA Hyper Vel	TSBus	0327000C	Flow velocity after loading	TSBus	3270001	Left Anterior Descending Coronary Artery									
LCA VP base	LN	11726-7	Peak Velocity	TSBus	3270001	Left Anterior Descending Coronary Artery									
LCA VM base	LN	11692-1	Time averaged peak velocity	TSBus	3270001	Left Anterior Descending Coronary Artery									
LCA DcT	LN	20217-6	Deceleration time	TSBus	3270001	Left Anterior Descending Coronary Artery									
LCA PHT	LN	20280-4	Pressure half time	TSBus	3270001	Left Anterior Descending Coronary Artery									
LCA CFR Vel	TSBus	0327000D	Vel hyper/Vel base	TSBus	3270001	Left Anterior Descending Coronary Artery									
LCA CFR VP	TSBus	0327000E	VP hyper/VP base	TSBus	3270001	Left Anterior Descending Coronary Artery									
LCA CFR VM	TSBus	0327000F	VM hyper/VM base	TSBus	3270001	Left Anterior Descending Coronary Artery									

Table 8.1-47
SOP COMMON MODULE OF CREATED ENHANCED SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Specific Character Set	(0008,0005)	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

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 8.1-48.

Table 8.1-48
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	--
Requested Procedure ID	Study ID	Study ID
--	Performed Procedure Step ID	Performed Procedure Step ID
--	Performed Procedure Step Description	Performed Procedure Step Description
Requested Procedure Description		
Requested Procedure Code Sequence	Procedure Code Sequence	Procedure Code Sequence

8.1.4 Coerced/Modified Fields

Not applicable.

8.2 DATA DICTIONARY OF PRIVATE ATTRIBUTES

This product reserves private attribute values in the groups 0029 and 7015.
The private attributes added to created SOP instances or directory records are listed in Table 8.1-12.

8.3 CONTROLLED TERMINOLOGY AND TEMPLATES

Not applicable.

8.4 GRAYSCALE IMAGE CONSISTENCY

Not applicable.

8.5 STANDARD EXTENDED/SPECIALIZED/PRIVATE SOP CLASSES

Not applicable.

8.6 PRIVATE TRANSFER SYNTAXES

Not applicable.