WS80A Ultrasound System

DICOM Conformance Statement

Revision 4.0

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1 CONFORMANCE STATEMENT OVERVIEW

WS80A implements the necessary DICOM services to download worklists from information systems, save acquired US images and Structured Reports to a network storage device, CD or DVD, print to a networked hardcopy device, query remote AE's for lists of studies or series, retrieve selected series, and inform the information system about the work actually done.

Table 1-1 provides an overview of the network services supported by WS80A.

Table 1-1

NETWORK SERVICES

SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Transfer		
Ultrasound Image Storage	Yes	Yes
Ultrasound Multi-frame Image Storage	Yes	Yes
Comprehensive SR	Yes	No
Workflow Management		
Modality Worklist	Yes	No
Storage Commitment Push Model	Yes	No
Modality Performed Procedure Step	Yes	No
Print Management		
Basic Grayscale Print Management	Yes	No
Basic Color Print Management	Yes	No
Query/Retrieve		
Study Root Information Model FIND	Yes	No
Study Root Information Model MOVE	Yes	No

Table 1-2 provides an overview of the Media Storage Application Profiles supported by WS80A.

Table 1-2

MEDIA SERVICES

Media Storage Application Profile	Write Files (FSC or FSU)	Read Files (FSR)
Compact Disk – Recordable		
STD-US-SC-MF-CDR	Yes	Yes
DVD		
STD-US-SC-MF-DVD	Yes	Yes

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3 INTRODUCTION

3.1 REVISION HISTORY

Document Version	System Version	Date of Issue	Author	Description
1.0	1.0	Dec 06, 2013	SAMSUNG MEDISON	Final Text for System 1.0
1.1	1.0	Mar 05, 2014	SAMSUNG MEDISON	Fix the document. Add laterality to Fetal Long Bone and Cranium section of OB-GYN SR
1.2	1.02	April 18, 2014	SAMSUNG MEDISON	Add the Finding Site Code value to the OB/GYN Fetal Long Bone and Fetal Cranium Section of DICOM SR.
2.0	3.0	October 26, 2015	SAMSUNG MEDISON	Add Q/R Application Entity Add STORAGE-SCP Application Entity Add Cyst, Fibroid, Mass and Flow, Pelvic Floor Section of OB-GYN SR
4.0	4.0	April 14, 2017	SAMSUNG MEDISON	Support uncompress for cine Image Add patient based query criteria to worklist Add 5D Heart Volume Private Tags Connect Scheduled Performing Physician Name (MWL) to Performing Physician Name (US IOD) Change Configuration Parameters Table Add new measurement items in Gyn, Vascular and Cardiac Structured Reports

3.2 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.

3.3 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 SAMSUNG MEDISON and other vendor's Medical equipment. The Conformance Statement should be read and understood in conjunction with the DICOM Standard [DICOM]. However, it is not guaranteed to ensure by itself 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 SAMSUNG MEDISON and non – SAMSUNG MEDISON equipment.

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

- The DICOM Standard will evolve to meet the users' future requirements. SAMSUNG MEDISON is activity involved in developing the standard further and therefore reserves the right to make changes to its products or to discontinue their delivery.

3.4 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	DICOM Application Entity
AET	Application Entity Title
ASCE	Association Control Service Element
CD-R	Compact Disk Recordable
FSC	File-Set Creator
FSU	File-Set Updater
FSR	File-Set Reader
IOD	(DICOM) Information Object Definition
ISO	International Standard Organization

MPPS	Modality Performed Procedure Step
MSPS	Modality Scheduled Procedure Step
Q/R	Query and Retrieve
R	Required Key Attribute
O	Optional Key Attribute
PDU	DICOM Protocol Data Unit
SCU	DICOM Service Class User (DICOM client)
SCP	DICOM Service Class Provider (DICOM server)
SOP	DICOM Service-Object Pair
U	Unique Key Attribute

3.5 REFERENCES

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

4 NETWORKING

4.1 IMPLEMENTATION MODEL

4.1.1 Application Data Flow

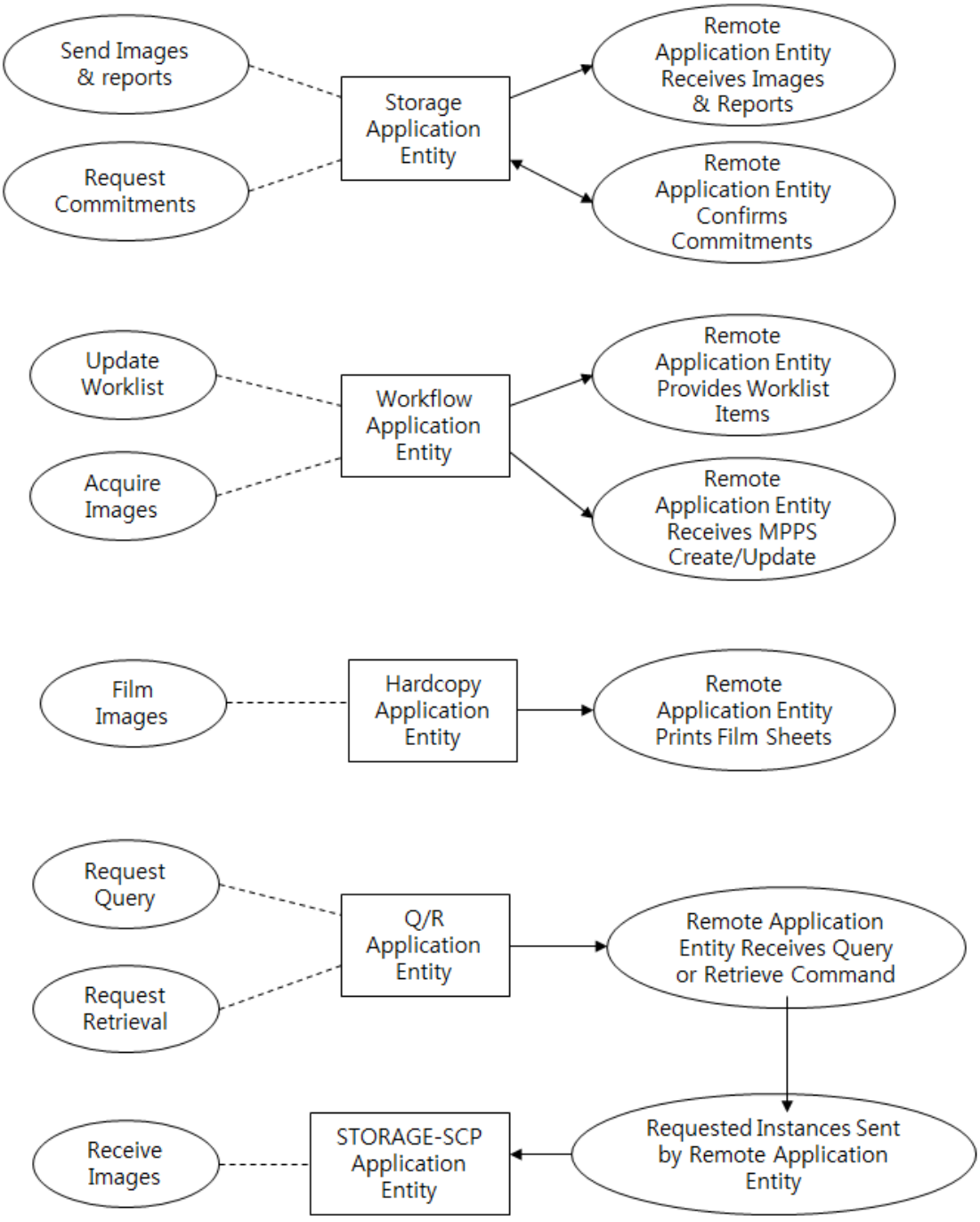

Figure 4.1-1

APPLICATION DATA FLOW DIAGRAM

- The Storage Application Entity sends images, Structured Reports and requests Storage Commitment to a remote AE. It is associated with the local real-world activities “Send Images & Reports” and “Request Commitments”. Methods to send SOP Instances (images and Structured Reports) depend on user configuration, “Send on end exam”, “Send As You Go” or “Manual”. “Manual” mode is performed upon user request for each study or for specific images selected. “Send on end exam” mode starts to send SOP Instances at End Exam for each study. “Send As You Go” mode starts when the first SOP Instance is acquired for each study and SOP Instances are transferred immediately after acquisition.

  If the remote AE is configured as an archive device, the Storage AE will request Storage Commitment and if a commitment is successfully obtained, it will record this information in the local database and displayed it in the Exam List.

- The Workflow Application Entity receives Worklist information from and sends MPPS information to a remote AE. It is associated with the local real-world activities “Update Worklist” and “Acquire Images”. When the “Update Worklist” local real-world activity is performed the Workflow Application Entity queries a remote AE for worklist items and provides the set of worklist items matching the query request. “Update Worklist” is performed as a result of an operator request or can be performed automatically at specific time intervals. When the “Acquire Images” local real-world activity is performed, the Workflow Application Entity creates and updates Modality Performed Procedure Step instances managed by a remote AE. Acquisition of images will result in automated creation of an MPPS Instance. Completion of the MPPS is performed at End Exam for each study.

- The Hardcopy Application Entity prints images on a remote AE (Printer). It is associated with the local real-world activity “Film Images”. Methods to film Images depend on user configuration and are equal to the Sending images’ of the Storage Application Entity.

- The Q/R Application Entity queries the remote AE for lists of studies or series and retrieves the selected series. It is associated with the local real-world activities ‘Query study or series’ and ‘Retrieve series’. When the ‘Query study or series’ local real-world activity is performed, the Q/R Application Entity queries a remote AE for a list of studies or series and provides the set of items matching the query request. When the ‘Retrieve series’ local real-world activity is performed, the Q/R Application Entity retrieves the selected series from the remote AE.

- The STORAGE-SCP Application Entity can receive incoming DICOM images and store them in the system.

4.1.2 Functional Definition of AE's

4.1.2.1 Functional Definition of Storage Application Entity

The existence of a send-job with associated network destination will activate the Storage AE. An association request is sent to the destination AEs and upon successful negotiation of a Presentation Context, the image or Structured Report transfer is started. If the association cannot be opened, the related send-job is set to an error state and can be restarted by the user via DICOM manager interface or automatically. An automatic retry (retry interval, retry count) can be configured using the Setup/DICOM Menu.

4.1.2.2 Functional Definition of Workflow Application Entity

Worklist Update attempts to download a Worklist from a remote node. If the Workflow AE establishes an association to a remote AE, it will transfer all matching worklist items via the open Association. By default, Worklist Update use "US" for Modality, current date for Scheduled Procedure Step Start Date and blank for Scheduled Station AE-Title as query parameters. The results will be displayed in a separate list, which will be cleared with the next Worklist Update.

The Workflow AE performs the creation of an MPPS Instance automatically whenever the first SOP Instance is acquired for each study. The MPPS "Complete" or "Discontinued" states can only be set by "End Exam" for each study.

4.1.2.3 Functional Definition of Hardcopy Application Entity

The existence of a print-job will activate the Hardcopy AE. An association is established with the printers and the printer's status determined. If the printer is operating normally, the film sheets described within the print-job will be printed. If the printer is not operating normally, the print-job will set to an error state and can be restarted by the user via DICOM manager interface or automatically. An automatic retry (retry interval, retry count) can be configured using the Setup/DICOM Menu.

4.1.2.4 Functional Definition of the Q/R Application Entity

The Query function is activated through the user interface when the user selects a Q/R AE to query (from a pre-configured list), then initiates a query. Queries are performed per the study or series. Retrieval is activated through the user interface when the user selects a series for retrieval. A connection to the Q/R AE is established to initiate and monitor the retrieval and the STORAGE-SCP AE receives the retrieved instances.

4.1.2.5 Functional Definition of STORAGE – SCP Application Entity

The STORAGE-SCP AE waits for another application to connect from the presentation address configured for its AE Title. When another application connects, the STORAGE-SCP AE expects it to be a DICOM application. The STORAGE-SCP AE will accept associations with presentation contexts for SOP Classes of the Storage Device. Any images received in such Presentation Contexts will be stored in the system.

4.1.3 Sequencing of Real-World Activities

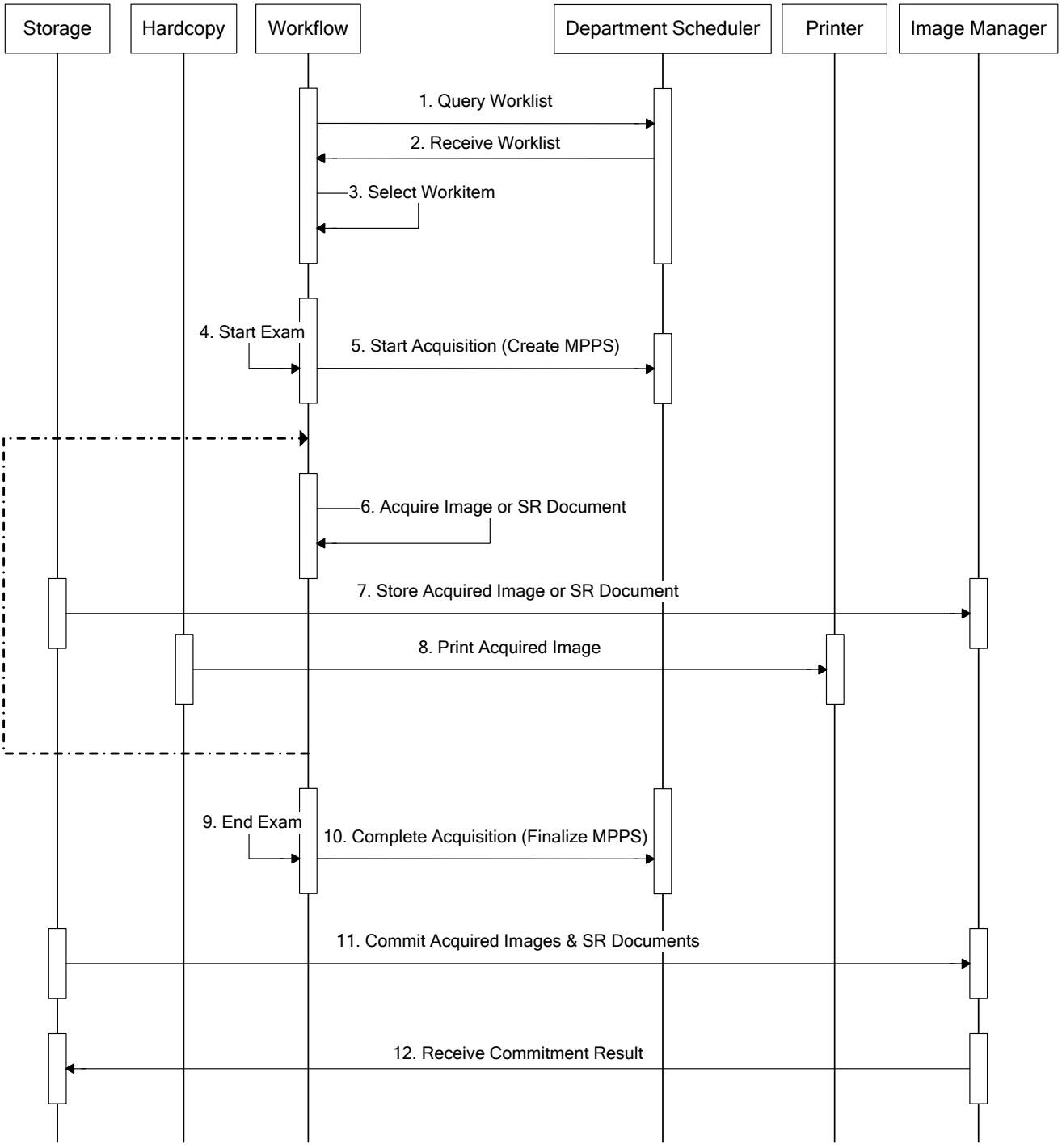

Figure 4.1-2

SEQUENCING CONTRAINTS – SEND AS YOU GO

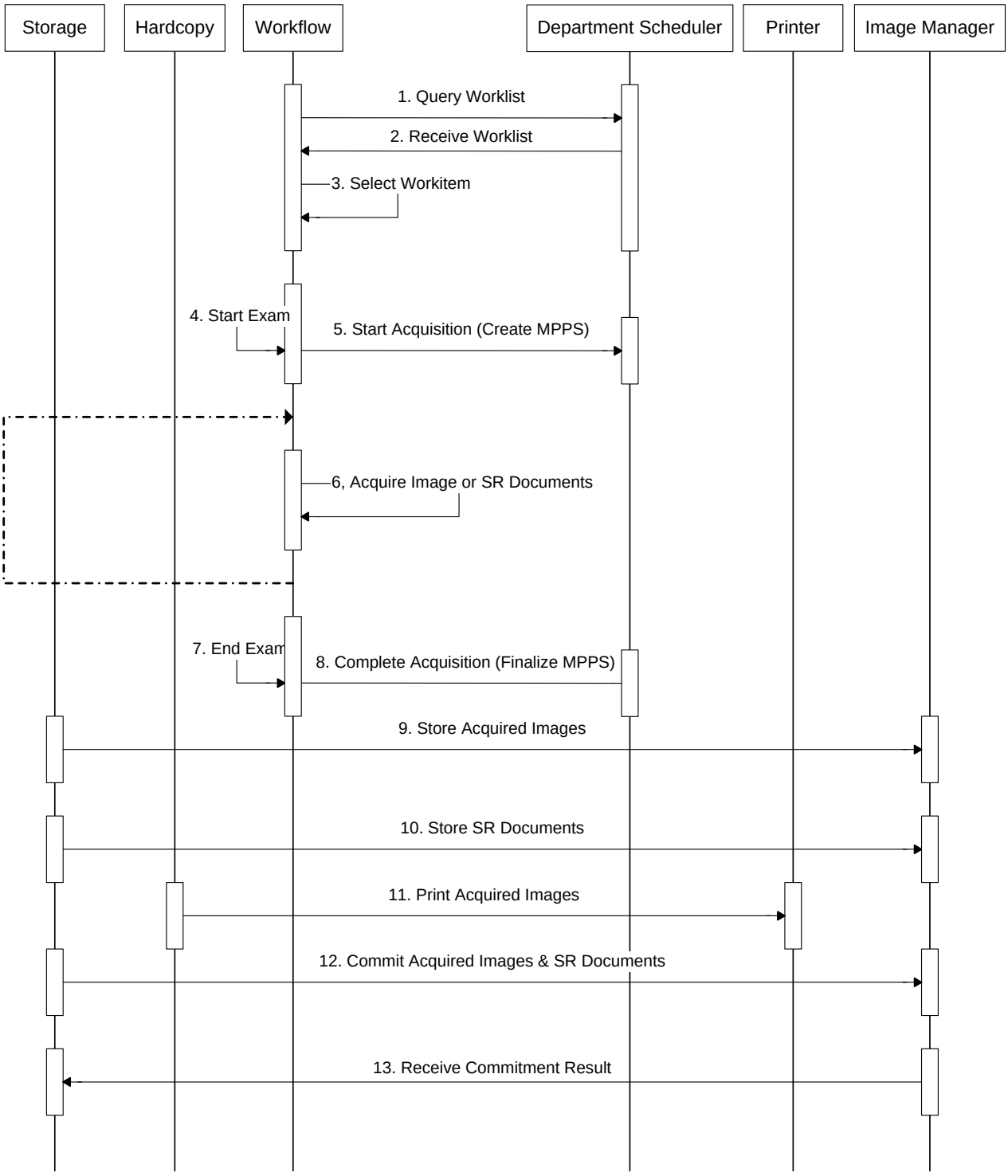

Figure 4.1-3

SEQUENCING CONSTRAINTS – SEND ON END EXAM MODE

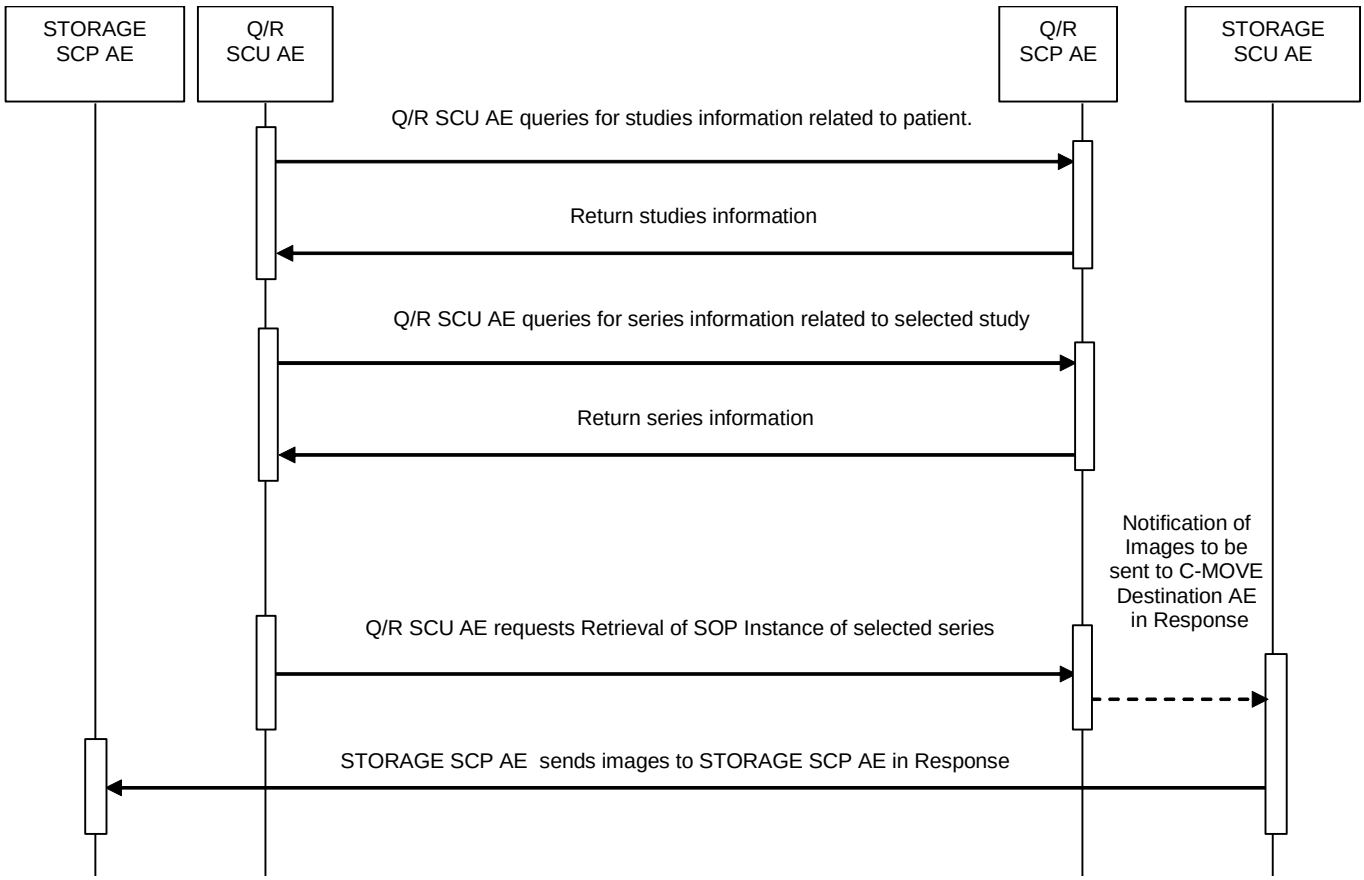

Figure 4.1-4
SEQUENCING CONSTRAINTS – QUERY AND RETRIEVE

Under normal scheduled workflow conditions, the sequencing constraints are illustrated in Figure 4.1-2 , Figure 4.1-3 and Figure 4.1-4

Other workflow situations (e.g. unscheduled procedure steps) will have other sequencing constraints. Printing could equally take place after the images acquired have been stored. Printing could be omitted completely if no printer is connected or hardcopies are not required.

4.2 AE SPECIFICATIONS

4.2.1 Storage Application Entity Specification

4.2.1.1 SOP Classes

WS80A provides Standard Conformance to the following SOP Classes:

Table 4.2-1

SOP CLASSES FOR AE STORAGE

SOP Classes	SOP Class UID	SCU	SCP
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	No
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	No
Comprehensive Structured Report Storage	1.2.840.10008.5.1.4.1.1.88.33	Yes	No
Storage Commitment Push Model	1.2.840.10008.1.20.1	Yes	No
Verification	1.2.840.10008.1.1	Yes	Yes

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 AE STORAGE

Application Context Name	1.2.840.10008.3.1.1.1

4.2.1.2.2 Number of Associations

WS80A can initiate one or more Associations at a time for each destination to which a transfer request is being processed in the active job queue list.

Table 4.2-3

NUMBER OF ASSOCIATIONS INITIATED FOR AE STORAGE

Maximum number of simultaneous Associations	Unlimited

WS80A accepts Associations to receive N-EVENT_REPORT notifications for the Storage Commitment Push Model SOP Class.

Table 4.2-4

NUMBER OF ASSOCIATIONS ACCEPTED FOR AE STORAGE

Maximum number of simultaneous Associations	Unlimited

4.2.1.2.3 Asynchronous Nature

WS80A does not support asynchronous communications (multiple outstanding transactions over a single Association).

Table 4.2-5

ASYNCHRONOUS NATURE AS A SCU FOR AE STORAGE

Maximum number of outstanding asynchronous transactions	1

4.2.1.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-6

DICOM IMPLEMENTATION CLASS AND VERSION FOR AE STORAGE

Implementation Class UID	1.2.410.200001.1.1131
Implementation Version Name	WS80A

4.2.1.3 Association Initiation Policy

4.2.1.3.1 Activity – Send Images and Structured Reports and Requests Commitment

4.2.1.3.1.1 Description and Sequencing of Activities

A user can select exams or images and request them to be sent to some destination. Each request is forwarded to the job queue and processed individually. When the “Send on end exam” or “Send As You Go” option is active, Stored images and reports will be forwarded to the network job queue for a pre-configured auto-send target destination automatically. For “Send on end exam” and “Manual” configuration, the system opens an association, sends all images in the study, and closes the association. If “Send As You Go” is selected, the system handles the association with the Storage SCP Server using the following method.

a. Open an Association when the first image is acquired, and keep association open until the study is closed.

b. If an error occurs while sending an SOP Instance to the server because there is no longer an open

association (server timed-out), attempt to re-establish the association.

c. When the study is closed, close the open association after SOP Instances remained in that study are sent.

If the remote AE is configured as an archive device, the Storage AE will, after all images and reports have been sent, transmit Storage Commitment request (N-ACTION) over a separate Association. The Storage AE can only receive an N-EVENT-REPORT request in a subsequent association initiated by the SCP.

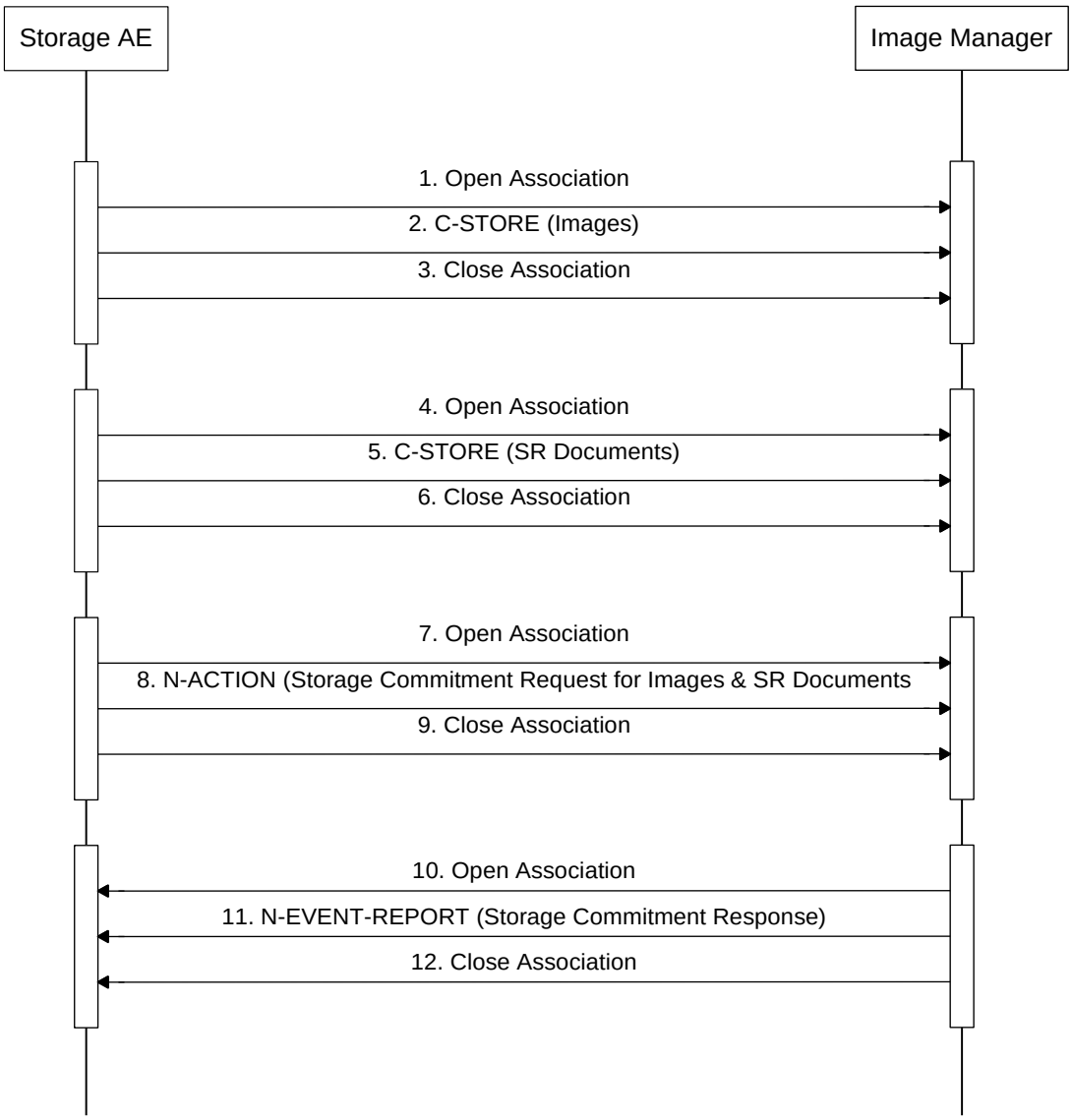

Figure 4.2-1
SEQUENCING OF ACTIVITY - SEND IMAGES AND SR DOCUMENTS

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

NOTE: The N-EVENT-REPORT must be sent over a separate association initiated by the Image Manager. (See Section 4.2.1.4)

4.2.1.3.1.2 Proposed Presentation Contexts

WS80A is capable of proposing the Presentation Contexts shown in the following table.

Table 4.2-7
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY SEND IMAGES

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Ultrasound Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian JPEG Lossy Baseline	1.2.840.10008.1.2 1.2.840.10008.1.2.4.50	SCU	None
Ultrasound Multi-frame Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian JPEG Lossy Baseline	1.2.840.10008.1.2 1.2.840.10008.1.2.4.50	SCU	None
Comprehensive Structured Report Storage	1.2.840.10008.5.1.4.1.1.88.33	Implicit VR Little Endian	1.2.840.10008.1.2	SCU	None
Storage Commitment Push Model	1.2.840.10008.1.20.1	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None
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

Presentation Contexts for Ultrasound Image Storage and Ultrasound Multi-frame Image Storage will be proposed for the “Storage” device configured in Setup/DICOM.

A Presentation Context for Comprehensive Structured Report Storage will be proposed for the “Storage SR” device configured in Setup/DICOM.

A Presentation Context for Storage Commitment Push Model will be proposed for the “SC” device configured in Setup/DICOM.

A Presentation Context for Verification will be proposed when a user press the “Test” button for a configured device.

4.2.1.3.1.3 SOP Specific Conformance Image & Comprehensive Structured Report Storage SOP Classes

All Image & Structured Report Storage SOP Classes supported by the Storage AE exhibit the same behavior, except where stated, and are described together in this section.

Table 4.2-8

STORAGE C-STORE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The SCP has successfully stored the SOP Instance. If all SOP Instances succeed, the job is marked as complete.
Refused	Out of Resources	A700-A7FF	The association is aborted using A-ABORT and the send job is marked as failed. The status is logged.
Error	Data Set does not match SOP Class	A900-A9FF	Same as "Refused" above.
Error	Cannot Understand	C000-CFFF	Same as "Refused" above.
Warning	Coercion of Data Elements	B000	Image transmission is considered successful.
Warning	Data Set does not match SOP Class	B007	Same as "Warning" above.
Warning	Elements Discards	B006	Same as "Warning" above.
*	*	Any other status code.	Same as "Refused" above.

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

Table 4.2-9

STORAGE COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the send job is marked as failed.
Association aborted by the SCP or network layers	The Send job is marked as failed.

A failed send job can be restarted by user interaction. The system can be configured to automatically resend failed jobs if a transient status code is received. The delay between resending failed jobs and the number of retries is also

configurable.

4.2.1.3.1.4 SOP Specific Conformance for Storage Commitment SOP Class

4.2.1.3.1.4.1 Storage Commitment Operations (N-ACTION)

The Storage AE will request storage commitment for the configured device for instances of the Ultrasound Image, Ultrasound Multi-frame Image and Structured Report Storage SOP Classes.

The Storage AE will consider Storage Commitment failed if no N-EVENT-REPORT is received for a Transaction UID within a configurable time period after receiving a successful N-ACTION response (duration of applicability for a Transaction UID).

The Storage AE does not send the optional Storage Media FileSet ID & UID Attributes or the Referenced Study Component Sequence Attribute in the N-ACTION

The Behavior of Storage AE when encountering status codes in an N-ACTION response is summarized in the Table below:

Table 4.2-10

STORAGE COMMITMENT N-ACTION RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The request for storage comment is considered successfully sent. The system waits for the association of the N-Event-Report.
*	*	Any other status code.	The Association is aborted using A-Abort and the request for storage comment is marked as failed

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

Table 4.2-11

STORAGE COMMITMENT COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the storage commitment job is marked as failed.
Association aborted by the SCP or network layers	The storage commitment job is marked as failed.

4.2.1.3.1.4.2 Storage Commitment Notification (N-EVENT-REPORT)

The Storage AE is capable of receiving an N-EVENT-REPORT notification if it has successfully negotiated a Presentation Context for the Storage Commitment Push Model.

Upon receipt of an N-EVENT-REPORT the timer associated with the Transaction UID will be cancelled.

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

Table 4.2-12

STORAGE COMMITMENT N-EVENT-REPORT BEHAVIOR

Event Type Name	Event Type ID	Behavior
Storage Commitment Request Successful	1	The commit status is set to “Y” for each exam in the exam list. Auto deletion for committed exam is not supported.
Storage Commitment Request Complete – Failures Exists	2	The commit status is set to “N” for each exam in the exam list. The Referenced SOP Instances under Failed SOP Sequence (0008, 1198) are logged. A send job that failed storage commitment will not be automatically restarted but can be restarted by user interaction.

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

Table 4.2-13

STORAGE COMMITMENT N-EVENT-REPORT RESPONSE STATUS REASONS

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The Storage commitment result has been successfully received.
Failure	Unrecognized Operation	0211H	The Transaction UID in the N_EVENT_REPORT request is not (was never issued within an N_ACTION request)
Failure	No Such Event Type	0113H	An invalid Event Type ID was supplied in the N_EVENT_REPORT request
Failure	Processing Failure	0110H	An internal error occurred during processing of the N_EVENT_REPORT

4.2.1.3.1.5 SOP Specific Conformance for Verification

The Behavior when encountering status codes in a C-ECHO response is summarized in the Table below:

Table 4.2-14

VERIFICATION C-ECHO RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	Verification Status is set to ‘Normal’
*	*	Any other status code	Verification Status is set to ‘Failed’

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

Table 4.2-15

VERIFICATION COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the verification job is marked as failed.
Association aborted by the SCP or network layers	The verification job is marked as failed.

4.2.1.4 Association Acceptance Policy

4.2.1.4.1 Activity – Receive Storage Commitment Response

4.2.1.4.1.1 Description and Sequence of Activities

The Storage AE will accept associations in order to receive responses to a Storage Commitment Request.

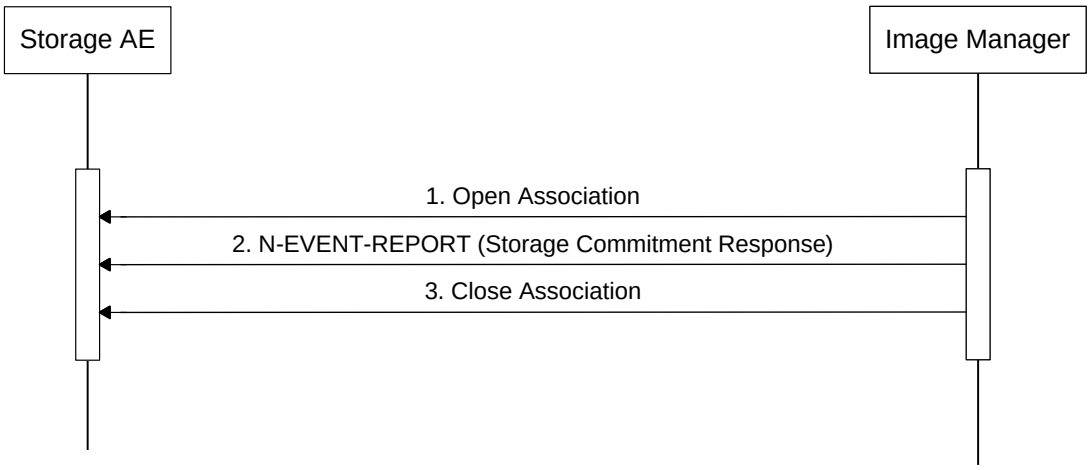

Figure 4.2-2
SEQUENCING OF ACTIVITY - RECEIVE STORAGE COMMITMENT RESPONSE

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

1. The Image Manager opens a new association with the Storage AE.

2. The Image Manager sends an N-EVENT-REPORT request notifying the Storage AE of the status of a previous Storage Commitment Request. The Storage AE replies with an N-EVENT-REPORT response confirming receipt.

3. The Image Manager closes the association with the Storage AE.

4.2.1.4.1.2 Accepted Presentation Contexts

The Storage AE will accept Presentation Contexts as shown in the Table below.

Table 4.2-16
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 Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None
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	SCP	None

4.2.1.4.1.3 SOP Specific Conformance for Storage Commitment SOP Class

4.2.1.4.1.3.1 Storage Commitment Notifications (N-EVENT-REPORT)

Upon receipt of an N-EVENT-REPORT the timer associated with the Transaction UID will be cancelled.

The behavior of Storage AE when receiving Event Types within the N-EVENT_REPORT is summarized in Table 4.2-12.

The reasons for returning specific status codes in an N-EVENT-REPORT response are summarized in Table 4.2-13.

4.2.1.4.1.4 SOP Specific Conformance for Verification SOP Class

The Storage AE provides standard conformance to the Verification SOP Class as an SCP. If the C-ECHO request was successfully received, a 0000 (Success) status code will be returned in the C-ECHO response.

4.2.2 Workflow Application Entity Specification

4.2.2.1 SOP Classes

WS80A provides Standard Conformance to the following SOP Classes:

Table 4.2-17

SOP CLASSES FOR AE WORKFLOW

SOP Classes	SOP Class UID	SCU	SCP
Modality Worklist Information Model – FIND	1.2.840.10008.5.1.4.31	Yes	No
Modality Performed Procedure Step	1.2.840.10008.3.1.2.3.3	Yes	No

4.2.2.2 Association Establishment Policy

4.2.2.2.1 General

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

Table 4.2-18

DICOM APPLICATION CONTEXT FOR AE WORKFLOW

Application Context Name	1.2.840.10008.3.1.1.1

4.2.2.2.2 Number of Associations

WS80A initiates one Association at a time for a Worklist request.

Table 4.2-19

NUMBER OF ASSOCIATIONS INITIATED FOR AE WORKFLOW

Maximum number of simultaneous Associations	1

4.2.2.2.3 Asynchronous Nature

WS80A does not support asynchronous communications (multiple outstanding transactions over a single Association)

Table 4.2-20

ASYNCHRONOUS NATURE AS A SCU FOR AE WORKFLOW

Maximum number of outstanding asynchronous transactions	1

4.2.2.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-21

DICOM IMPLEMENTATION CLASS AND VERSION FOR AE WORKFLOW

Implementation Class UID	1.2.410.200001.1.1131
Implementation Version Name	WS80A

4.2.2.3 Association Initiation Policy

4.2.2.3.1 Activity – Worklist Update

4.2.2.3.1.1 Description and Sequencing of Activities

The request for a Worklist Update is initiated by user interaction or automatically at specific time intervals, configurable by the user.

The interactive Worklist Query will display a dialog for entering data as search criteria. When the Query is started on your request, only the data from the dialog will be inserted as matching keys into the query.

With automated worklist queries the WS80A always requests all items for a Scheduled Procedure Step Start Date (actual date), Modality (US) and Scheduled Station AE Title.

Upon initiation of the request, the WS80A 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, WS80A will access the local database to add patient demographic data. The results will be displayed in a separate list, which will be cleared with the next worklist update.

WS80A will initiate an Association in order to issue a C-FIND request according to the Modality Worklist Information Model.

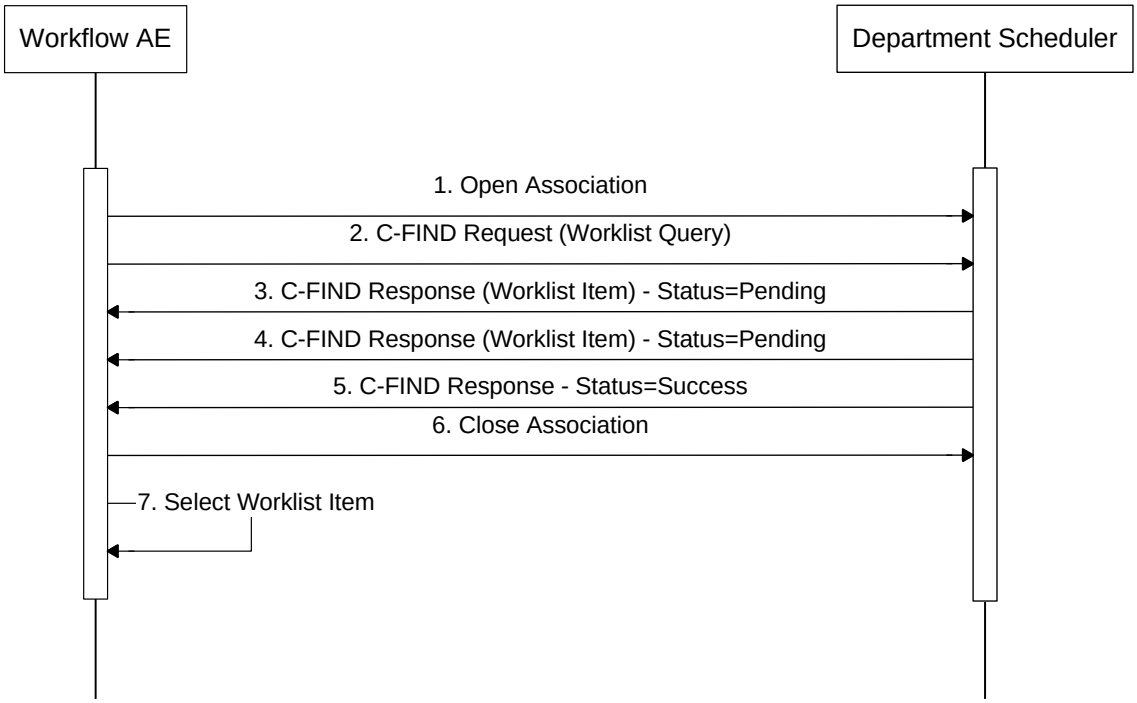

Figure 4.2-3
SEQUENCING OF ACTIVITY - WORKLIST UPDATE

A possible sequence of interactions between the Workflow AE and a Departmental 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:

4.2.2.3.1.2 Proposed Presentation Contexts

WS80A will propose Presentation Contexts as shown in the following table:

Table 4.2-22
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY WORKLIST UPDATE

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Modality Worklist Information Model - FIND	1.2.840.10008. 5.1.4.31	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008. 1.2.1	SCU	None

4.2.2.3.1.3 SOP Specific Conformance for Modality Worklist

The behavior of WS80A when encountering status codes in a Modality Worklist C-FIND response is summarized in the table below. If any other SCP response status than “Success” or “Pending” is received by WS80A, a message ”Query failed” will appear on the user interface.

Table 4.2-23

MODALITY WORKLIST C-FIND RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Matching is complete	0000	The SCP has Completed the operation successfully.
Pending	Matches are continuing	FF00	Continue.
Pending	Matches are continuing - Warning that one or more Optional Keys were not supported	FF01	Continue.
*	*	Any other status code.	The Association is aborted using A-Abort and the Worklist is marked as failed

The behavior of WS80A during communication failure is summarized in the Table below.

Table 4.2-24

MODALITY WORKLIST COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the worklist query is marked as failed.
Association aborted by the SCP or network layers	The Worklist query is marked as failed.

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

The Table below provides a description of the WS80A Worklist Request Identifier and specifies the attributes that are copied into the images. Unexpected attributes returned in a C-FIND response are ignored.

Requested return attributes not supported by the SCP are set to have no value. Non-matching responses returned by the SCP due to unsupported optional matching keys are ignored. No attempt is made to filter out possible duplicate entries.

Table 4.2-25

WORKLIST REQUEST IDENTIFIER

Module Name Attribute Name	Tag	VR	M	R	Q	D	IOD
Scheduled Procedure Step							
Scheduled Procedure Step Sequence	0040,0100	SQ		x			
> Scheduled Station AET	0040,0001	AE	(S)	x	x		
> Scheduled Procedure Step Start Date	0040,0002	DA	S,R	x	x	x	
> Scheduled Procedure Step Start Time	0040,0003	TM		x		x	
> Modality	0008,0060	CS	S	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	S	x	x		
> Scheduled Procedure Step Location	0040,0011	SH	S	x	x		
> Scheduled Protocol Code Sequence	0040,0008	SQ		x			x
> Scheduled Procedure Step ID	0040,0009	SH		x			x
Requested Procedure							
Requested Procedure ID	0040,1001	SH	S	x	x	x	x
Requested Procedure Description	0032,1060	LO		x			
Study Instance UID	0020,000D	UI		x			x
Referenced Study Sequence	0008,1110	SQ		x			x
Requested Procedure Code Sequence	0032,1064	SQ		x			x
Imaging Service Request							
Accession Number	0008,0050	SH	S	x	x	x	x
Requesting Physician	0032,1032	PN		x			
Referring Physician's Name	0008,0090	PN		x		x	x
Visit Status							
Current Patient Location	0038,0300	LO		x			
Patient Identification							
Patient’s Name	0010.0010	PN	S	x	x	x	x
Patient ID	0010,0020	LO	S	x	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 Medical							
Last Menstrual Date	0010,21D0	DA		x		x	x

The above table should read as follows:

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

Attribute Name: Attributes supported to build an WS80A Worklist Request Identifier.

Tag: DICOM tag for this attribute.

VR: DICOM VR for this attribute.

M: Matching keys for (automatic) Worklist Update. An “S” indicates that WS80A supplies an attribute value for Single Value Matching or additional specific tags indicated by “(S)”; an “R” will indicate Range Matching.

R: Return keys. An ”X” will indicate that WS80A will supply this attribute as Return Key with zero length for Universal Matching.

Q: Interactive Query Key. An “X” will indicate that WS80A will supply this attribute as matching key, if entered in the Setup Dialog.

D: Displayed keys. An “X” indicates that this worklist attribute is displayed to the user during a patient registration dialog.

IOD: An “X” indicates that this Worklist attribute is included into all Object Instances created during performance of the related Procedure Step.

4.2.2.3.2 Activity – Acquire Images

4.2.2.3.2.1 Description and Sequencing of Activities

An Association to the configured MPPS SCP system is established immediately after the first SOP Instance is acquired to send the MPPS N-Create message.

The “End Exam” button causes a message box in which a user can select “COMPLETED” or “DISCONTINUED” as a MPPS final state. An exam for which an MPPS instance is sent with a state of “COMPLETED” or “DISCONTINUED” can no longer be updated.

The WS80A will support creation of “unscheduled cases” by allowing MPPS Instances to be communicated for locally registered Patients.

The WS80A supports a 1-to-N relationship between Scheduled and Performed Procedure Steps.

WS80A 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.

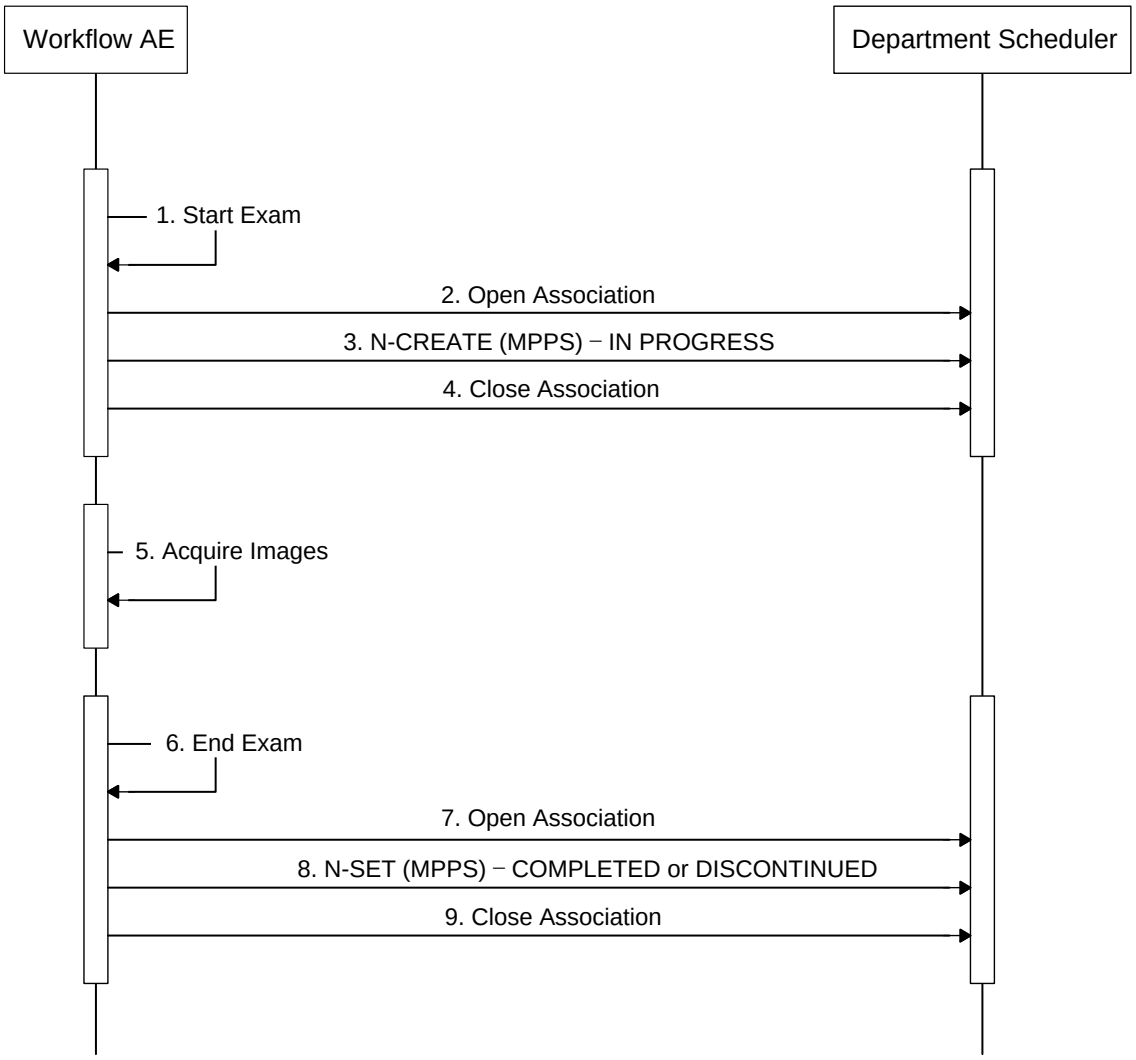

Figure 4.2-4
SEQUENCING OF ACTIVITY - ACQUIRE IMAGES

A possible sequence of interactions between the Workflow AE and a Departmental 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:

4.2.2.3.2.2 Proposed Presentation Contexts

WS80A will propose Presentation Contexts as shown in the following table:

Table 4.2-26

PROPOSED PRESENTATION CONTEXTS FOR REAL-WORLD ACTIVITY ACQUIRE IMAGES

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Modality Performed Procedure Step	1.2.840.10008. 3.1.2.3.3	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008. 1.2.1	SCU	None

4.2.2.3.2.3 SOP Specific Conformance for MPPS

The behavior of the WS80A when encountering status codes in an MPPS N-CREATE or N-SET response is summarized in the table below. If any other SCP response status than “Success” or “Warning” is received by WS80A, a message “MPPS failed” will appear on the user interface.

Table 4.2-27

MPPS N-CREATE / N-SET RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The SCP has Completed the operation successfully.
Warning	Attribute Value Out of Range	0116H	The MPPS Operation is considered successful.
*	*	Any other status code.	The Association is aborted using A-Abort and the MPPS is marked as failed

The behavior of WS80A during communication failure is summarized in the table below:

Table 4.2-28

MPPS COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the MPPS job is marked as failed.
Association aborted by the SCP or network layers	The study or series query is marked as failed.

Table 4.2-29 provides a description of the MPPS N-CREATE and N-SET request identifiers send by WS80A. Empty cells in the N-CREATE and N-SET columns indicate that the attribute is not sent.

Table 4.2-29

MPPS N-CREATE / N-SET REQUEST IDENTIFIER

Attribute Name	Tag	VR	N-CREATE	N-SET
Specific Character Set	0008,0005	CS	Ref. Section 6 SUPPORT OF CHARACTER SETS	
Performed Procedure Step Relationship				
Scheduled Step Attribute Sequence	0040,0270	SQ		
> Study Instance UID	0020,000D	UI	From MWL or generated by device	
> Referenced Study Sequence	0008,1110	SQ	From MWL	
>> Referenced SOP Class UID	0008.1150	UI	From MWL	
>> Referenced SOP Instance UID	0008,1155	UI	From MWL	
> Accession Number	0008,0050	SH	From MWL or user input	
> Requested Procedure ID	0040,1001	SH	From MWL	
> Requested Procedure Description	0032,1060	LO	From MWL	
> Scheduled Procedure Step ID	0040,0009	SH	From MWL	
> Scheduled Procedure Step Description	0040,0007	LO	From MWL	
> Scheduled Protocol Code	0040,0008	SQ	From MWL	

Sequence				
>> Code Value	0008,0100	SH	From MWL	
>> Coding Scheme Designator	0008,0102	SH	From MWL	
>> Coding Scheme Version	0008,0103	SH	From MWL	
>> Code Meaning	0008,0104	LO	From MWL	
Patient's Name	0010,0010	PN	From MWL or user input	
Patient ID	0010,0020	LO	From MWL or user input	
Patient's Birth Date	0010,0030	DA	From MWL or user input	
Patient's Sex	0010,0040	CS	From MWL or user input	
Referenced Patient Sequence	0008,1120	SQ	Zero length	
> Referenced SOP Class UID	0008,1150	UI	Zero length	
> Referenced Instance UID	0008,1155	UI	Zero length	
Performed Procedure Step Information				
Performed Procedure Step ID	0040,0253	SH	Generated by device (Study Date + Study Time)	
Performed Station AE Title	0040,0241	AE	From Modality Setup	
Performed Station Name	0040,0242	SH	From Modality Setup	
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	From MWL or user input (Same as Study Description)	From MWL or user input (Same as Study Description)
Performed Procedure Type Description	0040,0255	LO	Zero length	Zero length
Procedure Code Sequence	0008,1032	SQ	From MWL	From MWL
> Code Value	0008,0100	SH	From MWL	From MWL
> Coding Scheme Designator	0008,0102	SH	From MWL	From MWL
> Coding Scheme Version	0008,0103	SH	From MWL	From MWL

> Code Meaning	0008,0104	LO	From MWL	From MWL
Performed Procedure Step End Date	0040,0250	DA	Zero length	Actual End Date
Performed Procedure Step End Time	0040,0251	TM	Zero length	Actual End Time
Performed Procedure Step Discontinuation Reason Code Sequence	0040,0281	SQ		Used when Performed Procedure Step Status is “DISCONTINUED”
> Code Value	0008,0100	SH		From User Select
> Coding Scheme Designator	0008,0102	SH		From User Select
> Coding Scheme Version	0008,0103	SH		
> Code Meaning	0008,0104	LO		From user select
Image Acquisition Results				
Modality	0008,0060	CS	"US"	
Study ID	0020,0010	SH	Requested Procedure ID or Generated by device (Study Date + Study Time)	
Performed Protocol Code Sequence	0040,0260	SQ	Zero length	
Performed Series Sequence	0040,0340	SQ	Zero length	One or more items
> Performed Physician's Name	0008,1050	PN		From MWL or user input
> Protocol Name	0018,1030	LO		"FreeForm"
> Operator's Name	0008,1070	PN		From user input
> Series Instance UID	0020,000E	UI		Generated by device
> Series Description	0008,103E	LO		Zero length
> Retrieve AE Title	0008,0054	AE		Zero length
> Referenced Image Sequence	0008,1140	SQ		From Modality
>> Referenced SOP Class UID	0008,1150	UI		From Modality
>> Referenced SOP Instance UID	0008,1155	UI		From Modality
> Referenced Non-Image Composite SOP Instance	0040,0220	SQ		From Modality

Sequence				
>> Referenced SOP Class UID	0008,1150	UI		From Modality
>> Referenced SOP Instance UID	0008,1155	UI		From Modality

4.2.2.4 Association Acceptance Policy

The Workflow Application Entity does not accept Associations.

4.2.3 Hardcopy Application Entity Specification

4.2.3.1 SOP Classes

WS80A provides Standard Conformance to the following SOP Classes:

Table 4.2-30

SOP CLASSES FOR AE HARDCOPY

SOP Classes	SOP Class UID	SCU	SCP
Basic Grayscale Print Management Meta	1.2.840.10008.5.1.1.9	Yes	No
Basic Color Print Management Meta	1.2.840.10008.5.1.1.18	Yes	No

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 4.2-31

DICOM APPLICATION CONTEXT FOR AE HARDCOPY

Application Context Name	1.2.840.10008.3.1.1.1

4.2.3.2.2 Number of Association

WS80A can initiate one or more Associations at a time for each destination to which a transfer request is being processed in the active job queue list.

Table 4.2-32

NUMBER OF ASSOCIATIONS INITIATED FOR AE HARDCOPY

Maximum number of simultaneous Associations	Unlimited (number of configured hardcopy devices)

4.2.3.2.3 Asynchronous Nature

WS80A does not support asynchronous communications (multiple outstanding transactions over a single Association)

Table 4.2-33

ASYNCHRONOUS NATURE AS A SCU FOR AE HARDCOPY

Maximum number of outstanding asynchronous transactions	1

4.2.3.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-34

DICOM IMPLEMENTATION CLASS AND VERSION FOR AE HARDCOPY

Implementation Class UID	1.2.410.200001.1.1131
Implementation Version Name	WS80A

4.2.3.3 Association Initiation Policy

4.2.3.3.1 Activity – Film Images

4.2.3.3.1.1 Description and Sequencing of Activities

A user composes images onto film sheets and requests them to be sent to a specific hardcopy device. The user can select the desired film format and number of copies. Each print-job is forwarded to the job queue and processed individually.

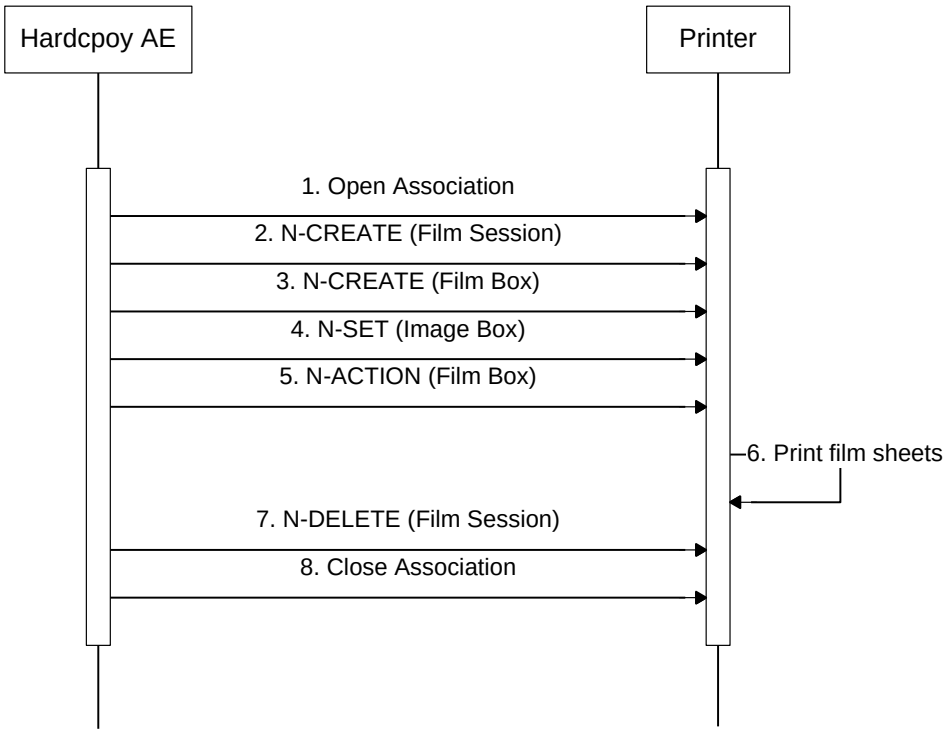

Figure 4.2-5
SEQUENCING OF ACTIVITY - FILM IMAGES

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

Association Initiation Policies for “Send on end exam”, “Send As You Go” and “Manual” Mode are equal to the Sending images’ of the Storage Application Entity. (See 4.2.1.3.1.1)

Status of the print-job is reported through the job control interface. One or more job can be active at a time for each

separate hardcopy device. If any response from the remote Application contains a status other than Success or Warning, the Association is aborted and the related job is switched to a failed state. It can be restarted any time by user interaction or, if configured, by automated retry.

4.2.3.3.1.2 Proposed Presentation Contexts

WS80A is capable of proposing the Presentation Contexts shown in the Table below:

Table 4.2-35
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY FILM IMAGES

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Basic Grayscale Print Management Meta	1.2.840.10008.5.1.1.9	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None
Basic Color Print Management Meta	1.2.840.10008.5.1.1.18	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None

4.2.3.3.1.3 Common SOP Specific Conformance for all Print SOP Classes

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

Table 4.2-36
HARDCOPY COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted using A-ABORT and the print job is marked as failed.
Association aborted by the SCP or network layers	The print job is marked as failed.

4.2.3.3.1.4 SOP Specific Conformance for the Film Session SOP Class

Hardcopy AE supports the following DIMSE operations for the Film Session SOP Class:

- N-CREATE
- N-DELETE

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

4.2.3.3.1.4.1 Film Session SOP Class Operations (N-CREATE)

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

Table 4.2-37

FILM SESSION SOP CLASS N-CREATE REQUEST ATTRIBUTES

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

The Behavior of Hardcopy AE when encountering status codes in an N-CREATE response is summarized in the table below:

Table 4.2-38

FILM SESSION SOP CLASS N-CREATE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The SCP has Completed the operation successfully.
Warning	Attribute Value Out of Range	0116H	System continues operations.
Warning	Attribute List Error	0107H	Same as above
*	*	Any other status code.	The Association is aborted using A-Abort and the print-job is marked as failed

4.2.3.3.1.4.2 Film Session SOP Class Operations (N-DELETE)

The behavior of Hardcopy AE when encountering status codes in an N-DELETE response is summarized in the Table below:

Table 4.2-39
PRINTER SOP CLASS N-DELETE RESONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	
Success	Success	0000	The SCP has Completed the operation successfully.
*	*	Any other status code.	The Association is aborted using A-Abort and the print-job is marked as failed

4.2.3.3.1.5 SOP Specific Conformance for the Film Box SOP Class

Hardcopy AE supports the following DIMSE operations for the Film Box SOP Class:

- N-CREATE
- N-ACTION

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

4.2.3.3.1.5.1 Film Box SOP Class Operations (N-CREATE)

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

Table 4.2-40
FILM BOX SOP CLASS N-CREATE REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Display Format	2010,0010	ST	"STANDARD\1, 1" , "STANDARD\1, 2" , "STANDARD\2, 2" , "STANDARD\2, 3" , "STANDARD\3, 3" , "STANDARD\3, 4" , "STANDARD\3, 5" , "STANDARD\4, 4" ,	ALWAYS	USER

			"STANDARD\4, 5" or "STANDARD\4, 6"		
Referenced Film Session Sequence	2010.0500	SQ		ALWAYS	AUTO
> Referenced SOP Class UID	0008,1150	UI	1.2.840.10008.5.1.1.1	ALWAYS	AUTO
> Referenced SOP Instance UID	0008,1155	UI	From created Film Session SOP Instance	ALWAYS	AUTO
Film Orientation	2010,0040	CS	PORTRAIT or LANDSCAPE	ALWAYS	USER
Film Size ID	2010,0050	CS	8INX10IN, 8_5INX11IN, 10INX12IN, 10INX14IN, 11INX14IN, 11INX17IN, 14INX14IN, 14INX17IN, 24CMX24CM, 24CMX30CM, A4, A3	ALWAYS	USER
Magnification Type	2010,0060	CS	REPLICATE, BILINEAR, CUBIC, NONE	ALWAYS	USER
Max Density	2010,0130	US	0 ~	ANAP	USER
Configuration Information	2010,0150	ST	Values are defined in Print Conformance Statement	ANAP	USER
Smoothing Type	2010,0080	CS	Values are defined in Print Conformance Statement	ANAP	USER
Border Density	2010,0100	CS	BLACK or WHITE	ALWAYS	USER
Empty Image Density	2010,0110	CS	BLACK or WHITE	ALWAYS	USER
Min Density	2010,0120	US	0 ~	ANAP	USER

The behavior of Hardcopy AE when encountering status codes in an N-CREATE responses is summarized in the table below:

Table 4.2-41

FILM BOX SOP CLASS N-CREATE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The SCP has Completed the operation successfully.
Warning	Attribute Value Out of Range	0116H	System continues operations.
Warning	Attribute List Error	0107H	Same as above
Warning	Requested Min Density or Max Density outside of printer's operating range	B605H	Same as above
*	*	Any other status code.	The Association is aborted using A-Abort and the print-job is marked as failed

4.2.3.3.1.5.2 Film Box SOP Class Operations (N-ACTION)

An N-ACTION Request is issued to instruct the Print SCP to print the contents of the Film Box.

The behavior of Hardcopy AE when encountering status codes in an N-ACTION responses is summarized in the table below:

Table 4.2-42

FILM BOX CLASS N-ACTION RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The SCP has Completed the operation successfully.
*	*	Any other status code.	The Association is aborted using A-Abort and the print-job is marked as failed

4.2.3.3.1.6 SOP Specific Conformance for the Film Box SOP Class

Hardcopy AE supports the following DIMSE operations for the Image Box SOP Class:

- N-SET

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

4.2.3.3.1.6.1 Image Box SOP Class Operations (N-SET)

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

Table 4.2-43
BASIC GRAYSCALE IMAGE BOX SOP CLASS N-SET REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Position	2020,0010	US	1 .. N (N = Row * Column of Film Box)	ALWAYS	AUTO
Basic Grayscale Image Sequence	2020,0110	SQ		ALWAYS	AUTO
> Samples Per Pixel	0028,0002	US	1	ALWAYS	AUTO
> Photometric Interpretation	0028,0004	CS	MONOCHROME2	ALWAYS	AUTO
> Rows	0028,0010	US	Number of Row Pixels of Image	ALWAYS	AUTO
> Columns	0028,0011	US	Number of Column Pixels of Image	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	Pixels of Image	ALWAYS	AUTO

Table 4.2-44

BASIC COLOR IMAGE BOX SOP CLASS N-SET REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Position	2020,0010	US	1 .. N (N = Row * Column of Film Box)	ALWAYS	AUTO
> Samples Per Pixel	0028,0002	US	3	ALWAYS	AUTO
> Photometric Interpretation	0028,0004	CS	RGB	ALWAYS	AUTO
> Planar Configuration	0028,0006	US	1	ALWAYS	AUTO
> Rows	0028,0010	US	Number of Row Pixels of Image	ALWAYS	AUTO
> Columns	0028,0011	US	Number of Column Pixels of Image	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	Pixels of Image	ALWAYS	AUTO

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

Table 4.2-45

IMAGE BOX SOP CLASS N-SET RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The SCP has Completed the operation successfully.
*	*	Any other status code.	The Association is aborted using A-Abort and the print-job is marked as failed

4.2.3.4 Association Acceptance Policy

The Hardcopy Application Entity does not accept Associations.

4.2.4 Q/R Application Entity Specification

4.2.4.1 SOP Classes

WS80A provides Standard Conformance to the following SOP Classes:

Table 4.2-46

SOP CLASSES FOR AE Q/R

SOP Classes	SOP Class UID	SCU	SCP
Study Root Information Model- FIND	1.2.840.10008.5.1.4.1.2.2.1	Yes	No
Study Root Information Model- MOVE	1.2.840.10008.5.1.4.1.2.2.2	Yes	No

4.2.4.2 Association Establishment Policy

4.2.4.2.1 General

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

Table 4.2-47

DICOM APPLICATION CONTEXT FOR AE Q/R

Application Context Name	1.2.840.10008.3.1.1.1

4.2.4.2.2 Number of Associations

WS80A initiates one Association at a time for a Q/R request.

Table 4.2-48

NUMBER OF ASSOCIATIONS INITIATED FOR AE Q/R

Maximum number of simultaneous Associations	1

4.2.4.2.3 Asynchronous Nature

WS80A does not support asynchronous communications (multiple outstanding transactions over a single Association)

Table 4.2-49

ASYNCHRONOUS NATURE AS A SCU FOR AE Q/R

Maximum number of outstanding asynchronous transactions	1

4.2.4.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-50

DICOM IMPLEMENTATION CLASS AND VERSION FOR AE Q/R

Implementation Class UID	1.2.410.200001.1.1131
Implementation Version Name	WS80A

4.2.4.3 Association Initiation Policy

4.2.4.3.1 Activity – Query study or series

4.2.4.3.1.1 Description and Sequencing of Activities

The Query attempts to initiate a new association when the user selects Query from the user interface.

When the Query is requested, the data from the user interface will be inserted as matching keys into the query form. When the request is initiated, the WS80A will build an identifier for the C-FIND request, and it will initiate an association to send the request and will wait for Query responses. The results will be diaplayed in a study or series list.

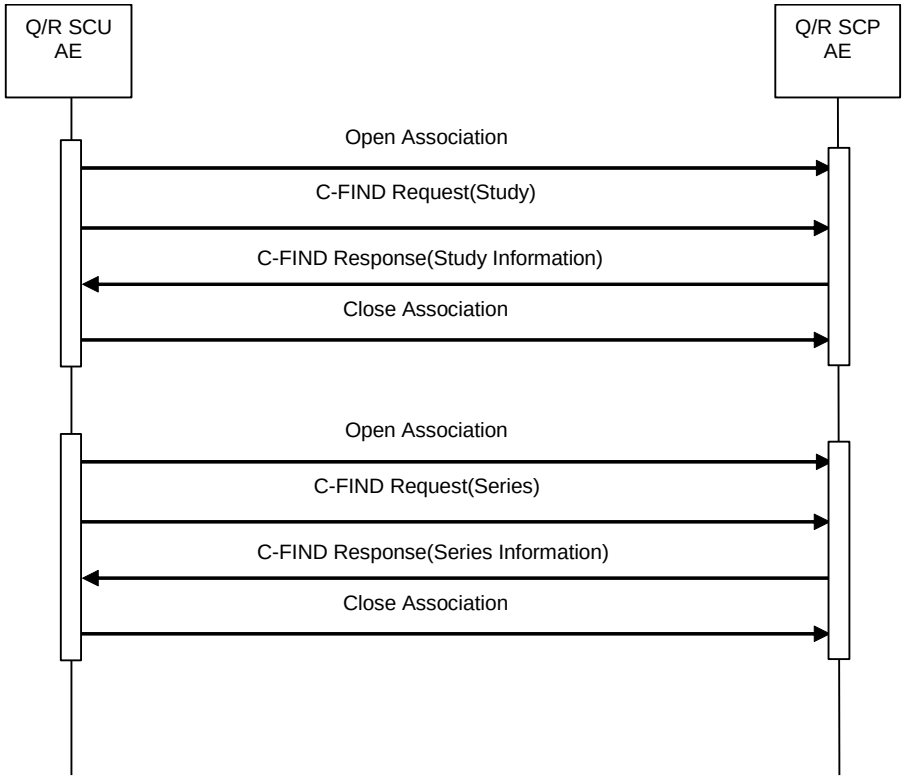

Figure 4.2-6

SEQUENCING OF ACTIVITY - HANDLING QUERY STUDY OR SERIES

4.2.4.3.1.2 Proposed Presentation Contexts

WS80A will propose Presentation Contexts as shown in the following table:

Table 4.2-51
PROPOSED PRESENTATION CONTEXTS
FOR REAL-WORLD ACTIVITY QUERY STUDY OR SERIES

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Study Root 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	SCU	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCU	None

4.2.4.3.1.3 SOP Specific Conformance for Query SOP Classes

The behavior of the WS80A when encountering status codes in the Query C-FIND response is summarized in the table below. If any SCP response status other than “Successful” or “Pending” is received by WS80A, the message ”Query failed” will appear in the user interface.

Table 4.2-52
QUERY C-FIND RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Successful	Matching is complete	0000	The SCP has completed the operation successfully.
Pending	Matches are continuing	FF00	The query is still ongoing.
Pending	Matches are continuing - Warning that one or more Optional Keys were not supported	FF01	The query is still ongoing.
*	*	Any other status code.	The association is aborted using A-Abort and the Query is marked as failed.

The behavior of the WS80A during communication failure is summarized in the table below:

Table 4.2-53

QUERY COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Time Out	The association is aborted using A-ABORT and the query is marked as failed.
Association aborted by the SCP or network layers	The study or series query is marked as failed.

The system actually performs a number of C-FIND requests at multiple levels in the DICOM object hierarchy to get the data it requires to display studies or series. Table 4.2-54 provides a description of the query request identifiers.

Table 4.2-54

QUERY REQUEST IDENTIFIER FOR FIND-SCU

Attribute Name	Tag	VR	M	R	Q	D
STUDY Level						
Query/Retrieve Level	0008,0052	CS	S	x	x	
Patient's ID	0010,0020	LO	S	x	x	x
Patient's Name	0010,0010	PN	S	x	x	x
Study Description	0008,1030	LO		x		x
Modalities In Study	0008,0061	CS		x		x
Study Date	0008,0020	DA	S,R	x	x	x
Study Time	0008,0030	TM		x		
Accession Number	0008,0050	SH		x	x	
Study Instance UID	0020,000D	UI		x	x	
Number of Study Related Series	0020,1206	IS		x		x
Number of Study Related Instances	0020,1208	IS		x		
SERIES Level						
Query/Retrieve Level	0008,0052	CS	S	x	x	
Series Number	0020,0011	IS		x		x
Series Description	0008,103E	LO		x		x
Modality	0008,0060	CS		x		x
Series Date	0008,0021	DA		x		x
Series Time	0008,0031	TM		x		
Body Part Examined	0018,0015	CS		x		x
Series Instance UID	0020,000E	UI		x		

Study Instance UID	0020,000D	UI	S		x	
Number of Series Related Instances	0020,1209	IS		x		x

The table above should read as follows:

Attribute Name: Supported attributes that can build an WS80A Query Request Identifier.

Tag: DICOM tag for this attribute.

VR: DICOM VR for this attribute.

M: Matching keys for (automatic) Query. An “S” indicates that the WS80A can supply an attribute value for Single Value Matching or additional specific tags indicated by “(S)”; an “R” indicates Range Matching.

R: Return keys. An ”X” indicates that the WS80A will supply this attribute as the Return Key with zero length for Universal Matching.

Q: Interactive Query Key. An “X” indicates that the WS80A will supply this attribute as a matching key, if entered in the Setup Dialog.

D: Displayed keys. An “X” indicates that this Query attribute is displayed to the user during a patient registration dialog.

4.2.4.3.2 Activity – Retrieve series

4.2.4.3.2.1 Description and Sequencing of Activities

The retrieval function attempts to initiate a new association when the user selects Retrieve in the user interface.A single attempt will be made to retrieve the entity (series) from the selected Q/R AE. If retrieval fails, for whatever reason, no reattempt will be performed.

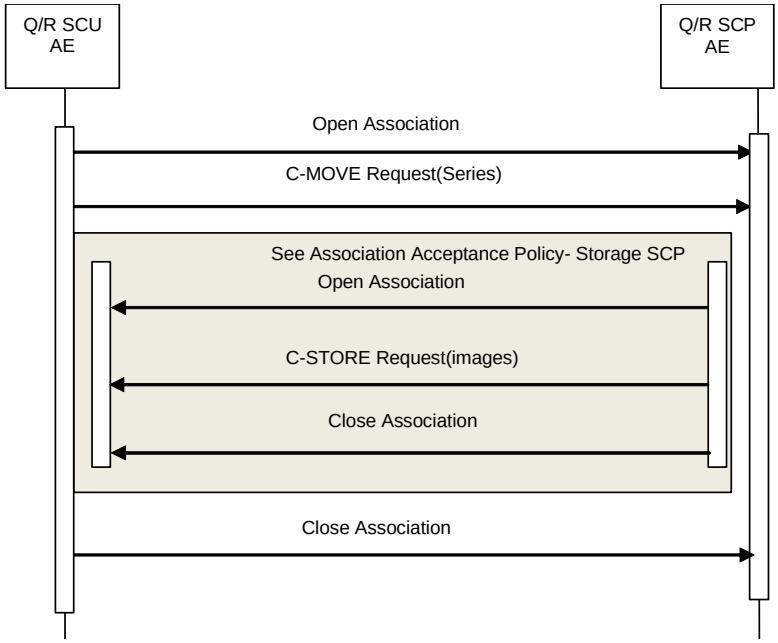

Figure 4.2-7
SEQUENCING OF ACTIVITY – HANDLING RETRIEVE SERIES

4.2.4.3.2.2 Proposed Presentation Contexts

WS80A will propose Presentation Contexts as shown in the following table:

Table 4.2-55
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY RETRIEVE SERIES

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Study Root Information	1.2.840.10008.5.1.4.1.2.2.2	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCP SCP	None None

Model- MOVE		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

4.2.4.3.2.3 SOP Specific Conformance for Retrieval SOP Classes

The behavior of the WS80A when encountering status codes in Retrieve C-MOVE response is summarized in the table below. If any SCP response status other than “Successful” or “Pending” is received by the WS80A, a “failed” message will appear on the user interface.

Table 4.2-56

RETRIEVE C-MOVE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Successful	Sub-operations complete – no failures detected	0000	All the Composite SOP Instances have been successfully sent to the C-MOVE Destination AE.
Pending	Sub-operations are still ongoing	FF00	A response with this status code is sent every time a Composite SOP Instance has been successfully sent to the C-MOVE Destination AE.
*	*	Any other status code.	The association is aborted using A-Abort and the retrieval is marked as failed

The behavior of the WS80A during communication failure is summarized in the table below.

Table 4.2-57

RETRIEVE COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The association is aborated using A-ABORT and the retireval job is marked as failed.
Association aborted by the SCP or network layers	The retrieval is marked as failed.

Table 4.2-58

RETREIVE REQUEST IDENTIFIER FOR MOVE-SCU

Name	Tag	VR	M	R	Q	D
Series Instance UID	0020,000E	UI	S		x	

4.2.4.4 Association Acceptance Policy

The Q/R Application Entity does not accept associations.

4.2.5 STORAGE-SCP Application Entity Specification

4.2.5.1 SOP Classes

The WS80A provides Standard Conformance to the following SOP Classes:

Table 4.2-59

SOP CLASSES FOR AE STORAGE-SCP

SOP Classes	SOP Class UID	SCU	SCP
Verification	1.2.840.10008.1.1	Yes	Yes
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	No	Yes
US Multi-frame Storage	1.2.840.10008.5.1.4.1.1.3.1	No	Yes
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	No	Yes
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	No	Yes
MG present Image Storage	1.2.840.10008.5.1.4.1.1.1.2	No	Yes
MG Process Image Storage	1.2.840.10008.5.1.4.1.1.1.2.1	No	Yes
DX present Image Storage	1.2.840.10008.5.1.4.1.1.1.1	No	Yes
DX process Image Storage	1.2.840.10008.5.1.4.1.1.1.1.1	No	Yes
Standard PET Image Storage	1.2.840.10008.5.1.4.1.1.128	No	Yes
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	No	Yes

4.2.5.2 Association Establishment Policy

4.2.5.2.1 General

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

Table 4.2-60

DICOM APPLICATION CONTEXT FOR AE STORAGE-SCP

Application Context Name	1.2.840.10008.3.1.1.1

4.2.5.2.2 Number of Associations

The STORAGE-SCP AE can support multiple simultaneous associations requested by AEs. Each time the STORAGE-SCP AE receives an association request, a child process will be spawned to process the storage.

Table 4.2-61

NUMBER OF ASSOCIATIONS INITIATED FOR AE STORAGE-SCP

Maximum number of simultaneous Associations	Unlimited

4.2.5.2.3 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 4.2-62

DICOM IMPLEMENTATION CLASS AND VERSION FOR AE STORAGE-SCP

Implementation Class UID	1.2.410.200001.1.1131
Implementation Version Name	WS80A

4.2.5.3 Association Initiation Policy

The STORAGE-SCP Application Entity does not initiate associations.

4.2.5.4 Association Acceptance Policy

4.2.5.4.1 Activity – Receive Images

4.2.5.4.1.1 Description and Sequencing of Activities

The STORAGE-SCP AE accepts associations only if they have valid Presentation Contexts. The STORAGE-SCP AE does not have a limit on the number of associations used to send images to it. Images belonging to more than one series can be sent over a single or multiple associations. Images belonging to a single Series can also be sent via different associations.

4.2.5.4.1.2 Proposed Presentation Contexts

The WS80A will propose Presentation Contexts as shown in the following table:

Table 4.2-63

PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY RECEIVE IMAGES

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext.**
Name	**UID**	**Name List**	**UID List**		**Neg.**
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		JPEG Lossless HIER 14	1.2.840.10008.1.2.4.70	SCP	None
		JPEG Baseline(Process 1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG 2000 Lossless ONLY	1.2.840.10008.1.2.4.90	SCP	None
		JPEG 2000	1.2.840.10008.1.2.4.91	SCP	None
US Multi-frame Storage	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		JPEG Lossless HIER 14	1.2.840.10008.1.2.4.70	SCP	None
		JPEG Baseline(Process 1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG 2000 Lossless ONLY	1.2.840.10008.1.2.4.90	SCP	None
		JPEG 2000	1.2.840.10008.1.2.4.91	SCP	None
CT Image Storage	1.2.840.10008.5.1.4.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		JPEG Lossless HIER 14	1.2.840.10008.1.2.4.70	SCP	None
		JPEG Baseline(Process 1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG 2000 Lossless ONLY	1.2.840.10008.1.2.4.90	SCP	None
		JPEG 2000	1.2.840.10008.1.2.4.91	SCP	None
MR Image Storage	1.2.840.10008.5.1.4.1.1.4	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None

		JPEG Lossless HIER 14	1.2.840.10008.1.2.4.70	SCP	None
		JPEG Baseline(Process 1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG 2000 Lossless ONLY	1.2.840.10008.1.2.4.90	SCP	None
		JPEG 2000	1.2.840.10008.1.2.4.91	SCP	None
MG present Image Storage	1.2.840.10008.5.1.4.1.1.1.2	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		JPEG Lossless HIER 14	1.2.840.10008.1.2.4.70	SCP	None
		JPEG Baseline(Process 1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG 2000 Lossless ONLY	1.2.840.10008.1.2.4.90	SCP	None
		JPEG 2000	1.2.840.10008.1.2.4.91	SCP	None
MG Process Image Storage	1.2.840.10008.5.1.4.1.1.1.2.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		JPEG Lossless HIER 14	1.2.840.10008.1.2.4.70	SCP	None
		JPEG Baseline(Process 1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG 2000 Lossless ONLY	1.2.840.10008.1.2.4.90	SCP	None
		JPEG 2000	1.2.840.10008.1.2.4.91	SCP	None
DX present Image Storage	1.2.840.10008.5.1.4.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		JPEG Lossless HIER 14	1.2.840.10008.1.2.4.70	SCP	None
		JPEG Baseline(Process 1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG 2000 Lossless ONLY	1.2.840.10008.1.2.4.90	SCP	None
		JPEG 2000	1.2.840.10008.1.2.4.91	SCP	None
DX process Image Storage	1.2.840.10008.5.1.4.1.1.1.1.1	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		JPEG Lossless HIER 14	1.2.840.10008.1.2.4.70	SCP	None
		JPEG Baseline(Process 1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG 2000 Lossless ONLY	1.2.840.10008.1.2.4.90	SCP	None

		JPEG 2000	1.2.840.10008.1.2.4.91	SCP	None
Standard PET Image Storage	1.2.840.10008.5.1.4.1.1.128	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		JPEG Lossless HIER 14	1.2.840.10008.1.2.4.70	SCP	None
		JPEG Baseline(Process 1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG 2000 Lossless ONLY	1.2.840.10008.1.2.4.90	SCP	None
		JPEG 2000	1.2.840.10008.1.2.4.91	SCP	None
Secondary Capture Image Storage	1.2.840.10008.5.1.4.1.1.7	Implicit VR Little Endian	1.2.840.10008.1.2	SCP	None
		Explicit VR Little Endian	1.2.840.10008.1.2.1	SCP	None
		Explicit VR Big Endian	1.2.840.10008.1.2.2	SCP	None
		JPEG Lossless HIER 14	1.2.840.10008.1.2.4.70	SCP	None
		JPEG Baseline(Process 1)	1.2.840.10008.1.2.4.50	SCP	None
		JPEG Extended (Process 2 & 4)	1.2.840.10008.1.2.4.51	SCP	None
		JPEG 2000 Lossless ONLY	1.2.840.10008.1.2.4.90	SCP	None
		JPEG 2000	1.2.840.10008.1.2.4.91	SCP	None

4.2.5.4.1.3 SOP Specific Conformance for Storage SOP Classes

The behavior response of the WS80A when encountering status codes in C-STORE is summarized in the table below. If any SCP response status other than “Successful” is received by the WS80A it is marked as failed.

Table 4.2-64

C-STORE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Successful	Successfully stored the SOP instance.	0000	The SCP has successfully stored the SOP Instance. If all SOP Instances succeed, the job is marked as complete.
*	*	Any other status code.	The association is aborted using A-Abort and the request to receive the image is marked as failed.

4.3 NETWORK INTERFACE

4.3.1 Physical Network Interface

WS80A supports a single network interface. One of the following physical network interfaces will be available depending on hardware options installed:

Table 4.3-1
SUPPORTED PHYSICAL NETWORK INTERFACES

Ethernet 100baseT
Ethernet 10baseT

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 Setup/DICOM Menu. All local DICOM services use the same AE Title. The system listens for Verification requests and Commitment reports on the configured Port.

4.4.1.2 Remote AE Title/Presentation Address Mapping

The AE Title, host names and port numbers of remote applications are configured using the WS80A Setup/DICOM Menu.

4.4.1.2.1 Storage

The Add button on the WS80A Setup/DICOM Menu must be used to set the AE Titles, port-numbers, IP addresses and capabilities for the remote Image Storage SCPs. Multiple remote Image Storage SCPs can be defined.

The Add button on the WS80A Setup/DICOM Menu must be used to set the AE Titles, port-numbers, IP addresses and capabilities for the remote Structured Report Storage SCP. Only a single remote Structured Report Storage SCP can be defined.

The Add button on the WS80A Setup/DICOM Menu must be used to set the AE Titles, port-numbers, IP addresses and capabilities for the remote Storage Commitment SCP. Only a single remote Storage Commitment SCP can be defined and only one Image Storage SCP can be assigned for Storage Commitment.

4.4.1.2.2 Workflow

The Add button on the WS80A Setup/DICOM Menu must be used to set the AE Titles, port-numbers, IP addresses and capabilities for the remote Modality Worklist SCP. Multiple remote Modality Worklist SCPs can be defined.

The Add button on the WS80A Setup/DICOM Menu must be used to set the AE Titles, port-numbers, IP addresses and capabilities for the remote MPPS SCP. Only a single remote MPPS SCP can be defined.

4.4.1.2.3 Hardcopy

The Add button on the WS80A Setup/DICOM Menu must be used to set the AE Titles, port-numbers, IP addresses and capabilities for the remote Print SCPs. Multiple remote Print SCPs can be defined.

4.4.1.2.4 Query/Retrieve

The Add button on the WS80A Setup/DICOM Menu must be used to set the AE Titles, port-numbers, IP addresses and capabilities for the remote Query/Retrieve SCP. Multiple remote Query/Retrieve SCPs can be defined.

4.4.2 Parameters

A number of parameters related to acquisition and general operation can be configured using the Setup/DICOM Menu. The Table below only shows those configuration parameters relevant to DICOM communications. See the WS80A Manual for details on general configuration capabilities.

Table 4.4-1

CONFIGURATION PARAMETERS TABLE

Parameter	Configurable (Yes/No)	Default Value
Local System Parameters		
AE Title (Local System AE Title)	Yes	“Set AE Title”
Station Name	Yes	“Set Station Name”
Port No. (Local Port Number)	Yes	104
DICOM Send Format Parameters		
2D Mode	Yes	Color

Color Mode	Yes	Color
DICOM Compression Parameters		
Still Image	Yes	Uncompressed
Cine	Yes	JPEG Baseline
DICOM Transfer Mode		
Send on end exam / Send as you go	Yes	“Send on end exam”
Service Common Parameters		
Retry Interval	Yes	30 Sec.
Connect Timeout	Yes	15 Sec.
Maximum Retires	Yes	1
Storage Parameters		
Maintain association	Yes	Checked
Include 3D Volume	Yes	Unchecked
Send Cine Loops	Yes	Checked
Include Pixel Spacing	Yes	Unchecked
Window Center (VOI LUT)	Yes	128
Window Width (VOI LUT)	Yes	256
Storage SR Paramater		
Maintain association	Yes	Checked
Performed Procedure Step Parameters		
Always complete exams	Yes	Checked
Storage Commitment Parameters		
Associated Storage Server	Yes	None
Associated SR Server	Yes	None
Worklist Modality Parameters		
Show Worklist first when the patient screen opens	Yes	Checked
Update Method	Yes	“Only on user Request”
Scheduled Station Name	Yes	“Any”
Study Description Priority	Yes	“Scheduled Procedure Step Description” “Requested Procedure Description”

		“Scheduled Procedure Step, Code Meaning”
Scheduled Station AE Title	Yes	Any
Scheduled Procedure Step Location	Yes	Any
State Date	Yes	Today
Modality Type	Yes	US
Patient ID	Yes	Blank
Last (Family)	Yes	Blank
Accession #	Yes	Blank
Procedure ID	Yes	Blank
Print Parameters		
Transfer Mode	Yes	“Send on end exam”
Color	Yes	“Grayscale”
Medium Type	Yes	“PAPER”
Format	Yes	1x1
Film Size	Yes	8 IN X 10 IN
Orientation	Yes	“PORTRAIT”
Destination	Yes	“MAGAZINE”
Magnification	Yes	“REPLICATE”
Smoothing Type	Yes	Blank
Border Density	Yes	“BLACK”
Empty Density	Yes	“BLACK”
Priority	Yes	“HIGH”
Min Density	Yes	Blank
Max Density	Yes	Blank
Copies	Yes	1
Configuration Info	Yes	Blank
Others		
Store SR at End of Exam	Yes	Checked
Max Frame Rate	Yes	30

MEDIA INTERCHANGE

5.1 IMPLEMENTATION MODEL

5.1.1 Application Data Flow

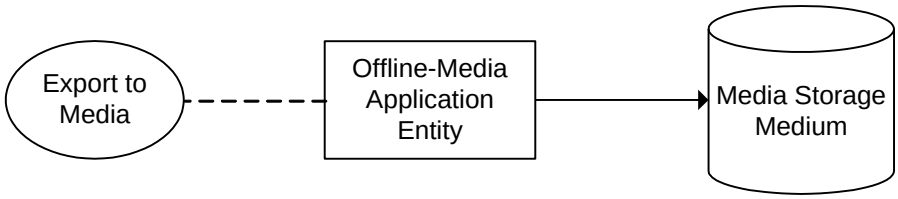

Figure 5.1-1
APPLICATION DATA FLOW DIAGRAM FOR MEDIA STORAGE

- The Offline-Media Application Entity exports images and Structured Report to a Media Storage medium. It is associated with the local real-world activity “Export to Media”, “Export to Media” is performed upon user request for selected studies.

5.1.2 Functional Definition of AEs

5.1.2.1 Functional Definition of Offline-Media Application Entity

Activation of the “Export to Media” menu entry will pass the currently selected studies to the Offline-Media Application Entity. The SOP Instances associated with the selection will be collected into one or more export jobs. The contents of each export job will be written to a single media.

5.1.3 Sequencing of Real-World Activities

At least one study must exist and be selected before the Offline-Media Application Entity can be invoked. The operator can insert a new media at any time before or after invocation of the Offline-Media Application Entity. If no media is available the export job can be cancelled immediately.

5.1.4 File Meta Information Options

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

Table 5.1-1

DICOM IMPLEMENTATION CLASS AND VERSION FOR MEDIA STORAGE

Implementation Class UID	1.2.410.200001.1.1131
Implementation Version Name	WS80A

5.2 AE SPECIFICATIONS

5.2.1 Offline-Media Application Entity Specification

The Offline-Media Application Entity provides standard conformance to 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
STD-US-SC-MF-CDR	Export To Media	FSC, FSU, FSR
STD-US-SC-MF-DVD	Export To Media	FSC, FSU, FSR

5.2.1.1 File Meta Information for the Application Entity

The File-Set Identifier included in the File Meta Header is “MED_FSU”.

5.2.1.2 Real-World Activities

5.2.1.2.1 Activity – Export to Media

The Offline-Media Application Entity acts as an FSC and FSU when requested to export SOP Instances from the local database to a media.

If the contents of the current selection do not fit on a single media, a separation into multiple export jobs which can be adapted by the user will be suggested.

The user will be prompted to insert a media for each export job. The contents of the export job will be written together with a corresponding DICOMDIR to a media. Writing in multi-session mode is supported.

5.2.1.2.1.1 Media Storage Application Profiles

The Offline-Media Application Entity supports the STD-US-SC-MF-CDR and STD-US-SC-MF-DVD Application Profile.

5.2.1.2.1.1.1 Options

The Media Application Entity supports the SOP Classes and Transfer Syntaxes listed in the table below:

Table 5.2-2
IODS, SOP CLASSES AND TRANSFER SYNTAXES FOR OFFLINE MEDIA

Information Object Definition	SOP Class UID	Transfer Syntax	Transfer Syntax UID
Media Storage Directory Storage	1.2.840.10008.1.3.10	Explicit VR Little Endian	1.2.840.10008.1.2.1
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Explicit VR Little Endian JPEG Baseline Lossy Compression	1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50
US Multiframe Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Explicit VR Little Endian JPEG Baseline Lossy Compression	1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50
Comprehensive Structured Report Storage	1.2.840.10008.5.1.4.1.1.88.33	Explicit VR Little Endian	1.2.840.10008.1.2.1

6 SUPPORT OF CHARACTER SETS

All WS80A DICOM applications support the

ISO_IR 100 : Latin Alphabet No. 1

Supplementary set of ISO 8859

ISO 646

\ISO 2022 IR 149 : Korean

KS X 1001 Hangle and Hanja

ISO 646

ISO 2000 IR 13\ISO 2022 IR 87 : Japanese

JIS X 0201 Katakana

JIS X 0201 Romaji

JIS X 0208 Kanji

JIS X 0212 Supplementary Kanji Set

7 SECURITY

WS80A does not support any specific security measures.

It is assumed that WS80A is used within a secured environment. It is assumed that a secured environment includes as minimum:

a. Firewall or router protections to ensure that only approved external hosts have network access to WS80A.

b. Firewall or router protections to ensure that WS80A has only network access to approved external hosts and services.

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

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

8 ANNEXES

8.1 IOD CONTENTS

8.1.1 Created SOP Instances

Table 8.1-1 specifies the attributes of an Ultrasound Image transmitted by the WS80A storage applications.

8.1-3 specifies the attributes of a Comprehensive Structured Reports transmitted by the WS80A storage applications.

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

VNAP	Value Not Always Present (attribute sends 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 the Modality Performed Procedure Step service
CONFIG	the attribute value source is a configurable parameter

NOTE: All dates and times are encoded in the local configured calendar and time. Date, Time and Time zones are configured using the Setup Menu.

8.1.1.1 US or US Multiframe Image IOD

Table 8.1-1

IOD OF CREATED US OR US MULTIFRAME SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-4	ALWAYS
Study	General Study	Table 8.1-5	ALWAYS

	Patient Study	Table 8.1-6	ALWAYS
Series	General Series	Table 8.1-7	ALWAYS
Equipment	General Equipment	Table 8.1-8	ALWAYS
Image	General Image	Table 8.1-9	ALWAYS
	Image Pixel	Table 8.1-10	ALWAYS
	Cine	Table 8.1-11	Only if US Multiframe
	Multi-Frame	Table 8.1-12	Only if US Multiframe
	US Region Calibration	Table 8.1-13	ANAP
	US Image	Table 8.1-14	ALWAYS
	VOI LUT	Table 8.1-15	ALWAYS
	SOP Common	Table 8.1-17	ALWAYS

8.1.1.1.1 Additional Module

Table 8.1-2

ADDITIONAL MODULES

Module	Reference	Presence of Module
Image Plane	Table 8.1-16	ANAP

8.1.1.2 Comprehensive Structured Report IOD

Table 8.1-3

IOD OF CREATED COMPREHENSIVE STRUCTURED REPORT SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 8.1-4	ALWAYS
Study	General Study	Table 8.1-5	ALWAYS
	Patient Study	Table 8.1-6	ALWAYS
Series	SR Document Series	Table 8.1-18	ALWAYS
Equipment	General Equipment	Table 8.1-8	ALWAYS
Document	SR Document General	Table 8.1-19	ALWAYS
	SR Document Content	Table 8.1-20	ALWAYS
	SOP Common	Table 8.1-21	ALWAYS

8.1.1.3 Common Modules

Table 8.1-4

PATIENT MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient's Name	0010,0010	PN	From MWL or User Input. Values supplied via Modality Worklist will be entered as received. Values supplied via user input will contain first 3 components (Last^First^Middle). Maximum 64 characters.	VNAP	MWL/USER
Patient ID	0010,0020	LO	From MWL, user input or generated by device. Maximum 64 characters.	ALWAYS	MWL/USER/AUTO
Patient's Birth Date	0010,0030	DA	From MWL or user input	VNAP	MWL/USER
Patient's Sex	0010,0040	CS	From MWL or user input	VNAP	MWL/USER

Table 8.1-5

GENERAL STUDY MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Study Instance UID	0020,000D	UI	From MWL or generated by device	ALWAYS	MWL/AUTO
Study Date	0008,0020	DA	<yyyymmdd>	ALWAYS	AUTO
Study Time	0008,0030	TM	<hhmmss>	ALWAYS	AUTO
Referring Physician's Name	0008,0090	PN	From MWL or user input	VNAP	MWL/USER
Study ID	0020,0010	SH	From Requested Procedure UID or System generate : Study Date + Study Time	ALWAYS	AUTO

			<yyyymmddhhmmss>		
Accession Number	0008,0050	SH	From MWL or user input	VNAP	MWL/USER
Study Description	0008,1030	LO	From MWL (Scheduled procedure step description, Requested procedure description or Code Meaning of Scheduled procedure step) or user input	ANAP	MWL/USER
Referenced Study Sequence	0008,1110	SQ	From MWL	ANAP	MWL
> Referenced SOP Class UID	0008,1150	UI	From MWL	ANAP	MWL
> Referenced SOP Instance UID	0008,1155	UI	From MWL	ANAP	MWL
Procedure Code Sequence	0008,1032	SQ	From MWL	ANAP	MWL

Table 8.1-6

PATIENT STUDY MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient's Size	0010,1020	DS	From MWL or user input	ANAP	MWL/USER
Patient's Weight	0010,1030	DS	From MWL or user input	ANAP	MWL/USER

Table 8.1-7

GENERAL SERIES MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	0008,0060	CS	US	ALWAYS	AUTO

Series Instance UID	0020,000E	UI	Generated by device	ALWAYS	AUTO
Series Number	0020,0011	IS	Generated by device, increments from "1" in each study	ALWAYS	AUTO
Series Date	0008,0021	DA	<yyyymmdd>	ALWAYS	AUTO
Series Time	0008,0031	TM	<hhmmss>	ALWAYS	AUTO
Performing Physician's Name	0008,1050	PN	From MWL or user input	ANAP	MWL/USER
Operators' Name	0008,1070	PN	From user input	ANAP	USER
Referenced Performed Procedure Step Sequence	0008,1111	SQ	Identifies the MPPS SOP Instance to which this image is related	ALWAYS	MPPS
> Referenced SOP Class UID	0008,1150	UI	MPPS SOP Class UID "1.2.840.10008.3.1.2.3.3"	ALWAYS	MPPS
> Referenced SOP Instance UID	0008,1155	UI	MPPS SOP Instance UID	ALWAYS	MPPS
Request Attributes Sequence	0040,0275	SQ	Zero or 1 item will be present	ANAP	AUTO
> Requested Procedure ID	0040,1001	SH	From MWL	ANAP	MWL
> Scheduled Procedure Step ID	0040,0009	SH	From MWL	ANAP	MWL
> Scheduled Procedure Step Description	0040,0007	LO	From MWL	ANAP	MWL
> Scheduled Protocol Code Sequence	0040.0008	SQ	From MWL	ANAP	MWL
Performed	0040,0253	SH	Same as MPPS	ALWAYS	MPPS

Procedure Step ID					
Performed Procedure Step Start Date	0040,0244	DA	Same as Study Date	ALWAYS	AUTO
Performed Procedure Step Start Time	0040,0245	TM	Same as Study Time	ALWAYS	AUTO
Performed Procedure Step Description	0040,0254	LO	Same as Study Description	ANAP	MWL/USER

Table 8.1-8

GENERAL EQUIPMENT MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Manufacturer	0008,0070	LO	"SAMSUNG MEDISON CO., LTD."	ALWAYS	AUTO
Institution Name	0008,0080	LO	From user input	ANAP	CONFIG
Station Name	0008,1010	SH	From user input	ANAP	CONFIG
Manufacturer's Model Name	0008,1090	LO	"WS80A"	ALWAYS	AUTO
Device Serial Number	0018,1000	LO	Generated by device	ALWAYS	AUTO
Software Versions	0018,1020	LO	Generated by device	ALWAYS	AUTO

8.1.1.4 US or US Multiframe Image Module

Table 8.1-9

GENERAL IMAGE MODULE OF CREATED US OR US MULTIFRAME SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Instance Number	0020,0013	IS	Generated by device, increments from "1" in each series	ALWAYS	AUTO
Patient	0020,0020	CS	NULL		

Orientation					
Content Date	0008,0023	DA	<yyyymmdd>	ALWAYS	AUTO
Content Time	0008,0033	TM	<hhmmss>	ALWAYS	AUTO
Image Type	0008,0008	CS	"ORIGINAL" and "PRIMARY"	ALWAYS	AUTO
Acquisition Date	0008,0022	DA	<yyyymmdd>	ALWAYS	AUTO
Acquisition Time	0008,0032	TM	<hhmmss>	ALWAYS	AUTO
Acquisition DateTime	0008,002A	DT	<yyyymmddhhmmss>	ALWAYS	AUTO
Lossy Image Compression	0028,2110	CS	US = "00" (uncompressed) or “01” (lossy compressed) US-MF = "01" (lossy compressed)	ALWAYS	AUTO
Lossy Image Compression Ratio	0028,2112	DS	Used if (0028, 2110) = "01", Calculated by device	ANAP	AUTO
Lossy Image Compression Method	0028,2114	CS	"ISO_10918_1", used if (0028,2110) = "01"	ANAP	AUTO

Table 8.1-10

IMAGE PIXEL MODULE OF CREATED US OR US MULTIFRAME SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples per Pixel	0028,0002	US	"3" for RGB or YBR_FULL_422 “1” for MONOCHROME2	ALWAYS	AUTO
Photometric Interpretation	0028,0004	CS	Uncompressed = "RGB" or “MONOCHROME2” Compressed = “YBR_FULL_422”	ALWAYS	AUTO
Rows	0028,0010	US	US = "872", US-MF = "480"	ALWAYS	AUTO
Columns	0028,0011	US	US = "1280", US-MF = "640"	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	0028,0103	US	"0"	ALWAYS	AUTO

Representation					
Pixel Data	7FE0,0010	OW or OB	Generated by device	ALWAYS	AUTO
Planar Configuration	0028,0006	US	"0"	ALWAYS	AUTO
Private Creator	7FE1,0010	LO	“MEDISON_US”	ANAP	AUTO
3D Volume	7FE1,1002	OB	3D Volume Data	ANAP	AUTO
Data Types In 3D Volume	7FE1,1003	UL	Data Types In 3D Volume	ANAP	AUTO
Data Types in 5D Heart	7FE1,1011	UL	Data Types in 5D Heart	ANAP	AUTO
5D Volume	7FE1,1012	OB	5D Heart Volume	ANAP	AUTO

Table 8.1-11

CINE MODULE OF CREATED US MULTIFRAME SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Frame Time	0018,1063	DS	Milliseconds	ANAP	AUTO
Cine Rate	0018,0040	IS	Frames per second	ANAP	AUTO

Table 8.1-12

MULTI-FRAME MODULE OF CREATED US MULTIFRAME SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Number of Frames	0028,0008	IS	Numbers of Frames	ANAP	AUTO
Frame Increment Pointer	0028,0009	AT	"1577059" : (0018, 1063)	ANAP	AUTO

Table 8.1-13

US REGION CALIBRATION MODULE OF CREATED US OR US MULTIFRAME SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source

Sequence of Ultrasound Regions	0018,6011	SQ	Generated by device. A sequence is present for each region in the system display.	ANAP	AUTO
> Region Location Min x0	0018,6018	UL	Left position of region	ALWAYS	AUTO
> Region Location Min y0	0018,601A	UL	Top position of region	ALWAYS	AUTO
> Region Location Max x1	0018,601C	UL	Right position of region	ALWAYS	AUTO
> Region Location Max y1	0018,601E	UL	Bottom position of region	ALWAYS	AUTO
> Physical Units X Direction	0018,6024	US	2D Image : 0003H = cm M-Mode : 0004H = seconds Doppler : 0004H = seconds	ALWAYS	AUTO
> Physical Units Y Direction	0018,6026	US	2D Image : 0003H = cm M-Mode : 0003H = cm Doppler : 0005H = hertz or 0007H = cm/sec	ALWAYS	AUTO
> Physical Delta X	0018,602C	FD	The physical value per pixel increment	ALWAYS	AUTO
> Physical Delta Y	0018,602E	FD	The physical value per pixel increment	ALWAYS	AUTO
> Region Spatial Format	0018,6012	US	2D Tissue : 0001H M-Mode Tissue or flow : 0002H Spectral (CW or PW Doppler) : 0003H	ALWAYS	AUTO
> Region Data Type	0018,6014	US	Tissue : 0001H Color Flow : 0002H PW Spectral Doppler : 0003H CW Spectral Doppler : 0004H	ALWAYS	AUTO
> Region Flags	0018,6016	UL	See DICOM PS 3.3 C.8.5.5.1.3	ALWAYS	AUTO

Table 8.1-14

US IMAGE MODULE OF CREATED US OR US MULTIFRAME SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples Per Pixel	0028,0002	US	"3" for RGB or YBR_FULL_422 “1” for MONOCHROME2	ALWAYS	AUTO
Photometric Interpretation	0028,0004	CS	Uncompressed = "RGB" or “MONOCHROME2” Compressed = “YBR_FULL_422”	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
Planar Configuration	0028,0006	US	"0"	ALWAYS	AUTO
Pixel Representation	0028,0103	US	"0"	ALWAYS	AUTO
Image Type	0008,0008	CS	"ORIGINAL" and "PRIMARY"	ALWAYS	AUTO
Lossy Image Compression	0028,2110	CS	US = "00" (uncompressed) or “01” (lossy compressed) US-MF = "01" (lossy compressed)	ALWAYS	AUTO

Table 8.1-15

VOI LUT MODULE OF CREATED US OR US MULTIFRAME SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Window Center	0028,1050	DS	default : "128"	ALWAYS	CONFIG
Window Width	0028,1051	DS	default : "256"	ALWAYS	CONFIG

Table 8.1-16

IMAGE PLANE MODULE OF CREATED US OR US MULTIFRAME SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source

Pixel Spacing	0028,0030	DS	In case that All following conditions are satisfied, This attribute is inserted. 1. User shall select the option activating Pixel Spacing at the DICOM Setup. 2. Image shall have regions consisting of only tissue and color 3. For all regions, Units for X and Y direction shall be “cm” 4. For all regions, Delta X of US Region calibration module shall have the same value. 5. For all regions, Delta Y of US Region calibration module shall have the same value.	ANAP	AUTO

Table 8.1-17

SOP COMMON MODULE OF CREATED US OR US MULTIFRAME SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
SOP Class UID	0008,0016	UI	US = "1.2.840.10008.5.1.4.1.1.6.1" US-MF = "1.2.840.10008.5.1.4.1.1.3.1"	ALWAYS	AUTO
SOP Instance UID	0008,0018	UI	Generated by device	ALWAYS	AUTO
Specific Character Set	0008,0005	CS	Ref. Section 6 SUPPORT OF CHARACTER SETS	ALWAYS	AUTO

8.1.1.5 Comprehensive Structured Report Modules

Table 8.1-18

SR DOCUMENT SERIES MODULE OF CREATED COMPREHENSIVE SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source

Modality	0008,0060	CS	SR	ALWAYS	AUTO
Series Instance UID	0020,000E	UI	Generated by device	ALWAYS	AUTO
Series Number	0020,0011	IS	"2"	ALWAYS	AUTO
Referenced Performed Procedure Step Sequence	0008,1111	SQ	Identifies the MPPS SOP Instance to which this image is related	ALWAYS	MPPS
> Referenced SOP Class UID	0008,1150	UI	MPPS SOP Class UID "1.2.840.10008.3.1.2.3.3"	ALWAYS	MPPS
> Referenced SOP Instance UID	0008,1155	UI	MPPS SOP Instance UID	ALWAYS	MPPS

Table 8.1-19

SR DOCUMENT GENERAL MODULE OF CREATED COMPREHENSIVE SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Instance Number	0020,0013	IS	Generated by device, increments from "1" in each series	ALWAYS	AUTO
Completion Flag	0040,A491	CS	"PARTIAL"	ALWAYS	AUTO
Verification Flag	0040,A493	CS	"UNVERIFIED"	ALWAYS	AUTO
Content Date	0008,0023	DA	<yyyymmdd>	ALWAYS	AUTO
Content Time	0008,0033	TM	<hhmmss>	ALWAYS	AUTO
Referenced Request Sequence	0040,A370	SQ	1 item will be present	ALWAYS	AUTO
> Study Instance UID	0020,000D	UI	From MWL or generated by device	ALWAYS	MWL/AUTO
> Referenced Study Sequence	0008,1110	SQ	From MWL	ANAP	MWL
>> Referenced SOP Class UID	0008,1150	UI	From MWL	ANAP	MWL

>> Referenced SOP Instance UID	0008,1155	UI	From MWL	ANAP	MWL
> Accession Number	0008,0050	SH	From MWL or user input	VNAP	MWL/USER
> Placer Order Number/Imaging Service Request	0040,2016	LO	NULL	VNAP	AUTO
> Filler Order Number/Imaging Service Request	0040,2017	LO	NULL	VNAP	AUTO
> Requested Procedure ID	0040,1001	SH	From MWL	VNAP	MWL
> Requested Procedure Description	0032,1060	LO	From MWL	VNAP	MWL
> Requested Procedure Code Sequence	0032,1064	SQ	From MWL	VNAP	MWL
Performed Procedure Code Sequence	0040,A372	SQ	NULL	VNAP	AUTO

Table 8.1-20

SR DOCUMENT CONTENT MODULE OF CREATED COMPREHENSIVE SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Value Type	0040,A040	CS	"CONTAINER"	ALWAYS	AUTO
Concept Name Code Sequence	0040,A043	SQ	1 item will be present	ALWAYS	AUTO
> Include 'Code Sequence Macro'			"EV(125000, DCM, "OB-GYN Ultrasound Procedure Report") for OB-GYN “EV(125100, DCM, “Vascular	ALWAYS	AUTO

			Ultrasound Procedure Report") for Vascular "EV(125200, DCM, "Adult Echocardiography Procedure Report") for Adult Echocardiography		
Include 'Container Macro'				ALWAYS	AUTO
Content Sequence	0040,A730	SQ	One or more items may be included in this sequence	ALWAYS	AUTO
> Relationship Type	0040,A010	CS	Ref. Section 9 STRUCTURED REPORT TEMPLATES	ALWAYS	AUTO
> Include Document Relationship Macro			Ref. Section 9 STRUCTURED REPORT TEMPLATES	ALWAYS	AUTO
> Include Document Content Macro			Ref. Section 9 STRUCTURED REPORT TEMPLATES	ALWAYS	AUTO

Table 8.1-21

SOP COMMON MODULE OF CREATED COMPREHENSIVE SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
SOP Class UID	0008,0016	UI	"1.2.840.10008.5.1.4.1.1.88.33"	ALWAYS	AUTO
SOP Instance UID	0008,0018	UI	Generated by device	ALWAYS	AUTO
Specific Character Set	0008,0005	CS	Ref. Section 6 SUPPORT OF CHARACTER SETS	ALWAYS	AUTO

8.1.2 Used Fields in received IOD by application

The WS80A storage application does not receive SOP Instances. The usage of attributes received via Modality Worklist is described in section 4.2.2.3.1.3.

8.1.3 Attribute mapping

The relationships between attributes received via Modality Worklist, stored in acquired images and communicated via MPPS are summarized in the Table below. The format and conversions used in Table are the same as the corresponding table in IHE Technical Framework, Rev. 7.0 May 15, 2006, vol. II, Appendix A.

Table 8.1-22

ATTRIBUTE MAPPING BETWEEN MODALITY WORKLIST, IMAGE AND MPPS

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

	Description	
____	____	Performed Series Sequence
Requested Procedure Code Sequence	Procedure Code Sequence	Procedure Code Sequence
____	Referenced Performed Procedure Step Sequence	____
____	> Referenced SOP Class UID	SOP Class UID
____	> Referenced SOP Instance UID	SOP Instance UID
Scheduled Performing Physician's Name	Performing Physicians Name	Performing Physicians Name

8.1.4 Coerced/Modified Fields

The Modality Worklist AE will truncate attribute values received in the response to a Modality Worklist Query if the value length is longer than the maximum length permitted by the attribute's VR.

8.2 DATA DICTIONARY OF PRIVATE ATTRIBUTES

The Private Attributes added to create SOP Instances are listed in the Table below. WS80A reserves blocks of private attributes in groups 7FE1. Further details on usage of these private attributes are contained in Section 8.1

Table 8.2-1

DATA DICTIONALY OF PRIVATE ATTRIBUTES

Tag	Attribute Name	VR	VM
(7FE1, 0010)	Private Creator	LO	1
(7FE1, 1002)	3D Volume	OB	1
(7FE1, 1003)	Data Types in 3D Volume	UL	1
(7FE1, 1011)	Data Types in 5D Volume	UL	1
(7FE1, 1012)	5D Heart Volume	OB	1

8.3 CODED TERMINOLOGY AND TEMPLATES

The Workflow AE is capable of supporting arbitrary coding schemes for Procedure and Protocol Codes. The contents of Requested Procedure Code Sequence (0032, 1064) and Scheduled Protocol Code Sequence (0040, 0008) supplied in Worklist Items will be mapped to Image IOD and MPPS attributes as described in Section 8.1.3

8.4 STANDARD EXTENDED / SPECIALIZED / PRIVATE SOP CLASSES

No Specialized or Private SOP Classes are supported.

8.4.1 US OR US MULTIFRAME IMAGE STORAGE SOP CLASS

The US or US Multiframe Image Storage SOP Classes are extended to create a Standard Extended SOP Class by addition of standard and private attributes to the created SOP Instances as documented in section 8.1

3D Volume Data is transferred to the configured Storage Server, if “Send 3D Volume” option is enabled in the Setup Dialog.

8.5 PRIVATE TRANSFER SYNTAXES

No Private Transfer Syntaxes are supported.

9 STRUCTURED REPORT TEMPLATES

This Section uses the following forms for describing Structured Report Templates used in WS80A.

	Rel with Parent	VT	Concept Name	Presence of Value	Comments
1					
2					

	NL	REL	VT	Concept Name	Unit / CODE Value	Ref TID	Ref CID	Comments or Label
A-1								
A-2								

Rel with Parent	Relationship
VT	Value Type
Concept Name	Any constraints on Concept Name are specified in this filed as defined or enumerated coded entries, or as baseline or defined context groups.
Presence of Value	Ref. Section 8.1.1
Comments	Description about Reference section or used values.
Label	Name which is indicated in the system
NL	The nesting level of Content Items is denoted by “>” symbols
REL	Relationship
Unit/Code, Value	Applied unit, enumerated coded entries, or the reference of Context Group.
Ref TID	Referenced Template ID Number
Ref CID	Referenced Context ID Number. The left side of “/” shows a CID value applied in “Concept Name” column and the right side shows a CID value applied in “Unit/Code, Value” column. (e.g. 228/12012)

9.1 OB-GYN STRUCTURED REPORT TEMPLATE

9.1.1 OB-GYN Ultrasound Report Templates(TID 5000)

Table 9.1-1

OB-GYN ULTRASOUND PROCEDURE REPORT TEMPLATE

	Rel with Parent	VT	Concept Name	Presence of Value	Comments
1		CONTAINER	EV (125000, DCM, "OB-GYN Ultrasound Procedure Report")	ALWAYS	
2	HAS CONCEPT MOD	INCLUDE	DTID (1204) Language of Content Item and Descendants		
3	HAS OBS CONTEXT	INCLUDE	DTID (1001) Observation Context	ANAP	Ref. Section 9.1.1.1
4	CONTAINS	INCLUDE	DTID (5001) Patient Characteristics	ANAP	Ref. Section 9.1.1.2
5	CONTAINS	CONTAINER	DT (111028, DCM, "Image Library")		
6	CONTAINS	IMAGE	No Purpose of reference		
7	CONTAINS	INCLUDE	DTID (5002) OB-GYN Procedure Summary Section	ANAP	Ref. Section 9.1.1.3
8	CONTAINS	INCLUDE	DTID (5004) Fetal Biometry Ratio Section	ANAP	Ref. Section 9.1.1.4
9	CONTAINS	INCLUDE	DTID (5005) Fetal Biometry Section	ANAP	Ref. Section 9.1.1.5
10	CONTAINS	INCLUDE	DTID (5006) Long Bones Section	ANAP	Ref. Section 9.1.1.6
11	CONTAINS	INCLUDE	DTID (5007) Fetal Cranium Section	ANAP	Ref. Section 9.1.1.7
12	CONTAINS	INCLUDE	DTID (5009) Fetal Biophysical Profile Section	ANAP	Ref. Section 9.1.1.8
13	CONTAINS	INCLUDE	DTID (5011) Early Gestation Section	ANAP	Ref. Section 9.1.1.9
14	CONTAINS	INCLUDE	DTID (5010) Amniotic Sac Section	ANAP	Ref. Section 9.1.1.10
15	CONTAINS	INCLUDE	DTID (5015) Pelvis and Uterus Section	ANAP	Ref. Section 9.1.1.11
16	CONTAINS	INCLUDE	DTID (5012) Ovaries Section	ANAP	Ref. Section 9.1.1.12
17	CONTAINS	INCLUDE	DTID (5013) Follicles Section	ANAP	Ref. Section 9.1.1.13
18	CONTAINS	INCLUDE	DTID (5013) Follicles Section	ANAP	Ref. Section 0.1.1.1
19	CONTAINS	INCLUDE	DTID (99003) Cyst Section	ANAP	Ref. Section 9.1.1.15
20	CONTAINS	INCLUDE	DTID (99004) Fibroid Section	ANAP	Ref. Section 9.1.1.16
22	CONTAINS	CONTAINER	EV (121070, DCM, "Findings")	ANAP	
23	HAS CONCEPT MOD	CODE	EV (G-C0E3, SRT, "Finding Site")	ANAP	

24	CONTAINS	INCLUDE	DTID (5025) OB-GYN Fetal Vascular Measurement Group	ANAP	Ref. Section 9.1.1.17
25	CONTAINS	CONTAINER	EV (121070, DCM, "Findings")	ANAP	
26	HAS CONCEPT MOD	CODE	EV (G-C0E3, SRT, "Finding Site")	ANAP	
27	CONTAINS	INCLUDE	DTID (5026) OB-GYN Pelvic Vascular Measurement Group	ANAP	Ref. Section 9.1.1.18
28	CONTAINS	INCLUDE	DTID (99005) Mass and Flow Section	ANAP	Ref. Section 9.1.1.19
29	CONTAINS	INCLUDE	DTID (99006) Pelvic Floor Section	ANAP	Ref. Section 9.1.1.20
30	CONTAINS	INCLUDE	DTID (99007) Pelvic Floor Report	ANAP	Ref. Section 9.1.1.21

9.1.1.1 Observation ConText (TID 1001)

Table 9.1-2

OBSERVATION CONTEXT IN OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label
A-1	HAS OBS CONTEXT	CODE	(121005, DCM, “Observer Type”)	(121006, DCM, “Person“)	
A-2	HAS OBS CONTEXT	PNAME	(121008, DCM, “Person Observer Name”)		Ref. Physician
A-3	HAS OBS CONTEXT	CODE	(121024, DCM, “Subject Class”)	(121025 ,DCM,"Patient”)	
A-4	HAS OBS CONTEXT	PNAME	(121029,DCM, “Subject Name”)		Last Name,First Name
A-5	HAS OBS CONTEXT	DATE	(121031,DCM, “Subject Birth Date”)		BirthDate
A-6	HAS OBS CONTEXT	CODE	(121032,DCM, “Subject Sex”)	(M, DCM, “Male”) (F, DCM, “Female”) (U, DCM, “Unknown sex”)	Gender
A-7	HAS OBS CONTEXT	NUM	(121033,DCM, “Subject Age”)	(mo, UCUM, “month”)	Not Used

9.1.1.2 Patient Characteristics (TID 5001)

Table 9.1-3

PATIENT CHARACTERISTICS IN OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label

A-8	CONTAINS	CONTAINTER	(121118,DCM “Patient Characteristics”)		
A-8-1	CONTAINS	TEXT	(121106,DCM, “Comment”)		Description
A-8-2	CONTAINS	NUM	(8302-2, LN, “Patient Height”)	(cm, UCUM, “centimeter”) (mm, UCUM, “millimeter”)	Height
A-8-3	CONTAINS	NUM	(29463-7, LN, “Patient Weight”)	(kg, UCUM, “kilograms”)	Weight
A-8-4	CONTAINS	NUM	(11996-6, LN “Gravida”)	(1, UCUM, “no units”)	Gravida
A-8-5	CONTAINS	NUM	(11977-6, LN, “Para”)	(1, UCUM, “no units”)	Para
A-8-6	CONTAINS	NUM	(11612-9, LN, “Aborta”)	(1, UCUM, “no units”)	Aborta
A-8-7	CONTAINS	NUM	(33065-4, LN, “Ectopic Pregnancies”)	(1, UCUM, “no units”)	Ectopic

9.1.1.3 OB-GYN Summary Section (TID 5002)

Table 9.1-4

OB-GYN Procedure Summary Section

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-10	CONTAINS	CONTAINER	(121111, DCM, “Summary”)			
A-10-1	CONTAINS	DATE	Context ID 12003 Extended OB-GYN Dates	yyyymmdd	Estab.DueDate	Ref. Table 9.1-
A-10-2	CONTAINS	NUM	(11878-6, LN, “Number of Fetuses”)	(1, UCUM, “no units”)		
A-10-3	CONTAINS	TEXT	(12186, DCM, “Comment”)		Comment	
A-10-4	CONTAINS	CONTAINER	(125008, DCM, “Fetus Summary”)			
A-10-4-1	HAS OBS CONTEXT	TEXT	(11951-1, LN, “Fetus ID”)			Will be present if more than one fetus.
A-10-4-2	CONTAINS	NUM	(11878-6, LN, “Number of Fetuses”)		Gestations	
A-10-4-3	CONTAINS	NUM	(18185-9, LN, “Gestational		AUA	

			Age”)			
			(11885-1, LN, “Gestational Age by LMP”)		GA(LMP)	
A-10-4-4	CONTAINS	NUM	(11727-5, LN, “Estimated Weight”)	(kg, UCUM, “kg”)	EFW	
A-10-4-4-1	INFERRED FROM	CODE	(121420, DCM, “Equation”) (121424, DCM, “Table of Values”)	(Context ID 12014)OB Fetal Body Weight Equations and Tables		
A-10-4-5	CONTAINS	NUM	(11767-1, LN, “EFW percentile rank”)	UCUM percentile "percentile"	Pctl.(EFW)	
A-10-4-5-1	INFERRED FROM	CODE	(121420, DCM, “Equation”) (121424, DCM, “Table of Values”)	(Context ID 12016)Estimated Fetal Weight Percentile Equations and Tables		
A-10-4-6	CONTAINS	NUM	(11948-7, LN, “Fetal Heart Rate”)	(bpm, UCUM "bpm")	Fetal HR	

9.1.1.4 OB-GYN Fetal Biometry Ratio Section (TID 5004)

Table 9.1-5

Fetal Biometry Ratio Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-11	CONTAINS	CONTAINER	(125001, DCM, “Fetal Biometry Ratios”)			
A-11-1	HAS OBS CONTEXT	TEXT	(11951-1, LN, “Fetus ID”)			Will be present if more than one fetus.

A-11-2	CONTAINS	NUM	(12004, CID, “Fetal Biometry Ratios”)	(1, UCUM, “no units”)		
	CONTAINS	NUM	Context ID 12004 Extended Fetal Biometry Ratios Measurements	(%, UCUM, "%")		Ref. Table 9.1-

9.1.1.5 OB-GYN Fetal Biometry Section (TID 5005)

Table 9.1-6

Fetal Biometry Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-12	CONTAINS	CONTAINER	(125002, DCM, “Fetal Biometry”)			
A-12-1	HAS OBS CONTEXT	TEXT	(11951-1, LN, “Fetus ID”)			Will be present if more than one fetus.
A-12-2	CONTAINS	CONTAINER	(125005, DCM, “Biometry Group”)			
A-12-2-1	CONTAINS	NUM	Context ID 12005 Extended Fetal Biometry Measurements	(cm, UCUM, “centimeter”) (cm2, UCUM, “Square centimeter”)		Ref. Table 9.1-
A-12-2-1-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		
A-12-2-2	CONTAINS	NUM	(18185-9, LN, “Gestational Age”)	(d, UCUM, “days”)		

A-12-2-2-1	INFERRED FROM	CODE	(121420 , DCM, “Equation”) (121424, DCM, “Table of Values”)	(ContextID 12013)Gestational Age Equations and Tables		Ref. Table 9.1-3
A-12-2-3	CONTAINS	NUM	(125012, DCM, “Growth Percentile Rank”) (125013, DCM, “Growth Z-score”)	(percentile, UCUM, "percentile")		
A-12-2-3-1	INFERRED FROM	CODE	(121420, DCM, “Equation”) (121424, DCM, “Table of Values”)	(ContextID 12015)Fetal Growth Equations and Tables		Ref. Table 9.1-5

9.1.1.6 OB-GYN Fetal Long Bones Section (TID 5006)

Table 9.1-7

Long Bones Sections in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-13	CONTAINS	CONTAINER	(125003, DCM, “Fetal Long Bones”)			
A-13-1	HAS OBS CONTEXT	TEXT	(11951-1, LN,“FetusID”)			Will be present if more than one fetus.
A-13-2	CONTAINS	CONTAINER	(125005, DCM, “Biometry Group”)			

A-13-2-1	CONTAINS	NUM	Context ID 12006 Extended Fetal Long Bones Biometry Measurements	(cm, UCUM, “centimeter”)		Ref. Table 9.1-16
A-13-2-1-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		
A-13-2-1-2	HAS CONCEPT MOD	CODE	(G-C0E3, SRT, “Finding Site”)	(ContextID 7304) Implant Target Anatomy		Ref. Table 9.1-39
A-13-2-1-2-1	HAS CONCEPT MOD	CODE	(G-C171, SRT, “Laterality”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)		
A-13-2-2	CONTAINS	NUM	(18185-9, LN, “Gestational Age”)	(d, UCUM, “day”)		
A-13-2-2-1	INFERRED FROM	CODE	(121420, DCM, “Equation”) (121424, DCM, “Table of Values”)	(ContextID 12013)Gestational Age Equations and Tables		Ref. Table 9.1-
A-13-2-3	CONTAINS	NUM	(125012, DCM, “Growth Percentile Rank”)	(percentile, UCUM, "percentile")		
A-13-2-3-1	INFERRED FROM	CODE	(121420, DCM, “Equation”) (121424, DCM, “Table of Values”)	(ContextID 12015)Fetal Growth Equations and Tables		Ref. Table 9.1-

9.1.1.7 OB-GYN Fetal Cranium Section (TID 5007)

Table 9.1-8

Fetal Cranium Sections in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	Label	Comments

A-14	CONTAINS	CONTAINER	(125004, DCM, “Fetal Cranium”)			
A-14-1	HAS OBS CONTEXT	TEXT	(11951-1, LN, “FetusID”)			Will be present if more than one fetus.
A-14-2	CONTAINS	CONTAINER	(125005, DCM, “Biometry Group”)			
A-14-2-1	CONTAINS	NUM	Context ID 12007 Extended Fetal Cranium	(cm, UCUM, “centimeter”) (cm2, UCUM, “Square centimeter”)		Ref. Table 9.1-27
A-14-2-1-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		
A-14-2-1-2	HAS CONCEPT MOD	CODE	(G-C0E3, SRT, “Finding Site”)	(Defined Context ID) Fetal Cranium Finding Sites		Ref. Table 9.1-
A-14-2-1-2-1	HAS CONCEPT MOD	CODE	(G-C171, SRT, “Laterality”)	(G-A100, SRT, “Right”)		
A-14-2-2	CONTAINS	NUM	(18185-9, LN, “Gestational Age”)	(d, UCUM, “day”)		
A-14-2-2-1	INFERRED FROM	CODE	(121420, DCM, “Equation”) (121424, DCM, “Table of Values”)	(ContextID 12013)Gestational Age Equations and Tables		Ref. Table 9.1-
A-14-2-3	CONTAINS	NUM	(125012, DCM, “Growth Percentile Rank”)	(percentile, UCUM, "percentile")		

	INFERRED FROM	CODE	(121420, DCM, “Equation”) (121424, DCM, “Table of Values”)	(ContextID 12015)Fetal Growth Equations and Tables		Ref. Table 9.1-45

9.1.1.8 OB-GYN Early Gestation Section (TID 5011)

Table 9.1-9

Early Gestation Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	Label	Comments
A-15	CONTAINS	CONTAINER	(125009, DCM, “Early Gestation”)			
A-15-1	HAS OBS CONTEXT	TEXT	(11951-1, LN, “Fetus ID”)			Will be present if more than one fetus.
A-15-2	CONTAINS	CONTAINER	(125005, DCM, “Biometry Group”)			
A-15-2-1	CONTAINS	NUM	Context ID 12009 Extended Early Gestation Biometry Measurements	(cm, UCUM, “centimeter”) (cm2, UCUM, “Square centimeter”)		Ref. Table 9.1-
A-15-2-1-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		
A-14-2-2	CONTAINS	NUM	(18185-9, LN Gestational Age	(d, UCUM, “day”)		
A-14-2-2-1	INFERRED FROM	CODE	(121420, DCM, “Equation”) (121424, DCM, “Table of Values”)	(ContextID 12013)Gestational Age Equations and Tables		Ref. Table 9.1-

A-14-2-3	CONTAINS	NUM	(125012, DCM, “Growth Percentile Rank”)	(percentile, UCUM, "percentile")		
	INFERRED FROM	CODE	(121420, DCM, “Equation”) (121424, DCM, “Table of Values”)	(ContextID 12015)Fetal Growth Equations and Tables		Ref. Table 9.1-

9.1.1.9 OB-GYN Fetal Biophysical Profile Section (TID 5009)

Table 9.1-10

Fetal Biophysical Profile Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-16	CONTAINS	CONTAINER	(125006, DCM, “Biophysical Profile”)			
A-16-1	HAS OBS CONTEXT	TEXT	(11951-1, LN, “Fetus ID”)			Will be present if more than one fetus.
A-16-2	CONTAINS	NUM	(11631-9, LN, “Gross Body Movement”)	({0:2}, UCUM, ”range 0:2”)	Fetal Movements	value as entered in the Report.
			(11632-7, LN, “Fetal Breathing”)		Fetal Breathing Movements	value as entered in the Report.
			(11635-0, LN, “Fetal Tone”)		Fetal Tone	value as entered in the Report.
			(11635-5, LN, “Fetal Heart Reactivity”)		Nonstress Test	value as entered in the Report.
			(11630-1, LN, “Amniotic Fluid Volume”)		Amniotic Fluid Volume	value as entered in the Report.

			(11634-3, LN, “Biophysical Profile Sum Score”)	(1, UCUM, “no units”)	Total	Automatically calculates the sum of the scores.

9.1.1.10 OB-GYN Amniotic Sac Section (TID 5010)

Table 9.1-11

Amniotic Sac Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-17	CONTAINS	CONTAINER	(121070, DCM, “Findings”)		AFI	
A-17-1	HAS CONCEPT MOD	CODE	(G-C0E3, SRT, “Finding Site”)	(T-F1300, SRT, ”Amniotic Sac”)		
A-17-2	CONTAINS	NUM	(11627-7, LN, “Amniotic Fluid Index”)	(cm, UCUM, “centimeter”)	AFI	
			Context ID 12008 Extended OB-GYN Amniotic Sac			Ref. Table 9.1-
			(99004-01, MDSN, “MVP”)		Max Vertical Pocket	
A-17-2-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		

9.1.1.11 OB-GYN Pelvis and Uterus Section (TID 5015)

Table 9.1-12

Pelvis and Uterus Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-18	CONTAINS	CONTAINER	(125011, DCM, “Pelvis			

			and Uterus”)			
A-18-1	CONTAINS	CONTAINER	(T-83000, SRT, “Uterus”)			
A-18-1-1	CONTAINS	NUM	(11865-3, LN, “Uterus Width”)	(cm, UCUM, “centimeter”)	Uterus W	
			(11842-2, LN, “Uterus Length”)		Uterus L	
			(11859-6, LN, “Uterus Height”)		Uterus H	
A-18-1-1-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		
A-18-1-2	CONTAINS	NUM	(33192-6, LN, “Uterus Volume”)	(cm3, UCUM, “Cubic centimeter”)	Uterus Vol.	
A-18-2	CONTAINS	NUM	Context ID 12011 Extended Ultrasound Pelvis and Uterus	(cm, UCUM, “centimeter”)		Ref. Table 9.1-
A-18-2-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		
A-18-3	CONTAINS	NUM	Cervix Volume	(cm3, UCUM, “Cubic centimeter”)	Cervix Vol.	

9.1.1.12 OB-GYN Ovaries Section (TID 5012)

Table 9.1-13

Ovaries Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-19	CONTAINS	CONTAINER	(121070, DCM, “Findings”)			

A-19-1	HAS CONCEPT MOD	CODE	(G-C0E3, SRT, “Finding Site”)	(T-87000, SRT, ”Ovary”)		
A-19-2	CONTAINS	CONTAINER	(T-87000, SRT, ”Ovary”)			
A-19-2-1	CONTAINS	NUM	(11829-9, LN, “Left Ovary Width”)	(cm, UCUM, “centimeter”) (mm, UCUM, “millimeter”)	Lt. Ovary W	
			(11840-6, LN, “Left Ovary Length”)		Lt. Ovary L	
			(11857-0, LN, “Left Ovary Height”)		Lt. Ovary H	
			(99005-29, MDSN, “Left Ovary Area”)	(cm2, UCUM, ”Square centimeter”)	Lt. Ovary Area	
A-19-2-1-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		
A-19-2-2	CONTAINS	NUM	(12164-0, LN, “Left Ovary Volume”)	(ml, UCUM, “milliliter”)	Lt. Ovary Vol.	
A-19-3	CONTAINS	CONTAINER	(T-87000, SRT, “Ovary”)			
A-19-3-1	CONTAINS	NUM	(11830-7, LN, “Right Ovary Width”)	(cm, UCUM, “centimeter”) (mm, UCUM, “millimeter”)	Rt. Ovary W	
			(11841-4, LN, “Right Ovary Length”)		Rt. Ovary L	
			(11858-8, LN, “Right Ovary Height”)		Rt. Ovary H	
			(99005-28, MDSN, “Right Ovary Area”)	(cm2, UCUM, ”Square centimeter”)	Rt. Ovary Area	

A-19-3-1-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		
A-19-3-2	CONTAINS	NUM	(12165-7, LN, “Right Ovary Volume”)	(ml, UCUM, “milliliter”)	Rt. Ovary Vol.	

9.1.1.13 OB-GYN Follicles Section (TID 5013)

Table 9.1-14

Left Follicle Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-20	CONTAINS	CONTAINER	(121070, DCM, “Findings”)			
A-20-1	HAS CONCEPT MOD	CODE	(G-C0E3, SRT, “Finding Site”)	(T-87600, SRT, “Ovarian Follicle”)		
A-20-2	HAS CONCEPT MOD	CODE	(G-C171, SRT, “Laterality”)	(G-A101, SRT, “Left”)		
A-20-3	CONTAINS	NUM	(11879-4, LN, “Number of follicles in left ovary”)	(1, UCUM, “no units”)		
A-20-4	CONTAINS	CONTAINER	(125007, DCM, “Measurement Group”)			
A-20-4-1	HAS OBS CONTEXT	TEXT	(12510, DCM, “Identifier”)		"1", "2" …	
A-20-4-2	CONTAINS	NUM	(GD705, SRT, “Volume”)	(ml, UCUM, “milliliter”)	Vol.	
A-20-4-3	CONTAINS	NUM	(11793-7, LN, “Follicle Diameter”)	(cm, UCUM, “centimeter”) (mm, UCUM, “millimeter”)	"1", "2" …	
A-20-4-3-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		

9.1.1.14 OB-GYN Follicles Section (TID 5013)

Table 9.1-15

Right Follicle Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-21	CONTAINS	CONTAINER	(121070, DCM, “Findings”)			
A-21-1	HAS CONCEPT MOD	CODE	(G-C0E3, SRT, “Finding Site”)	(T-87600, SRT, “Ovarian Follicle”)		
A-21-2	HAS CONCEPT MOD	CODE	(G-C171, SRT, “Laterality”)	(G-A100, SRT, “Right”)		
A-21-3	CONTAINS	NUM	(11880-2, LN, “Number of follicles in right ovary”)	(1, UCUM, “no units”)		
A-21-4	CONTAINS	CONTAINER	(125007, DCM, “Measurement Group”)			
A-21-4-1	HAS OBS CONTEXT	TEXT	(12510, DCM, “Identifier”)		"1", "2" …	
A-21-4-2	CONTAINS	NUM	(G-D705, SRT, “Volume”)	(ml, UCUM, “milliliter”)	Vol.	
A-21-4-3	CONTAINS	NUM	(11793-7, LN, “Follicle Diameter”)	(cm, UCUM, “centimeter”) (mm, UCUM, “millimeter”)	"1", "2" …	
A-21-4-3-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		

9.1.1.15 OB-GYN Cyst Section (TID 99003)

Table 9.1-16

Cyst Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments

A-22	CONTAINS	CONTAINER	(121070, DCM, “Findings”)			
A-22-1	HAS CONCEPT MOD	CODE	(G-C0E3, SRT, “Finding Site”)	(99009-01, MDSN, “Cyst”)		
A-22-2	CONTAINS	CONTAINER	(125007, DCM, “Measurement Group”)			
A-22-2-1	HAS OBS CONTEXT	TEXT	(12510, DCM, “Identifier”)		"1", "2" …	
A-22-2-2	CONTAINS	NUM	(G-D705, SRT, “Volume”)	(ml, UCUM, “milliliter”)	Vol.	
A-22-2-3	CONTAINS	NUM	(99005-23, MDSN, “Cyst Diameter”)	(cm, UCUM, “centimeter”) (mm, UCUM, “millimeter”)		
A-22-2-3-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		

9.1.1.16 OB-GYN Fibroid Section (TID 99004)

Table 9.1-17

Fibroid Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-23	CONTAINS	CONTAINER	(121070, DCM, “Findings”)			
A-23-1	HAS CONCEPT MOD	CODE	(G-C0E3, SRT, “Finding Site”)	(99005-21, MDSN, “Fibroids”)		
A-23-2	CONTAINS	CONTAINER	(125007, DCM, “Measurement Group”)			
A-23-2-1	HAS OBS CONTEXT	TEXT	(12510, DCM, “Identifier”)		"1", "2" …	
A-23-2-2	CONTAINS	NUM	(G-D705, SRT, “Volume”)	(ml, UCUM, “milliliter”)	Vol.	
A-23-2-3	CONTAINS	NUM	(99005-22, MDSN, “Fibroid Diameter”)	(cm, UCUM, “centimeter”)		

				(mm, UCUM, “millimeter”)		
A-23-2-3-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		

9.1.1.17 OB-GYN Pelvic Vascular Measurement Group (TID 5026)

Table 9.1-18

OB-GYN Fetal Vascular Measurement Group in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-24	CONTAINS	CONTAINER	(121070, DCM, “Findings”)			
A-24-1	HAS CONCEPT MOD	CODE	(G-C0E3, SRT, “Finding Site”)	(T-F6800, SRT, “Embryonic Vascular Structure”)		
A-24-2	CONTAINS	CONTAINER	Context ID 12141 Extended Fetal Vasculature Anatomical Location			Ref. Table 9.1-31
A-24-2-1	HAS OBS CONTEXT	TEXT	(11951-1, LN, “Fetus ID”)			Will be present if more than one fetus.
A-24-2-2	HAS CONCEPT MOD	CODE	(G-C171, SRT, “Laterality”)	(G-A103 , SRT, “Unilateral”)		
A-24-2-3	CONTAINS	NUM	Context ID 12119 Vascular Ultrasound Property			Ref. Table 9.1-33 33
A-24-2-3-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		

9.1.1.18OB-GYN Pelvic Vascular Measurement Group (TID 5026)

Table 9.1-19

OB-GYN Pelvic Vascular Measurement Group in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-25	CONTAINS	CONTAINER	(121070, DCM, “Findings)			
A-25-1	HAS CONCEPT MOD	CODE	(G-C0E3. SRT, Finding Site)	(T-D6007, SRT, “Pelvic Vascular Structure”)		
A-25-2	CONTAINS	CONTAINER	Context ID 12140 Extended Pelvic Vasculature Anatomical Location			Ref. Table 9.1-
A-25-2-1	HAS CONCEPT MOD	CODE	(G-C171, SRT, “Laterality”)	(G-A100, SRT, “Right”)		
				(G-A101, SRT, “Left”)		
				(G-A102, SRT, “Unilateral”)		
A-25-2-2	HAS CONCEPT MOD	TEXT	(112050, DCM, “Anatomic Identifier”)			
A-25-2-3	CONTAINS	NUM	Context ID 12119 Vascular Ultrasound Property			Ref. Table 9.1-33
A-25-2-3-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		

9.1.1.19 OB-GYN Mass and Flow Section (TID 99005)

Table 9.1-20

Mass and Flow Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-26	CONTAINS	CONTAINER	(121070, DCM, “Findings”)			
A-26-1	HAS CONCEPT MOD	CODE	Context ID 99100 Gynecology Finding Site			9.1.1.19.1 Ref. 9.1.1.19.2 Table 9.1-41 **Table 9.1-39** **Table 9.1-39** **Table 9.1-39** **Table 9.1-39**
A-26-2	HAS CONCEPT MOD	CODE	(G-C171, SRT, “Laterality”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”) (G-A102, SRT, “Unilateral”)		
A-26-3	CONTAINS	CONTAINER	Context ID 99103 Gynecology Mass and Flow			**9.1.1.19.3** Ref. Table 9.1-40
A-26-3-1	HAS OBS CONTEXT	TEXT	(12510, DCM, “Identifier”)		"1", "2" …	
A-26-3-2	CONTAINS	NUM	(11840-6, LN, "Length")	(cm, UCUM, “centimeter”) (mm, UCUM, “millimeter”)		
	CONTAINS	NUM	(11857-0, LN, "Height")			
	CONTAINS	NUM	(11829-9, LN, "Width")			
A-26-3-2-1	HAS	CODE	(121401, DCM, “Derivation”)	Common CID-		

	CONCEPT MOD			Derivation		
A-26-3-3	CONTAINS	NUM	(G-D705, SRT, “Volume”)	(ml, UCUM, “milliliter”)	Vol.	
A-26-3-4	CONTAINS	NUM	Context ID 12119 Vascular Ultrasound Property			Ref. Table 9.1-33
A-26-3-4-1	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		

9.1.1.20 OB-GYN Pelvic Floor Section (TID 99006)

Table 9.1-21

Pelvic Floor Section in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-27	CONTAINS	CONTAINER	(99019-0, MDSN, “Pelvic Floor”)			
A-27-1	CONTAINS	CONTAINER	(121070, DCM, “Findings”)			
A-27-1-1	CONTAINS	NUM	Context ID 99104 Pelvic Floor			9.1.1.20.1 ef. **9.1.1.20.2** able **9.1-41**
A-27-1-1-1	HAS CONCEPT MOD	CODE	(G-C0E3. SRT, Finding Site)	(99019-1, MDSN, “Pelvic Floor Measurements”)		
A-27-1-1-2	HAS CONCEPT MOD	CODE	(121401, DCM, “Derivation”)	Common CID-Derivation		

9.1.1.21 OB-GYN Plevic Floor Report (TID 99007)

Table 9.1-22

Pelvic Floor Report in OB-GYN SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label	Comments
A-28	CONTAINS	CONTAINER	(99020-0, MDSN, “Pelvic Floor Finding”)			
A-28-1	CONTAINS	CONTAINER	(121070, DCM, “Findings”)			
A-28-1-1	CONTAINS	NUM	Context ID 99105 Pelvic Floor Report			**9.1.1.21.1** ef. Table 9.1-42
A-28-1-1-1	HAS CONCEPT MOD	CODE	(G-C0E3. SRT, Finding Site)	(99020-1, MDSN, “Pelvic Floor Findings”)		

9.1.2 DCMR Context Groups used in WS80A

9.1.2.1 Standard Extended Context Groups in OB-GYN SR

Table 9.1-23

Context ID 12003 Extended OB-GYN Dates

CSD	CV	CM	WS80A Label
LN	11778-8	EDD	Estab.DueDate
LN	11779-6	EDD from LMP	EDD(LMP)
LN	11781-2	EDD from average ultrasound age	EDD(AUA)
LN	11955-2	LMP	LMP
LN	11976-8	Ovulation date	Exp.Ovul.

Table 9.1-24

Context ID 12004 Extended Fetal Biometry Ratios Measurements

CSD	CV	CM	Laterality	WS80A Label

LN	11871-1	FL/AC	N/A	FL/AC
LN	11872-9	FL/BPD	N/A	FL/BPD
LN	11873-7	FL/HC	N/A	FL/HC
LN	11823-2	Cephalic Index	N/A	CI(BPD/OFD)
LN	11947-9	HC/AC	N/A	HC/AC
MDSN	99000-01	FL/FOOT	N/A	FL/FOOT
MDSN	99000-02	ThC/AC	N/A	ThC/AC
MDSN	99000-08	Anterior Horn Lateral ventricular to Hemispheric Width Ratio	N/A	Va/Hem
MDSN	99000-09	Posterior Horn Lateral ventricular to Hemispheric Width Ratio	N/A	Vp/Hem
MDSN	99000-04	Right Anterior Horn Lateral ventricular to Hemispheric Width Ratio	Right	Rt. Va/Hem
MDSN	99000-05	Leftt Anterior Horn Lateral ventricular to Hemispheric Width Ratio	Left	Lt. Va/Hem
MDSN	99000-06	Right Posterior Horn Lateral ventricular to Hemispheric Width Ratio	Right	Rt. Vp/Hem
MDSN	99000-07	Leftt Posterior Horn Lateral ventricular to Hemispheric Width Ratio	Left	Lt. Vp/Hem

Table 9.1-25

Context ID 12005 Extended Fetal Biometry Measurements

CSD	CV	CM	WS80A Label
LN	11820-8	Biparietal Diameter	BPD
LN	11851-3	Occipital-Frontal Diameter	OFD
LN	11984-2	Head Circumference	HC
LN	11818-2	Anterior-Posterior Abdominal Diameter	APD
LN	11862-0	Tranverse Abdominal Diameter	TAD
LN	11979-2	Abdominal Circumference	AC

LN	11963-6	Femur Length	FL
LN	11819-0	Anterior-Posterior Trunk Diameter	APTD
LN	11864-6	Transverse Thoracic Diameter	TTD
LN	11988-3	Thoracic Circumference	ThC
LN	11965-1	Foot length	Foot
MDSN	99001-18	Kidney length	Renal L
MDSN	99001-19	Kidney width	Renal AP
MDSN	99005-01	Pelvis	Pelvis
LN	11834-9	Left Kidney length	Lt. Renal L
LN	11825-7	Left Kidney width	Lt. Renal AP
MDSN	99005-14	Left Pelvis	Lt. Pelvis
LN	11836-4	Right Kidney length	Rt. Renal L
LN	11827-3	Right Kidney width	Rt. Renal AP
MDSN	99005-13	Right Pelvis	Rt. Pelvis
LN	33068-8	Thoracic Area	ThA
MDSN	99001-01	Middle Abdominal Diameter	MAD
MDSN	99001-02	Fetal Trunk Area	FTA
MDSN	99001-03	APTDxTTD	APTDxTTD
MDSN	99001-04	Ear Length	Ear
MDSN	99001-05	Middle Phalanx	MP
MDSN	99001-06	Thoracic Anteriorposterior Diameter	ThD ap
MDSN	99001-07	Thoracic Transverse Diameter	ThD trans
MDSN	99001-08	Heart Anteriorposterior Diameter	HrtD ap
MDSN	99001-09	Heart Transverse Diameter	HrtD trans
MDSN	99001-11	Cardio-Thoracic Area Ratio by Distance	CTAR(D)
MDSN	99001-12	Heart Area	HrtA
MDSN	99001-13	Cardio-Thoracic Area Ratio by Area	CTAR(A)
MDSN	99001-22	Heart Circumference	HrtC
MDSN	99001-23	Cardio-Thoracic Area Ratio by Circumference	CTAR(C)

Table 9.1-16

Context ID 12006 Extended Fetal Long Bones Biometry Measurements

CSD	CV	CM	Laterality	WS80A Label
LN	11966-9	Humerus length	N/A	HUM

LN	11966-9	Humerus length	Right	Rt. HUM
LN	11966-9	Humerus length	Left	Lt. HUM
LN	11969-3	Ulna length	N/A	ULNA
LN	11969-3	Ulna length	Right	Rt. ULNA
LN	11969-3	Ulna length	Left	Lt. ULNA
LN	11968-5	Tibia length	N/A	TIB
LN	11968-5	Tibia length	Right	Rt. TIB
LN	11968-5	Tibia length	Left	Lt. TIB
LN	11967-7	Radius length	N/A	RAD
LN	11967-7	Radius length	Right	Rt. RAD
LN	11967-7	Radius length	Left	Lt. RAD
LN	11964-4	Fibula length	N/A	FIB
LN	11964-4	Fibula length	Right	Rt. FIB
LN	11964-4	Fibula length	Left	Lt. FIB
LN	11962-8	Clavicle length	N/A	CLAV
LN	11962-8	Clavicle length	Right	Rt. CLAV
LN	11962-8	Clavicle length	Left	Lt. CLAV
MDSN	99002-01	Vertebral	N/A	Vertebral

Table 9.1-27

Context ID 12007 Extended Fetal Cranium

CSD	CV	CM	Laterality	WS80A Label
LN	11863-8	Trans Cerebellar Diameter	N/A	CEREB
LN	11860-4	Cisterna Magna length	N/A	CM
LN	12146-7	Nuchal Fold thickness	N/A	NF
LN	33069-6	Nuchal Translucency	N/A	NT
LN	11629-3	Outer Orbital Diameter	N/A	OOD
LN	33070-4	Inner Orbital Diameter	N/A	IOD
LN	33197-5	Anterior Horn Lateral ventricular width	N/A	Va
LN	33197-5	Anterior Horn Lateral ventricular width	Right	Rt. Va
LN	33197-5	Anterior Horn Lateral ventricular width	Left	Lt. Va
LN	33196-7	Posterior Horn Lateral	N/A	Vp

		ventricular width		
LN	33196-7	Posterior Horn Lateral ventricular width	Right	Rt. Vp
LN	33196-7	Posterior Horn Lateral ventricular width	Left	Lt. Vp
LN	12170-7	Width of Hemisphere	N/A	Hem
LN	12170-7	Width of Hemisphere	Right	Rt. Hem
LN	12170-7	Width of Hemisphere	Left	Lt. Hem
MDSN	99003-01	Nasal Bone	N/A	NB

Table 9.1-28

Context ID 12008 Extended OB-GYN Amniotic Sac

CSD	CV	CM	WS80A Label
LN	11624-4	First Quadrant Diameter	Q1
LN	11626-9	Second Quadrant Diameter	Q2
LN	11625-1	Third Quadrant Diameter	Q3
LN	11623-6	Fourth Quadrant Diameter	Q4
LN	11627-7	Amniotic Fluid Index	AFI
SRT	M-02550	Diameter	Max Vertical Pocket
MDSN	99004-01	MVP	MVP

Table 9.1-29

Context ID 12009 Extended Early Gestation Biometry Measurements

CSD	CV	CM	WS80A Label
LN	11850-5	Gestational Sac Diameter	GS
LN	11957-8	Crown Rump Length	CRL
LN	11816-6	Yolk Sac length	YS
LN	33071-2	Spine Length	SL

Table 9.1-30

Context ID 12011 Extended Ultrasound Pelvis and Uterus

CSD	CV	CM	WS80A Label
LN	11961-0	Cervix Length	
LN	12145-9	Endometrium Thickness	
MDSN	99005-02	Cervix Height	Cervix H

MDSN	99005-03	Cervix Width	Cervix W
MDSN	99005-04	Cervix Volume	Cervix Vol.

Table 9.1-31

Context ID 12141 Extended Fetal Vasculature Anatomical Location

CSD	CV	CM	WS80A Label
SRT	T-42000	Aorta	Fetal Aorta
SRT	T-D0765	Descending Aorta	Dsc Aorta (in Fetal Heart)
SRT	T-45600	Middle Cerebral Artery	Mid Cereb A
SRT	T-44000	Pulmonary Artery	MPA (in Fetal Heart)
SNM3	T-45010	Carotid artery	Lt. Fetal Carotid Rt. Fetal Carotid
MDSN	99008-02	Ductus Venosus	Ductus Venosus
MDSN	99008-03	Renal Artery	Lt. Renal A Rt. Renal A
SRT	T-48710	Inferior vena cava	IVC (in Fetal Heart)
MDSN	99008-07	Ductus Atriosus	Duct A
MDSN	99008-09	Ascending Aorta	Asc Aorta

Table 9.1-32

Context ID 12140 Extended Pelvic Vasculature Anatomical Location

CSD	CV	CM	WS80A Label
SRT	T-F1810	Umbilical Artery	Umbilical A
SRT	T-46980	Ovarian Artery	Lt. Ovarian A Rt. Ovarian A
SRT	T-46820	Uterine Artery	Lt. Uterine A (in OB or Gynecology) Rt. Uterine A (in OB or Gynecology)
SRT	T-F1412	Vitelline Artery of Placenta	Placenta A
MDSN	99007-01	Perisystic Flow	Perisystic Flow
MDSN	99007-02	Endometrial Flow	Endometrial Flow

Table 9.1-33

Context ID 12119 Vascular Ultrasound Property

CSD	CV	CM	WS80A Label
INCLUDE CID 12120 Extended Blood Velocity Measurements			

INCLUDE	CID 12121 Vascular Indices and Ratios
INCLUDE	CID 12122 Other Vascular Properties

Table 9.1-34

Context ID 12120 Extended Blood Velocity Measurement

CSD	CV	CM	WS80A Label
LN	11653-3	End Diastolic Velocity	EDV
LN	11726-7	Peak Systolic Velocity	PSV
LN	20352-1	Time averaged mean velocity	TAMV
LN	11692-1	Time averaged peak velocity	TAPV
MDSN	99008-04	Systolic Peak Velocity	Duct. V S Vmax
MDSN	99008-05	Diastolic Peak Velocity	Duct. V D Vmax
MDSN	99008-06	Atrial Peak Velocity	Duct. V A Vmax

Table 9.1-35

Context ID 12121 Vascular Indices and Ratios

CSD	CV	CM	WS80A Label
LN	20167-3	Acceleration Index	Acc
SRT	R-101BA	Lumen Area Stenosis	%StA
SRT	R-101BB	Lumen Diameter Stenosis	%StD
LN	12008-9	Pulsatility Index	PI
LN	12023-8	Resistivity Index	RI
LN	12144-2	Systolic to Diastolic Velocity Ratio	S/D

Table 9.1-36

Context ID 12122 Other Vascular Properties

CSD	CV	CM	WS80A Label
LN	20168-1	Acceleration Time	AccT
MDSN	99200-06	Acceleration	Acc
LN	20217-6	Deceleration Time	DecT
MDSN	99200-07	Deceleration	Dec
SRT	G-0364	Vessel lumen diameter	Dout
SRT	R-1025C	Vessel Intimal Diameter	Din
SRT	R-1025D	Vessel Intimal Cross-Sectional Area	Ain

SRT	G-0365	Vessel outside diameter	Vesl. Dist.
SRT	G-0366	Vessel lumen cross-sectional area	Aout
LN	33878-0	Volume flow	Vol. Flow
LN	20247-3	Peak Gradient	PGmax
LN	20256-4	Mean Gradient	PGmean

Table 9.1-37

Context ID 7304 Implant Target Anatomy

CSD	CV	CM	WS80A Label
SRT	T-12410	Humerus	HUM
SRT	T-12420	Radius	RAD
SRT	T-12430	Ulna	ULNA
SRT	T-12440	Tibia	TIB
SRT	T-12450	Fibula	FIB
SRT	T-12310	Clavicle	CLAV

Table 9.1-38

Fetal Cranium Finding Sites

CSD	CV	CM	WS80A Label
SRT	T-A1700	Anterior Horn Lateral Ventricle	Va
SRT	T-A1710	Posterior Horn Lateral Ventricle	Vp
SRT	T-A010F	Cerebral hemisphere	Hem

Table 9.1-39

Gynecology Finding Site

CSD	CV	CM	WS80A Label
SRT	M-03000	Mass	Mass
MDSN	99009-04	Endometrial Polyp	Endo. Polyp
MDSN	99009-05	Ovarian Mass	Ovarian Mass
MDSN	99009-08	Ectopic Pregnancy	Ectopic Pregnancy
MDSN	99009-09	Uterine Fibroid	Uterine Fibroid
MDSN	99009-10	Cervix	Cervix Flow

Table 9.1-40

Gynecology Mass and Flow

CSD	CV	CM	WS80A Label
SRT	M-03000	Mass	Mass
MDSN	99007-03	Endometrial Polyp Flow	Endo. Polyp
MDSN	99007-04	Ovarian Mass Flow	Ovarian Mass
MDSN	99007-07	Ectopic Flow	Ectopic Flow
MDSN	99007-08	Uterine Fibroid Flow	Uterine Fibroid
MDSN	99007-09	Cervical Flow	Cervix Flow

Table 9.1-41

Pelvic Floor

CSD	CV	CM	WS80A Label
MDSN	99019-5	Detr. Wall th.	Detr. Wall th.
MDSN	99019-6	Bladder neck rest	Blad. neck rest
MDSN	99019-7	Bladder neck stress	Blad. neck stress
MDSN	99019-8	Bladder neck desc.	Blad. neck desc.
MDSN	99019-9	Urethral rotation	Urethral rotation
MDSN	99019-10	Bladder desc. Max	Blad. desc. max
MDSN	99019-13	Depth of rectocele	Depth of rectocele

Table 9.1-42

Pelvic Floor Report

CSD	CV	CM	WS80A Label
MDSN	99020-3	urethral kinking	Urethral kinking
MDSN	99020-2	funneling	Funnelling

9.1.2.2 Gestational Age Equations and Tables (Context Group 12013)

Table 9.1-43

Gestational Age Equations and Tables

Coding Scheme Designator	Code Value	Code Meaning
LN	11889-3	AC, Campbell 1975
LN	11892-7	AC, Hadlock 1984
LN	33076-1	AC, Shinozuka 1996

LN	11902-4	BPD, Hadlock 1984
LN	33538-0	BPD, Hansmann 1986
LN	11905-7	BPD, Jeanty 1984
LN	11906-5	BPD, Kurtz 1980
LN	33082-9	BPD, Osaka 1989
LN	11907-3	BPD, Sabbagha 1978
LN	33084-5	BPD, Shinozuka 1996
LN	33086-0	BPD-oi, Chitty 1997
LN	33087-8	BPD-oo, Chitty 1997
LN	33088-6	Clavical length,Yarkoni 1985
LN	11910-7	CRL, Hadlock 1992
LN	33540-6	CRL, Hansmann 1986
LN	11913-1	CRL, Nelson 1981
LN	33093-6	CRL, Osaka 1989
LN	33094-4	CRL, Rempen 1991
LN	11914-9	CRL, Robinson 1975
LN	33095-1	CRL, Shinozuka 1996
LN	33098-5	FL, Chitty 1997
LN	11920-6	FL, Hadlock 1984
LN	33541-4	FL, Hansmann 1986
LN	11922-2	FL, Hohler 1982
LN	11923-0	FL, Jeanty 1984
LN	33101-7	FL, Osaka 1989
LN	33102-5	FL, Shinozuka 1996
LN	11928-9	GS, Hellman 1969
LN	33107-4	GS, Nyberg 1992
LN	33108-2	GS, Tokyo 1986
LN	33110-8	HC measured, Chitty 1997
LN	33111-6	HC derived, Chitty 1997
LN	11932-1	HC, Hadlock 1984
LN	33543-0	HC, Hansmann 1986
LN	11936-2	Humerus, Jeanty 1984
LN	33117-3	Humerus Length, Osaka 1989
LN	33120-7	OFD, Hansmann 1986
LN	11941-2	Tibia, Jeanty 1984

LN	11944-6	Ulna, Jeanty 1984
LN	11929-7	GS, Rempen 1991
LN	33083-7	BPD, Rempen 1991

9.1.2.3 OB Fetal Body Weight Equations and Tables (Context ID 12014)

Table 9.1-44

OB Fetal Body Weight Equations and Tables

Coding Scheme Designator	Code Value	Code Meaning
LN	11756-4	EFW by AC, Campbell 1975
LN	11738-2	EFW by AC, BPD, Hadlock 1984
LN	11735-8	EFW by AC, BPD, FL, Hadlock 1985
LN	11732-5	EFW by AC, BPD, FL, HC, Hadlock 1985
LN	11751-5	EFW by AC, FL, Hadlock 1985
LN	11746-5	EFW by AC, FL, HC, Hadlock 1985
LN	33139-7	EFW by BPD, TTD, Hansmann 1986
LN	11739-0	EFW by AC and BPD, Shepard 1982
LN	33140-5	EFW by BPD, FTA, FL, Osaka 1990

9.1.2.4 Fetal Growth Equations and Tables (Context ID 12015)

Table 9.1-45

Fetal Growth Equations and Tables

Coding Scheme Designator	Code Value	Code Meaning
LN	33145-4	AC by GA, ASUM 2000
LN	33146-2	AC by GA, Hadlock 1984
LN	33147-0	AC (measured) by GA, Chitty 1994
LN	33546-3	AC (derived) by GA, Chitty 1994
LN	33149-6	AC by GA, Shinozuka 1996
LN	33151-2	BPD by GA, ASUM 2000
LN	33198-3	BPD by GA, Hadlock 1984
LN	33556-2	BPD outer-inner by GA, Chitty 1994
LN	33152-0	BPD outer-outer by GA, Chitty 1994

LN	33156-1	BPD by GA, Shinozuka 1996
LN	33161-1	CRL by GA, Shinozuka 1996
LN	33164-5	Fibula by GA, Jeanty 1983
LN	33165-2	FL by GA, ASUM 2000
LN	33166-0	FL by GA, Hadlock 1984
LN	33167-8	FL by GA, Chitty 1994
LN	33170-2	FL by GA, Shinozuka 1996
LN	33172-8	HC by GA, ASUM 2000
LN	33173-6	HC by GA, Hadlock 1984
LN	33174-4	HC derived by GA, Chitty 1994
LN	33177-7	Humerus Length by GA, ASUM 2000
LN	33178-5	OFD by GA, ASUM 2000
LN	33180-1	Radius by GA, Jeanty 1983
LN	33181-9	TCD by GA Goldstein 1987
LN	33155-3	BPD by GA, Rempen 1991
LN	33171-0	GS by GA, Rempen 1991

9.1.2.5 Estimated Fetal Weight Percentile Equations and Tables (Context ID 12016)

Table 9.1-46

Estimated Fetal Weight Percentile Equations and Tables

Coding Scheme Designator	Code Value	Code Meaning
LN	33183-5	FWP by GA, Hadlock 1991
LN	33184-3	FWP by GA, Williams, 1982
LN	33189-2	FWP by GA, Brenner 1976

9.2 VASCULAR STRUCTURED REPORT TEMPLATE

9.2.1 Vascular Ultrasound Report Templates (TID 5100)

Table 9.2-1

Vascular Ultrasound Procedure Report Template

No	Rel With Parent	VT	Concept Name	Comments	WS80A Label
1		CONTAINER	(125100, DCM, “Vascular Ultrasound Procedure Report”)		
2	HAS OBS CONTEXT	INCLUDE	DTID (1001) Observation Context		
3	CONTAINS	INCLUDE	DTID (5101) Vascular Patient Characteristics		
4	CONTAINS	INCLUDE	DTID (5102) Vascular Procedure Summary Section		
5	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-40501, SRT, ”Blood Vessel of Head”)	TCD (Unilateral)
				$SectionLaterality = EV (G-A103, SRT, ”Unilateral”)	
				$Anatomy = DCID (12106) Intracranial Cerebral Vessels (unilateral)	
6	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-40501, SRT, ”Blood Vessel of Head”)	Rt. TCD
				$SectionLaterality = EV (G-A100, SRT, ”Right”)	
				$Anatomy = DCID (12105) Intracranial Cerebral Vessels	
7	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-40501, SRT, ”Blood Vessel of Head”)	Lt. TCD
				$SectionLaterality = EV (G-A101, SRT, ”Left”)	
				$Anatomy = DCID (12105) Intracranial Cerebral Vessels	
8	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound	$SectionScope = DT (T-40501,	TCD

			Section	SRT, ”Blood Vessel of Head”)	
				$Anatomy = DCID (12105) Intracranial Cerebral Vessels	
9	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-45005, SRT, ”Artery of neck”)	Rt. Carotid
				$SectionLaterality = EV (G-A100, SRT, ”Right”)	
				$Anatomy = DCID (12104) Extracranial Arteries	
				$AnatomyRatio = DCID (12123) Carotid Ratios	
9	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-45005, SRT, ”Artery of neck”)	Lt. Carotid
				$SectionLaterality = EV (G-A101, SRT, ”Left”)	
				$Anatomy = DCID (12104) Extracranial Arteries	
				$AnatomyRatio = DCID (12123) Carotid Ratios	
10	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-47040, SRT, ”Artery of Lower Extremity”)	Rt. LE Artery
				$SectionLaterality = EV (G-A100, SRT, ”Right”)	
				$Anatomy = DCID (12109) Lower Extremity Arteries	
11	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-47040, SRT, ”Artery of Lower Extremity”)	Lt. LE Artery
				$SectionLaterality = EV (G-A101, SRT, ”Left”)	
				$Anatomy = DCID (12109) Lower Extremity Arteries	
12	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-49403, SRT, ”Vein of Lower Extremity”)	Rt. LE Vein
				$SectionLaterality = EV (G-A100, SRT, ”Right”)	
				$Anatomy = DCID (12110) Lower	

				Extremity Veins	
13	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-49403, SRT, ”Vein of Lower Extremity”)	Lt. LE Vein
				$SectionLaterality = EV (G-A101, SRT, ”Left”)	
				$Anatomy = DCID (12110) Lower Extremity Veins	
14	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-47020, SRT, ”Artery Of Upper Extremity”)	Rt. UE Artery
				$SectionLaterality = EV (G-A100, SRT, ”Right”)	
				$Anatomy = DCID (12107) Upper Extremity Arteries	
15	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-47020, SRT, ”Artery Of Upper Extremity”)	Lt. UE Artery
				$SectionLaterality = EV (G-A101, SRT, ”Left”)	
				$Anatomy = DCID (12107) Upper Extremity Arteries	
16	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-49103, SRT, ”Vein Of Upper Extremity”)	Rt. UE Vein
				$SectionLaterality = EV (G-A100, SRT, ”Right”)	
				$Anatomy = DCID (12108) Upper Extremity Veins	
17	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-49103, SRT, ”Vein Of Upper Extremity”)	Lt. UE Vein
				$SectionLaterality = EV (G-A101, SRT, ”Left”)	
				$Anatomy = DCID (12108) Upper Extremity Veins	
18	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-71019, SRT, ”Vascular Structure Of Kidney”)	Rt. Abdomen Renal
				$SectionLaterality = EV (G-A100, SRT, ”Right”)	

				$Anatomy = DCID (12115) Renal Vessels	
				$AnatomyRatio = DCID (12124) Renal Ratios	
19	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-71019, SRT, ”Vascular Structure Of Kidney”)	Lt. Abdomen Renal
				$SectionLaterality = EV (G-A101, SRT, ”Left”)	
				$Anatomy = DCID (12115) Renal Vessels	
				$AnatomyRatio = DCID (12124) Renal Ratios	
20	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-46002, SRT, ”Artery of Abdomen”)	Abdomen Artery (Unilateral)
				$SectionLaterality = EV (G-A103, SRT, ”Unilateral”)	
				$Anatomy = DCID (12112) Abdominal Arteries (unilateral)	
21	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-46002, SRT, ”Artery of Abdomen”)	Rt. Abdomen Artery
				$SectionLaterality = EV (G-A100, SRT, ”Right”)	
				$Anatomy = DCID (12111) Abdominal Arteries (lateral)	
22	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-46002, SRT, ”Artery of Abdomen”)	Lt. Abdomen Artery
				$SectionLaterality = EV (G-A101, SRT, ”Left”)	
				$Anatomy = DCID (12111) Abdominal Arteries (lateral)	
23	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-46002, SRT, ”Artery of Abdomen”)	Abdomen Artery
				$Anatomy = DCID (12111) Abdominal Arteries (lateral)	
24	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound	$SectionScope = DT (T-487A0,	Abdomen

			Section	SRT, ”Vein of Abdomen”)	Vein (Unilateral)
				$SectionLaterality = EV (G-A103, SRT, ”Unilateral”)	
				$Anatomy = DCID (12114) Abdominal Veins (unilateral)	
25	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-487A0, SRT, ”Vein of Abdomen”)	Rt. Abdomen Vein
				$SectionLaterality = EV (G-A100, SRT, ”Right”)	
				$Anatomy = DCID (12113) Abdominal Veins (lateral)	
26	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-487A0, SRT, ”Vein of Abdomen”)	Lt. Abdomen Vein
				$SectionLaterality = EV (G-A101, SRT, ”Left”)	
				$Anatomy = DCID (12113) Abdominal Veins (lateral)	
27	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-487A0, SRT, ”Vein of Abdomen”)	Abdomen Vein
				$Anatomy = DCID (12113) Abdominal Veins (lateral)	
28	CONTAINS	INCLUDE	DTID (5103) Vascular Ultrasound Section	$SectionScope = DT (T-D4000, SRT, ”Abdomen”)	Abdomen (B- MODE)
				$Anatomy = DCID (6204) Anatomic Non-Colon Findings	

9.2.1.1 Observation Context (TID 1001)

Table 9.2-2

Observation Context in Vascular SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label
B-1	HAS OBS CONTEXT	CODE	(121005, DCM, “Observer Type”)	(121006, DCM, “Person“)	
B-2	HAS OBS CONTEXT	PNAME	(121008, DCM, “Person Observer Name”)		Ref. Physician

B-3	HAS OBS CONTEXT	CODE	(121024, DCM, “Subject Class”)	(121025, DCM, “Patient”)	
B-4	HAS OBS CONTEXT	PNAME	(121029, DCM, “Subject Name”)		Last Name,First Name
B-5	HAS OBS CONTEXT	DATE	(121031, DCM, “Subject Birth Date”)		BirthDate
B-6	HAS OBS CONTEXT	CODE	(121032, DCM, “Subject Sex”)	(M, DCM, “Male”)	Gender
				(F, DCM, “Female”)	
				(U, DCM, “Unknown sex”)	
B-7	HAS OBS CONTEXT	NUM	(121033, DCM, “Subject Age”)	(mo, UCUM, “month”)	Not Used

9.2.1.2 Vascular Patient Characteristics (TID 5101)

Table 9.2-3

Patient Characteristics in Vascular SR

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label
B-8	CONTAINS	CONTAINER	(121118, DCM, “Patient Characteristics”)		
B-8-1	CONTAINS	NUM	(121033, DCM, "Subject Age”)	Units = DCID (7456) Units of Measure for Age	Description
B-8-2	CONTAINS	CODE	(121032, DCM, "Subject Sex”)	DCID (7455) Sex	Height
	CONTAINS	NUM	(8867-4, LN, “Heart Rate”)		
B-8-3	CONTAINS	NUM	(F-008EC, SRT, “Systolic Blood Pressure”)		Weight
B-8-4	CONTAINS	NUM	(F-008ED, SRT, "Diastolic Blood Pressure")		Gravida

9.2.1.3 Vascular Procedure Summary Section (TID 5102)

Table 9.2-4

Vascular Summary Section

	REL	VT	Concept Name	Unit / CODE Value	WS80A

					Label
B-9	CONTAINS	CONTAINER	DT (121111, DCM, “Summary”)		
B-9-1	CONTAINS	TEXT	DCID (12101) Vascular Summary		

9.2.1.4 Vascular Ultrasound Section (TID 5103)

Table 9.2-5

Vascular Ultrasound Section

	REL	VT	Concept Name	Unit / CODE Value	WS80A Label
B-10		CONTAINER	DT (121070, DCM, “Findings”)		
B-10-1	HAS CONCEPT MOD	CODE	EV (G-C0E3, SRT, “Finding Site”)	$SectionScope	
B-10-2	HAS CONCEPT MOD	CODE	EV (G-C171, SRT, “Laterality”)	$SectionLaterality	
	CONTAINS	INCLUDE	DTID (5104) Vascular Measurement Group	$AnatomyGroup = $Anatomy	
B-10-3	CONTAINS	CONTAINER	$AnatomyGroup		
B-10-3-1	HAS CONCEPT MOD	CODE	EV (G-A1F8, SRT, “Topographical Modifier”)	DCID (12116) Vessel Segment Modifiers	
	HAS CONCEPT MOD	CODE	EV (125101, DCM, “Vessel Branch”)	DCID (12117) Vessel Branch Modifiers	
	CONTAINS	INCLUDE	DTID (300) Measurement	$Measurement = DCID (12119) Vascular Ultrasound Property	
				$Derivation = DCID (3627) Measurement Type	
B-10-2-3-1		NUM	$Measurement	Units = $Units	
B-10-2-3-2	HAS CONCEPT MOD	CODE	EV (121401, DCM, “Derivation”)	$Derivation	
	CONTAINS	INCLUDE	DTID (300) Measurement	$Measurement = $AnatomyRatio	
B-10-4		NUM	$Measurement	Units = $Units	

9.2.2 Vascular Measurement and Calculation used in Vascular SR

Table 9.2-6

Carotid

WS80A Label	DICOM SR Concept Name (CDS CV CM)	Laterality	Topographical Modifier
Subclavian A	(T-46100, SRT, “Subclavian Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
PSV	(11726-7, LN, “Peak Systolic Velocity”)		
EDV	(11653-3, LN, “End Diastolic Velocity)		
TAPV	(11692-1, LN, “Time averaged peak velocity”)		
TAMV	(20352-1, LN, “Time averaged mean velocity”)		
PGmax	(20247-3, LN, “Peak Gradient”)		
PGmean	(20256-4, LN, “Mean Gradient”)		
S/D	(12144-2, LN, “Systolic to Diastolic Velocity Ratio”)		
D/S	(99200-01, MDSN, “Diastolic to Systolic Velocity Ratio”)		
RI	(12023-8, LN, “Resistivity Index”)		
PI	(12008-9, LN, “Pulsatility Index”)		
%StA Outer Area	(G-0366, SRT, “Vessel lumen cross-sectional area”)		
%StA Inner Area	(R-1025D , SRT, “Vessel Intimal Cross-Sectional Area”)		
%StA	(R-101BA , SRT, “Lumen Area Stenosis”)		
%StD Outer Dist.	(G-0364, SRT, “Vessel lumen diameter”)		
%StD Inner Dist.	(R-1025C, SRT, “Vessel Intimal Diameter”)		
%StD	(R-101BB , SRT, “Lumen Diameter Stenosis”)		
Vesl. Area	(99200-02, MDSN, “Vessel Area”)		
Vol. Flow(A)	(33878-0, LN, “Volume flow”)		

Vesl. Dist	(G-0365, SRT, “Vessel outside diameter”)		
Vol. Flow(D)	(33878-0, LN, “Volume flow”)		
CCA	(T-45100, SRT, “Common Carotid Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
PSV	(11726-7, LN, “Peak Systolic Velocity”)		
EDV	(11653-3, LN, “End Diastolic Velocity”)		
TAPV	(11692-1, LN, “Time averaged peak velocity”)		
TAMV	(20352-1, LN, “Time averaged mean velocity”)		
PGmax	(20247-3, LN, “Peak Gradient”)		
PGmean	(20256-4, LN, “Mean Gradient”)		
S/D	(12144-2, LN, “Systolic to Diastolic Velocity Ratio”)		
D/S	(99200-01, MDSN, “Diastolic to Systolic Velocity Ratio”)		
RI	(12023-8, LN, “Resistivity Index”)		
PI	(12008-9, LN, “Pulsatility Index”)		
%StA	(R-101BA , SRT, “Lumen Area Stenosis”)		
%StA Outer Area	(G-0366, SRT, “Vessel lumen cross-sectional area”)		
%StA Inner Area	(R-1025D , SRT, “ Vessel Intimal Cross-Sectional Area”)		
%StD	(R-101BB , SRT, “Lumen Diameter Stenosis”)		
%StD Outer Dist.	(G-0364, SRT, “Vessel lumen diameter”)		
%StD Inner Dist.	(R-1025C , SRT, “Vessel Intimal Diameter”)		
Vesl. Area	(99200-02, MDSN, “Vessel Area”)		
Vesl. Dist	(G-0365, SRT, “Vessel outside diameter”)		
Vol. Flow	(33878-0, LN, “Volume flow”)		
IMT	(99200-05, MDSN, “Intima-media thickness”)		
Bulb	(T-45170, SRT, “Carotid Bulb”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-

			longitudinal”) (G-A119, SRT “Distal”)
ICA	(T-45300, SRT, “Internal Carotid Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
ECA	(T-45200, SRT, “External Carotid Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Vertebral A	(T-45700, SRT, “Vertebral Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Comment	(121106, DCM, “Comment”)		

Table 9.2-7

LE Artery

WS80A Label	DICOM SR Concept Name (CDS CV CM)	Laterality	Topographical Modifier
CIA	(T-46710, SRT, “Common Iliac Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
PSV	(11726-7, LN, “Peak Systolic Velocity”)		
EDV	(11653-3, LN, “End Diastolic Velocity”)		

TAPV	(11692-1, LN, “Time averaged peak velocity”)		
TAMV	(20352-1, LN, “ Time averaged mean velocity”)		
PGmax	(20247-3, LN, “Peak Gradient”)		
PGmean	(20256-4, LN, “Mean Gradient”)		
S/D	(12144-2, LN, “Systolic to Diastolic Velocity Ratio”)		
D/S	(99200-01, MDSN, “Diastolic to Systolic Velocity Ratio”)		
RI	(12023-8, LN, “Resistivity Index”)		
PI	(12008-9, LN, “Pulsatility Index”)		
%StA	(R-101BA , SRT, “Lumen Area Stenosis”)		
%StA Outer Area	(G-0366, SRT, “Vessel lumen cross-sectional area”)		
%StA Inner Area	(R-1025D , SRT, “Vessel Intimal Cross-Sectional Area”)		
%StD	(R-101BB , SRT, “Lumen Diameter Stenosis”)		
%StD Outer Dist.	(G-0364, SRT, “Vessel lumen diameter”)		
%StD Inner Dist.	(R-1025C , SRT, “Vessel Intimal Diameter”)		
Vesl. Area	(99200-02, MDSN, “Vessel Area”)		
Vol. Flow	(33878-0, LN, “Volume flow”)		
Vesl. Dist	(G-0365, SRT, “Vessel outside diameter”)		
IIA	(T-46740, SRT, “Internal Iliac Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
EIA	(T-46910, SRT, “External Iliac Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
CFA	(T-47400, SRT, “Common Femoral Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”)

			(G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
SFA	(T-47403, SRT, “Superficial Femoral Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
DFA	(T-47440, SRT, “Profunda Femoris Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Popliteal A	(T-47500, SRT, “Popliteal Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
ATA	(T-47700, SRT, “Anterior Tibial Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
PTA	(T-47600, SRT, “Posterior Tibial Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Peroneal A	(T-47630, SRT, “Peroneal Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”)

			(G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
DPA	(T-47741, SRT, “Dorsalis Pedis Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
MPA	(T-47690, SRT, “Plantar Arterial Arch”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
LPA	(T-47690, SRT, “Plantar Arterial Arch”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Metatarsal A	(99201-1, MDSN, “Metatarsal Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Digital A	(99201-2, MDSN, “Digital Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Comment	(121106, DCM, “Comment”)		

Table 9.2-8

LE Vein

WS80A Label	DICOM SR Concept Name (CDS CV CM)	Laterality	Topographical Modifier
CIV	(T-48920, SRT, “Common Iliac Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Vmax	(99200-03, MDSN, “Max Velocity”)		
Duration Time	(99200-04, MDSN, “Duration Time”)		
Vesl. Dist.	(G-0365, SRT, “Vessel outside diameter”)		
Vesl. Area.	(MDSN, 99200-02, “Vessel Area”)		
TAMV	(LN, 20352-1, “Time averaged mean velocity”)		
Vol. Flow	(LN, 33878-0, “Volume flow”)		
IIV	(T-48940, SRT, “Internal iliac vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
EIV	(T-48930, SRT, “External Iliac Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
CFV	(G-035B, SRT, “Common Femoral Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)

SFV	(G-035A , SRT, “Superficial Femoral Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
GSV	(T-49530, SRT, “Great Saphenous Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Popliteal V	(T-49640, SRT, “Popliteal Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
LSV	(T-49550, SRT, “Lesser Saphenous Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
ATV	(T-49630, SRT, “Anterior Tibial Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
PTV	(T-49620, SRT, “Posterior Tibial Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)

Peroneal V	(T-49650, SRT, “Peroneal Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
MPV	(99203-01, MDSN, “Medial Plantar Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
LPV	(99203-02, MDSN, “Lateral Plantar Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Metatarsal V	(99203-03, MDSN, “Metatarsal Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Digital V	(99203-04, MDSN, “Digital Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Comment	(121106, DCM, “Comment”)		

Table 9.2-9

UE Artery

WS80A Label	DICOM SR Concept Name (CDS CV CM)	Laterality	Topographical

			Modifier
Subclavian A	(T-46100, SRT, “Subclavian Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
PSV	(11726-7, LN, “Peak Systolic Velocity”)		
EDV	(11653-3, LN, “End Diastolic Velocity”)		
TAPV	(11692-1, LN, “Time averaged peak velocity”)		
TAMV	(20352-1, LN, “Time averaged mean velocity”)		
PGmax	(20247-3, LN, “Peak Gradient”)		
PGmean	(20256-4, LN, “Mean Gradient”)		
S/D	(12144-2, LN, “Systolic to Diastolic Velocity Ratio”)		
D/S	(99200-01, MDSN, “Diastolic to Systolic Velocity Ratio”)		
RI	(12023-8, LN, “Resistivity Index”)		
PI	(12008-9, LN, “Pulsatility Index”)		
%StA	(R-101BA , SRT, “Lumen Area Stenosis”)		
%StA Outer Area	(G-0366, SRT, “Vessel lumen cross-sectional area”)		
%StA Inner Area	(R-1025D, SRT, “Vessel Intimal Cross-Sectional Area”)		
%StD	(R-101BB, SRT, “Lumen Diameter Stenosis”)		
%StD Outer Dist.	(G-0364, SRT, “Vessel lumen diameter”)		
%StD Inner Dist.	(R-1025C , SRT, “Vessel Intimal Diameter”)		
Vesl. Area	(99200-02, MDSN, “Vessel Area”)		
Vesl. Dist	(G-0365, SRT, “Vessel outside diameter”)		
Vol. Flow	(33878-0, LN, “Volume flow”)		
Axillary A	(T-47100, SRT, “Axillary Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT

			“Distal”)
Brachial A	(T-47160, SRT, “Brachial Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Radial A	(T-47300, SRT, “Radial Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Ulnar A	(T-47200, SRT, “Ulnar Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
SPA	(T-47240, SRT, “Superficial Palmar Arch”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Comment	(121106, DCM, “Comment”)		

Table 9.2-10

UE Vein

WS80A Label	DICOM SR Concept Name (CDS CV CM)	Laterality	Topographical Modifier
Internal Jugular V	(T-48170, SRT, “Internal Jugular vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”)

			(G-A119, SRT “Distal”)
Vmax	(99200-03, MDSN, “Max Velocity”)		
Duration Time	(99200-04, MDSN, “Duration Time”)		
Vesl. Dist.	(G-0365, SRT, “Vessel outside diameter”)		
Vesl. Area.	(MDSN, 99200-02, “Vessel Area”)		
TAMV	(LN, 20352-1, “Time averaged mean velocity”)		
Vol. Flow	(LN, 33878-0, “Volume flow”)		
Innominate V	(T-48620, SRT, “Innominate vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Subclavian V	(T-48330, SRT, “Subclavian vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Axillary V	(T-49110, SRT, “Axillary vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Brachial V	(T-49350, SRT, “Brachial vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Cephalic V	(T-49240, SRT, “Cephalic vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”)

			(G-A119, SRT “Distal”)
Basilic V	(T-48052, SRT, “Basilic vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Radial V	(T-49340, SRT, “Radial vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Ulnar V	(T-49330, SRT, “Ulnar vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Comment	(121106, DCM, “Comment”)		

Table 9.2-11

TCD

WS80A Label	DICOM SR Concept Name (CDS CV CM)	Laterality	Topographical Modifier
Basilar A	(T-45800, SRT, “Basilar Artery”)	(G-A103, SRT, “Unilateral”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
PSV	(11726-7, LN, “Peak Systolic Velocity”)		
EDV	(11653-3, LN, “End Diastolic Velocity”)		
TAPV	(11692-1, LN, “Time averaged peak velocity”)		

TAMV	(20352-1, LN, “Time averaged mean velocity”)		
PGmax	(20247-3, LN, “Peak Gradient”)		
PGmean	(20256-4, LN, “Mean Gradient”)		
S/D	(12144-2, LN, “Systolic to Diastolic Velocity Ratio”)		
D/S	(99200-01, MDSN, “Diastolic to Systolic Velocity Ratio”)		
RI	(12023-8, LN, “Resistivity Index”)		
PI	(12008-9, LN, “Pulsatility Index”)		
%StA	(R-101BA , SRT, “Lumen Area Stenosis”)		
%StA Outer Area	(G-0366, SRT, “Vessel lumen cross-sectional area”)		
%StA Inner Area	(R-1025D, SRT, “Vessel Intimal Cross-Sectional Area”)		
%StD	(R-101BB, SRT, “Lumen Diameter Stenosis”)		
%StD Outer Dist.	(G-0364, SRT, “Vessel lumen diameter”)		
%StD Inner Dist.	(R-1025C , SRT, “Vessel Intimal Diameter”)		
Vesl. Area	(99200-02, MDSN, “Vessel Area”)		
Vesl. Dist	(G-0365, SRT, “Vessel outside diameter”)		
Vol. Flow	(33878-0, LN, “Volume flow”)		
ACA	(T-45540, SRT, “Anterior Cerebral Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	
MCA	(T-45600, SRT, “Middle Cerebral Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	
PCA (P1)	(R-10253, SRT, “Posterior Cerebral Artery P1 Segment”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	
PCA (P2)	(R-10255, SRT, “Posterior Cerebral Artery P2 Segment”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	

Table 9.2-12
Abdomen Artery

WS80A Label	DICOM SR Concept Name (CDS CV CM)	Laterality	Topographical Modifier
Aorta	(T-42000, SRT, "Aorta")	(G-A103, SRT, “Unilateral”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
PSV	(11726-7, LN, “Peak Systolic Velocity”)		
EDV	(11653-3, LN, “End Diastolic Velocity”)		
TAPV	(11692-1, LN, “Time averaged peak velocity”)		
TAMV	(20352-1, LN, “Time averaged mean velocity”)		
PGmax	(20247-3, LN, “Peak Gradient”)		
PGmean	(20256-4, LN, “Mean Gradient”)		
S/D	(12144-2, LN, “Systolic to Diastolic Velocity Ratio”)		
D/S	(99200-01, MDSN, “Diastolic to Systolic Velocity Ratio”)		
RI	(12023-8, LN, “Resistivity Index”)		
PI	(12008-9, LN, “Pulsatility Index”)		
%StA	(R-101BA , SRT, “Lumen Area Stenosis”)		
%StA Outer Area	(G-0366, SRT, “Vessel lumen cross-sectional area”)		
%StA Inner Area	(R-1025D, SRT, “Vessel Intimal Cross-Sectional Area”)		
%StD	(R-101BB, SRT, “Lumen Diameter Stenosis”)		
%StD Outer Dist.	(G-0364, SRT, “Vessel lumen diameter”)		
%StD Inner Dist.	(R-1025C , SRT, “Vessel Intimal Diameter”)		
Vesl. Area	(99200-02, MDSN, “Vessel Area”)		
Vesl. Dist	(G-0365, SRT, “Vessel outside diameter”)		
Vol. Flow	(33878-0, LN, “Volume flow”)		
Celiac A	(T-46400, SRT, "Celiac Axis")	(G-A103, SRT,	

		“Unilateral”)	
Splenic A	(T-46460, SRT, "Splenic Artery")	(G-A103, SRT, “Unilateral”)	
SMA	(T-46510, SRT, "Superior Mesenteric Artery")	(G-A103, SRT, “Unilateral”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
IMA	(T-46520, SRT, "Inferior Mesenteric Artery")	(G-A103, SRT, “Unilateral”)	
Renal Aortic Ratio	(33869-9, LN, "Renal Artery/Aorta velocity ratio")	(G-A103, SRT, “Unilateral”)	
Renal A. PSV	(99200-07, MDSN "Reanl A.PSV")		
Aorta PSV	(99200-08, MDSN "Aorta PSV")		
Hepatic A	(T-46420, SRT, "Hepatic artery")	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	
Iliac A	(T-46710, SRT, "Common Iliac Artery")	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
G.D.A	(T-46440, SRT, "Gastroduodenal Artery")	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	

Table 9.2-13

Abdomen Vein

WS80A Label	DICOM SR Concept Name (CDS CV CM)	Laterality	Topographical Modifier
Hepatic V	(T-48720, SRT, "Hepatic Vein")	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	
Vmax	(99200-03, MDSN, “Max Velocity”)		
Duration Time	(99200-04, MDSN, “Duration Time”)		

Vesl. Dist.	(G-0365, SRT, “Vessel outside diameter”)		
Vesl. Area.	(MDSN, 99200-02, “Vessel Area”)		
TAMV	(LN, 20352-1, “Time averaged mean velocity”)		
Vol. Flow	(LN, 33878-0, “Volume flow”)		
IVC	(T-48710, SRT, "Inferior Vena Cava")	(G-A103, SRT, “Unilateral”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Portal V	(T-48810, SRT, "Portal Vein")	(G-A103, SRT, “Unilateral”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
SMV	(T-48840, SRT, "Superior Mesenteric Vein")	(G-A103, SRT, “Unilateral”)	
IMV	(T-48910, SRT, "Inferior Mesenteric Vein")	(G-A103, SRT, “Unilateral”)	
Splenic V	(T-48890, SRT, "Splenic Vein")	(G-A103, SRT, “Unilateral”)	

Table 9.2-14

Abdomen Renal

WS80A Label	DICOM SR Concept Name (CDS CV CM)	Laterality	Vessel Branch	Topographical Modifier
Renal A	(T-46600, SRT, “Renal Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(G-A332, SRT, “Main”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
PSV	(11726-7, LN, “Peak Systolic Velocity”)			

EDV	(11653-3, LN, “End Diastolic Velocity”)			
TAPV	(11692-1, LN, “Time averaged peak velocity”)			
TAMV	(20352-1, LN, “Time averaged mean velocity”)			
PGmax	(20247-3, LN, “Peak Gradient”)			
PGmean	(20256-4, LN, “Mean Gradient”)			
S/D	(12144-2, LN, “Systolic to Diastolic Velocity Ratio”)			
D/S	(99200-01, MDSN, “Diastolic to Systolic Velocity Ratio”)			
RI	(12023-8, LN, “Resistivity Index”)			
PI	(12008-9, LN, “Pulsatility Index”)			
%StA	(R-101BA , SRT, “Lumen Area Stenosis”)			
%StA Outer Area	(G-0366, SRT, “Vessel lumen cross-sectional area”)			
%StA Inner Area	(R-1025D, SRT, “Vessel Intimal Cross-Sectional Area”)			
%StD	(R-101BB, SRT, “Lumen Diameter Stenosis”)			
%StD Outer Dist.	(G-0364, SRT, “Vessel lumen diameter”)			
%StD Inner Dist.	(R-1025C , SRT, “Vessel Intimal Diameter”)			
Vesl. Area	(99200-02, MDSN, “Vessel Area”)			
Vesl. Dist	(G-0365, SRT, “Vessel outside diameter”)			
Vol. Flow	(33878-0, LN, “Volume flow”)			
Upper Renal A	(T-46600, SRT, “Renal Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(99201-4, MDSN, “Upper”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”)

				(G-A119, SRT “Distal”)
Lower Renal A	(T-46600, SRT, “Renal Artery”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	(99201-5, SRT, “Lower”)	(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Arcuate A	(T-4668A, SRT, “Arcuate Artery of the Kidney”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)		(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Lobular Renal A	(T-4667D, SRT, “Interlobar Artery of Kidney”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)		(G-A118, SRT, “Proximal”) (G-A188, SRT “Mid-longitudinal”) (G-A119, SRT “Distal”)
Renal Vein	(SRT, T-48740, “Renal Vein”)	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)		

Table 9.2-15

Abdomen (2D)

WS80A Label	DICOM SR Concept Name (CDS CV CM)	Laterality	Topographical Modifier
Liver	(T-62000, SRT, "Liver")	(G-A103, SRT, “Unilateral”)	
Spleen	(T-C3000, SRT, "Spleen")	(G-A103, SRT, “Unilateral”)	
Gall bladder	(T-63000, SRT, "Gall bladder")	(G-A103, SRT, “Unilateral”)	
Pancreas	(T-65000, SRT, "Pancreas")	(G-A103, SRT, “Unilateral”)	

Pancreas Head	(99016-2, MDSN, "Pancreas Head")		
Pancreas Body	(99016-3, MDSN, "Pancreas Body")		
Pancreas Tail	(99016-4, MDSN, "Pancreas Tail")		
Bowel	(99016-6, MDSN, "Bowel")		
Kidney	(T-71000, SRT, "Kidney")	(G-A100, SRT, “Right”) (G-A101, SRT, “Left”)	
Kidney Vol.	99016-19, MDSN, "Kidney Volume")		
Kidney L	(99016-20 MDSN, "Kidney Length")		
Kidney W	(99016-21 MDSN, "Kidney Width")		
Kidney H	(99016-22 MDSN, "Kidney Height")		

9.3 ADULT ECHOCARDIOGRAPHY STRUCTURED REPORT TEMPLATE

9.3.1 Adult Echocardiography Ultrasound Report Templates(TID 5200)

Table 9.3-1

Adult Echocardiography Ultrasound Procedure Report Tempalte

No	Rel With Parent	VT	Concept Name	Comments
1		CONTAINER	EV (125200, DCM, “Adult Echocardiography Procedure Report”)	
2	HAS CONCEPT MOD	INCLUDE	DTID (1204) Language of Content Item and Descendants	
3	HAS OBS CONTEXT	INCLUDE	DTID (1001) Observation Context	
4	CONTAINS	INCLUDE	DTID (5201) Echocardiography Patient Characteristics	
5	CONTAINS	CONTAINER	(111028, DCM, “Image Library”)	
6	CONTAINS	IMAGE	No purpose of reference	
7	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-32600, SRT, “Left Ventricle”)
				$MeasType = DCID (12200) Echocardiography Left Ventricle
8	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-32500, SRT, “Right Ventricle”)
				$MeasType = DCID (12204) Echocardiography Right Ventricle
9	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-32300, SRT, “Left Atrium”)
				$MeasType = DCID (12205) Echocardiography Left Atrium
10	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-32200, SRT, “Right Atrium”)
				$MeasType = DCID (12206) Echocardiography Right Atrium
11	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-35400, SRT, “Aortic Valve”)

				$MeasType = DCID (12211) Echocardiography Aortic Valve
12	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-35300, SRT, “Mitral Valve”)
				$MeasType = DCID (12207) Echocardiography Mitral Valve
13	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-35200, SRT, “Pulmonic Valve”)
				$MeasType = DCID (12209) Echocardiography Pulmonic Valve
14	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-35100, SRT, “Tricuspid Valve”)
				$MeasType = DCID (12208) Echocardiography Tricuspid Valve
15	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-42000, SRT, “Aorta”)
				$MeasType= DCID (12212) Echocardiography Aorta
16	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-44000, SRT, “Pulmonary artery”)
				$MeasType DCID (12210) = Echocardiography Pulmonary Artery
17	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-48600, SRT, “Vena Cava”
				$MeasType = DCID (12215) Echocardiography Vena Cavae
18	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (T-48581, SRT, “Pulmonary Venous Structure”
				$MeasType = DCID (12214) Echocardiography Pulmonary Veins
19	CONTAINS	INCLUDE	DTID (5202) Echo Section	$SectionSubject = EV (P5-30031, SRT, “Cardiac Shunt Study”)
				$MeasType = DCID (12217) Echocardiography Cardiac Shunt

9.3.2 Cardiac Measurement and Calculation used in Adult Echocardiography SR

- Label – Label of measurement or calculation used in Cardiac Calc. package for the Ultrasound System
- FSite – Finding Site
- Concept – (CV, CSD, “Concept Name”)
- Modifier – Additional codes and Modifiers used

Table 9.3-2

Cardiac Measurement and Calculation

Label	FSite	Concept	Modifiers
LVIDd	Left Ventricle	(29436-3, LN, “Left Ventricle Internal End Diastolic Dimension”)	Image Mode = 2D mode
LVIDs	Left Ventricle	(29438-9, LN, “Left Ventricle Internal Systolic Dimension”)	
Frac Short	Left Ventricle	(18051-3, LN, “Left Ventricular Fractional Shortening”)	
IVSd	Left Ventricle	(18154-5, LN, “Interventricular Septum Diastolic Thickness”)	
IVSs	Left Ventricle	(18158-6, LN, “Interventricular Septum Systolic Thickness”)	
IVS% Thickening	Left Ventricle	(18054-7, LN, “Interventricular Septum % Thickening”)	
LVPWd	Left Ventricle	(18152-9, LN, “Left Ventricle Posterior Wall Diastolic Thickness”)	
LVPWs	Left Ventricle	(18156-0, LN, “Left Ventricle Posterior Wall Systolic Thickness”)	
LVPW% Thickening	Left Ventricle	(18053-9, LN, “Left Ventricle Posterior Wall % Thickening”)	
IVSd/LVPWd	Left Ventricle	(18155-2, LN, “Interventricular Septum to Posterior Wall Thickness Ratio”)	Image Mode = 2D mode Cardiac Cycle Point = Diastole
IVSs/LVPWs	Left Ventricle	(18155-2, LN, “Interventricular Septum to Posterior Wall Thickness Ratio”)	Image Mode = 2D mode Cardiac Cycle Point = Systole
Vol.d(Teichholz)	Left Ventricle	(18026-5, LN, “Left Ventricular End Diastolic Volume”)	Image Mode = 2D mode Measurement Method = Teichholz

Vol.d(Cubed)	Left Ventricle	(18026-5, LN, “Left Ventricular End Diastolic Volume”)	Image Mode = 2D mode Measurement Method = Cube Method
Vol.d(Bullet)	Left Ventricle	(18026-5, LN, “Left Ventricular End Diastolic Volume”)	Image Mode = 2D mode Measurement Method = Bullet Method
Vol.s(Teichholz)	Left Ventricle	(18148-7, LN, “Left Ventricular End Systolic Volume”)	Image Mode = 2D mode Measurement Method = Teichholz
Vol.s(Cubed)	Left Ventricle	(18148-7, LN, “Left Ventricular End Systolic Volume”)	Image Mode = 2D mode Measurement Method = Cube Method
Vol.s(Bullet)	Left Ventricle	(18148-7, LN, “Left Ventricular End Systolic Volume”)	Image Mode = 2D mode Measurement Method = Bullet Method
EF	Left Ventricle	(18043-0, LN, “Left Ventricular Ejection Fraction”)	Image Mode = 2D mode
SV	Left Ventricle	(F-32120, SRT, “Stroke Volume”)	Image Mode = 2D mode
SI	Left Ventricle	(F-00078, SRT, "Stroke Index")	Image Mode = 2D mode"
CO	Left Ventricle	(F-32100, SRT, “Cardiac Output”)	Image Mode = 2D mode
CI	Left Ventricle	(F-32110, SRT, “Cardiac Index”)	Image Mode = 2D mode
Mass	Left Ventricle	(18087-7, LN, “Left Ventricle Mass”)	Image Mode = 2D mode
RVIDd	Right Ventricle	(20304-2, LN, “Right Ventricular Internal Diastolic Dimension”)	Image Mode = 2D mode
RVIDs	Right Ventricle	(20305-9, LN, "Right Ventricular Internal Systolic Dimension")	Image Mode = 2D mode
RVAWd	Right Ventricle	(18153-7, LN, “Right Ventricle Anterior Wall Diastolic Thickness”)	Image Mode = 2D mode
RVAWs	Right Ventricle	(18157-8, LN, “Right Ventricular Anterior Wall Systolic Thickness”)	Image Mode = 2D mode
TAPSE	Right Ventricle	(99105-16, MDSN, Tricuspid Annular Plane Systolic Excursion)	Image Mode = M mode
LVIDd	Left Ventricle	(29436-3, LN, “Left Ventricle Internal End Diastolic Dimension”)	Image Mode = M mode
LVIDs	Left Ventricle	(29438-9, LN, “Left Ventricle Internal Systolic Dimension”)	Image Mode = M mode
Frac Short	Left Ventricle	(18051-3, LN, “Left Ventricular Fractional Shortening”)	Image Mode = M mode
IVSd	Left Ventricle	(18154-5, LN, “Interventricular Septum Diastolic Thickness”)	Image Mode = M mode

IVSs	Left Ventricle	(18158-6, LN, “Interventricular Septum Systolic Thickness”)	Image Mode = M mode
IVS% Thickening	Left Ventricle	(18054-7, LN, “Interventricular Septum % Thickening”)	Image Mode = M mode
LVPWd	Left Ventricle	(18152-9, LN, “Left Ventricle Posterior Wall Diastolic Thickness”)	Image Mode = M mode
LVPWs	Left Ventricle	(18156-0, LN, “Left Ventricle Posterior Wall Systolic Thickness”)	Image Mode = M mode
MAPSE	Left Ventricle	(99104-10, MDSN, “Mitral Annular Plane Systolic Excursion”)	Image Mode = M mode
LVPW% Thickening	Left Ventricle	(18053-9, LN, “Left Ventricle Posterior Wall % Thickening”)	Image Mode = M mode
IVSd/LVPWd IVSs/LVPWs	Left Ventricle	(18155-2, LN, “Interventricular Septum to Posterior Wall Thickness Ratio”)	Image Mode = M mode
Vol.d(Teichholz)	Left Ventricle	(18026-5, LN, “Left Ventricular End Diastolic Volume”)	Image Mode = M mode Measurement Method = Teichholz
Vol.d(Cubed)	Left Ventricle	(18026-5, LN, “Left Ventricular End Diastolic Volume”)	Image Mode = M mode Measurement Method = Teichholz
Vol.s(Teichholz)	Left Ventricle	(18148-7, LN, “Left Ventricular End Systolic Volume”)	Image Mode = M mode
Vol.s(Cubed)	Left Ventricle	(18148-7, LN, “Left Ventricular End Systolic Volume”)	Image Mode = M mode
EF	Left Ventricle	(18043-0, LN, “Left Ventricular Ejection Fraction”)	Image Mode = M mode
SV	Left Ventricle	(F-32120, SRT, “Stroke Volume”)	Image Mode = M mode
SI	Left Ventricle	(F-00078, SRT, "Stroke Index")	Image Mode = M mode
CO	Left Ventricle	(F-32100, SRT, “Cardiac Output”)	Image Mode = M mode
CI	Left Ventricle	(F-32110, SRT, “Cardiac Index”)	Image Mode = M mode
Mass	Left Ventricle	(18087-7, LN, “Left Ventricle Mass”)	Image Mode = M mode
RVIDd	Left Ventricle	(20304-2, LN, “Right Ventricular Internal Diastolic Dimension”)	Image Mode = M mode
RVIDs	Left Ventricle	(20305-9, LN, "Right Ventricular Internal Systolic Dimension")	Image Mode = M mode
RVAWd	Left Ventricle	(18153-7, LN, “Right Ventricle Anterior Wall Diastolic Thickness”)	Image Mode = M mode

RVAWs	Left Ventricle	(18157-8, LN, “Right Ventricular Anterior Wall Systolic Thickness”)	Image Mode = M mode
A4C d Length	Left Ventricle	(29436-3, LN, “Left Ventricle Internal End Diastolic Dimension”)	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C d Length	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method of Disks, Single Plane
A4C s Length	Left Ventricle	(29438-9, LN, “Left Ventricle Internal Systolic Dimension”)	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C s Length	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method of Disks, Single Plane
A4C d Area	Left Ventricle	(G-0375, SRT, "Left Ventricular Diastolic Area")	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C d Area	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method of Disks, Single Plane
LVAd SAX MV	Left Ventricle		Image Mode = 2D mode Image View = Parasternal short axis Measurement Method = \Bullet Method
A4C s Area	Left Ventricle	(G-0374, SRT, "Left Ventricular Systolic Area")	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C s Area	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method of

			Disks, Single Plane
LVAs SAX MV	Left Ventricle		Image Mode = 2D mode Image View = Parasternal short axis Measurement Method = Bullet Method
A4C Vol.d	Left Ventricle	(18026-5, LN, “Left Ventricular End Diastolic Volume”)	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C Vol.d	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method of Disks, Single Plane
BP Vol.d	Left Ventricle		Image Mode = 2D mode Measurement Method = Method of Disks, Biplane
A4C Vol.s	Left Ventricle	(18148-7, LN, “Left Ventricular End Systolic Volume”)	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C Vol.s	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method of Disks, Single Plane
BP Vol.s	Left Ventricle		Image Mode = 2D mode Measurement Method = Method of Disks, Biplane
A4C EF	Left Ventricle	(18043-0, LN, “Left Ventricular Ejection Fraction”)	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C EF	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method of Disks, Single Plane

BP EF	Left Ventricle		Image Mode = 2D mode Measurement Method = Method of Disks, Biplane
EF(Bullet)	Left Ventricle		Image Mode = 2D mode Measurement Method = Bullet Method
A4C SV	Left Ventricle	(F-32120, SRT, “Stroke Volume”)	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C SV	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method Of Disks, Single Plane
BP SV	Left Ventricle		Image Mode = 2D mode Measurement Method = Method of Disks, Biplane
SV (Bullet)	Left Ventricle		Image Mode = 2D mode Measurement Method = Bullet Method
A4C SI	Left Ventricle	(F-00078, SRT, "Stroke Index")	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C SI	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method Of Disks, Single Plane
BP SI	Left Ventricle		Image Mode = 2D mode Measurement Method = Method of Disks, Biplane
A4C CO	Left Ventricle	(F-32100, SRT, “Cardiac Output”)	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C CO	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method Of

			Disks, Single Plane
BP CO	Left Ventricle		Image Mode = 2D mode Measurement Method = Method of Disks, Biplane
CO (Bullet)	Left Ventricle		Image Mode = 2D mode Measurement Method = Bullet Method
A4C CI	Left Ventricle	(F-32110, SRT, “Cardiac Index”)	Image Mode = 2D mode Image View = Apical Four Chamber Measurement Method = Method Of Disks, Single Plane
A2C CI	Left Ventricle		Image Mode = 2D mode Image View = Apical Two Chamber Measurement Method = Method Of Disks, Single Plane
BP CI	Left Ventricle		Image Mode = 2D mode Measurement Method = Method of Disks, Biplane
CI (Bullet)	Left Ventricle		Image Mode = 2D mode Measurement Method = Bullet Method
Vol.d	Left Ventricle	(18026-5, LN, “Left Ventricular End Diastolic Volume”)	Image Mode = 2D mode Measurement Method = Area-Length Single Plane
Vol.s	Left Ventricle	(18148-7, LN, “Left Ventricular End Systolic Volume”)	Image Mode = 2D mode Measurement Method = Area-Length Single Plane
EF	Left Ventricle	(18043-0, LN, “Left Ventricular Ejection Fraction”)	Image Mode = 2D mode Measurement Method = Area-Length Single Plane
SV	Left Ventricle	(F-32120, SRT, “Stroke Volume”)	Image Mode = 2D mode Measurement Method = Area-Length Single Plane
SI	Left Ventricle	(F-00078, SRT, "Stroke Index")	Image Mode = 2D mode Measurement Method = Area-Length Single Plane
SI (Bullet)	Left Ventricle	(F-00078, SRT, "Stroke Index")	Image Mode = 2D mode

			Measurement Method = Bullet Method
CO	Left Ventricle	(F-32100, SRT, “Cardiac Output”)	Image Mode = 2D mode Measurement Method = Area-Length Single Plane Image Mode = 2D mode
CI	Left Ventricle	(F-32110, SRT, “Cardiac Index”)	Measurement Method = Area-Length Single Plane
LVAd sax	Left Ventricle	(G-0375, SRT, "Left Ventricular Diastolic Area")	Image Mode = 2D mode Image View = Parasternal short axis
LVAs sax	Left Ventricle	(G-0374, SRT, "Left Ventricular Systolic Area")	Image Mode = 2D mode Image View = Parasternal short axis
LVLd apical	Left Ventricle	(18077-8, LN, "Left Ventricle diastolic major axis")	Image Mode = 2D mode
LVLd apical (Bullet)	Left Ventricle	(18077-8, LN, "Left Ventricle diastolic major axis")	Image Mode = 2D mode Measurement Method = Bullet Method
LVLs apical	Left Ventricle	(18076-0, LN, "Left Ventricle systolic major axis")	Image Mode = 2D mode
LVLs apical (Bullet)	Left Ventricle	(18076-0, LN, "Left Ventricle systolic major axis")	Image Mode = 2D mode Measurement Method = Bullet Method
Vol.d	Left Ventricle	(18026-5, LN, “Left Ventricular End Diastolic Volume”)	Image Mode = 2D mode
Vol.s	Left Ventricle	(18148-7, LN, “Left Ventricular End Systolic Volume”)	Image Mode = 2D mode
EF	Left Ventricle	(18043-0, LN, “Left Ventricular Ejection Fraction”)	Image Mode = 2D mode
SV	Left Ventricle	(F-32120, SRT, “Stroke Volume”)	Image Mode = 2D mode
SI	Left Ventricle	(F-00078, SRT, "Stroke Index")	Image Mode = 2D mode
CO	Left Ventricle	(F-32100, SRT, “Cardiac Output”)	Image Mode = 2D mode
CI	Left Ventricle	(F-32110, SRT, “Cardiac Index”)	Image Mode = 2D mode
Frac. Short	Left Ventricle	(18051-3, LN, “Left Ventricular Fractional Shortening”)	Image Mode = 2D mode
Frac. Area Change	Left Ventricle	(G-0376, SRT, “Left Ventricular Fractional Area Change”)	Image Mode = 2D mode
LVAd sax epi	Left Ventricle	(G-0379, SRT, “Left Ventricle Epicardial Diastolic Area, psax pap view”)	Image Mode = 2D mode

LVLd apical	Left Ventricle	(18077-8, LN, "Left Ventricle diastolic major axis")	Image Mode = 2D mode
LV Mass	Left Ventricle	(18087-7, LN, “Left Ventricle Mass”)	Image Mode = 2D mode
RVIDd	Right Ventricle	(20304-2, LN, “Right Ventricular Internal Diastolic Dimension”)	Image Mode = 2D mode
RVIDs	Right Ventricle	(20305-9, LN, "Right Ventricular Internal Systolic Dimension")	Image Mode = 2D mode
RVAWd	Right Ventricle	(18153-7, LN, “Right Ventricle Anterior Wall Diastolic Thickness”)	Image Mode = 2D mode
RVAWs	Right Ventricle	(18157-8, LN, “Right Ventricular Anterior Wall Systolic Thickness”)	Image Mode = 2D mode
MPA Diam	Right Ventricle	(18020-8, LN, “Main Pulmonary Artery Diameter”)	
RPA Diam	Right Ventricle	(18021-6, LN, “Right Pulmonary Artery Diameter”)	
LPA Diam	Right Ventricle	(18019-0, LN, “Left Pulmonary Artery Diameter”)	
RVIDd	Right Ventricle	(20304-2, LN, “Right Ventricular Internal Diastolic Dimension”)	Image Mode = M mode
RVIDs	Right Ventricle	(20305-9, LN, "Right Ventricular Internal Systolic Dimension")	Image Mode = M mode
RVAWd	Right Ventricle	(18153-7, LN, “Right Ventricle Anterior Wall Diastolic Thickness”)	Image Mode = M mode
RVAWs	Right Ventricle	(18157-8, LN, “Right Ventricular Anterior Wall Systolic Thickness”)	Image Mode = M mode
LA Diam	Left Atrium	(29469-4, LN, “Left Atrium Antero-posterior Systolic Dimension”)	Image Mode = 2D mode
LA Area	Left Atrium	(17977-0, LN, “Left Atrium Systolic Area”)	Image Mode = 2D mode
LA Vol.	Left Atrium	(G-0383, SRT, “Left Atrium Systolic Volume”)	Image Mode = 2D mode
Ao Root	Aorta	(18015-8, LN, Aortic Root Diameter)	Image Mode = 2D mode
LA Diam.	Left Atrium	(29469-4, LN, “Left Atrium Antero-posterior Systolic Dimension”)	Image Mode = 2D mode
LA/Ao	Left Atrium	(17985-3, LN, “Left Atrium to Aortic Root Ratio”)	Image Mode = 2D mode
LVOT Diam	Left Ventricular	(G-038F, SRT, “Cardiovascular Orifice	

	Outflow Tract	Diameter”)	
Asc Ao	Aorta	(18012-5, LN, “Ascending Aortic Diameter”)	
Desc Ao	Aorta	(18013-3, LN, “Descending Aortic Diameter”)	
Ao Arch	Aorta	(18011-7, LN, “Aortic Arch Diameter”)	
Ao Isth Diam	Aorta	(18014-1, LN, “Aortic Isthmus Diameter”)	
Ao Root	Aorta	(18015-8, LN, “Aortic Root Diameter”)	Image Mode = M mode
AV Cusp Sep	AV	(17996-0, LN, “Aortic Valve Cusp Separation”)	Image Mode = M mode
LA Diam.	Left Atrium	(29469-4, LN, “Left Atrium Antero-posterior Systolic Dimension”)	Image Mode = M mode
LA/Ao	Left Atrium	(17985-3, LN, “Left Atrium to Aortic Root Ratio”)	Image Mode = M mode
RAP	Right Atrium	(G-0380, SRT, “Right Ventricular Peak Systolic Pressure”)	
RAAs	Right Atrium	(17988-7, LN, “Right Atrium Systolic Area”)	
IVC Diam Ins.	Right Atrium	(18006-7, LN, “Inferior Vena Cava Diameter”)	Respiratory Cycle Point = During Inspiration
IVC Diam Exp.	Right Atrium	(18006-7, LN, “Inferior Vena Cava Diameter”)	Respiratory Cycle Point = During Expiration
IVC % Change	Right Atrium	(18050-5, LN, “Inferior Vena Cava % Collapse”)	
LVOT Diam	Left Ventricular Outflow Tract	(G-038F, SRT, “Cardiovascular Orifice Diameter”)	Image Mode = 2D mode
LVOT Area	Left Ventricular Outflow Tract	(G-038E, SRT, “Cardiovascular Orifice Area”)	Image Mode = 2D mode
Vmax	Left Ventricular Outflow Tract	(11726-7, LN, “Peak Velocity”)	
Pgmax	Left Ventricular Outflow Tract	(20247-3, LN, “Peak Gradient”)	
Vmean	Left Ventricular Outflow Tract	(20352-1, LN, “Mean Velocity”)	
Pgmean	Left Ventricular Outflow Tract	(20256-4, LN, “Mean Gradient”)	
VTI	Left Ventricular Outflow Tract	(20354-7, LN, “Velocity Time Integral”)	

AccT	Left Ventricular Outflow Tract	(20168-1, LN, “Acceleration Time”)	
SV	Left Ventricular Outflow Tract	(F-32120, SRT, “Stroke Volume”)	
CO	Left Ventricular Outflow Tract	(F-32100, SRT, “Cardiac Output”)	
RVOT Diam	Right Ventricular Outflow Tract	(G-038F, SRT, "Cardiovascular Orifice Diameter")	
RVOT Area	Right Ventricular Outflow Tract	(G-038E, SRT, “Cardiovascular Orifice Area”)	
PVA(Vmax)	Right Ventricular Outflow Tract	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Continuity Equation by Peak Velocity
TVA(Vmax)	Right Ventricular Outflow Tract	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Continuity Equation by Peak Velocity
Vmax	Right Ventricular Outflow Tract	(11726-7, LN, “Peak Velocity”)	
Vmean	Right Ventricular Outflow Tract	(20352-1, LN, “Mean Velocity“)	
Pgmax	Right Ventricular Outflow Tract	(20247-3, LN, “Peak Gradient”)	
Pgmean	Right Ventricular Outflow Tract	(20256-4, LN, “Mean Gradient”)	
VTI	Right Ventricular Outflow Tract	(20354-7, LN, “Velocity Time Integral”)	
SV	Right Ventricular Outflow Tract	(F-32120, SRT, “Stroke Volume”)	

CO	Right Ventricular Outflow Tract	(F-32100, SRT, “Cardiac Output”)	
AV Cusp	Aortic Valve	(17996-0, LN, "Aortic Valve Cusp Separation")	Image Mode = 2D mode
AV Diam	Aortic Valve	(G-038F, SRT, "Cardiovascular Orifice Diameter”)	Image Mode = 2D mode
AVA Planimetry	Aortic Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Image Mode = 2D mode Measurement Method = Planimetry
AVA(Vmax)	Aortic Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Continuity Equation by Peak Velocity
AVA(VTI)	Aortic Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Continuity Equation by Velocity Time Integral
AV Vmax	Aortic Valve	(11726-7, LN, “Peak Velocity”)	
AV Vmean	Aortic Valve	(20352-1, LN, “Mean Velocity“)	
AV PGmax	Aortic Valve	(20247-3, LN, “Peak Gradient”)	
AV PGmean	Aortic Valve	(20256-4, LN, “Mean Gradient”)	
AV PHT	Aortic Valve	(20280-4, LN, “Pressure Half-Time”)	
AV VTI	Aortic Valve	(20354-7, LN, “Velocity Time Integral”)	
AV AccT	Aortic Valve	(20168-1, LN, “Acceleration Time”)	
AV DecT	Aortic Valve	(20217-6, LN, "Deceleration Time")	
AV Dec	Aortic Valve	(20216-8, LN, "Deceleration Slope"	
AV EjectT	Aortic Valve	(18041-4, LN, Aortic Valve Ejection Time)	
AV AccT/ET	Aortic Valve	(G-0382, SRT, “Ratio of Aortic Valve Acceleration Time to Ejection Time”)	
AR VC Diam	Aortic Valve	(G-038F, SRT, “Cardiovascular Orifice Diameter”)	Image Mode = 2D mode Flow Direction = Regurgitant Flow
AR Vmax	Aortic Valve	(11726-7, LN, “Peak Velocity”)	
AR Vmean	Aortic Valve	(20352-1, LN, “Mean Velocity“)	
AR PGmax	Aortic Valve	(20247-3, LN, “Peak Gradient”)	
AR PGmean	Aortic Valve	(20256-4, LN, “Mean Gradient”)	
AR PHT	Aortic Valve	(20280-4, LN, “Pressure Half-Time”)	
AR VTI	Aortic Valve	(20354-7, LN, “Velocity Time Integral”)	
AR AccT	Aortic Valve	(20168-1, LN, “Acceleration Time”)	
AR DecT	Aortic Valve	(20217-6, LN, "Deceleration Time")	

AR Dec	Aortic Valve	(20216-8, LN, "Deceleration Slope"	
AR PISA Rad.	Aortic Valve	(G-038F, SRT, "Cardiovascular Orifice Diameter”)	Image Mode = 2D mode Measurement Method = Proximal Isovelocity Surface Area
AR Flow Rate	Aortic Valve	(34141-2, LN, "Peak Instantaneous Flow Rate")	
AR ERO	Aortic Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Proximal Isovelocity Surface Area
AR Volume	Aortic Valve	(33878-0, LN, “Volume Flow”)	Measurement Method = Proximal Isovelocity Surface Area
AR Fraction	Aortic Valve	(G-0390-4, SRT, “Regurgitant Fraction”)	
AV IVRT	Aortic Valve	(18071-1, LN, “Left Ventricular Isovolumic Relaxation Time”)	
AV IVCT	Aortic Valve	(G-037E, SRT, “Left Ventricular Isovolumic Contraction Time”)	
Tei Index	Aortic Valve	(G-037F, SRT, “Left Ventricular Index of Myocardial Performance”)	
E-F Slope	Mitral Valve	(18040-6, LN, “Mitral Valve E-F Slope by M-Mode”)	
EPSS	Mitral Valve	(18036-4, LN, “Mitral Valve EPSS, E wave”)	
MV Ann Diam	Mitral Valve	(G-038F, SRT, “Cardiovascular Orifice Diameter”)	Image Mode = 2D mode Finding Site = Mitral Annulus Flow Direction = Antegrade Flow
Diam1	Mitral Valve	(G-038F, SRT, “Cardiovascular Orifice Diameter”)	Image Mode = 2D mode
Diam2	Mitral Valve	(G-038F, SRT, “Cardiovascular Orifice Diameter”)	Image Mode = 2D mode
MVA Planimetry	Mitral Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Planimetry
MVArea	Mitral Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Image Mode = 2D mode
MVA(Vmax)	Mitral Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Continuity Equation by Peak Velocity
MVA(PHT)	Mitral Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Flow Direction = Antegrade Flow Measurement Method = Area by PHT
MVA(VTI)	Mitral Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Continuity Equation by Velocity Time Integral

MV Peak A	Mitral Valve	(17978-8, LN, “Mitral Valve A-Wave Peak Velocity”)	
MV Peak E	Mitral Valve	(18037-2, LN, “Mitral Valve E-Wave Peak Velocity”)	
MV E/A	Mitral Valve	(18038-0, LN, “Mitral Valve E to A Ratio”)	
MV Vmax	Mitral Valve	(11726-7, LN, “Peak Velocity”)	Flow Direction = Antegrade Flow
MV Vmean	Mitral Valve	(20352-1, LN, “Mean Velocity”)	Flow Direction = Antegrade Flow
MV PGmax	Mitral Valve	(18057-0, LN, “Mitral Valve Diastolic Peak Instantaneous Gradient”)	Flow Direction = Antegrade Flow
MV PGmean	Mitral Valve	(20256-4, LN, “Mean Gradient”)	Flow Direction = Antegrade Flow
MV PHT	Mitral Valve	(20280-4, LN, “Pressure Half-Time”)	Flow Direction = Antegrade Flow
MV VTI	Mitral Valve	(20354-7, LN, “Velocity Time Integral”)	Flow Direction = Antegrade Flow
MV AccT	Mitral Valve	(20168-1, LN, “Acceleration Time”)	Flow Direction = Antegrade Flow
MV DecT	Mitral Valve	(20217-6, LN, "Deceleration Time")	Flow Direction = Antegrade Flow
MV Dec	Mitral Valve	(20216-8, LN, "Deceleration Slope"	Flow Direction = Antegrade Flow
MV AccT/DecT	Mitral Valve	(G-0386, SRT, “Mitral Valve AT/DT Ratio”)	
MV A Dur	Mitral Valve	(G-0385, SRT, "Mitral Valve A-Wave Duration")	
SV	Mitral Valve	(F-32120, SRT, “Stroke Volume”)	
CO	Mitral Valve	(F-32100, SRT, “Cardiac Output”)	
MV IVRT	Mitral Valve	(18071-1, LN, “Left Ventricular Isovolumic Relaxation Time”)	
MV IVCT	Mitral Valve	(G-037E, SRT, “Left Ventricular Isovolumic Contraction Time”)	
Tei Index	Mitral Valve	(G-037F, SRT, "Left Ventricular Index of Myocardial Performance ")	
MR Vmax	Mitral Valve	(11726-7, LN, “Peak Velocity”)	Flow Direction = Regurgitant Flow
MR Vmean	Mitral Valve	(20352-1, LN, “Mean Velocity”)	Flow Direction = Regurgitant Flow
MR PGmax	Mitral Valve	(20247-3, LN, “Peak Gradient”)	Flow Direction = Regurgitant Flow
MR PGmean	Mitral Valve	(20256-4, LN, Mean Gradient”)	Flow Direction = Regurgitant Flow
MR VTI	Mitral Valve	(20354-7, LN, “Velocity Time Integral”)	Flow Direction = Regurgitant Flow
MR dp/dt	Mitral Valve	(18035-6, LN, “Mitral Regurgitation dP/dt derived from Mitral Regurgitation velocity”)	
MR PISA Rad.	Mitral Valve	(G-038F, SRT, "Cardiovascular Orifice Diameter”)	Image Mode = 2D mode Measurement Method = Proximal

			Isovelocity Surface Area
MR Flow Rate	Mitral Valve	(34141-2, LN, "Peak Instantaneous Flow Rate")	
MR ERO	Mitral Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Proximal Isovelocity Surface Area
MR Volume	Mitral Valve	(33878-0, LN, “Volume Flow”)	Measurement Method = Proximal Isovelocity Surface Area
MR Fraction	Mitral Valve	(G-0390, SRT, “Regurgitant Fraction”)	
TV Ann Diam	Tricuspid Valve	(G-038F, SRT, “Cardiovascular Orifice Diameter”)	Image Mode = 2D mode
TV Diam1	Tricuspid Valve	(G-038F, SRT, “Cardiovascular Orifice Diameter”)	Image Mode = 2D mode
TV Diam2	Tricuspid Valve	(G-038F, SRT, “Cardiovascular Orifice Diameter”)	Image Mode = 2D mode
TVA Planimetry	Tricuspid Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Image Mode = 2D mode Measurement Method = Planimetry
TV Area	Tricuspid Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Image Mode = 2D mode
TVA(VTI)	Tricuspid Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Continuity Equation by Velocity Time Integral
TV Vmax	Tricuspid Valve	(11726-7, LN, “Peak Velocity”)	Flow Direction = Antegrade Flow
TV Peak E	Tricuspid Valve	(18031-5, LN, “Tricuspid Valve E Wave Peak Velocity”)	Flow Direction = Antegrade Flow
TV Peak A	Tricuspid Valve	(18030-7, LN, “Tricuspid Valve A Wave Peak Velocity”)	Flow Direction = Antegrade Flow
TV E/A	Tricuspid Valve	(18039-8, LN, “Tricuspid Valve E to A Ratio”)	Flow Direction = Antegrade Flow
TV Vmean	Tricuspid Valve	(20352-1, LN, “Mean Velocity”)	Flow Direction = Antegrade Flow
TV PGmax	Tricuspid Valve	(20247-3, LN, “Peak Gradient”)	Flow Direction = Antegrade Flow
TV PGmean	Tricuspid Valve	(20256-4, LN, “Mean Gradient”)	Flow Direction = Antegrade Flow
TV PHT	Tricuspid Valve	(20280-4, LN, “Pressure Half-Time”)	Flow Direction = Antegrade Flow
TV VTI	Tricuspid Valve	(20354-7, LN, “Velocity Time Integral”)	Flow Direction = Antegrade Flow
TV AccT	Tricuspid Valve	(20168-1, LN, “Acceleration Time”)	Flow Direction = Antegrade Flow
TV DecT	Tricuspid Valve	(20217-6, LN, "Deceleration Time")	Flow Direction = Antegrade Flow
TV Dec	Tricuspid Valve	(20216-8, LN, "Deceleration Slope"	Flow Direction = Antegrade Flow
TV SV	Tricuspid Valve	(F-32120, SRT, “Stroke Volume”)	

TV CO	Tricuspid Valve	(F-32100, SRT, “Cardiac Output”)	
Q to TV Open	Tricuspid Valve	(20296-0, LN, “Time from Q wave to Tricuspid Valve Opens”)	
TR Vmax	Tricuspid Valve	(11726-7, LN, “Peak Velocity”)	Flow Direction = Regurgitant Flow
TR PGmax	Tricuspid Valve	(20247-3, LN, “Peak Gradient”)	Flow Direction = Regurgitant Flow
TR Vmean	Tricuspid Valve	(20352-1, LN, “Mean Velocity”)	Flow Direction = Regurgitant Flow
TR PGmean	Tricuspid Valve	(20256-4, LN, “Mean Gradient”)	Flow Direction = Regurgitant Flow
TR VTI	Tricuspid Valve	(20354-7, LN, “Velocity Time Integral”)	Flow Direction = Regurgitant Flow
RV Systolic Pressure	Tricuspid Valve	(G-0380, SRT, "Right Ventricular Peak Systolic Pressure")	
TR dp/dt	Tricuspid Valve	(18034-9, LN, "Tricuspid Regurgitation dP/dt")	
TR PISA Rad.	Tricuspid Valve	(G-038F, SRT, "Cardiovascular Orifice Diameter”)	Image Mode = 2D mode Measurement Method = Proximal Isovelocity Surface Area
TR Flow Rate	Tricuspid Valve	(34141-2, LN, "Peak Instantaneous Flow Rate")	
TR ERO	Tricuspid Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Proximal Isovelocity Surface Area
TR Volume	Tricuspid Valve	(33878-0, LN, “Volume Flow”)	Measurement Method = Proximal Isovelocity Surface Area
TR Fraction	Tricuspid Valve	(G-0390, SRT, “Regurgitant Fraction”)	
PV Ann Diam	Pulmonic Valve	(G-038F, SRT, “Cardiovascular Orifice Diameter”)	
PV Area	Pulmonic Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	
PVA Planimetry	Pulmonic Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Planimetry
PV Vmax	Pulmonic Valve	(11726-7, LN, “Peak Velocity”)	Flow Direction = Antegrade Flow
PV Vmean	Pulmonic Valve	(20352-1, LN, "Mean Velocity")	Flow Direction = Antegrade Flow
PV Pgmax	Pulmonic Valve	(20247-3, LN, “Peak Gradient”)	Flow Direction = Antegrade Flow
PV Pgmean	Pulmonic Valve	(20256-4, LN, “Mean Gradient”)	Flow Direction = Antegrade Flow
PV PHT	Pulmonic Valve	(20280-4, LN, "Pressure Half-Time")	Flow Direction = Antegrade Flow
PV VTI	Pulmonic Valve	(20354-7, LN, “Velocity Time Integral”)	Flow Direction = Antegrade Flow
PVA(VTI)	Pulmonic Valve	(G-038E, SRT, “Cardiovascular Orifice Area”)	Measurement Method = Continuity Equation by Velocity Time Integral
PV AccT	Pulmonic Valve	(20168-1, LN, “Acceleration Time”)	Flow Direction = Antegrade Flow

PV DecT	Pulmonic Valve	(20217-6, LN, "Deceleration Time")	Flow Direction = Antegrade Flow
PV Dec	Pulmonic Valve	(20216-8, LN, "Deceleration Slope"	Flow Direction = Antegrade Flow
PV ET	Pulmonic Valve	(18042-2, LN, "Pulmonic Valve Ejection Time")	
PV AccT/ET	Pulmonic Valve	(G-0388, SRT, "Ratio of Pulmonic Valve Acceleration Time to Ejection Time")	
Q to PV Close	Pulmonic Valve	(20295-2, LN, "Time from Q wave to Pulmonic Valve Closes")	
PR VC Diam	Pulmonic Valve		Image Mode = 2D mode Flow Direction = Regurgitant Flow
PR Vmax	Pulmonic Valve	(11726-7, LN, “Peak Velocity”)	Flow Direction = Regurgitant Flow
MPA Vmax	Pulmonic Valve	(G-038A, SRT, “Main Pulmonary Artery Velocity”)	
PR Vmean	Pulmonic Valve	(20352-1, LN, "Mean Velocity")	Flow Direction = Regurgitant Flow
PR Pgmax	Pulmonic Valve	(20247-3, LN, “Peak Gradient”)	Flow Direction = Regurgitant Flow
PR Pgmean	Pulmonic Valve	(20256-4, LN, “Mean Gradient”)	Flow Direction = Regurgitant Flow
PV PHT	Pulmonic Valve	(20280-4, LN, "Pressure Half-Time")	Flow Direction = Regurgitant Flow
PR AccT	Pulmonic Valve	(20168-1, LN, “Acceleration Time”)	Flow Direction = Regurgitant Flow
PR DecT	Pulmonic Valve	(20217-6, LN, "Deceleration Time")	Flow Direction = Regurgitant Flow
PR Dec	Pulmonic Valve	(20216-8, LN, "Deceleration Slope"	Flow Direction = Regurgitant Flow
Tei Index	Left Ventricle	(G-037F, SRT, “Left Ventricular Index of Myocardial Performance”)	
MV IVRT	Left Ventricle	(18071-1, LN, “Left Ventricular Isovolumic Relaxation Time”)	
MV IVCT	Left Ventricle	(G-037E, SRT, “Left Ventricular Isovolumic Contraction Time”)	
Sys Vel.	Pulmonary Venous Structure	(29450-4, LN, “Pulmonary Vein Systolic Peak Velocity”)	
Dias Vel.	Pulmonary Venous Structure	(29451-2, LN, “Pulmonary Vein Diastolic Peak Velocity”)	
Sys/Dias	Pulmonary Venous Structure	(29452-0, LN, “Pulmonary Vein Systolic to Diastolic Ratio”)	

A. Rev Vel.	Pulmonary Venous Structure	(29453-8, LN, “Pulmonary Vein Atrial Contraction Reversal Peak Velocity”)	
A. Rev Dur.	Pulmonary Venous Structure	(G-038B, SRT, “Pulmonary Vein A-Wave Duration”)	
Sys Vel.	Hepatic Vein	(29471-0, LN, “Hepatic Vein Systolic Peak Velocity”)	
Dias Vel.	Hepatic Vein	(29472-8, LN, “Hepatic Vein Diastolic Peak Velocity”)	
Sys/Dias	Hepatic Vein	(29473-6, LN, “Hepatic Vein Systolic to Diastolic Ratio”)	
A. Rev Vel.	Hepatic Vein	(29474-4, LN, “Hepatic Vein Atrial Contraction Reversal Peak Velocity”)	
Peak E'	Left Ventricle	(G-037A, SRT, “Left Ventricular Peak Early Diastolic Tissue Velocity”)	
MV E/E'	Left Ventricle	(G-037B, SRT, “Ratio of MV Peak Velocity to LV Peak Tissue Velocity E-Wave”)	
Peak A'	Left Ventricle	(G-037C, SRT, “LV Peak Diastolic Tissue Velocity During Atrial Systole”)	
Peak S	Left Ventricle	(G-037D, SRT, “Left Ventricular Peak Systolic Tissue Velocity”)	
LVOT Diam(S)	Left Ventricular Outflow Tract	(G-038F, SRT, “Cardiovascular Orifice Diameter”)	Image Mode = 2D mode
RVOT Diam(P)	Left Ventricular Outflow Tract	(G-038F, SRT, "Cardiovascular Orifice Diameter")	Image Mode = 2D mode
Sys. VTI(S)	Left Ventricular Outflow Tract	(20354-7, LN, “Velocity Time Integral”)	
Pulm. VTI(P)	Left Ventricular Outflow Tract	(20354-7, LN, “Velocity Time Integral”)	
Sys. SV(S)	Left Ventricular Outflow Tract	(F-32120, SRT, “Stroke Volume”)	
Sys. SI(S)	Left Ventricular Outflow Tract	(F-00078, SRT, "Stroke Index")	
Sys. CO(S)	Left Ventricular Outflow Tract	(F-32100, SRT, “Cardiac Output”)	

Pulm. SV(P)	Left Ventricular Outflow Tract	(F-32120, SRT, “Stroke Volume”)	
Pulm. SI(P)	Left Ventricular Outflow Tract	(F-00078, SRT, "Stroke Index")	
Pulm. CO(P)	Left Ventricular Outflow Tract	(F-32100, SRT, “Cardiac Output”)	

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