DICOM

Conformance Statement

iU22 Release 3.0.x.x
iE33 Release 3.0.x.x

453561239620009 Rev A, 2006-10-12

PHILIPS

0.1 REVISION HISTORY

Document Version	Date of Issue	Author	Description
A	October 12, 2006	M. Leif	Send on Demand New configurable MWL Query Keys Pediatric Echo SR Configurable Archive Timeouts Single frame compression – Lossless and Lossy All to Monochrome New larger image size for loops and full screen single frames on wide screen systems only

1 CONFORMANCE STATEMENT OVERVIEW

The Philips iU22 and iE33 Ultrasound systems implement the necessary DICOM® services to download worklists from an information system, save acquired US Images and Structured Reports to a network storage device, CD or DVD, print to a networked hardcopy device and inform the information system about the work actually done.

Table 1 provides an overview of the supported network services.

Table 1
NETWORK SERVICES

Networking SOP Classes	User of Service (SCU)	Provider of Service (SCP)
Transfer		
Ultrasound Image Storage	Yes*	No
Ultrasound Multiframe Image Storage	Yes*	No
Storage Commitment Push Model	Yes*	No
Comprehensive SR	Yes*	No
Private 3D Presentation State	Yes*	No
Workflow Management		
Modality Worklist	Yes*	No
Modality Performed Procedure Step	Yes*	No
Print Management		
Basic Grayscale Print Management	Yes	No
Basic Color Print Management	Yes	No

* Purchasable option “Netlink DICOM 3.0”. DICOM Printing does not require an option.

Table 2 specifies the Media Storage Application Profiles supported.

Table 2
MEDIA SERVICES

Media Storage Application Profile	Write Files (FSC or FSU)	Read Files (FSR)
Compact Disk - Recordable		
STD-US-SC-SF&MF-CDR	Yes / Yes	Yes(1)(2)
DVD		
STD-US-SC-SF&MF-DVD	Yes / Yes	Yes(1)(2)

(1) Structured Reports cannot be imported.
(2) Only reads and imports data from other Philips iE33 and iU22 systems of the same software version.

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2 TABLE OF CONTENTS

3 INTRODUCTION

3.1 AUDIENCE

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

3.2 REMARKS

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

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

The scope of this Conformance Statement is to facilitate communication between Philips Medical Systems and other vendors' Medical equipment. The Conformance Statement should be read and understood in conjunction with the DICOM Standard [DICOM]. However, by itself it is not guaranteed to ensure the desired interoperability and 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 Philips Medical Systems and non - Philips Medical Systems equipment.
— Test procedures should be defined to validate the desired level of connectivity.
— The DICOM standard will evolve to meet the users' future requirements. Philips Medical Systems is actively involved in developing the standard further and therefore reserves the right to make changes to its products or to discontinue its delivery.
— This DICOM Conformance Statement reports the implementation of two ultrasound systems, the iU22 and iE33 with software release 3.0.0.x.

3.3 DEFINITIONS, TERMS AND ABBREVIATIONS

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

Abbreviations and terms are as follows:

AE	DICOM Application Entity
AET	Application Entity Title
ASCE	Association Control Service Element
CD-R	Compact Disk Recordable
CSE	Customer Service Engineer
DICOM	Digital Imaging and Communications in Medicine
FSC	File-Set Creator
FSU	File-Set Updater
FSR	File-Set Reader
GSDF	Grayscale Standard Display Function
IOD	(DICOM) Information Object Definition

ISO	International Standard Organization
LOINC	Logical Observation Identifiers Names and Codes
MPPS	Modality Performed Procedure Step
MSPS	Modality Scheduled Procedure Step
MWL	Modality Worklist
R	Required Key Attribute
O	Optional Key Attribute
PDU	DICOM Protocol Data Unit
PDE	Patient Data Entry
SCU	DICOM Service Class User (DICOM client)
SCP	DICOM Service Class Provider (DICOM server)
SOP	DICOM Service-Object Pair
SNOMED	Systematized Nomenclature of Medicine (SRT)
U	Unique Key Attribute
US	Ultrasound

3.4 REFERENCES

[DICOM] Digital Imaging and Communications in Medicine (DICOM), NEMA PS 3.1-3.18, 2006

Integrated Healthcare Enterprise (IHE) Radiology Technical Framework, Vol. 1, Integration Profiles, version 6.0 Final Text May 20, 2005

Integrated Healthcare Enterprise (IHE) Radiology Technical Framework, Vol. 2, Transactions, version 6.0 Final Text May 18, 2005

Integrated Healthcare Enterprise (IHE) Radiology Technical Framework, Vol. 3, Transactions continued, version 6.0 Final Text May 12, 2005

Integrated Healthcare Enterprise (IHE) Cardiology Technical Framework, Vol. 1, Integration Profiles, Trial Implementation, version 2.0, June 27, 2005

Integrated Healthcare Enterprise (IHE) Cardiology Technical Framework, Vol. 2, Transactions, Trial Implementation, version 2.0, June 27, 2005

Integrated Healthcare Enterprise (IHE) Cardiology Technical Framework, supplement 2005, Cath Evidence Option and Echo Evidence Option for the Evidence Documents Profile, Trial Implementation, version 0.10, June 27, 2005

VistA DICOM Conformance Requirements for Image Acquisition Modalities in Radiology and Other Specialties, Department of Veterans Affairs, version 2.3 January 3, 2003

4 NETWORKING

4.1 IMPLEMENTATION MODEL

4.1.1 Application Data Flow

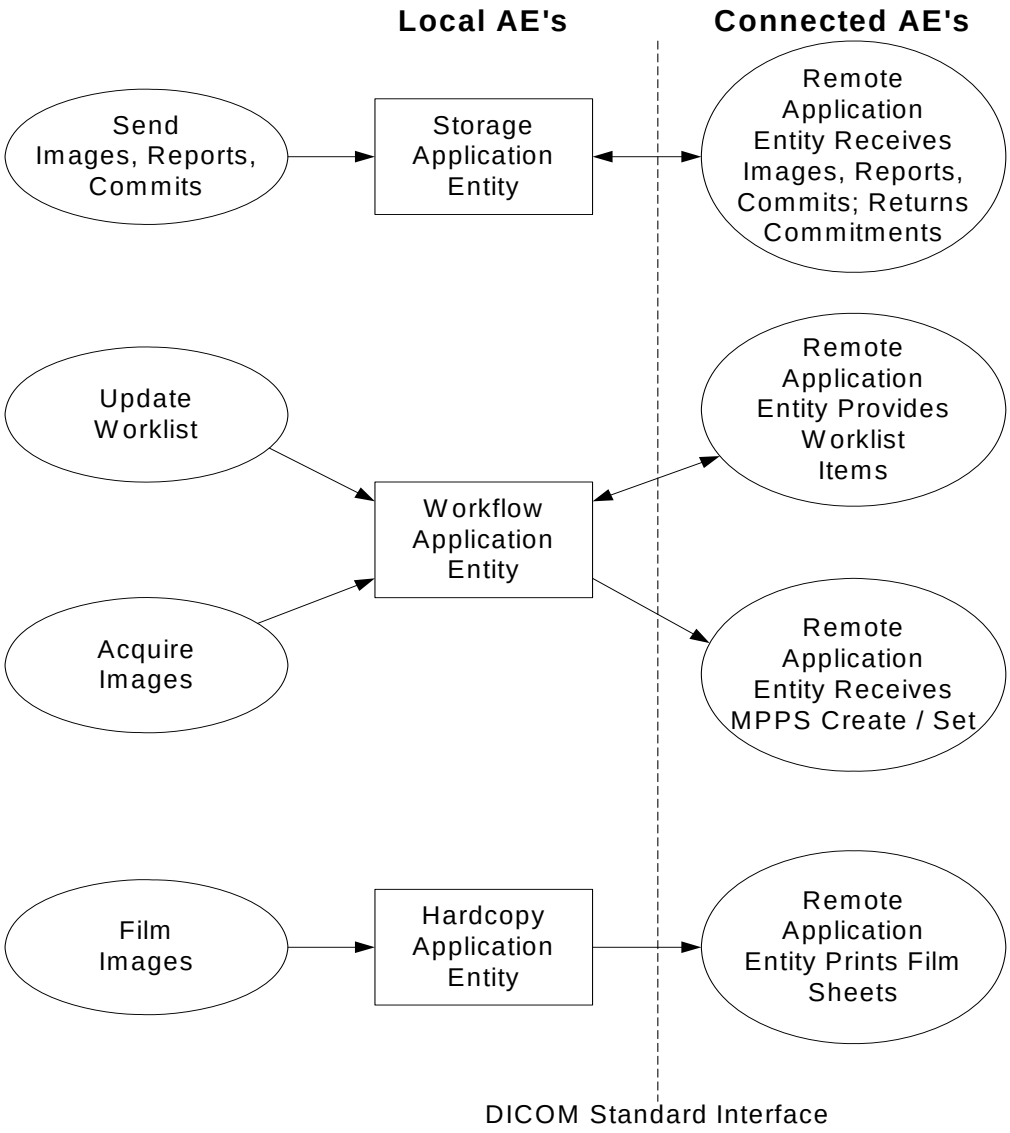

Figure 1
APPLICATION DATA FLOW DIAGRAM

— The **Storage Application Entity** sends **Images** and **Structured Reports** to a remote AE. It is associated with the local real-world activity “Print” for single frame and “Capture” for Multiframe or Cineloops on iU22, and “Freeze” then “Acquire” for single frame and “Acquire” for loops or clips on the iE33. Sending of images depends on user configuration, either “After Each Print/Capture” for iU22 and “After Each Print/Acquire” for iE33, or “At End of Exam” with or without “Send on Demand.” Sending Structured Reports occurs at End of Exam or images and SRs

are sent when Send on Demand is pressed. An exam may be sent by user selection from the Patient Directory (PDIR) using "Review". If configured for After Each, images are transferred immediately after acquisition. The association remains open for 10 minutes, and then closes. If the remote AE is configured for Storage Commitment, the Storage AE will request Storage Commitment after End Exam. If a commitment response is successfully obtained, this information is recorded in the local database, placing a checkmark in the commit portion of the Patient Directory display and signaling the Auto-delete function that the exam qualifies for deletion.

— 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", "Patient Search" and "Acquire Images". When either the "Update Worklist" or "Patient Search" 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 is performed automatically at specific time intervals. "Patient Search" is manually initiated.

- MPPS N-Create, Status = IN PROGRESS:
  - Acquisition of images using "Print", "Capture" or "Acquire" will result in automated creation of an MPPS Instance managed by a remote AE.
- MPPS N-Set, Status = COMPLETE
  - Completion of the MPPS is performed as the result of an operator action of ending the exam.
- MPPS N-Set, Status = DISCONTINUED
  - "Cancel Exam" causes the "Discontinued" status to be sent. A "Paused" exam does not initiate an MPPS event.

— The ability to **Append** images and SRs to an ended exam is available since software version 2.0.0.x. There are two fundamental methods to perform append:

- Append from Patient Directory
  - Select an Ended study from the Patient Directory.
    - Select the study; choose "Append." Two options are available:
      - "Add" (if less than 24 hours old), allows images to be added to the original Study, using the same Study Instance UID, and a new Series Instance UID. If more than 24 hours old, only "Create" will be available.
      - "Create", which will create a new Study Instance UID.
      - Study Status will be "Ended"
      - The choice of which option to use is dependent on the behavior of the SCP to which the data is sent.
- Append from Image Review
  - Select the exam from the Patient Directory. Select "Display Exams" to review images.
    - Select an image for full-screen display
      - iU22: "Capture" or "Print"
      - iE33: "Freeze > Acquire", "Acquire" or "Create Subpage"
    - A message is displayed at the bottom of the screen, "Creating a new exam for append…"
    - Study Status of new exam in the Patient Directory will be "Appended" after exiting review.
- Default behavior is selectable via the Print/Network configuration screen for Append from Image Review – Create Study Instance UID:
  - iU22 – Enabled by Default
  - iE33 – Disabled by Default
- For Exams appended by creating the image from Image Review and changing visualization of the existing images, for example, changing chroma map, added images would have the same Date/Time stamp of the original images in which the images were acquired. This is not the case for append from Patient Directory, which creates completely new images with the current date and time.

- Study Date on the Report page on the iU22 or iE33 system refers to the date of an exam in which the evidences were acquired. This is exported as DICOM Study Date. This includes all Appended and Non-Appended exams.
- For Exams appended from Image Review, the Report footer on the iU22 or iE33 system has the statement "Appended: " followed by the date in which the exam is started for Appending/Appended exams from Image Review. This is exported as DICOM Performed Procedure Step Start Date. The statement is not displayed for Non-Appended Exams and Appended exams from Patient Directory.
- SR Vendors shall refer to DICOM Study Date to determine the date of the original exam in which the evidences were acquired and refer to DICOM Performed Procedure Step Start Date for the date of Appended exam.

— **Send on Demand** allows for sending images (US Image, US MF Image) and/or Structured Report during an active exam. Print images will be sent without requiring a full page or end exam. System export setting must be "End of Exam" for Send on Demand to be available, as indicated by a new icon located at the bottom center of the system display after acquiring the first image of the study,

— The **Hardcopy Application Entity** prints images on a remote AE (Printer or print server). It is associated with the local real-world activity "Print" for iU22 or "Freeze" then "Acquire" from iE33. Either user action creates a print queue containing one or more virtual film sheets composed from images acquired by the user. It creates and sends fully rendered pages already containing the user's selected formatting choices. Only a single image object per sheet is sent to the printer. This print object is rather large compared to sending individual Image Box objects to the printer. If the user has both a BW and Color DICOM printer configured and selected, and is using "After Each Print/Capture (or Acquire)", the images containing no Color Flow or Chroma data will be sent to the BW printer, all others will be sent to the Color printer.

— Exam data is sent to all selected Store, Print and Workflow destinations simultaneously in accordance with system configuration of "After Each Print/Capture (or Acquire)" or "At End of Exam", unless Send on Demand is enabled resulting in images and updated Structured Reports since last Send on Demand. Writing to media is always at the end of the exam.

4.1.2 Functional Definition of AEs

4.1.2.1 Functional Definition of Storage Application Entity

The existence of a Network Store queue with associated network destination will activate the Storage AE. An association request is sent to the destination AE and upon successful negotiation of a Presentation Context the image transfer is started. If the association cannot be opened, the related queue is set to a "Failed" state, indicated by a Red dot on the Network Icon, and can be restarted by the user via the queue management interface. The user may need to cancel the queue, and then restart manually. Multiframe (loop) objects will be transferred first, then single frames when configured for End of Exam. When "Image Export Format" is selected as "monochrome", single frame images that have no Color Flow Doppler or Chroma maps applied, will export as grayscale using Monochrome2 Photometric Interpretation. Single frame images that include Color Flow Doppler will be sent as RGB. If the non-active region of a 2D/scrolling image has a chroma map, it will be sent as monochrome. The "Image Export Format" selection has no effect on loop images.

System acquisition Maximums: Number of exams on the system = 200*

Number of Frames in cineloop iU22 = 2200 and iE33 = 1000

* Unless system hard drive capacity is exceeded first

4.1.2.2 Functional Definition of Workflow Application Entity

Update Worklist attempts to download a Modality Worklist from a Modality Worklist server with studies matching the search criteria. Default Modality is US for ultrasound and the current date. A custom Modality is now possible. If the Workflow AE establishes an Association to a remote AE, it will transfer all worklist items via the open Association. The results of a successful Worklist Update will overwrite the data in the Worklist display. Specific queries for Patient Last Name, Patient ID, Accession #, Date, and Requested Procedure ID may be performed using the Patient Search.

Additional changes to Modality Worklist search include customizing to search for a different AE Title, Station Name and System Location than the values configured in the System Global Configuration screen.

There is no queue management for Worklist.

Note: A wildcard (broad) patient query can be performed by entering a * in the Patient Name field.

The Workflow AE performs the creation of a MPPS Instance automatically when the first image of a study is acquired. MPPS message queues are listed along with Image and Structured Report queues in the Network status window.

4.1.2.3 Functional Definition of Hardcopy Application Entity

The existence of a print queue will activate the Hardcopy AE. An association is established with the printer(s) and the printer's status determined. If the printer is operating normally, the film sheets will be printed. If the printer is not operating normally, the print queue will set to a "Failed" state and can be restarted by the user via the queue management interface. In the case that a user has both a BW and a Color DICOM printer configured, during an exam with "After Each Print/Capture" selected, the images that contain color data, i.e., Color Flow Doppler or Chroma, will be sent to the Color printer only, and all other images sent only to the BW printer. There is an embedded retry mechanism that retries User Recoverable errors for up to 1 hour, waiting 20 seconds between attempts.

4.1.3 Sequencing of Real-World Activities

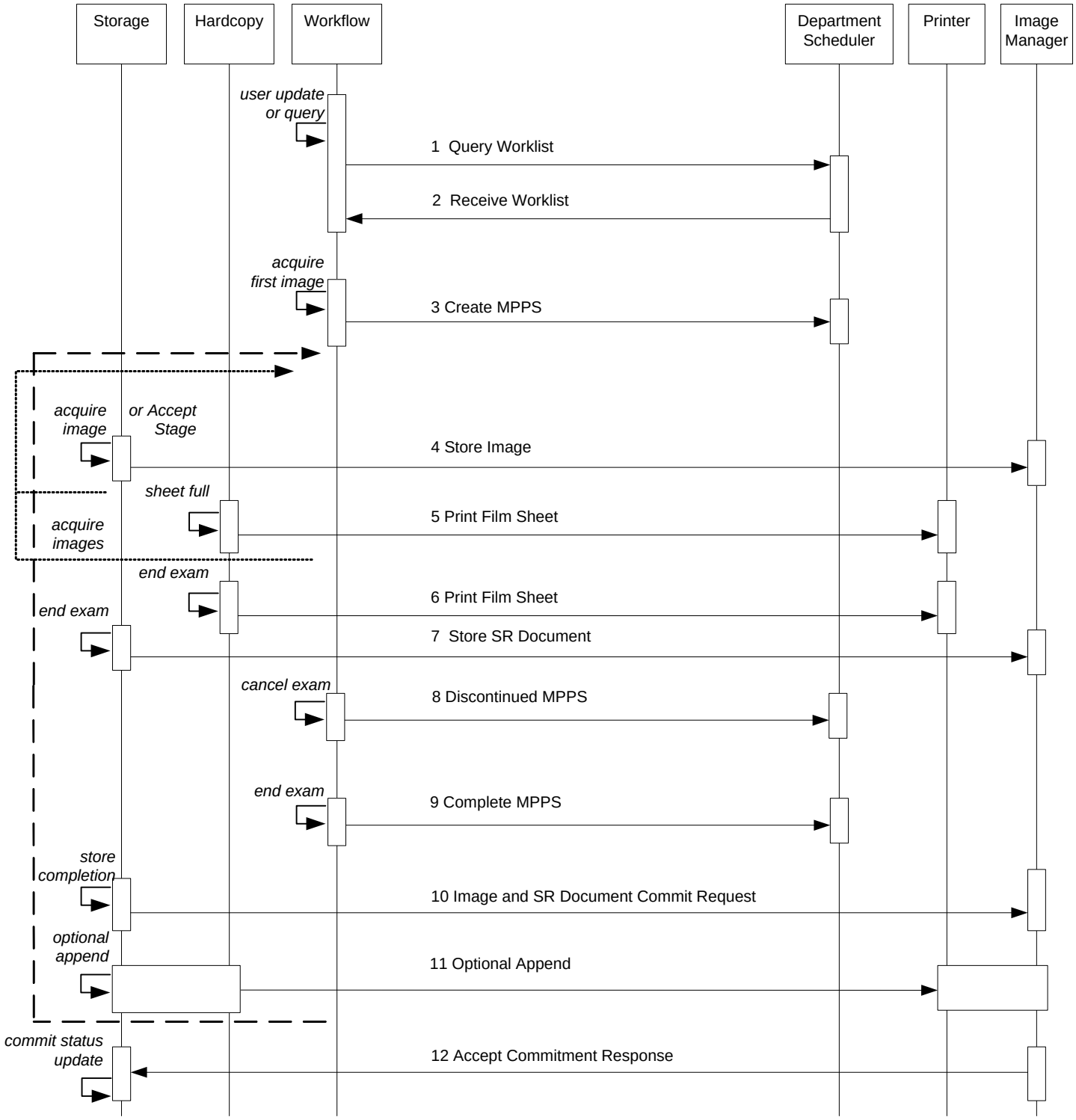

FIGURE 2A:
SEQUENCING CONSTRAINTS – AFTER EACH CONFIGURATION

Figures 2a and 2b illustrate normal scheduled workflow conditions.

Notes:

- Printing to DICOM printers may occur independent of any other DICOM activity.
- All selected store, print and workflow devices are sent data during the exam when configured for “Send After Each Print/Capture” or at “At End of Exam.” DVD will only be sent to at End of Exam.
- Selecting a study from Review for export will send to all selected devices.

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

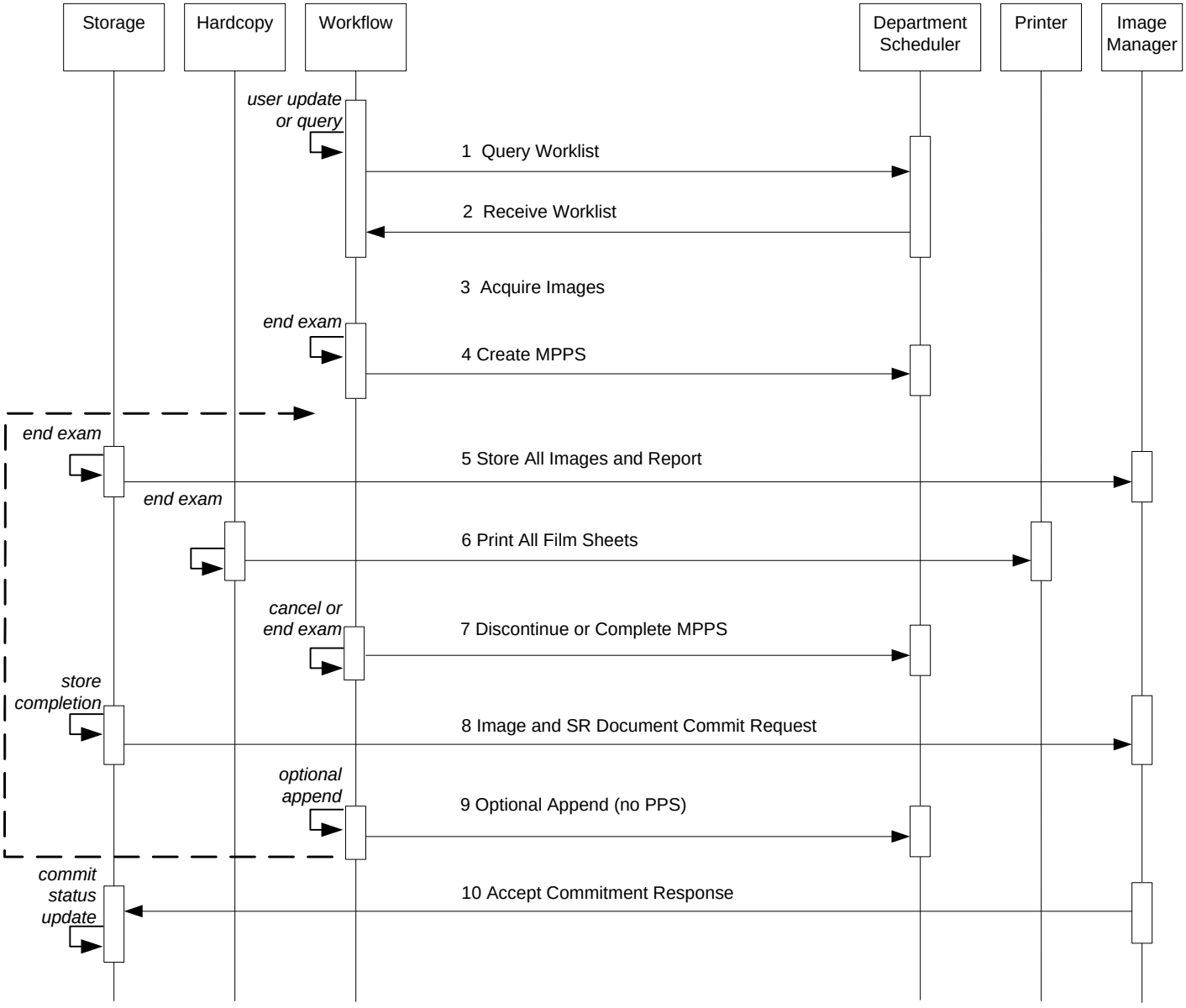

FIGURE 2B:
SEQUENCING CONSTRAINTS – END EXAM CONFIGURATION

Figures 2c Illustrates Flow Changes to Send At End of Exam with Send on Demand (SoD)

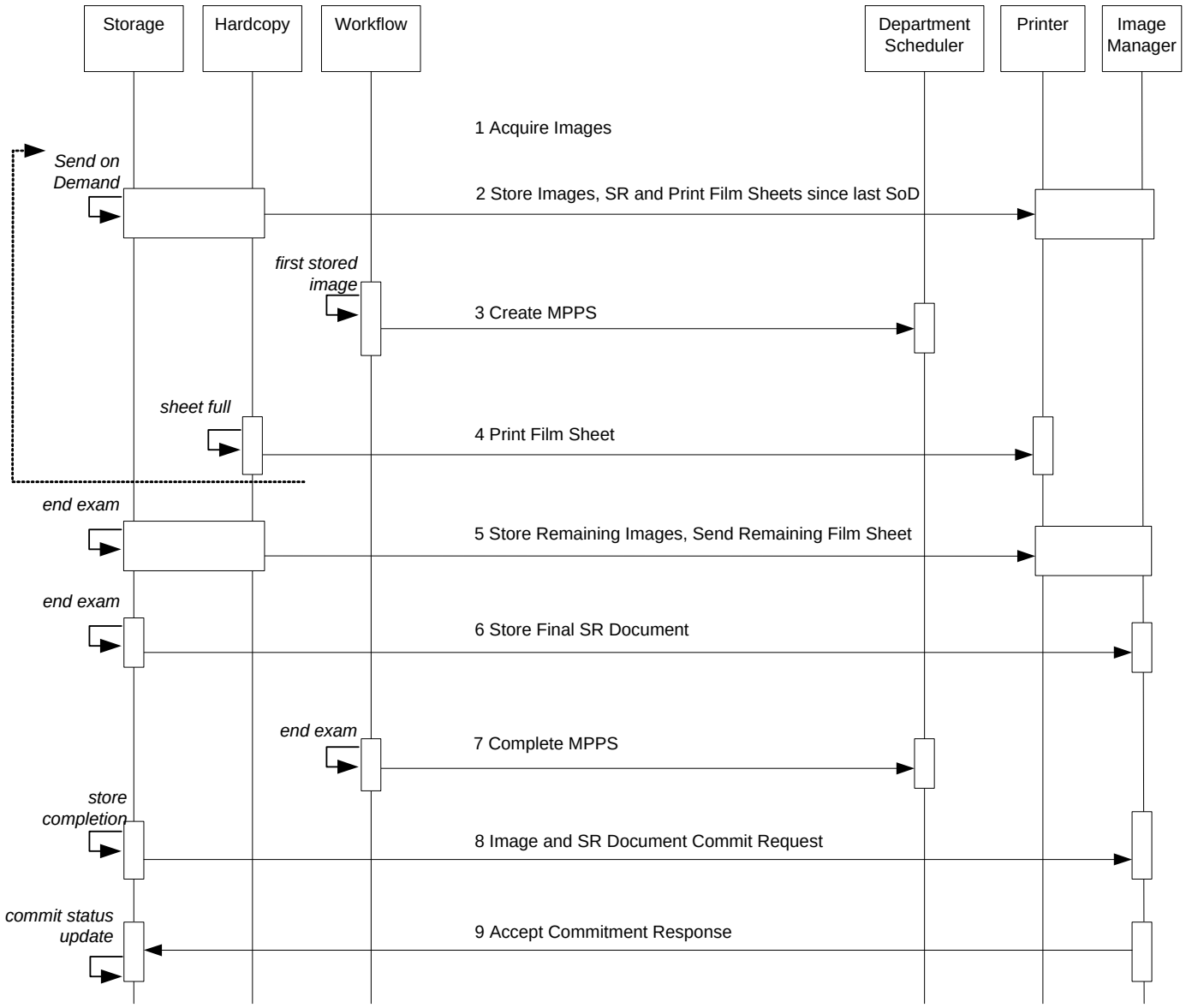

FIGURE 2C:
SEQUENCING CONSTRAINTS – SEND ON DEMAND CONFIGURATION

4.2 AE SPECIFICATIONS

4.2.1 Storage Application Entity Specification

4.2.1.1 SOP Classes

iU22 and iE33 provide Standard Extended[1] Conformance to the following SOP Classes:

Table 3
SOP CLASSES FOR AE STORAGE

SOP Class Name	SOP Class UID	SCU	SCP
US Image Storage	1.2.840.10008.5.1.4.1.1.6.1	Yes	No
US Image Storage (retired)	1.2.840.10008.5.1.4.1.1.6	Yes	No
US Multiframe Image Storage	1.2.840.10008.5.1.4.1.1.3.1	Yes	No
US Multiframe Image Storage (retired)	1.2.840.10008.5.1.4.1.1.3	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

Note: Use of Retired SOP Classes only is user configurable for the system on the Print/Network “Printer/Capture configuration page in the “Image Export” section. All image storage will use Retired SOP Classes only when selected.

4.2.1.2 Association Establishment Policy

4.2.1.2.1 General

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

Table 4
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

iU22 and iE33 initiate one Association at a time for each destination to which a transfer request is being processed in the active job queue list. Three ‘Archive’ destinations may be selected simultaneously, but only one job will be active at a time, the other(s) remain pending until the active job is completed or failed.

Table 5
NUMBER OF ASSOCIATIONS INITIATED FOR AE STORAGE

Maximum number of simultaneous Associations	5, 1 for each configured storage device

1 for each store destination, up to 3; 1 Structured Report and 1 Storage Commitment

iU22 and iE33 accept Associations for N-EVENT-REPORT notifications for the Storage Commitment Push Model SOP Class.

Table 6
NUMBER OF ASSOCIATIONS ACCEPTED FOR AE STORAGE

Maximum number of simultaneous Associations	1

4.2.1.2.3 Asynchronous Nature

iU22 and iE33 do not support asynchronous communication (multiple outstanding transactions over a single Association).

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[1] See section 8.7 for information on the Standard Extended SOP Class

Table 7
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 8
DICOM IMPLEMENTATION CLASS AND VERSION FOR AE STORAGE

Implementation Class UID	1.3.46.670589.5.2.10
Implementation Version Name	MIP5.1L4

4.2.1.3 Association Initiation Policy

4.2.1.3.1 Activity – Store Images, Loops and Structured Reports

4.2.1.3.1.1 Description and Sequencing of Activities

A user may select exams or individual images from Review and request them to be sent to multiple destinations (up to 3). Reports may not be selected individually, but are sent when “End Exam” is pressed, and when an entire study is selected from the Review Directory. Each object (single frame, Multiframe, 3D, 3D Subpage, report) is entered into the job queue. When the “Send After Each Print/Capture” option is active, the queue is serviced continuously during the exam. There is a default 10-minute timeout for “Send After Each,” after which the association is closed. Any additional images acquired during the exam will be sent on a subsequent association.

The Network Status icon reports the status of the job, Green is ok, Yellow is paused, and Red is failed. If the C-STORE 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. When a system configured with selected network destinations is used without the network connected, it is considered in “Portable” mode. Each network status Icon will be Yellow with status of “Pending” for each study acquired while the network was not connected. When returning from portable, reconnecting the network cable will initiate transfer again.

If a device is configured for Storage Commitment service, the Storage AE will transmit a separate Storage Commitment request (N-ACTION) for images and one for the report, over two separate Associations. The Storage AE can only receive an N-EVENT-REPORT request in a separate subsequent association initiated by the SCP employing PDU 54H SCP/SCU Role Negotiation in the SCP’s Association Request. It cannot receive N-Event-Report-Rq messages on the same association as the N-Action-Rq.

Structured reports will contain all supported measurements and calculations created by iU22 and iE33 even if they are not selected for display in the on-system report. Measurements or calculations that are not supported for export are listed in Appendix A in the Mapping Tables for each report and indicated by “Not Mapped”

OB-GYN study types generate OB-GYN Ultrasound Procedure Reports, Vascular or Abdominal (iU22) study measurements generate a Vascular SR report and the Adult Echo Study creates Adult Echocardiography Reports. Note that there can be more than one report instance per exam, so long as they are from different study types.

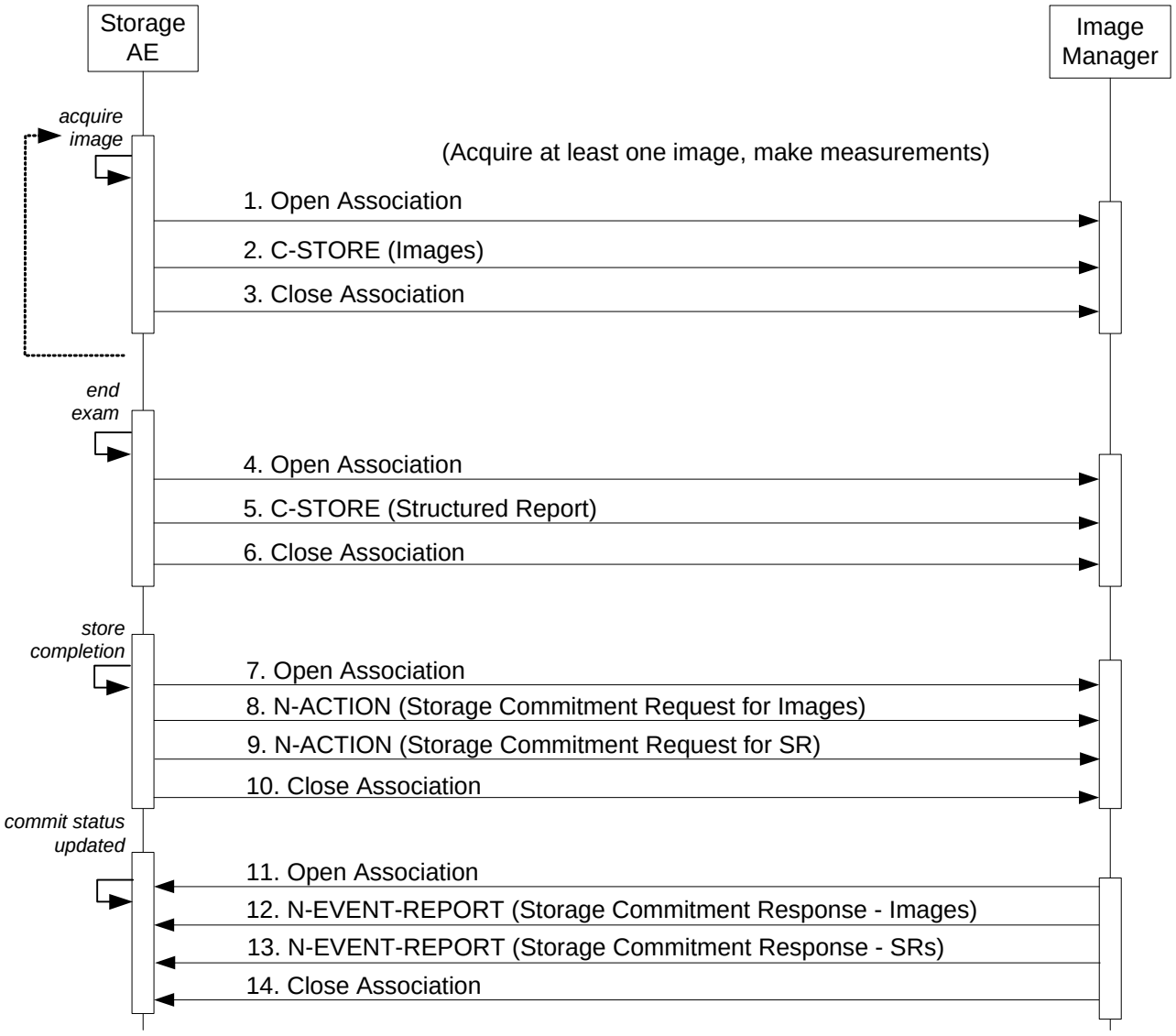


Figure 3
SEQUENCING OF ACTIVITY – SEND IMAGES AND STRUCTURED REPORT

The sequence of interactions between the Storage AE and an Image Manager is illustrated in Figure 3 for the "Store" configuration option "After Each." The alternative option, "End Exam" differs only in the removal of the loop symbol on the 'acquire images' activity

NOTES: Pausing an exam will close the current association. A new association will be created when resumed. Similar behavior when the association times out.
The N-EVENT-REPORT must be sent over a separate association initiated by the Image Manager (see Section 4.2.1.4.1 on Activity – Receive Storage Commitment Response).

4.2.1.3.1.2 Proposed Presentation Contexts

iU22 and iE33 are capable of proposing the Presentation Contexts shown in the following table:

Table 9
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY SEND IMAGES

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
US Image Storage*	1.2.840.10008.5.1.4.1.1.6.1	Implicit VR Little Endian Explicit VR Little Endian JPEG Lossy Baseline JPEG Lossless Baseline	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70	SCU	None
US Image Storage* (Retired)	1.2.840.10008.5.1.4.1.1.6	Implicit VR Little Endian Explicit VR Little Endian JPEG Lossy Baseline JPEG Lossless Baseline	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50 1.2.840.10008.1.2.4.70	SCU	None
US Multiframe Image Storage**	1.2.840.10008.5.1.4.1.1.3.1	Implicit VR Little Endian Explicit VR Little Endian JPEG Lossy Baseline	1.2.840.10008.1.2 1.2.840.10008.1.2.1 1.2.840.10008.1.2.4.50	SCU	None
US Multiframe Image Storage** (Retired)	1.2.840.10008.5.1.4.1.1.3	Implicit VR Little Endian Explicit VR Little Endian JPEG Lossy Baseline	1.2.840.10008.1.2 1.2.840.10008.1.2.1 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 Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	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
Private 3D Presentation State***	1.3.46.670589.2.5.1.1	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None

* Single frame images will be exported per the following table.
** Loops will be YBR_FULL_422 unless “Uncompressed” is selected in setups, which will produce RGB, or Monochrome2 loops, depending on system setup and image content (if Color Doppler or Chroma) listed below.
*** Intended for use only on QLAB and Xcelera workstations.

Presentation Contexts are proposed for each Archive device based on selected options. Storage Commitment N-Action Requests will only be sent to a device that is also configured as the Storage Commitment server, and a target archive is selected that images are sent to.

Monochrome Setting and resulting Image Export formats

Send Color as RGB / Non-color as Monochrome

“BW as Monochrome2 / Color as RGB”

Image Type	Color Data in Image? E.g. Color Flow or Chroma	Compression Setting	Image Exported As
Single Frame	No	Grey out as Uncompressed	Monochrome2 uncompressed
Single Frame	Yes	Grey out as Uncompressed	RGB uncompressed
Data Screen	No	Grey out as Uncompressed	Monochrome2 uncompressed
Loop	No	Uncompressed	Monochrome2 uncompressed
Loop	Yes	Uncompressed	RGB uncompressed
Loop	No	Yes	Compressed RGB (JPEG)
Loop	Yes	Yes	Compressed RGB (JPEG)

“Send ALL as Monochrome”

Image Type	Color Data in Image? E.g. Color Flow or Chroma	Compression Setting	Image Exported As
Single Frame	No	Grey out as Uncompressed	Monochrome2 uncompressed
Single Frame	Yes	Grey out as Uncompressed	Monochrome2 uncompressed
Data Screen	No	Grey out as Uncompressed	Monochrome2 uncompressed
Loop	No	Uncompressed	Monochrome2 uncompressed
Loop	Yes	Uncompressed	Monochrome2 uncompressed

“Monochrome Off”

Image Type	Color Data in Image? E.g. Color Flow or Chroma	Compression Setting	Image Exported As
Single Frame	No	Grey out as Uncompressed	Monochrome2 uncompressed
Single Frame	Yes	Grey out as Uncompressed	RGB uncompressed
Data Screen	No	Grey out as Uncompressed	Monochrome2 uncompressed

Loop	No	Uncompressed	Monochrome2 uncompressed
Loop	Yes	Uncompressed	RGB uncompressed
Loop	No	Yes	Compressed RGB (JPEG)
Loop	Yes	Yes	Compressed RGB (JPEG)

NOTE: If 'Full Screen' is selected, it applies only to single frame images and no scaling data is sent.

All Presentation Contexts are proposed for all Archive devices, unless the user selects "Implicit Little Endian Only" in the Advanced Configuration tab for the configured device. Then only Implicit Little Endian is negotiated for that device, provided the study contains no JPEG Lossy compressed loops

The Implicit Little Endian Only selection will override the Single Frame Compression setting, resulting in only uncompressed export.

Storage Commitment N-Action Requests are only sent to devices that are configured as the Storage Commitment server, and a target archive is selected that images are sent to.

"Target Archive" must be one of the three selected archives that images are sent to. "Commit Server" may be the same device but a configuration entry must be made for it in Global Config/Devices.

4.2.1.3.1.3 SOP Specific Conformance for Image and Comprehensive Structured Report Storage SOP Classes

All Image and Comprehensive 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 10 describes C-Store response behavior.

Table 10
STORAGE C-STORE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The SCP 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 transfer fails. The status is logged.

The behavior of Storage AE during communication failure is summarized in Table 11.

Table 11
STORAGE COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	Same as Service Status "Refused" in Table 10 above.
Association aborted by the SCP or network layers	Same as Service Status "Refused" in Table 10 above.

A green dot on the Network Transfer Icon indicates a successful transfer or an active queue. A red dot indicates failure. By using the Queue Manager, the user can restart a failed transfer. Open the Queue Manager by clicking on the Network Transfer Icon. Select the failed transfer and click Retry

An Association that is interrupted due to a broken and reestablished network topology will automatically retry the connection 1 time after a 5 second delay before reporting a connection failure.

The contents of US Image, US Multiframe Storage and Comprehensive Structured Report Storage SOP Instances conform to the DICOM IOD definitions described in Section 8.1.

4.2.1.3.1.4 SOP Specific Conformance for Storage Commitment Push Model 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.

Table 12 summarizes the behavior of Storage AE when receiving response status codes.

Table 12
STORAGE COMMITMENT N-ACTION RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The system waits for the N-Event-Report.
*	*	Any other status code.	The commit status remains incomplete for all objects.

Table 13 summarizes the behavior of Storage AE during communication failure.

Table 13
STORAGE COMMITMENT COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	Same as non-success status in Table 12.
Association aborted by the SCP or network layers	Same as non-success status in Table 12.

4.2.1.3.1.4.2 Storage Commitment Tags (N-ACTION)

The Storage AE will request storage commitment using the following tags

NOTE: Storage Commitment may only be automatically requested by the system at the end of a study.

Table 13a
STORAGE COMMITMENT N-ACTION-REQUEST MESSAGE CONTENTS

Action Type Name	Action Type ID	Attribute	Tag	Requirement Type SCU
Request Storage Commitment	1	Transaction UID	(0008,1195)	1
		Storage Media File-Set ID	(0088,0130)	3
		Storage Media File-Set UID	(0088,0140)	3
		Referenced SOP Sequence	(0008,1199)	1
		>Referenced SOP Class UID	(0008,1150)	1
		>Referenced SOP Instance UID	(0008,1155)	1
		>Storage Media File-Set ID	(0088,0130)	3
		>Storage Media File-Set UID	(0088,0140)	3

4.2.1.3.1.4.3 Storage Commitment Notifications (N-EVENT-REPORT)

The Storage AE can receive an N-EVENT-REPORT notification received from the SCP via Reverse-role negotiation.

Table 14 summarizes the behavior of Storage AE when receiving Event Types within the N-EVENT-REPORT.

Table 14
STORAGE COMMITMENT N-EVENT-REPORT BEHAVIOUR

Event Type Name	Event Type ID	Behavior
Storage Commitment Request Successful	1	The commit status is set to complete for each object.
Storage Commitment Request Complete – Failures Exist	2	The commit status remains incomplete. The commit comment for each object is logged.

The reasons for returning specific status codes in a N-EVENT-REPORT response are summarized in Table 15.

Table 15
STORAGE COMMITMENT N-EVENT-REPORT RESPONSE STATUS REASONS

Service Status	Further Meaning	Error Code	Reasons
Success	Success	0000	The storage commitment result has been successfully received.

4.2.1.3.1.4.4 Storage Commitment Tags (N-EVENT-REPORT)

Tags supported for receiving an N-Event-Report message.

Table 15a lists the tags that are supported within the N-EVENT-REPORT.

Table 15a
STORAGE COMMITMENT N-EVENT-REPORT MESSAGE CONTENTS

Event Type Name	Event Type ID	Attribute	Tag	Requirement Type SCU
Storage Commitment Request Successful	1	Transaction UID	(0008,1195)	None
		Retrieve AE Title	(0008,0054)	None
		Storage Media File-Set ID	(0088,0130)	None
		Storage Media File-Set UID	(0088,0140)	None
		Referenced SOP Sequence	(0008,1199)	None
		>Referenced SOP Class UID	(0008,1150)	None
		>Referenced SOP Instance UID	(0008,1155)	None
		>Retrieve AE Title	(0008,0054)	None
		>Storage Media File-Set ID	(0088,0130)	None
		>Storage Media File-Set UID	(0088,0140)	None
Storage Commitment Request Complete – Failures Exist	2	Transaction UID	(0008,1195)	None
		Retrieve AE Title	(0008,0054)	None
		Storage Media File-Set ID	(0088,0130)	None
		Storage Media File-Set UID	(0088,0140)	None
		Referenced SOP Sequence	(0008,1199)	None

		>Referenced SOP Class UID	(0008,1150)	None
		>Referenced SOP Instance UID	(0008,1155)	None
		>Retrieve AE Title	(0008,0054)	None
		>Storage Media File-Set ID	(0088,0130)	None
		>Storage Media File-Set UID	(0088,0140)	None
		Failed SOP Sequence	(0008,1198)	None
		>Referenced SOP Class UID	(0008,1150)	None
		>Referenced SOP Instance UID	(0008,1155)	None
		>Failure Reason	(0008,1197)	None

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 Sequencing of Activities

The Storage AE accepts associations for pending responses to a Storage Commitment Request only using SCP/SCU Role Negotiation; explicitly stating that the association is initiated by the SCP to the SCU. Any other will be rejected.

4.2.1.4.1.2 Accepted Presentation Contexts

Table 17 summarizes Presentation Contexts that the Storage AE accepts.

Table 17
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

4.2.1.4.1.3 SOP Specific Conformance for Storage Commitment Push Model 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 canceled.

Table 14 summarizes the behavior of Storage AE when receiving Event Types within the N-EVENT-REPORT.

Table 15 summarizes the reasons for returning specific status codes in an N-EVENT-REPORT response.

4.2.2 Workflow Application Entity Specification

4.2.2.1 SOP Classes

iU22 and iE33 provide Standard Conformance to the following SOP Classes:

Table 18
SOP CLASSES FOR AE WORKFLOW

SOP Class Name	SOP Class UID	SCU	SCP
MWL 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 19
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

iU22 and iE33 initiate one Association at a time for a Worklist request.

Table 20
NUMBER OF ASSOCIATIONS INITIATED FOR AE WORKFLOW

Maximum number of simultaneous Associations	1

4.2.2.2.3 Asynchronous Nature

iU22 and iE33 do not support asynchronous communication.

Table 21
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 22
DICOM IMPLEMENTATION CLASS AND VERSION FOR AE WORKFLOW

Implementation Class UID	1.3.46.670589.5.2.10
Implementation Version Name	MIP5.1L4

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

Two events may initiate worklist queries for Modality (US) or Custom defined:

- User may press “Update Worklist” or ”Patient Search...” and enter matching fields to start a query: Patient Name, Patient ID, Accession #, Exam Date, Requested Procedure ID or Custom modality.
- The system may be set to periodically update on “End Exam” or with a configurable time interval (between 15 and 120 minutes at 15 minute increments) and configured query fields: System AE Title or Custom defined, Station Name or Custom defined, Current Date, System Location or Custom defined.

The user at may cancel a worklist update anytime between sending the update request and receiving the final response.

“Update Worklist” C-Find-Rq sends:
Modality = US or Custom defined
and Current Date
Optional additional tags*:
Station Name or Custom
System Location or Custom
System’s AE Title or Custom

“Patient Search,,,” C-Find-Rq sends:
Modality = US or Custom Defined
and any combination of
Last Name (Wild Card (*) or Matching Leading Letters)
Patient ID (Exact Match)
Accession # (Exact Match)
Exam Date (Exact Match)
Procedure ID (Exact Match)

* Follow Setups > Print/Network > Device Selection > Worklist to set optional additional tags for Update Worklist. Patient Search options are located at Patient Data > Patient Search.

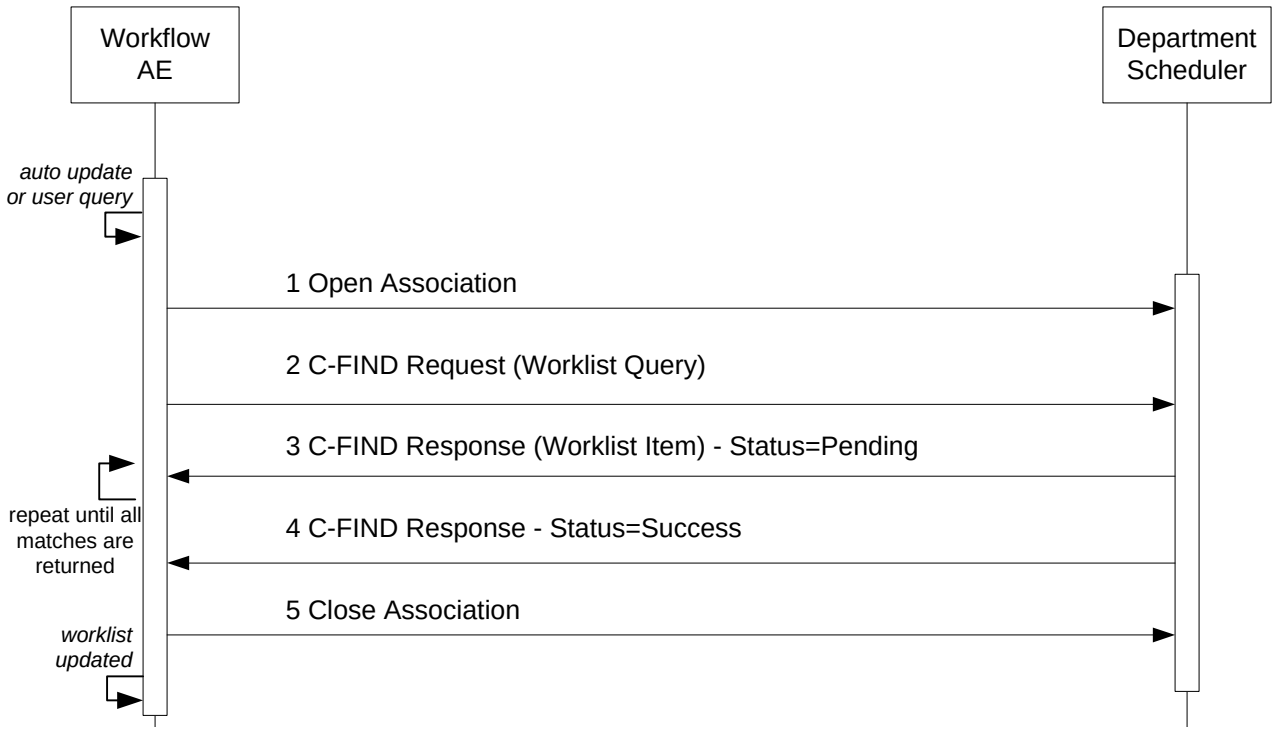


Figure 5
SEQUENCING OF ACTIVITY – WORKLIST UPDATE

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 MWL SOP Class as an SCP) is illustrated in Figure 5:

4.2.2.3.1.2 Proposed Presentation Contexts

iU22 and iE33 will propose Presentation Contexts as shown in the following table:

Table 23
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

Table 24 summarizes the behavior of iU22 and iE33 when encountering status codes in a MWL C-FIND response.

A message “query failed” will appear on the user interface if iU22 or iE33 receive any other SCP response status than “Success” or “Pending.”

Table 24
MODALITY WORKLIST C-FIND RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Matching is complete	0000	The system replaced the worklist from the response.
Refused	Out of Resources	A700	The Association is aborted using A-ABORT. The worklist is not replaced.
Failed	Identifier does not match SOP Class	A900	Same as “Refused” above.
Failed	Unable to Process	C000 – CFFF	Same as “Refused” above.
Cancel	Matching terminated due to Cancel request	FE00	The retrieved items are ignored.
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.	Same as “Refused” above.

Table 25 summarizes the behavior of iU22 and iE33 during communication failure.

Table 25
MODALITY WORKLIST COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	Same as Service Status “Refused” in the table above.
Association aborted by the SCP or network layers	Same as Service Status “Refused” in the table above.

Table 26 describes the iU22 and iE33 Worklist Matching Keys and requested attributes. Unexpected attributes returned in a C-FIND response are ignored.

Non-matching responses returned by the SCP due to unsupported optional matching keys are ignored.

Table 26
WORKLIST MATCHING KEYS

Module Name Attribute Name	**Tag**	**VR**	**M**	**R**	**Q**	**D**	**IOD**
SOP Common							
Specific Character Set	(0008,0005)	CS		x			
Scheduled Procedure Step							
Scheduled Procedure Step Sequence	(0040,0100)	SQ		x			x
> Scheduled Station AE Title [1]	(0040,0001)	AE	(S)	x			
> Scheduled Procedure Step Start Date [2]	(0040,0002)	DA	S, (S)	x	x	x	
> Scheduled Procedure Step Start Time	(0040,0003)	TM		x			
> Scheduled Procedure Step End Date	(0040,0004)	DA		x			
> Scheduled Procedure Step End Time	(0040,0005)	TM		x			
> Modality [3]	(0008,0060)	CS	S	x			x
> Scheduled Performing Physician's Name	(0040,0006)	PN		x			(x)
> Scheduled Procedure Step Description	(0040,0007)	LO		x		x	(x)
> Scheduled Protocol Code Sequence	(0040,0008)	SQ		x			(x)
> Scheduled Station Name [4]	(0040,0010)	SH	(S)	x			
> Scheduled Procedure Step Location [5]	(0040,0011)	SH	(S)	x			(x)
> Pre-Medication	(0040,0012)	LO		x			
> Scheduled Procedure Step ID	(0040,0009)	SH		x			x
> Requested Contrast Agent	(0032,1070)	LO		x			
> Scheduled Procedure Step Status	(0040,0020)	CS		x			(x)
> Comments on the Scheduled Procedure Step	(0040,0400)	LT		x			
Requested Procedure							
Requested Procedure ID [6]	(0040,1001)	SH	S	x	(x)		x*
Requested Procedure Description	(0032,1060)	LO		x			x
Study Instance UID	(0020,000D)	SH		x			x
Referenced Study Sequence	(0008,1110)	SQ		x			x
Requested Procedure Code Sequence	(0032,1064)	SQ		x			x
Names of Intended Recipients of Results	(0040,1010)	PN		x			x
Requested Procedure Comments	(0040,1400)	LT		x			
Imaging Service Request							
Accession Number [7]	(0008,0050)	SH	S	x	x	x	x
Requesting Physician	(0032,1032)	PN		x			x
Requesting Service	(0032,1033)	LO		x			x
Referring Physician's Name	(0008,0090)	PN		x		x	x
Imaging Service Request Comments	(0040,2400)	LT					
Visit Admission							
Admitting Diagnosis Description	(0008,1080)	LO		x			x
Current Patient Location	(0038,0300)	LO		x			
Patient Identification							
Patient's Name [8]	(0010,0010)	PN	S	x	x	x	x
Patient ID [9]	(0010,0020)	LO	S	x	x	x	x
Other Patient IDs	(0010,1000)	LO		x			x
Patient Demographic							
Patient's Birth Date	(0010,0030)	DA		x		x	x
Patient's Sex	(0010,0040)	CS		x		x	x
Patient Size	(0010,1020)	DS		x		x	x
Ethnic Group	(0010,2160)	SH		x			x
Patient's Weight	(0010,1030)	DS		x		x	x
Patient Comments	(0010,4000)	LT		x		x	x
Referenced Patient Sequence	(0008,1120)	SQ		x			x

Module Name Attribute Name	Tag	VR	M	R	Q	D	IOD
Patient Medical							
Medical Alerts	(0010,2000)	LO		x			x
Additional Patient's History	(0010,21B0)	LT		x			x
Pregnancy Status	(0010,21C0)	US		x			x
Last Menstrual Date	(0010,21D0)	DA		x			

X* = Additionally mapped to "Study ID" (0020,0010) in Composite Objects

The above table should be read as follows:

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

Attribute Name: Attributes supported to build an iU22 or iE33 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 iU22 and iE33 supply an attribute value for Single Value Matching or additional specific tags indicated by "(S)". See [1] below.

R: Return keys. An "x" indicates that iU22 and iE33 supply this attribute as a Return Key with zero length for Universal Matching.

Q: Interactive Query Key. An "x" " indicates that iU22 and iE33 supply this attribute as matching key, if entered in the Patient Search dialog.

D: Displayed keys. An "x" indicates that this worklist attribute is displayed to the user in the Patient Data Entry screen or Worklist Directory.

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

[1] Entered in Global Configuration – System tab, "**AE Title**" or Custom defined, selected in Device Selection – Worklist tab, Define Query section
[2] From Patient Search tab in Patient Data Entry – "**Exam Date**" field
[3] Fixed at "US" or Custom defined, selected in Device Selection – Worklist tab, Define Query section
[4] From Global Configuration – System tab, "**Station Name**" or Custom defined, selected in Device Selection – Worklist tab, Define Query section
[5] From Global Configuration – System tab, "**System Location**" or Custom defined, selected in Device Selection – Worklist tab, Define Query section
[6] From Patient Search tab in Patient Data Entry – "**Procedure ID**" field.
[7] From Patient Search tab in Patient Data Entry – "**Accession #**" field
[8] From Patient Search tab in Patient Data Entry – "**Last Name**" field
[9] From Patient Search tab in Patient Data Entry – "**Patient ID**" field

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 image is acquired to send the MPPS N-Create message with status of "IN PROGRESS".

The "End Exam" button causes a "COMPLETED" status in the N-Set message. An exam for which an MPPS Instance is sent with a state of "COMPLETED" can no longer be updated. However, it may be appended to. See section 4.1.1, Application Data Flow for details on append.

The "Cancel Exam" button causes a "DISCONTINUED" message. An exam for which an MPPS Instance is sent with a state of "DISCONTINUED" can also no longer be updated. However, it may be appended to. See section 4.1.1, Application Data Flow for details on append.

The system supports creation of “unscheduled cases” by allowing MPPS Instances to be communicated for locally registered Patients.

The system performs a single Performed Procedure Step at a time per Scheduled Procedure Step.

iU22 and iE33 will initiate an Association to issue an:

— N-CREATE request according to the CREATE Modality Performed Procedure Step SOP Instance operation or a
— N-SET request to finalize the contents and state of the MPPS according to the SET Modality Performed Procedure Step Information operation.

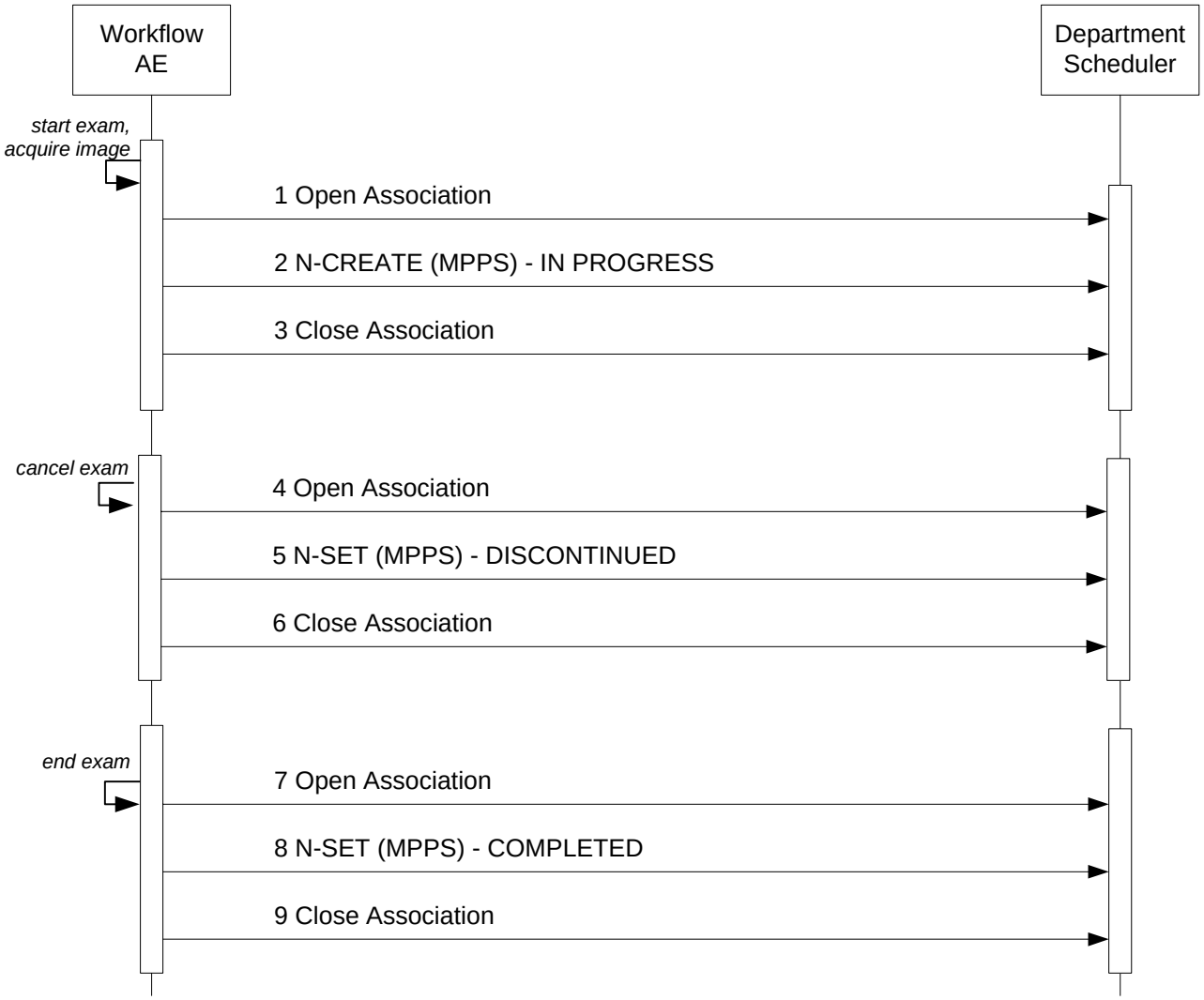


Figure 6
SEQUENCING OF ACTIVITY – ACQUIRE IMAGES

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 Figure 6.
Note: The Cancel and End Exam commands are mutually exclusive. They are both represented here for illustration purposes only. Actual workflow uses one or the other for a given exam.

4.2.2.3.2.2 Proposed Presentation Contexts

iU22 will propose Presentation Contexts as shown in the following table:

Table 27
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

Table 28 summarizes the behavior of iU22 and iE33 when encountering status codes in an MPPS N-CREATE or N–SET response.

Table 28
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.
Failure	Processing Failure – Performed Procedure Step Object may no longer be updated	0110	The Association is aborted.
Warning	Attribute Value Out of Range	0116H	The error message is displayed.
*	*	Any other status code.	Same as “Failure” above.

Table 29 summarizes the behavior of iU22 and iE33 during communication failure.

Table 29
MPPS COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	Same as “Failure” above.
Association aborted by the SCP or network layers	Same as “Failure” above.

Table 30 provides a description of the MPPS N-CREATE and N-SET request identifiers. Empty cells in the N-CREATE and N-SET columns indicate that the attribute is not sent.

Table 30
MPPS N-CREATE / N-SET REQUEST IDENTIFIER

Attribute Name	Tag	VR	N-CREATE	N-SET
Specific Character Set	(0008,0005)	CS	Not Sent	
Modality	(0008,0060)	CS	US	
Referenced Patient Sequence	(0008,1120)	SQ		
> Referenced SOP Class UID	(0008,1150)	UI	1.2.840.10008.3.1.2.1.1	

Attribute Name	Tag	VR	N-CREATE	N-SET
>Referenced SOP Instance UID	(0008,1155)	UI		
Patient's Name	(0010,0010)	PN	As received from MWL or entered in PDE.	
Patient ID	(0010,0020)	LO	From Modality Worklist or user input. MWL value may be edited.	
Patient's Birth Date	(0010,0030)	DA	Same as above.	
Patient's Sex	(0010,0040)	CS	Same as above.	
Study ID	(0020,0010)	SH	From Requested Procedure ID from MWL, else System Generated <yyyymmdd.hhmmss>	
Performed Station AE Title	(0040,0241)	AE	AE Title from configuration (requires power cycle)	
Performed Station Name	(0040,0242)	SH	From Ultrasound System Configuration (requires power cycle)	
Performed Location	(0040,0243)	SH	From Ultrasound System Configuration (requires power cycle)	
Performed Procedure Step Start Date	(0040,0244)	DA	Actual start date	
Performed Procedure Step Start Time	(0040,0245)	TM	Actual start time	
Procedure Code Sequence	(0008,1032)	SQ	Mapped from Requested Procedure Code Sequence (0032,1064) from MWL	As received from MWL
>Code Value	(0008,0100)	SH	As received from MWL	As received from MWL
>Coding Scheme Designator	(0008,0102)	SH	As received from MWL	As received from MWL
>Coding Scheme Version	(0008,0103)	SH	As received from MWL	As received from MWL
>Code Meaning	(0008,0104)	LO	As received from MWL	As received 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 Status	(0040,0252)	CS	IN PROGRESS	COMPLETED or DISCONTINUED
Performed Procedure Step ID	(0040,0253)	SH	Auto generated, or mapped from Requested Procedure ID from MWL	
Performed Procedure Step Description	(0040,0254)	LO	MWL Scheduled Procedure Step Description (0040,0007) or PDE input if any.	Same
Performed Procedure Type Description	(0040,0255)	LO	If present in MWL, else zero length	

Attribute Name	Tag	VR	N-CREATE	N-SET
Performed Protocol Code Sequence	(0040,0260)	SQ	Zero length, or mapped from MWL Scheduled Protocol Code Sq (0040,0008)	Same
Scheduled Step Attributes Sequence	(0040,0270)	SQ		
> Accession Number	(0008,0050)	SH	From MWL or user PDE input. MWL value may be edited.	
> Referenced Study Sequence	(0008,1110)	SQ	One item per item in the MWL Reference Study Sequence. Absent if unscheduled.	
>> Referenced SOP Class UID	(0008,1150)	UI	Same value as in of the Reference Study Sequence in the MWL	
>> Referenced SOP Instance UID	(0008,1155)	UI	Same value as in of the Reference Study Sequence in the MWL	
> Study Instance UID	(0020,000D)	UI	Same value as in MWL attribute or auto generated	
> Requested Procedure Description	(0032,1060)	LO	Same value as in MWL attribute	
> Scheduled Procedure Step Description	(0040,0007)	LO	Same value as in MWL attribute	
> Scheduled Protocol Code Sequence	(0040,0008)	SQ	Same value as in MWL attribute	
> Scheduled Procedure Step ID	(0040,0009)	SH	Same value as in MWL attribute	
> Requested Procedure ID	(0040,1001)	SH	Same value as in MWL attribute	
Performed Series Sequence	(0040,0340)	SQ		One item per acquired series
> Retrieve AE Title	(0008,0054)	AE	Zero Length	
> Series Description	(0008,103E)	LO	Zero length, or Mapped from Scheduled Procedure Step Description (0040,0007)	Same
> Performing Physician's Name	(0008,1050)	PN	See Table 74	See Table 74
> Operator's Name	(0008,1070)	PN	See Table 74	See Table 74
> Referenced Image Sequence	(0008,1140)	SQ		One item per referenced instance
>> Referenced SOP Class UID	(0008,1150)	UI		SOP Class UID of acquired instance
>> Referenced SOP Instance UID	(0008,1155)	UI		SOP Instance UID of acquired instance
> Protocol Name	(0018,1030)	LO	See Table 74	See Table 74
> Series Instance UID	(0020,000E)	UI	Auto Generated	Same
> Referenced Non-Image Composite SOP Instance	(0040,0220)	SQ	Zero Length	Zero Length

Attribute Name	Tag	VR	N-CREATE	N-SET
Sequence				

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

iU22 and iE33 provide Standard Conformance to the following SOP Classes:

Table 31
SOP CLASSES FOR AE HARDCOPY

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

4.2.3.2 Association Establishment Policy

4.2.3.2.1 General

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

Table 32
DICOM APPLICATION CONTEXT FOR AE HARDCOPY

Application Context Name	1.2.840.10008.3.1.1.1

4.2.3.2.2 Number of Associations

iU22 and iE33 initiate one Association at a time for each configured hardcopy device. Multiple hardcopy devices can be configured.

Table 33
NUMBER OF ASSOCIATIONS INITIATED FOR AE HARDCOPY

Maximum number of simultaneous Associations	2 (number of configured hardcopy devices)

4.2.3.2.3 Asynchronous Nature

iU22 and iE33 do not support asynchronous communication (multiple outstanding transactions over a single Association).

Table 34
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 35
DICOM IMPLEMENTATION CLASS AND VERSION FOR AE HARDCOPY

Implementation Class UID	1.3.46.670589.5.2.10
Implementation Version Name	MIP5.1L4

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

The system composes images onto film sheets and sends print requests to job queue.

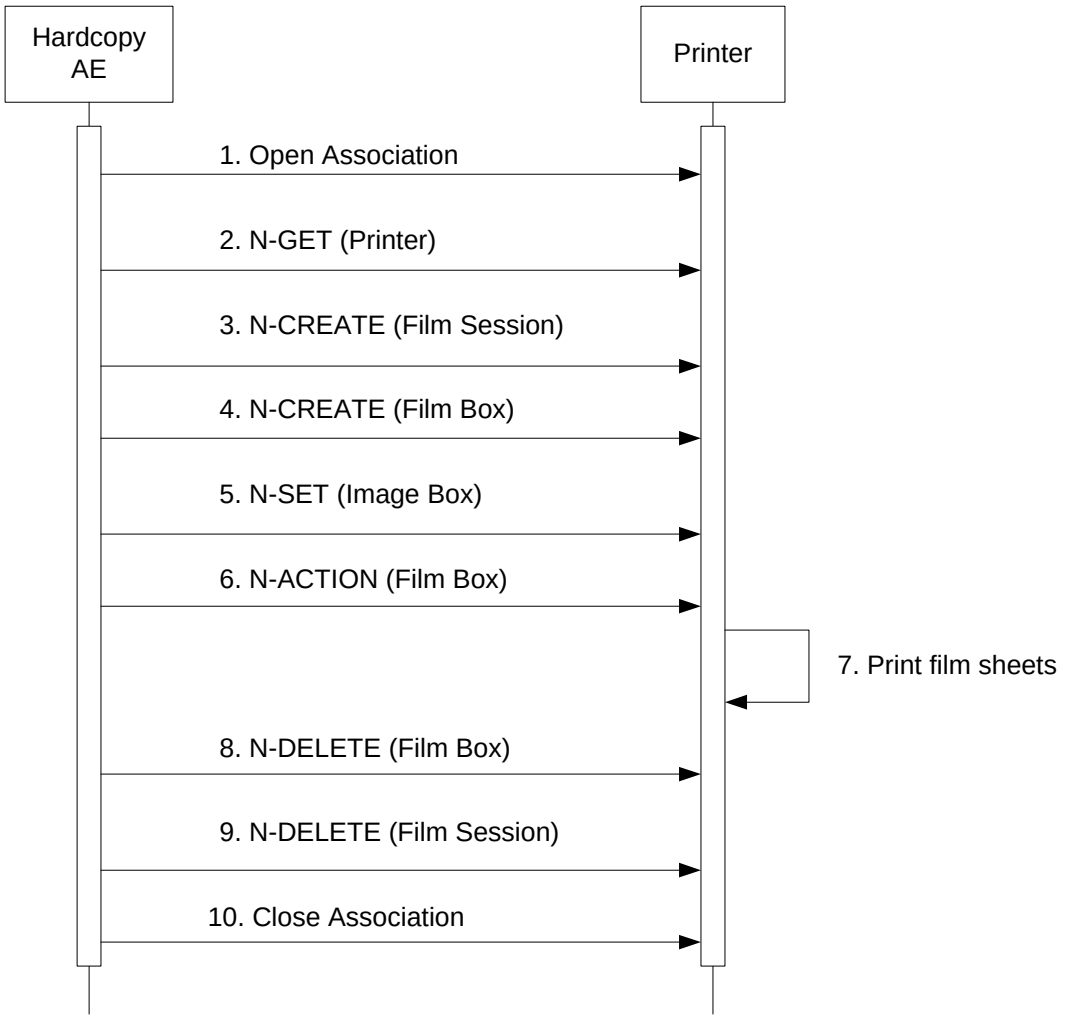


Figure 7
SEQUENCING OF ACTIVITY – PRINT IMAGES

Figure 7 illustrates a typical sequence of DIMSE messages sent over an association between Hardcopy AE and a Printer. Two DICOM Printers may be simultaneously configured, one for BW and one for Color prints.

If both BW and Color printers are configured and selected, the user may choose to automatically send BW prints only to the BW printer and color prints only to the color printer. This feature may only be used while configured for "**After Each Image**", and during the exam. Re-selecting the exam after it has been ended will send all images to both printers. When using the **"Send on Demand"** feature with print, page(s) that have not been exported will be sent, according to the formatting configuration. If less than a full page is sent, then the remaining blank spaces will be sent black.

Status of the print-job is reported through the Printer Queue Manager icon. Only one job will 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.

4.2.3.3.1.2 Proposed Presentation Contexts

Table 36 shows the Presentation Contexts iU22 and iE33 are capable of proposing.

Table 36
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

Table 37 summarizes the general behavior of Hardcopy AE during communication failure. This behavior is common for all SOP Classes supported by Hardcopy AE.

Table 37
HARDCOPY COMMUNICATION FAILURE BEHAVIOR

Exception	Behavior
Timeout	The Association is aborted and reported as "Failed."
Association aborted by the SCP or network layers	"Network Communication Failure" is reported.

4.2.3.3.1.4 SOP Specific Conformance for the Printer SOP Class

Hardcopy AE supports the following DIMSE operations and notifications for the Printer SOP Class:

— N-GET

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

4.2.3.3.1.4.1 Printer SOP Class Operations (N-GET)

Hardcopy AE uses the Printer SOP Class N-GET operation to obtain information about the current printer status. Table 38 lists the attributes obtained via N-GET.

Table 38
PRINTER SOP CLASS N-GET RESPONSE ATTRIBUTES

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

The Printer Status information is evaluated as follows:

1. If Printer status (2110,0010) is NORMAL, the print-job continues to be printed.
2. If Printer status (2110,0010) is FAILURE, the print-job is marked as failed.
3. If Printer status (2110,0010) is WARNING, the print-job continues to be printed.

Table 39 summarizes the behavior of Hardcopy AE when encountering status codes in a N-GET response.

Table 39
PRINTER SOP CLASS N-GET RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The request to get printer status information was success.
*	*	Any other status code.	Same as Timeout above.

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

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

Table 40 summarizes the behavior of Hardcopy AE when receiving Event Types within the N-EVENT-REPORT.

Table 40
PRINTER SOP CLASS N-EVENT-REPORT BEHAVIOUR

Event Type Name	Event Type ID	Behavior
Normal	1	The print-job continues to be printed.
Warning	2	The print-job. For user-recoverable warnings, the job fails and a 1-hour retry period starts, retrying every 20 seconds.
Failure	3	The print-job is marked as failed.
*	*	Status code of 0113H

Table 41 summarizes the reasons for returning specific status codes in a N-EVENT-REPORT response.

Table 41
PRINTER SOP CLASS N-EVENT-REPORT RESPONSE STATUS REASONS

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

	Failure		short description of the error will be returned in Error Comment (0000,0902).

4.2.3.3.1.5 SOP Specific Conformance for the Film Session SOP Class

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

— N-CREATE

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

4.2.3.3.1.5.1 Film Session SOP Class Operations (N-CREATE)

Table 42 lists the attributes supplied in an N-CREATE Request.

Table 42
FILM SESSION SOP CLASS N-CREATE REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Number of Copies	(2000,0010)	IS	Default 1. User defined in Device Configuration.	ALWAYS	USER
Print Priority	(2000,0020)	CS	HIGH	ALWAYS	AUTO
Medium Type	(2000,0030)	CS	BLUE FILM, CLEAR FILM or PAPER*	ALWAYS	USER
Film Destination	(2000,0040)	CS	MAGAZINE or PROCESSOR*	ALWAYS	USER
Film Session Label	(2000,0050)	LO	Philips Medical Systems	ALWAYS	AUTO

*Dependent on the specific printer selected

Table 43 summarizes the behavior of Hardcopy AE when encountering status codes in a N-CREATE response.

Table 43
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 and the print-job fails.

4.2.3.3.1.7 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.

4.2.3.3.1.7.1 Film Box SOP Class Operations (N-CREATE)

Table 47 lists the attributes supplied in an N-CREATE Request.

Table 47

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 or CUSTOM\xxx depending on printer. Default is displayed, and is user editable. Edit only when a valid substitute value is known.	ALWAYS	AUTO/USER
Referenced Film Session Sequence	(2010,0500)	SQ		ALWAYS	AUTO
>Referenced SOP Class UID	(0008,1150)	UI	1.2.840.10008.5.1.1.1	ALWAYS	AUTO
>Referenced SOP Instance UID	(0008,1155)	UI	From created Film Session SOP Instance	ALWAYS	AUTO
Film Orientation	(2010,0040)	CS	PORTRAIT or LANDSCAPE	ALWAYS	USER
Film Size ID	(2010,0050)	CS	Depends on configuration file selected. DICOM Defined Terms plus US_Letter.	ALWAYS	USER
Magnification Type	(2010,0060)	CS	Default Value = NONE, depending on printer	ANAP	AUTO
Min Density	(2010,0120)	US	Default value displayed, user editable	ALWAYS	AUTO/USER
Max Density	(2010,0130)	US	Default value displayed, user editable	ALWAYS	AUTO/USER
Trim	(2010,0140)	CS	NO	ALWAYS	AUTO
Configuration Information	(2010,0150)	ST	Default value displayed, user editable. Edit only when a valid substitute value is known.	ALWAYS	AUTO/USER

Table 48 summarizes the behavior of Hardcopy AE when encountering status codes in a N-CREATE response.

Table 48
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	Requested Max Density outside of printer's operating range	B605H	The N-CREATE operation is considered successful but the status meaning is logged.
*	*	Any other status code.	The Association is aborted and the job failed.

4.2.3.3.1.7.2 Film Box SOP Class Operations (N-ACTION)

The Hardcopy AE issues an N-ACTION Request to instruct the Print SCP to print the contents of the Film Box.

Table 49 summarizes the behavior of Hardcopy AE when encountering status codes in an N-ACTION response.

Table 49
FILM BOX SOP CLASS N-ACTION RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	Success	0000	The SCP has completed the operation successfully. The film has been accepted for printing.
Warning	Film Box SOP Instance hierarchy does not contain Image Box SOP Instances (empty page)	B603H	The Association is aborted and the job is failed.
Failure	Unable to create Print Job SOP Instance; print queue is full.	C602	Same as B603H above.
*	*	Any other status code.	Same as B603H above.

4.2.3.3.1.8 SOP Specific Conformance for the Image 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.

4.2.3.3.1.8.1 Image Box SOP Class Operations (N-SET)

Table 50 lists the attributes supplied in an N-SET Request.

Table 50
IMAGE BOX SOP CLASS N-SET REQUEST ATTRIBUTES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Image Position	(2020,0010)	US	1	ALWAYS	AUTO
Polarity	(2020,0020)	CS	NORMAL	ALWAYS	AUTO
Basic Grayscale Image Sequence	(2020,0110)	SQ	Used for BW (Monochrome2) print	ALWAYS*	AUTO
Basic Color Image Sequence	(2020,0111)	SQ	Used for Color (RGB) print	ALWAYS*	AUTO
>Samples Per Pixel	(0028,0002)	US	1 for Monochrome2 3 for RGB	ALWAYS	AUTO
>Photometric Interpretation	(0028,0004)	CS	MONOCHROME2 RGB	ALWAYS	AUTO
Planar Configuration	(0028,0006)	US	Always “01”, only used for RGB print.	ANAP	AUTO
>Rows	(0028,0010)	US	Depends on film size, number of rows for entire sheet of film	ALWAYS	Printer Configuration File
>Columns	(0028,0011)	US	Depends on film size, number of columns for entire sheet of film	ALWAYS	Printer Configuration File
>Bits Allocated	(0028,0100)	US	8	ALWAYS	AUTO
>Bits Stored	(0028,0101)	US	8	ALWAYS	AUTO

>High Bit	(0028,0102)	US	7	ALWAYS	AUTO
>Pixel Representation	(0028,0103)	US	0	ALWAYS	AUTO
>Pixel Data	(7FE0,0010)	OW	Pixels of rendered film sheet.	ALWAYS	AUTO

* Mutually exclusive attributes

Table 51 summarizes the behavior of Hardcopy AE when encountering status codes in a N-SET response.

Table 51
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.
Failure	Insufficient memory in printer to store the image.	C605	The Association is aborted and the job is failed.
*	*	Any other status code.	Same as C605 above.

4.2.3.4 Association Acceptance Policy

The Hardcopy Application Entity does not accept Associations.

4.2.4 Verification Application Entity specification

4.2.4.1 SOP Class

iU22 and iE33 provide Standard Conformance to the following SOP Class:

Table 51.1
SOP CLASSES FOR AE VERIFICATION

SOP Class Name	SOP Class UID	SCU	SCP
Verification	1.2.840.10008.1.1	Yes	Yes

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 51.2
DICOM APPLICATION CONTEXT FOR AE VERIFICATION

Application Context Name	1.2.840.10008.3.1.1.1

4.2.4.2.2 Number of Associations

iU22 and iE33 initiate one Association at a time for a Verification request.

Table 51.31
NUMBER OF ASSOCIATIONS INITIATED FOR AE VERIFICATION

Maximum number of simultaneous Associations	Up to 10, one for each configured remote device

Table 51.32
NUMBER OF ASSOCIATIONS ACCEPTED FOR AE VERIFICATION

Maximum number of simultaneous Associations	Unlimited, however, calling AE must be already configured in iU22 or iE33.

4.2.4.2.3 Asynchronous Nature

iU22 and iE33 do not support asynchronous communication (multiple outstanding transactions over a single Association).

Table 51.4
ASYNCHRONOUS NATURE AS A SCU FOR AE VERIFICATION

Maximum number of outstanding asynchronous transactions	1

4.2.4.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 51.5
DICOM IMPLEMENTATION CLASS AND VERSION FOR AE VERIFICATION

Implementation Class UID	1.3.46.670589.5.2.10
Implementation Version Name	MIP5.1L4

4.2.4.3 Association Initiation Policy

4.2.4.3.1 Activity – Verify as SCU and SCP

4.2.4.3.2 Description and Sequencing of Activities

SCU: The user selecting the “Verify” button on the Device configuration page initiates the verification request to the device whose data has just been configured. This tool allows the user to ensure all data (AE Title, Port and IP Address) was correctly entered and the remote device may be contacted. It uses C-Echo and verifies the remote device supports all configured SOP Classes. Any SOP Classes requested that are not supported will report, “failed”. Operations may continue, but objects of the type that are not supported will not be exported. See note in 4.2.4.3.5.1 Verification SOP Class Notifications.

SCP: The system listens on the port configured on the Global System Configuration screen for Verification requests initiated by other remote devices. The calling device AE must already be configured as a remote device in iU22 or iE33 or the association is rejected.

iU22 and iE33 initiate an Association in order to issue:

— C-ECHO request according to the Verification SOP Class.

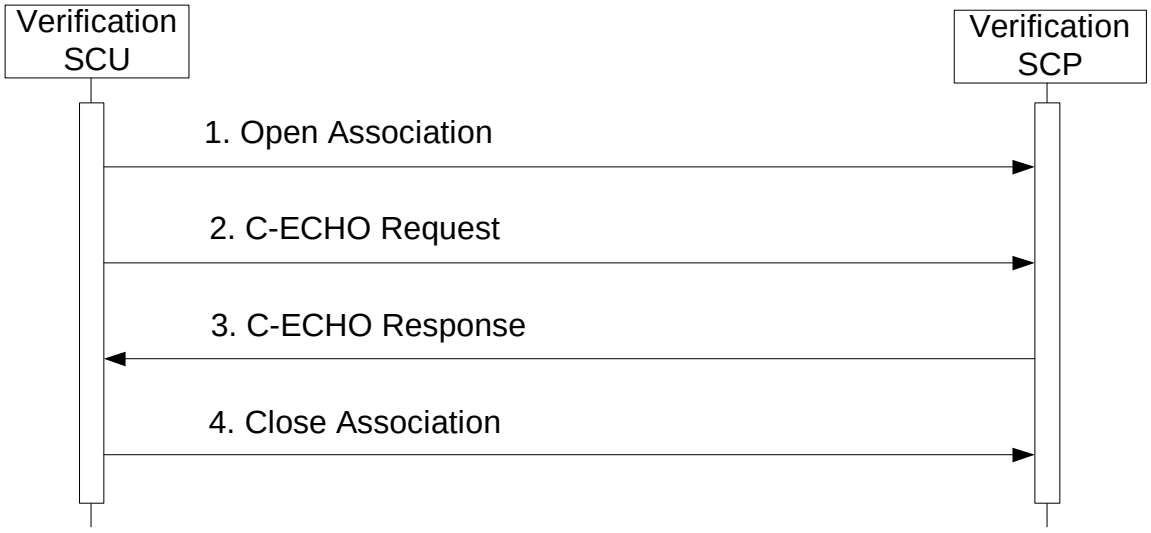


Figure 8a
SEQUENCING OF ACTIVITY – ISSUE VERIFY

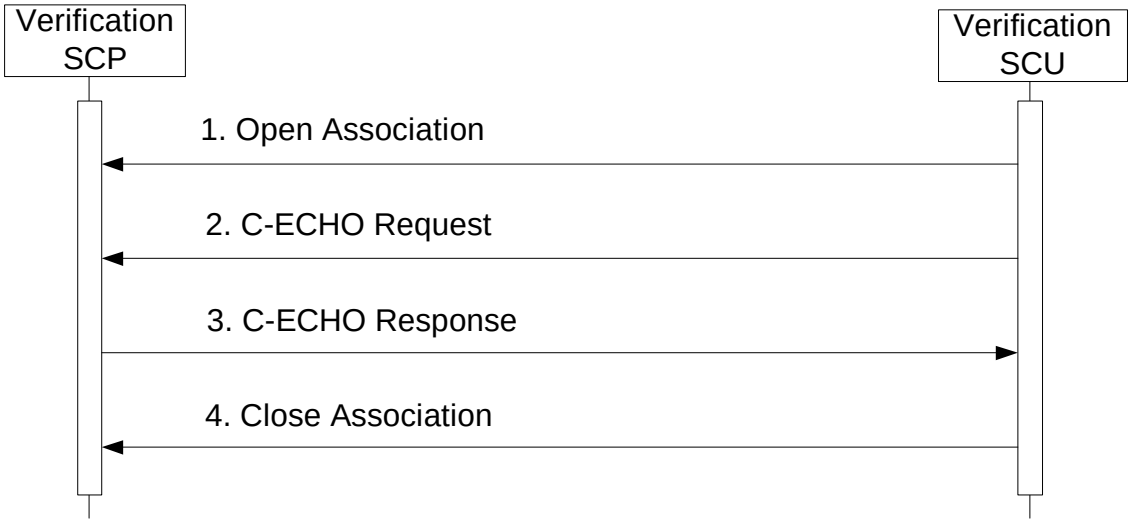


Figure 8b
SEQUENCING OF ACTIVITY – RECEIVE VERIFY

4.2.4.3.3 Proposed Presentation Contexts

iU22 and iE33 will propose Presentation Contexts as shown in the following table:

Table 51.6
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY VERIFICATION

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

4.2.4.3.4 SOP Specific Conformance for Verification

Table 51.7 summarizes the behavior of iU22 and iE33 when receiving status codes in a C-ECHO response.

A message will appear on the user interface if iU22 and iE33 receives any other SCP response status than “Success.”

Table 51.7
VERIFICATION C-ECHO RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success		0000	Device Status is set to: Verified
Refused	Out of Resources	A700	Device Status is set to: Not Verified
Failed	Unable to Process	C000 – CFFF	Same as “Refused” above.
*	*	Any other status code.	Same as “Refused” above.

4.2.4.3.4.1 Verification SOP Class Operations (C-ECHO)

4.2.4.3.5 Association Acceptance Policy

4.2.4.3.5.1 Verification SOP Class Notifications

Possible Responses when “Verify” is used in Global Device configuration:

Device Verification Succeeded
Device Verification Failed (with messages)
{SOP Class(es)}: **Verified**
{SOP Class(es)}: **Not Verified**

Note: A given “Archive” server may not support all of the SOP Classes requested in the Verification request. Receiving failures (“Not Verified”) responses for SOP Classes outside the scope or capability of the server will not result in a communications failure.

For example, if the correct Image Store SOP Classes are supported and Structured Report is not, then Image Storage will work successfully, and SRs will not be sent to the server. If multiframe is not supported and loops are acquired, the transfer will fail. In this case however, the single frame images will transfer.

Association Negotiation Request message contents for each DICOM device:

Device Type	SOP Classes Requested	Additional Notes
DICOM Archive Server	US Image Storage US Image Storage (Retired) US Multiframe Storage US Multiframe Storage (Retired) 3D Subpage Storage Storage Commitment Comprehensive Structured Report Storage Verification	If SR is supported, then no other configuration is needed to allow SR to export. If SR is not desired, after verification, de-select Export SR from the Advanced configuration option for the server under Device Selection. Storage Commitment requires configuration of a commit server even if verified with the Archive device.
DICOM Commit Server	Storage Commitment Verification	This device must be configured even if the Archive device indicates commit is supported.
DICOM PPS Server	Modality Performed Procedure Step Verification	
DICOM Worklist Server	Modality Worklist Verification	MWL query settings are located in the Global System configuration page, the Modality Worklist Device Selection Page and in the Patient Search window of the Patient Data Entry screen.
DICOM Structured Report Server	Comprehensive Structured Report Storage Verification	Configuration of this device is only required if not supported by the archive, or if SRs are to be sent to a separate server. Note: both locations may not be configured simultaneously.
DICOM BW Printer	Basic Grayscale META Print Verification	All bw printers configure this entry. If the printer supports both BW and Color, then this must be configured to allow BW on that printer.
DICOM Color Printer	Basic Color META Print Verification	May be the same printer if color is also supported.

4.3 PHYSICAL NETWORK INTERFACES

4.3.1 Supported Communication Stacks

4.3.1.1 TCP/IP Stack

The iU22 and iE33 provides DICOM TCP/IP Network Communication Support as defined in Part 8 of the DICOM Standard.

4.3.2 Physical Network Interface

iU22 and iE33 support a single network interface. The following physical network interface is available:

Table 52
SUPPORTED PHYSICAL NETWORK INTERFACE

Ethernet 10/100BaseT, RJ-45, UTP, STP; AutoDetect Speed, Full or Half Duplex

4.4 CONFIGURATION

AE Title/Presentation Address Mapping

The Devices Configuration section allows the following device types to be configured:

Device Type	Supported SOPs
DICOM Archive Server	Ultrasound Store Ultrasound Multiframe Store Comprehensive Structured Report Store* Storage Commitment Push Model** 3D Subpage Storage***
DICOM Commit Server	Storage Commitment Push Model**
DICOM PPS Server	Modality Performed Procedure Step
DICOM Worklist Server	Modality Work List
DICOM Structured Report Server	Comprehensive Structured Report Store*
DICOM BW Printer	Basic Grayscale Print Meta
DICOM Color Printer	Basic Color Print Meta

* See section 4.4.1.2.1 below.
** Storage Commitment must only be configured if supported by the Archive Server or a stand-alone server. In either case, the “Commit Server” and “Target Archive Server” must ONLY be configured if commitment is used.
*** May be configured off, uncompressed or compressed in Advanced Properties.

To configure a single server that supports image store, commitment and PPS, then a separate “Device” entry must be configured under Setups>Print/Network>Global Config>Devices>New Device, using the correct device type an appropriate AE Title, IP Address and Port data. The “Device Name” field is only used as an alias to identify the device in the system’s user interface.

Note: In Archive Device Advanced Properties also contains the selection of Native Data export. This should not be selected unless a workstation using Philips’ QLAB™ analysis software, as the datasets are large, possibly affecting data transfer performance.

4.4.1.1 Local AE Title

All local AEs use the same AE Title and TCP/IP Port configured via the Global Configuration Screen. The system listens on the configured Port only for Verification requests and Storage Commitment N-Event reports. All devices also support Verification as an SCU, allowing the use of the Verify button.

4.4.1.2 Remote AE Title/Presentation Address Mapping

The AE Titles, IP Addresses and Port numbers of remote applications are manually configured using the Devices Configuration Screen. The system supports Static Addressing or DHCP to receive its IP Address, Subnet Mask and

Default Gateway address. The system Host name is not reported to the DNS server, and the system cannot be contacted by another system using the “System Name” displayed on Setups > Print/Network > Global Configuration.

4.4.1.2.1 Image and Structured Report Storage

The New Device button on the Global Config > Devices Setup screen opens the Add Device dialog that allows configuration of the AE Titles, Port numbers, and IP Addresses for the remote Storage SCPs. Multiple remote Storage SCPs can be defined and three may be selected simultaneously for export.

User configuration of Monochrome (to match HDI 5000 system behavior) and use of Retired SOP Classes is located in the Print/Network > Print/Capture page.

User configuration to use Implicit Little Endian VR only is located in Print/Network > Device Selection > Advanced tab for the highlighted archive device. This setting does not apply to any other device than archive.

* Structured Reports will be sent to an Archive device if SR support is confirmed using Verify. If the Archive does not support SR, and a separate SR server is available, additionally configure the DICOM Structured Report Server. After configuration of an archive device is completed, perform verification by using “Verify”. Go to “Device Selection > Archive and select (highlight) the archive device. Select the “Advanced” button and make sure “Export Structured Report” is checked.

If SR support is confirmed using verify and measurements are made during the exam, a Structured Report will be sent to the archive. OB and Gyn measurements generate an OB SR report; Vascular and Abdominal measurements generate a Vascular SR report and Adult Echo measurements will create an Echo SR report. If no separate SR server is configured and the SOP Class fails negotiation on the Archive, then no SR objects will be created, however, a failed job will remain in the queue. This will need to be manually removed.

User Defined measurements will now be sent in an SR. No SR is sent for General, Small Parts, Breast or Pediatric Echo measurements.

4.4.1.2.1.1 Advanced Archive Device Association Timeout Configuration

Three timeout settings may now be easily configured for each “Archive” device via its “Advanced” properties page.

ARTIM (Association Request/Reject/Release) Timeout

- The Timeout between establishment of a TCP/IP connection and the actual Association Request message. Also specified the maximum timeout between association reject or release and the actual TCP/IP disconnect.

Network Reply Timeout

- If there is no response from the SCP within this time period, the Network/Reply timer expires. The system will send a DICOM A-Associate-Release Rq.

Association Timeout SCU/SCP

- Association inactivity timeout. In most cases where the system is configured to Send After Each Image, this timeout needs to exceed the maximum idle time expected during normal use.

4.4.1.2.1.2 Serial Structured Report Storage Configuration

Structured Report data may additionally be exported via a USB – RS-232 adapter cable to a null-modem RS-232 cable to a serial port configured for 115200 baud, 8 bits, No Parity, 1 Stop Bit and Xon-Xoff Flow Control. Output will be an XML representation of the DICOM SR object similar to DICOM Network structure.

4.4.1.2.2 Workflow

Setup is used to set the AE Title, port-number and IP Address the remote MWL SCP. Multiple MWL SCPs may be defined, but only a single remote MWL SCP can be selected at a time.

All default MWL queries use Modality = US. This may now be changed in the MWL Query definition page, as a Custom entry.

AE Title may now be selected as the system default or a custom query value may be defined for a different AE Title.

Automated queries may be set for a specific time interval, Startup and every 15, 30, 45, 60, 75, 90, 105 or 120 minutes, or at End of Exam. Automated queries use the current date and Modality. They may additionally use "Station Name", "System Location" and "AE Title" to further refine the search.

Setup is used to set the AE Title, port-number and IP Address of the remote MPPS SCP. Multiple MPPS SCPs may be defined, but only a single remote MPPS SCP can be selected at a time.

4.4.1.2.3 Hardcopy

Setup is used to set the AE Titles, Port numbers and IP Addresses for the remote Print SCPs.

Multiple remote Print SCPs can be defined, but up to one Grayscale and one Color Print SCP may be selected at a time.

Automatic sending of color images to the color printer and BW images to the BW printer is selectable in the Printer/Network > Print/Capture page's "Send Images/Clips" section.

5 MEDIA STORAGE

5.1 IMPLEMENTATION MODEL

5.1.1 Application Data Flow

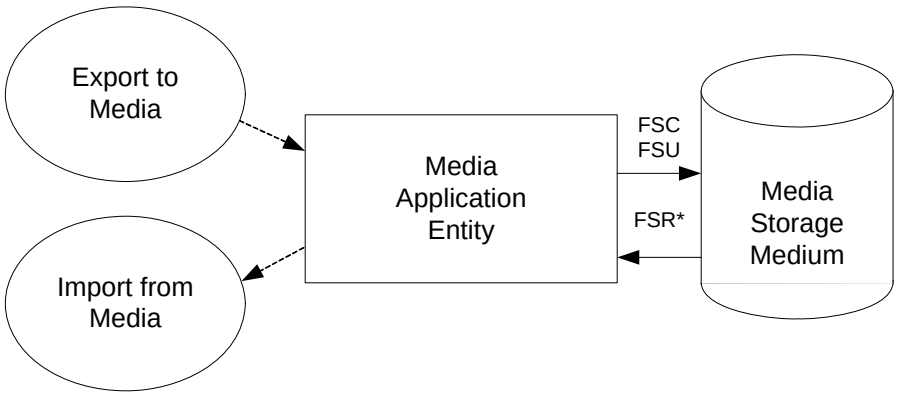


Figure 9
APPLICATION DATA FLOW DIAGRAM FOR MEDIA STORAGE

— The Media Application Entity exports Images, 3D Presentation States and structured Reports to a disk Storage medium. It is associated with the local real-world activity "Export to Media". "Export to Media" is performed upon user request for selected patients, studies, series or instances (images, 3D Volumes, 3D Subpages or Structured Reports). The system may be configured to perform this task automatically at end of exam.

— Throughout this section, the term "Media" refers to any of the media listed below which is in use.

iU22 and iE33 will support the use of most writable media including CD-R, CD-RW, DVD-R, DVD+R, DVD-RW and DVD+RW. DICOM structure will be the same regardless of media used.

Note that although –R or +R media may be erased multiple times using “erase”, the space may not be recovered. If a –R or +R media is “Erased”, the previously written data is no longer available, and only the remaining unwritten space on the media is available for use. This restriction does not apply to + / - RW media. Erasing + / - RW media allows the entire disk’s space to be used.

Note: the “send as you scan to media” and “delete exam from media” features have been removed from the product.

5.1.2 Functional Definition of AEs

5.1.2.1 Functional Definition of Media Application Entity

Using “Send to… Media” or automatic send at end of exam, will pass the currently selected patients’ exams or individually selected images to the 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 the installed media. If the capacity of a disk is exceeded, the user is provided a dialog, stating capacity exceeded and to insert another disk.

5.1.3 Sequencing of Real-World Activities

At least one image must exist and be selected before the Media Application Entity can be invoked. The operator can insert new media at any time. The Media Application Entity will wait indefinitely for media to be inserted before starting to write to the device. If no writable media is available, the Media queue management Icon will be Yellow.

5.1.4 File Meta Information Options

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

Table 65
DICOM IMPLEMENTATION CLASS AND VERSION FOR MEDIA STORAGE

Implementation Class UID	1.3.46.670589.5.2.10
Implementation Version Name	ACP1.1L4

5.2 AE SPECIFICATIONS

5.2.1 Media Application Entity Specification

The Media Application Entity provides standard conformance to the DICOM Interchange Option of the Media Storage Service Class. The Application Profiles and roles are listed in

Table 66
APPLICATION PROFILES, ACTIVITIES AND ROLES FOR OFFLINE-MEDIA

Application Profiles Supported	Real World Activity	Role	SC Option
STD-US-SC-SF&MF-CDR	Send to….Media	FSC,	Interchange
STD-US-SC-SF&MF-DVD		FSC, U**	
STD-US-SC-SF&MF-CDR STD-US-SC-SF&MF-DVD	Send to … Hard Disk	R*	

* File Set Reader functionality is limited only to media created by other iE33 or iU22 systems.
** Update functionality requires DVD+RW

5.2.1.1 File Meta Information for the Application Entity

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

5.2.1.2 Real-World Activities

5.2.1.2.1 Activity – Send to Media

The Media Application Entity acts as an FSC using the interchange option when requested to export SOP Instances from the local database to media.

The contents of the export job will be written together with a corresponding DICOMDIR to media. The user can cancel an export job in the job queue. Writing in multi-session format to CDs and DVDs is supported. Each export job is written as one session.

5.2.1.2.2 Activity – Import from Media

The Media Application Entity acts as an FSR using the interchange option when requested to import SOP Instances from media to the local database.

The Patient Directory UI presents the directory of the system or the offline media. Selected exams are transferred from the media to the system for review. Objects transferred to the system retain their original SOP Instance UIDs.

Note: Structured Reports may not be read back into the iU22 or iE33.

Note: Import from 1.x media is allowed, but one cannot write onto a piece of media created on 1.x.

5.2.1.2.3 Activity – Update to Media

The Media Application Entity acts as an FSU using the interchange option when requested to export SOP Instances from the local database to media upon which DICOM data already resides.

The system user selects exams from the system's directory for transfer to media that already contains data. The DICOMDIR is updated allowing access to original and new data.

DVD +RW media may be erased at any time, removing all previously recorded data.

5.2.1.2.3.1 Media Storage Application Profiles

See Table 66 for supported Application Profiles.

5.2.1.2.3.2 Options

The Media Application Entity supports the SOP Classes and Transfer Syntaxes listed in Table 67.

Table 67
IODS, SOP CLASSES AND TRANSFER SYNTAXES FOR OFFLINEMEDIA

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	1.2.840.10008.1.2.1
		JPEG Lossy Baseline	1.2.840.10008.1.2.4.50
		JPEG Lossless Baseline	1.2.840.10008.1.2.4.70
US Image Storage (Retired)*	1.2.840.10008.5.1.4.1.1.6	Explicit VR Little Endian	1.2.840.10008.1.2.1
		JPEG Lossy Baseline	1.2.840.10008.1.2.4.50
		JPEG Lossless Baseline	1.2.840.10008.1.2.4.70
US Multiframe Image Storage*	1.2.840.10008.5.1.4.1.1.3.1	Explicit VR Little Endian	1.2.840.10008.1.2.1
		JPEG Baseline Lossy Compression	1.2.840.10008.1.2.4.50
US Multiframe Image Storage (Retired)*	1.2.840.10008.5.1.4.1.1.3	Explicit VR Little Endian	1.2.840.10008.1.2.1
		JPEG Baseline Lossy Compression	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
Private 3D Presentation State**	1.3.46.670589.2.5.1.1	Explicit VR Little Endian	1.2.840.10008.1.2.1

* See details listed in Table 9. ** For import to Philips QLAB or Xcelera workstations only.

6 SUPPORT OF CHARACTER SETS

All iU22 and iE33 DICOM applications support the

ISO_IR 100 (ISO 8859-1:1987 Latin Alphabet No. 1 supplementary set)

7 SECURITY

DICOM security is not implemented on the iU22 or iE33 at this time.

iU22 and iE33 incorporate an internal firewall that only accepts incoming traffic on the designated listening port, as configured in the System tab of the Global Configuration screen.

8 ANNEXES

8.1 CREATED IOD INSTANCES

Table 69 specifies the attributes of an Ultrasound Image transmitted by the iU22 and iE33 storage application.

Table 70 specifies the attributes of a Comprehensive Structured Reports transmitted by the iU22 and iE33 storage application. Please note that there are differences between which Structured Report Templates are used in each product.

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

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

The abbreviations used in the “Source” column:

MWL	the attribute value source Modality Worklist
USER	the attribute value source is from User input
AUTO	the attribute value is generated automatically
MPPS	the attribute value is the same as the Modality Performed Procedure Step service
CONFIG	the attribute value source is a configurable parameter

8.1.1 US or US Multiframe Image IOD

Table 69
IOD OF CREATED US OR US MULTIFRAME SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 71	ALWAYS
Study	General Study	Table 72	ALWAYS
	Patient Study	Table 73	ALWAYS
Series	General Series	Table 74	ALWAYS
Equipment	General Equipment	Table 75	ALWAYS
Image	General Image	Table 76	ALWAYS
	Image Pixel	Table 77	ALWAYS
	Cine	Table 78	Only if Multi-frame
	Multi-frame	Table 79	Only if Multi-frame
	US Region Calibration	Table 80	ANAP
	US Image	Table 81	ALWAYS
	VOI LUT	Table 82	Only if Single frame
	SOP Common	Table 83	ALWAYS

8.1.2 Comprehensive Structured Report IOD

Table 70
IOD OF CREATED COMPREHENSIVE STRUCTURED REPORT SOP INSTANCES

IE	Module	Reference	Presence of Module
Patient	Patient	Table 71	ALWAYS
Study	General Study	Table 72	ALWAYS
	Patient Study	Table 73	ALWAYS
Series	SR Document Series	Table 84	ALWAYS
Equipment	General Equipment	Table 75	ALWAYS
Document	SR Document General	Table 85	ALWAYS
	SR Document Content	Table 86	ALWAYS
	SOP Common	Table 87	ALWAYS

8.1.3 Common Modules

Table 71
PATIENT MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Patient's Name	(0010,0010)	PN	Same attribute of MWL or PDE input	ALWAYS	MWL/ USER
Patient ID	(0010,0020)	LO	From MWL, user input or system generated. Maximum 64 characters.	ALWAYS	MWL/ USER/ AUTO
Patient's Birth Date	(0010,0030)	DA	Same attribute of MWL or PDE input	VNAP	MWL/ USER
Patient's Sex	(0010,0040)	CS	Same attribute of MWL or PDE input	VNAP	MWL/ USER
Other Patient IDs	(0010,1000)	LO	Same attribute of MWL	VNAP	MWL
Ethnic Group	(0010,2160)	SH	Same attribute of MWL	VNAP	MWL
Patient Comments	(0010,4000)	LT	Same attribute of MWL or PDE input	VNAP	USER

Table 72
GENERAL STUDY MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Study Instance UID	(0020,000D)	UI	Same value as in MWL or auto generated	ALWAYS	MWL/ AUTO
Study Date	(0008,0020)	DA	Study's Start Date (0040,0244).	ALWAYS	AUTO
Study Time	(0008,0030)	TM	Study's Start Time (0040,0245).	ALWAYS	AUTO
Referring Physician's Name	(0008,0090)	PN	Only Last, First and Middle names from MWL, sent as "Last, First, Middle" in the Last name field; or PDE input.	VNAP	MWL/ USER
Study ID	(0020,0010)	SH	MWL Requested Procedure ID (0040,1001) or auto-generated	ALWAYS	MWL/ AUTO

Attribute Name	Tag	VR	Value	Presence of Value	Source
Accession Number	(0008,0050)	SH	Same attribute of MWL or user PDE input.	VNAP	MWL/ USER
Study Description	(0008,1030)	LO	MWL Scheduled Procedure Step Description (0040,0007) or PDE input	VNAP	MWL/ USER
Physician(s) of Record	(0008,1048)	PN	Mapped from Names of Intended Recipients of Results (0040,1010) from MWL, otherwise not present	ANAP	MWL
Referenced Study Sequence	(0008,1110)	SQ	One item per item in the MWL Referenced Study Sequence. Absent if unscheduled.	ANAP	MWL
>Referenced SOP Class UID	(0008,1150)	UI	Same value as in of the Referenced Study Sequence in the MWL	VNAP	MWL
>Referenced SOP Instance UID	(0008,1155)	UI	Same value as in of the Referenced Study Sequence in the MWL	VNAP	MWL
>Requested Procedure Description	(0032,1060)	LO	Same value as MWL attribute	VNAP	MWL
Procedure Code Sequence	(0008,1032)	SQ	MWL Requested Procedure Code Sequence (0032,1064) Absent if unscheduled.	ANAP	MWL
>Code Value	(0008,0100)	SH	Same value as MWL attribute	VNAP	MWL
>Coding Scheme Designator	(0008,0102)	SH	Same value as MWL attribute	VNAP	MWL
>Coding Scheme Version	(0008,0103)	SH	Same value as MWL attribute	VNAP	MWL
>Code Meaning	(0008,0104)	LO	Same value as MWL attribute	VNAP	MWL

Table 73-a
PATIENT STUDY MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Admitting Diagnosis Description	(0008,1080)	LO	Same attribute as MWL attribute	VNAP	MWL
Patient Size	(0010,1020)	DS	Same value as MWL attribute or PDE input	VNAP	MWL/ USER
Patient's Weight	(0010,1030)	DS	Same value as MWL attribute or PDE input	VNAP	MWL/ USER
Additional Patient's History	(0010,21B0)	LT	Same value as MWL attribute	VNAP	MWL

Table 73-b
PATIENT MEDICAL MODULE OF CREATED SOP INSTANCES*

Attribute Name	Tag	VR	Value	Presence of Value	Source
Medical Alerts	(0010,2000)	LO	Same value as MWL attribute	VNAP	MWL
Pregnancy Status	(0010,21C0)	US	Same value as MWL attribute	ANAP	MWL

*Note: These tags extend the standard US Image and US Multiframe Image IODs

Table 74
GENERAL SERIES MODULE OF CREATED IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Modality	(0008,0060)	CS	"US"	ALWAYS	AUTO
Series Instance UID	(0020,000E)	UI	Auto-generated	ALWAYS	AUTO
Series Number	(0020,0011)	IS	A number unique within the Study.	ALWAYS	AUTO
Series Date	(0008,0021)	DA	Date of first image in series.	ALWAYS	AUTO
Series Time	(0008,0031)	TM	Time of first image in series.	ALWAYS	AUTO
Performing Physician's Name	(0008,1050)	PN	MWL Scheduled Performing Physician's Name (0040,0006)	VNAP	MWL
Protocol Name	(0018,1030)	LO	"Free Form" "Exercise 2 Stage" "Exercise 3 Stage" "Pharmacological 4 Stage" "Wall Motion and Contrast" "Quantitative 4 Stage" user defined	ALWAYS	AUTO
Series Description	(0008,103E)	LO	Same as Study Description when from MWL.	ANAP	MWL/ USER
Operator's Name	(0008,1070)	PN	From PDE "Sonographer" field	VNAP	USER
Referenced Performed Procedure Step Sequence	(0008,1111)	SQ	Identifies the MPPS SOP Instance this image is related to	ALWAYS	MPPS
>Referenced SOP Class UID	(0008,1150)	UI	PPS SOP Class = "1.2.840.10008.3.1.2.3.3"	ALWAYS	MPPS
>Referenced SOP Instance UID	(0008,1155)	UI	PPS Instance UID of the PPS generating this image	ALWAYS	MPPS
Request Attributes Sequence	(0040,0275)	SQ		ALWAYS	AUTO / MWL
>Requested Procedure ID	(0040,1001)	SH	Auto-generated=Study ID or value from MWL. One item.	ALWAYS	AUTO / MWL
>Scheduled Procedure Step ID	(0040,0009)	SH	Auto-generated=Study ID or value from MWL. One item.	ALWAYS	AUTO / MWL
>Scheduled Procedure Step Description	(0040,0007)	LO	Same value as MWL attribute.	VNAP	MWL
>Scheduled Protocol Code Sequence	(0040,0008)	SQ	Same value as MWL attribute.	VNAP	MWL
Performed Procedure Step ID	(0040,0253)	SH	Auto-generated=Study ID or value from MWL. One item.	ALWAYS	AUTO / MWL
Performed Procedure Step Start Date	(0040,0244)	DA	See Table 30	ALWAYS	AUTO
Performed Procedure Step Start Time	(0040,0245)	TM	See Table 30	ALWAYS	AUTO
Performed Procedure Step Description	(0040,0254)	LO	MWL Scheduled Procedure Step Description (0040,0007) or PDE input if any.	VNAP	USER / MWL

Attribute Name	Tag	VR	Value	Presence of Value	Source
Performed Protocol Code Sequence	(0040,0260)	SQ	Zero length, or mapped from MWL Scheduled Protocol Code Sq (0040,0008)	VNAP	MWL

Table 75
GENERAL EQUIPMENT MODULE OF CREATED SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Manufacturer	(0008,0070)	LO	Philips Medical Systems	ALWAYS	AUTO
Institution Name	(0008,0080)	LO	From Setups configuration* (requires power cycle)	VNAP	CONFIG
Station Name	(0008,1010)	SH	From Setups configuration	VNAP	CONFIG
Manufacturer's Model Name	(0008,1090)	LO	iU22 or iE33	ALWAYS	AUTO
Device Serial Number	(0018,1000)	LO	Encoded, also used as component of system generated private UIDs.	ALWAYS	AUTO
Software Version	(0018,1020)	LO	PMS1.1 Ultrasound iU22_3.0.x.x PMS1.1 Ultrasound iE33_3.0.x.x	ALWAYS	AUTO

* Always cycle system power after changing Institution Name prior to sending data.

8.1.4 US or Multiframe Image Modules

Table 76
GENERAL IMAGE MODULE OF CREATED US 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
Content Date	(0008,0023)	DA	<yyyymmdd>	ALWAYS	AUTO
Content Time	(0008,0033)	TM	<hhmmss>	ALWAYS	AUTO
Image Type	(0008,0008)	CS	ORIGINAL/PRIMARY/<Analysis Type*> for uncompressed, DERIVED/PRIMARY/ < Analysis Type *> if compressed	ALWAYS	CONFIG
Acquisition Datetime	(0008,002A)	DT	The date and time that the acquisition of data that resulted in this image started.	ALWAYS	AUTO
Derivation Description	(0008,2111)	ST	"Uncompressed" for US Image or "Low", "Medium" or "High" for USMF Image based on configuration setting	ALWAYS	AUTO
Burned In Annotation	(0028,0301)	CS	Set to "YES"	ALWAYS	AUTO
Lossy Image Compression	(0028,2110)	CS	"01" if image is lossy compressed, "00" if not.	ALWAYS	AUTO

Attribute Name	Tag	VR	Value	Presence of Value	Source
Lossy Image Compression Ratio	(0028,2112)	DS	A value is present, currently “0” for loops. For Lossy Compressed Single Frame images, the following is sent: Lossy Low = 100 Lossy Med = 95 Lossy High = 90	ANAP	AUTO
Presentation LUT Shape	(2050,0020)	CS	“IDENTITY“ Only if “Image Export Format” is GSDF.	ANAP	AUTO

* Analysis Type selection is determined by the analysis package associated with the transducer / preset selection.

Table 77
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	See US Image Module Table 81	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS	See US Image Module Table 81	ALWAYS	AUTO
Rows	(0028,0010)	US	Image height in pixels: 240*, 300**, 480***, 600****, 768*****, 1024******, 1050*******	ALWAYS	CONFIG
Columns	(0028,0011)	US	Image width in pixels: 320*, 400**, 640***, 800****, 1024*****, or 1280******, 1680*******	ALWAYS	CONFIG
Bits Allocated	(0028,0100)	US	8 Bits per pixel.	ALWAYS	AUTO
Bits Stored	(0028,0101)	US	Number of info bits in pixel: ”8” Color: 24; BW: 8.	ALWAYS	AUTO
High Bit	(0028,0102)	US	High bit is 7	ALWAYS	AUTO
Pixel Representation	(0028,0103)	US	“0” pixels are Unsigned integers	ALWAYS	AUTO
Pixel Data	(7FE0,0010)	OW / OB		ALWAYS	AUTO
Planar Configuration	(0028,0006)	US	Must be present when image is RGB. Value is “0”.	ALWAYS	AUTO

Image Size (Rows and Columns) details:
* = ROI Multiframe images on non-Wide Screen systems
**= ROI Multiframe images on Wide Screen systems
*** = Multiframe images, on non-Wide Screen systems
****= Multiframe images, on Wide Screen systems
***** = Single Frame Display Area only images and
****** = Single Frame Full Screen images (no scaling data), and Patient Data Entry screen
*******= New Single Frame full screen on Wide Screen systems only.

Table 78
CINE MODULE OF CREATED US MULTIFRAME SOP

Attribute Name	Tag	VR	Value	Presence of Value	Source
Frame Time	(0018,1063)	DS	Frame time in milliseconds	ANAP	AUTO

Table 79
MULTI-FRAME MODULE OF CREATED US MULTIFRAME SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Number of Frames	(0028,0008)	IS	# of frames in object	ANAP	AUTO
Frame Increment Pointer	(0028,0009)	AT	(0018,1063) Frame Time only	ANAP	AUTO

Table 80
US REGION CALIBRATION MODULE OF CREATED US IMAGE OR US MULTIFRAME IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Sequence of Ultrasound Regions	(0018,6011)	SQ	A sequence is present for each region on the system display, except for ECG regions. Only when set for “Display Area”. No scaling for “Full Screen” images, rendered 3D.	ANAP	AUTO
>Region Location Min x_0	(0018,6018)	UL	Top Left position of region.	ALWAYS	AUTO
>Region Location Min y_0	(0018,601A)	UL	Top Left position of region	ALWAYS	AUTO
>Region Location Max x_1	(0018,601C)	UL	Bottom Right position of region	ALWAYS	AUTO
>Region Location Max y_1	(0018,601E)	UL	Bottom Right position of region	ALWAYS	AUTO
>Physical Units X Direction	(0018,6024)	US	Enumerated Value. 2D Image = 0003H = CM Mmode / Doppler = 0004H = SEC	ALWAYS	AUTO
>Physical Units Y Direction	(0018,6026)	US	Enumerated Value. 2D Image = 0003H = CM Mmode = 0003H = CM Doppler = 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
>Reference Pixel X0	(0018,6020)	SL	The X pixel value of baseline, Doppler only	ANAP	AUTO
>Reference Pixel Y0	(0018,6022)	SL	The Y pixel value of baseline, Doppler only	ANAP	AUTO
>Region Spatial Format	(0018,6012)	US	Enumerated Value. 2D (tissue or flow) = 0001H M-Mode (tissue or flow) = 0002H Spectral (CW or PW Doppler) = 0003H	ALWAYS	AUTO
>Region Data Type	(0018,6014)	US	Enumerated Value. Tissue = 0001H	ALWAYS	AUTO

Attribute Name	Tag	VR	Value	Presence of Value	Source
			PW Spectral Doppler = 0003H CW Spectral Doppler = 0004H		
>Region Flags	(0018,6016)	UL	Bit mask. See DICOM PS3.3 C.8.5.5.1.3:	ALWAYS	AUTO

Table 81
US IMAGE MODULE OF CREATED US IMAGE OR US MULTIFRAME IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Samples Per Pixel	(0028,0002)	US	"1" for Monochrome2, only if "Export Monochrome" is selected, otherwise, "3" for RGB or YBR_FULL_422	ALWAYS	AUTO
Photometric Interpretation	(0028,0004)	CS	Uncompressed: "Monochrome2" or "RGB" Compressed: "YBR_FULL_422"	ALWAYS	CONFIG
Bits Allocated	(0028,0100)	US	8 Bits per pixel.	ALWAYS	AUTO
Bits Stored	(0028,0101)	US	Number of info bits in pixel: "8" Color: 24; BW: 8.	ALWAYS	AUTO
High Bit	(0028,0102)	US	High bit is 7	ALWAYS	AUTO
Planar Configuration	(0028,0006)	US	Always "0",	ALWAYS	AUTO
Pixel Representation	(0028,0103)	US	"0" Pixels are Unsigned integers	ALWAYS	AUTO
Frame Increment Pointer	(0028,0009)	AT	(0018,1063) "Frame Time" only.	ANAP	AUTO
Image Type	(0008,0008)	CS	See Table 76	ALWAYS	CONFIG
Lossy Image Compression	(0028,2110)	CS	"01" if image is lossy compressed, "00" if not.	ALWAYS	AUTO
Number of Stages	(0008,2124)	IS	1-n	ANAP	AUTO
Number of Views in Stage	(0008,212A)	IS	1-n	ANAP	AUTO
Ultrasound Color Data Present	(0028,0014)	US	0 or 1	ALWAYS	AUTO
Stage Name	(0008,2120)	SH	REST, PEAK, POST, IMPOST, BASE, LOW, user defined	ANAP	AUTO
Stage Code Sequence	(0040,000A)	SQ	Sequence of items describing the performed Ultrasound Protocol Stage(s). See Baseline Context ID 12002 for possible contents.	ANAP	AUTO
Stage Number	(0008,2122)	IS	1-n	ANAP	AUTO
View Name	(0008,2127)	SH	LAX, SAX, AP4, AP2, AP3, user defined	ANAP	AUTO
View Number	(0008,2128)	IS	1-n	ANAP	AUTO
Number of Event Timers	(0008,2129)	IS	1-n	ANAP	AUTO
Event Elapsed Time(s)	(0008,2130)	DS	nnn msec.	ANAP	AUTO
Event Timer Name(s)	(0008,2132)	LO	Timer	ANAP	AUTO

Attribute Name	Tag	VR	Value	Presence of Value	Source
View Code Sequence	(0050,0220)	SQ	Sequence that describes the view of the patient anatomy in this image. Only a single Item shall be permitted in this Sequence.		
Acquisition Datetime	(0008,002A)	DT	The date and time that the acquisition of data that resulted in this image started.	ALWAYS	AUTO
Trigger Time	(0018,1060)	DS	nnn msec.	ANAP	AUTO
Heart Rate	(0018,1088)	IS	Beats per minute	ANAP	AUTO
Transducer Data	(0018,5010)	LO	Transducer name	ALWAYS	AUTO
Processing Function	(0018,5020)	LO	Imaging optimization name.	ALWAYS	AUTO

Table 82
VOI LUT MODULE OF CREATED US SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Window Center	(0028,1050)	DS	Fixed at 127	ANAP	AUTO
Window Width	(0028,1051)	DS	Fixed at 254	ANAP	AUTO

Table 83
SOP COMMON MODULE OF CREATED US IMAGE OR US MULTIFRAME IMAGE SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
SOP Class UID	(0008,0016)	UI	1.2.840.10008.5.1.4.1.1.6.1 or 1.2.840.10008.5.1.4.1.1.6 for US Image 1.2.840.10008.5.1.4.1.1.3.1 or 1.2.840.10008.5.1.4.1.1.3 for US Multiframe Image	ALWAYS	AUTO
SOP Instance UID	(0008,0018)	UI	Generated by device	ALWAYS	AUTO
Specific Character Set	(0008,0005)	CS	Attribute only sent if an Extended or Replacement Character Set is used	ANAP	AUTO
Instance Creation Date	(0008,0012)	DA	<yyyymmdd>	ALWAYS	AUTO
Instance Creation Time	(0008,0013)	TM	<hhmmss>	ALWAYS	AUTO

8.1.5 Comprehensive Structured Report Modules

Table 84
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	Auto-generated	ALWAYS	AUTO
Series Number	(0020,0011)	IS	A number unique within the Study	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	PPS SOP Class = "1.2.840.10008.3.1.2.3.3"	ALWAYS	MPPS
> Referenced SOP Instance UID	(0008,1155)	UI	PPS Instance UID of the PPS generating this document	ALWAYS	MPPS

Table 85
SR DOCUMENT GENERAL MODULE OF CREATED COMPREHENSIVE SR SOP INSTANCES

Attribute Name	Tag	VR	Value	Presence of Value	Source
Instance Number	(0020,0013)	IS	Unique number	ALWAYS	AUTO
Completion Flag	(0040,A491)	CS	PARTIAL	ALWAYS	AUTO
Verification Flag	(0040,A493)	CS	UNVERIFIED	ALWAYS	AUTO
Content Date	(0008,0023)	DA	Date content created.	ALWAYS	AUTO
Content Time	(0008,0033)	TM	Time content created.	ALWAYS	AUTO
Predecessor Documents Sequence	(0040,A360)	SQ	Used when Send of Demand is used and Send Structured Reports with Send on Demand is selected. Will indicate the preceding SR sent in the study.	ANAP	AUTO
>Study Instance UID	(0020,000D)	UI	Study's UID	ANAP	AUTO
>Referenced Series Sequence	(0008,1115)	SQ	Identifies the Series containing the referenced SR	ALWAYS	AUTO
>>Referenced SOP Sequence	(0008,1199)	SQ	SOP Instance UID for SR Series in the study	ALWAYS	AUTO
>>> Referenced SOP Class	(0008,1150)	UI	Comprehensive SR SOP Class 1.2.840.10008.5.1.4.1.1.88.33	ALWAYS	AUTO
>>> Referenced SOP Instance UID	(0008,1155)	UI	SOP Instance UID of the preceding SR in the study	ALWAYS	AUTO
Referenced Request Sequence	(0040,A370)	SQ	Identifies Requested Procedures being fulfilled (completely or partially) by creation of this Document.	ANAP	AUTO
>Study Instance UID	(0020,000D)	UI	Same value as in MWL or auto generated	ALWAYS	MWL/ AUTO

Attribute Name	Tag	VR	Value	Presence of Value	Source
>Referenced Study Sequence	(0008,1110)	SQ	1 item per item in MWL, absent if unscheduled	ANAP	MWL
>>Referenced SOP Class UID	(0008,1150)	UI	Identifies the Referenced SOP Class	ANAP	MWL
>>Referenced SOP Instance UID	(0008,1155)	UI	Instance UID	ANAP	MWL
>Accession Number	(0008,0050)	SH	Same attribute of MWL or user PDE input.	VNAP	MWL/ USER
>Placer Order Number/Imaging Service Request	(0040,2016)	LO	Order Number of Imaging Service Request assigned by placer	VNAP	MWL
>Filler Order Number/Imaging Service Request	(0040,2017)	LO	Order Number of Imaging Service Request assigned by filler	VNAP	MWL
>Requested Procedure ID	(0040,1001)	SH	1 item per item in MWL, absent if unscheduled	ANAP	MWL
>Requested Procedure Description	(0032,1060)	LO	1 item per item in MWL, absent if unscheduled	ANAP	MWL
>Requested Procedure Code Sequence	(0032,1064)	SQ	1 item per item in MWL, absent if unscheduled	ANAP	MWL
Performed Procedure Code Sequence	(0040,A372)	SQ	Codes of the performed procedure	VNAP	AUTO/ MWL

Table 86
SR DOCUMENT CONTENT MODULE OF CREATED COMPREHENSIVE SR SOP INSTANCES
This table describes the template-specific data summarized from the following tables in the DICOM Standard: Document Content Macro, Document Relationship Macro, Numeric Measurement Macro and Code Macro

Attribute Name	Tag	VR	Value	Presence of Value	Source
Content Template Sequence	(0040,A504)	SQ		ALWAYS	AUTO
>Template Identifier	(0040,DB00)	CS	The Root Content Item identifies TID 5000 (OB-GYN), 5100 (Vascular). 5200 (Echo) or 995300 (Ped Echo).	ALWAYS	AUTO
>Mapping Resource	(0008,0105)	CS	DCMR	ALWAYS	AUTO
Content Sequence	(0040,A730)	SQ		ALWAYS	AUTO
>Relationship Type	(0040,A010)	CS	*See Template ID 5000 for OB-GYN, Template ID 5100 for Vascular Template ID 5200 for Adult Echo and Template ID 995300 for Ped Echo*	ALWAYS	AUTO
Document Relationship Macro Table			*See Template ID 5000 for OB-GYN, Template ID 5100 for Vascular Template ID 5200 for Adult Echo and Template ID 995300 for Ped Echo*	ANAP	AUTO

Attribute Name	Tag	VR	Value	Presence of Value	Source
Document Content Macro			*See Template ID 5000 for OB-GYN, Template ID 5100 for Vascular Template ID 5200 for Adult Echo and Template ID 995300 for Ped Echo*	ALWAYS	AUTO
Value Type	(0040,A040)	CS	CONTAINER, always first tag of SR	ALWAYS	AUTO
Concept Name Code Sequence	(0040,A043)	SQ		ALWAYS	AUTO
>Code Value	(0008,0100)		125000, 125100 125200 or 995300	ALWAYS	AUTO
>Coding Scheme Designator	(0008,0102)		DCM	ALWAYS	AUTO
>Code Meaning	(0008,0104)		"OB-GYN Ultrasound Procedure Report", "Vascular Ultrasound Procedure Report", "Adult Echocardiography Procedure Report" or Pediatric Echocardiography Procedure Report	ALWAYS	AUTO
Continuity of Content	(0040,A050)	CS	SEPARATE	ALWAYS	AUTO
Numeric Measurement Macro			*See Template ID 5000 for OB-GYN, Template ID 5100 for Vascular Template ID 5200 for Adult Echo and Template ID 995300 for Ped Echo*	ALWAYS	AUTO
Code Macro			*See Template ID 5000 for OB-GYN, Template ID 5100 for Vascular Template ID 5200 for Adult Echo and Template ID 995300 for Ped Echo*	ALWAYS	AUTO

Table 87
SOP COMMON MODULE OF CREATED COMPOSITE 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	"None", unless required by characters used	ALWAYS	CONFIG

8.2 USED FIELDS IN RECEIVED IOD BY APPLICATION

The iU22 and iE33 storage applications do not receive SOP Instances. The usage of attributes received via MWL is described in section 4.2.2.3.1.3 SOP Specific Conformance for Modality Worklist.

8.3 ATTRIBUTE MAPPING

Table 88 summarizes the relationships between attributes received via MWL, stored in acquired images and communicated via MPPS. The format and conventions used in Table 88 are the same as the corresponding table in IHE Technical Framework, Rev. 5.5 04-07-2003, vol. II: Transactions.

Table 88
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 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	>Requested Procedure Description
Scheduled Procedure Step ID	>Scheduled Procedure Step ID	>Scheduled Procedure Step ID
Scheduled Procedure Step Description	>Scheduled Procedure Step Description > Study Description > Series Description > Performed Procedure Step Description	>Scheduled Procedure Step Description
Scheduled Protocol Code Sequence	>Scheduled Protocol Code Sequence	----
----	Performed Protocol Code Sequence	Performed Protocol Code Sequence
----	Study ID – Requested Procedure ID from MWL, else generated	Study ID – Requested Procedure ID from MWL, else generated
----	Performed Procedure Step ID	Performed Procedure Step ID
----	Performed Procedure Step Start Date	Performed Procedure Step Start Date
----	Performed Procedure Step Start Time	Performed Procedure Step Start Time
----	Performed Procedure Step Description	Performed Procedure Step Description
----	----	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

Modality Worklist	Image IOD	MPPS IOD
----	Protocol Name	Protocol Name

8.4 COERCED/MODIFIED FIELDS

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

8.5 CONTROLLED TERMINOLOGY

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 Table 88.

Structured Reporting uses codes supplied by DCMR (DICOM Code Mapping Resource, PS 3-16), LOINC, SRT and 99PMSBLUS (Philips Private Codes for Ultrasound).

8.6 GRAYSCALE IMAGE CONSISTENCY

The high-resolution display monitor is calibrated according to the Grayscale Standard Display Function (GSDF).

8.7 EXTENSIONS / SPECIALIZATIONS / PRIVATIZATIONS

8.7.1 Standard Extended / Specialized / Private SOPs

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 objects stored to media include the same Pixel Data contents as above and 3D volume data in Private Tags solely for use by iU22 and iE33 for redisplay of the volume information. .

The tags that are sent via network or media are depended on settings for the specific destination, as found in "Print/Network>Device Selection and either the "Media" tab or "Archive" tab and the "Advanced" button for the highlighted archive device.

8.7.2 Private SOP Class – 3D Presentation State Specification

8.7.2.1 3D Presentation State SOP Class

iU22 and iE33 provide Standard Conformance to the following Private SOP Class:

Table 89
SOP CLASS FOR PRIVATE 3D PRESENTATION STATE

SOP Class Name	SOP Class UID	SCU	SCP
Private 3D Presentation State	1.3.46.670589.2.5.1.1	Yes	No

8.7.2.2 Association Establishment Policy

8.7.2.2.1 General

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

Table 90
DICOM APPLICATION CONTEXT FOR PRIVATE 3D PRESENTATION STATE

Application Context Name	1.2.840.10008.3.1.1.1

8.7.2.2.2 Number of Associations

iU22 and iE33 initiate one Association at a time for storage of a Private 3D Presentation state for each network store device, if configured to send 3D Presentation State. Configuration located in 'Advanced properties for the store device.

Table 91
NUMBER OF ASSOCIATIONS INITIATED FOR PRIVATE 3D PRESENTATION STATE

Maximum number of simultaneous Associations	3, one for each configured remote device

8.7.2.2.3 Asynchronous Nature

iU22 and iE33 do not support asynchronous communication (multiple outstanding transactions over a single Association).

Table 92
ASYNCHRONOUS NATURE AS A SCU FOR PRIVATE 3D PRESENTATION STATE

Maximum number of outstanding asynchronous transactions	1

8.7.2.2.4 Implementation Identifying Information

The implementation information for this Application Entity is:

Table 93
DICOM IMPLEMENTATION CLASS AND VERSION FOR PRIVATE 3D PRESENTATION STATE

Implementation Class UID	1.3.46.670589.5.2.10
Implementation Version Name	MIP5.1L4

8.7.2.3 Association Initiation Policy

8.7.2.3.1 Activity – Store a Private 3D Presentation state

8.7.2.3.2 Description and Sequencing of Activities

The user's selection to store a 3D image initiates the activity to store the 3D Presentation State to the configured and selected remote storage device(s), using standard DICOM C-Store DIMSE commands.

iU22 and iE33 initiate an Association in order to issue:

— C-STORE request to store 3D Presentation State.

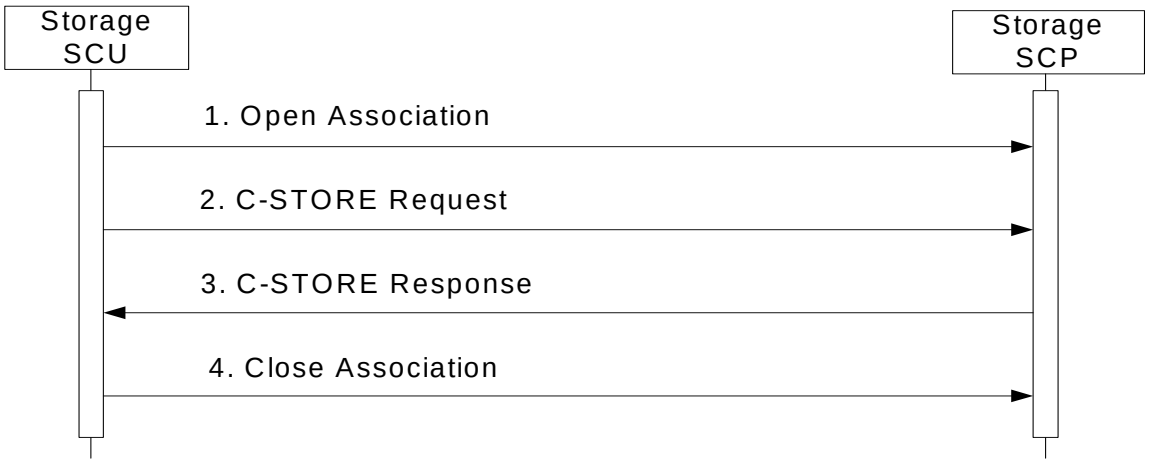


Figure 8a
SEQUENCING OF ACTIVITY – STORE PRIVATE 3D PRESENTATION STATE

8.7.2.3.3 Proposed Presentation Contexts

iU22 and iE33 will propose Presentation Contexts as shown in the following table:

Table 94
PROPOSED PRESENTATION CONTEXTS FOR ACTIVITY STORE PRIVATE 3D PRESENTATION STATE

Presentation Context Table					
Abstract Syntax		**Transfer Syntax**		**Role**	**Ext. Neg.**
Name	**UID**	**Name List**	**UID List**		
Private 3D Presentation State	1.3.46.670589.2.5.1.1	Implicit VR Little Endian Explicit VR Little Endian	1.2.840.10008.1.2 1.2.840.10008.1.2.1	SCU	None

8.7.2.3.4 SOP Specific Conformance for storage of a Private 3D Presentation State

Table 96 summarizes the behavior of iU22 and iE33 when encountering status codes in a Private 3D Presentation State C-STORE response.

A message will appear on the user interface if iU22 or iE33 receive any other SCP response status than "Success."

Table 95
PRIVATE 3D PRESENTATION STATE C-STORE RESPONSE STATUS HANDLING BEHAVIOR

Service Status	Further Meaning	Error Code	Behavior
Success	None	0000	Operations continue
Refused	SOP Class Not Supported	0112	Object is not stored, error message is logged and the user is informed
Failed	Unable to Process	C000 – CFFF	Same as “Refused” above.
*	*	Any other status code.	Same as “Refused” above.

Table 96 contains the tag ranges used in the private 3D Presentation State objects sent when 3D Subpages are stored.

Table 96
CREATED PRIVATE 3D PRESENTATION STATE OBJECT PRIVATE CREATOR RANGE VALUES

DICOM Tag	Description
2001,xxxx	Private Data
200d,xxxx	Private Data

For a list of the bulk private tags, see Appendix B.

8.8 PRIVATE TRANSFER SYNTAXES

There are no Private Transfer Syntaxes.

APPENDIX A – Structured Reports

A.1 STRUCTURED REPORTS

A.1.1 Introduction

iU22 and iE33 implement Structured Report Templates TID 5000 (OB-GYN) **(iU22-only),** 5100 (Vascular) **(both iU22 and iE33)** and 5200 (Echo) **(both iU22 and iE33)** from DICOM Part 16 and TID 995300 (Ped Echo) **(iE33-only)** based on Supplement 78 version 2, May 8 2004. This Appendix describes the manner that iU22 and iE33 measurements appear in DICOM reports.

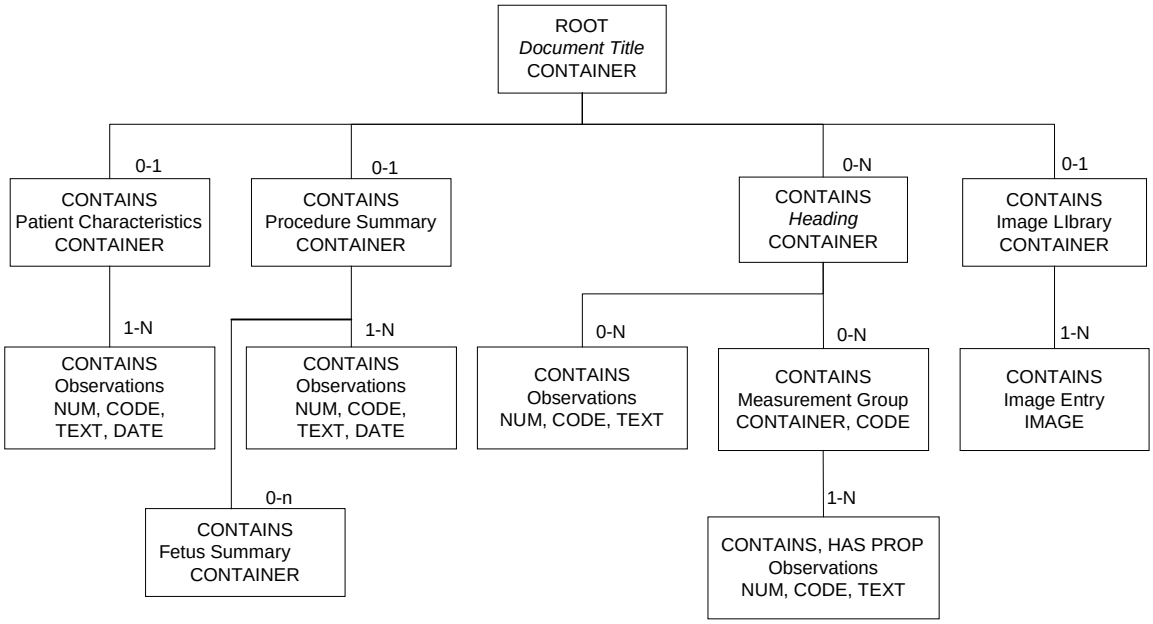
This Appendix contains tables of the measurement and calculations displayed on iU22 and iE33 calculation screens and the data dictionary of all code values, coding scheme designators and code meanings associated with those measurements and labels. There is no attempt to provide all tags that will be sent in the SR object. For those specifics, please refer to DICOM PS3-3, 3-16 and 3-17 for complete discussion on Comprehensive SOP Class support and the Templates described here.

Part 17 of the DICOM Standard includes tree diagrams showing graphic examples of the structure of each template.

Briefly, an SR document will contain only the measurements, calculations and observations made during the exam. Its exact structure is therefore determined by two main components, the measurements that are available within the context of the template and its referenced Templates and Context groups, and those measurements and calculations that are implemented on the system creating the report. Supplementing these constraints are private and user defined measurements and calculations, which may be added if the Root Container Template is extensible.

In the iU22 and iE33, the calculation packages contain a combination of template and user defined measurements and calculations. This Appendix contains a description of the calculation packages on each system and the related templates that support them. See the table in the Clinical Scope section below.

In each template section, there is a brief description of the mapping of measurement and calculation labels as they appear on the iU22 sidebars and iE33 Touch Screen buttons when the Analysis feature is enabled.



A.1.2 Clinical Scope

The supported measurements are located in Calcs packages accessed with the “Calc” hard key on iU22 and Analysis softkey on iE33. Measurements for a given SR section may come from several calcs sidebars/touch screens.

APPLICATIONS THAT EXPORT STRUCTURED REPORTS FROM IU22 AND IE33

The following table illustrates the calculation packages that are on iU22 and iE33, which will export Structured Reports when selecting the Change Calcs option on iU22. The calculation application selection on iE33 is made when the “Preset/Transducer” selection is made.

Y = will export an SR, N = No SR Exported

Applications	iU22	iE33	Template ID	Notes
OB	Yes	No	5000	
GYN	Yes	No	5000	
Small Parts	No	No	N/A	Not supported
Fetal Echo	No	No	N/A	Not supported
Pediatric Echo	No	Yes	995300	
General	No	No	N/A	No export
Abdominal	Yes	No	5100	
Adult Echo	Yes	Yes	5200	
Vascular	Yes	Yes	5100	Includes Abdominal

See the appropriate Template Section for details on specific outputs from each system.

The mapping tables that follow illustrate the relationship between system calculation package labels as represented on the screen and on-system report displays and relate them to the associated code representations.

Each section, OB-GYN, Vascular, Echo and Ped Echo begins with a table detailing the relationships of the mapping table contents to the Templates, and the specified Context groups.

The Patient Data Entry (PDE) and Study Info Mapping section describes the labels of the fields present in the user interface that will be sent with the Structured Report, and referenced template and date types.

PATIENT DATA ENTRY (PDE) AND STUDY INFO MAPPING

Date Data Sent with All Reports, not entered in PDE

Label	Referenced Template ID (TID)	Type	Origin
Study Date	**Private**	TEXT	Date exam originally started
Exam Date	**Private**	TEXT	Study Date, except when Report is generated during Append from Image Review. Please see detailed explanation in section 4.1.1.

The following table is the Patient / Study Data from Patient Data Entry which is added to all SRs. Each template section contains specific PDE data related to the particular examination type.

All of the following table’s contents are listed in:

CONTAINER (121118,DCM, “Patient Characteristics”)=SEPARATE

General PDE / Study Info

Label	Referenced Template ID (TID)	Type	Units
Patient Name	**Private (99002)**	TEXT	
Patient ID	**Private (99002)**	TEXT	
Patient's Birth Date	**Private (99002)**	DATE	
Patient's Sex	**Private (99002)**	TEXT	
Comments	**See the applicable template**	TEXT	
Patient Height	**See the applicable template**	NUM	m
Patient Weight	**See the applicable template**	NUM	kg
Accession Number	**Private**	TEXT	
Sonographer	**Private**	TEXT	
Study Description	**Private**	TEXT	
Referring Physician	**Private**	TEXT	

For the OB-GYN Structured Reports, the following PDE (Patient Date Entry) data is exported.

OB Study Info

Label	Referenced Template ID (TID)	Type	Units
Height	**5001, Line 3**	NUM	m
Weight	**5001, Line 4**	NUM	kg
LMP	**5002, Line 2**	DATE	
Conception Date	**5002, Line 2**	DATE	
EDD	**5002, Line 2**	DATE	
GA	**5002, Line 2**	NUM	
Diabetic	**Private**	CHECK	
Diabetic Type	**Private**	TEXT	
No. of Fetuses	**5002, Line 3**	NUM	no units
Gravida	**5001, Line 5**	NUM	no units
Para	**5001, Line 6**	NUM	no units
Aborta	**5001, Line 7**	NUM	no units
Ectopic	**5001, Line 8**	NUM	no units

GYN Study Info

Label	Referenced Template ID (TID)	Type	Units
Height	**5001, Line 3**	NUM	m
Weight	**5001, Line 4**	NUM	kg
Expected Ovulation	**Private**	DATE	
Abnormal Cycles	**Private**	CHECK	
Birth Control Medication	**Private**	CHECK	
Birth Control Medication Duration	**Private**	TEXT	
Hormone Replacement Therapy	**Private**	CHECK	
Hormone Replacement Therapy Year Started	**Private**	TEXT	
Menopause	**Private**	CHECK	
Pelvic Pain Right	**Private**	CHECK	
Pelvic Pain Left	**Private**	CHECK	
Bleeding	**Private**	CHECK	
Bleeding Duration	**Private**	TEXT	
Complete Hysterectomy	**Private**	CHECK	
Partial Hysterectomy	**Private**	CHECK	
Ovary Surgery Right	**Private**	CHECK	
Ovary Surgery Left	**Private**	CHECK	
Ovary Surgery Bilateral	**Private**	CHECK	
Endometrium	**Private**	TEXT	

TID 5000 OB-GYN ULTRASOUND PROCEDURE REPORT

MAPPING FOR OB-GYN DICOM SR

Reference for the columns in the mapping table to TID 5000 in DICOM PS 3-16
Columns:

- Group / Finding Site TID 5000 Rows 7-18, 21 and 24
- Concept TID 5000 Rows 7-18, 21 and 24
- Modifiers
  - Laterality (left/right) TID 5017, Rows 17, 18 and 5025, Line 3
  - Result (vascular subresults) TID 5025, Row 4 as $MeasType
  - Derivation (calculated) TID 5008, Row 2 as $Derivation
  - Identifier (follicles) TID 5014, Row 2

Additional properties:

- Fetus ID TID 1008, Row 4
- Derivation = Estimated (user entry), Mean TID 300, Row 4 as $Derivation,
- Selection Status = Mean / User-chosen TID 310, Row 6
- Inferred from authorType, authorRef TID 5003 Row 5 and 5008 Row 4,as $Equation

APPLICATION: OB, MEASUREMENTS

Label	Group / Finding Site	Concept	Modifiers
AC	Fetal Biometry	Abdominal Circumference	
Adr Gland AP	Fetal Biometry	Adrenal Gland Antero-posterior Dimension	
Adr Gland L	Fetal Biometry	Adrenal Gland Longitudinal Dimension	
Adr Gland Tr	Fetal Biometry	Adrenal Gland Transverse Dimension	
Ao Annul Diam	Fetal Heart	Aortic Annulus Diameter	
AoR Diam (2D)	Fetal Heart	Aortic Root Diameter	
Aorta	Embryonic Vascular Structure	Aorta	Result: End Diastolic Velocity
Aorta	Embryonic Vascular Structure	Aorta	Result: Minimum Diastolic Velocity
Aorta	Embryonic Vascular Structure	Aorta	Result: Peak Systolic Velocity
Aorta	Embryonic Vascular Structure	Aorta	Result: Time averaged mean velocity
Aorta	Embryonic Vascular Structure	Aorta	Result: Time averaged peak velocity
Aorta	Embryonic Vascular Structure	Aorta	Result: Acceleration Index
Aorta	Embryonic Vascular Structure	Aorta	Result: Peak Gradient
Aorta	Embryonic Vascular Structure	Aorta	Result: Pulsatility Index
Aorta	Embryonic Vascular Structure	Aorta	Result: Resistivity Index
Aorta	Embryonic Vascular Structure	Aorta	Result: Systolic to Diastolic Velocity Ratio
Aorta	Embryonic Vascular Structure	Aorta	Result: Acceleration Time
Aorta	Embryonic Vascular Structure	Aorta	Result: Deceleration Time
Aorta	Embryonic Vascular Structure	Aorta	Result: Vessel lumen diameter
Aorta	Embryonic Vascular Structure	Aorta	Result: Velocity Time Integral
Aorta	Embryonic Vascular Structure	Aorta	Result: Heart Rate
Aorta	Embryonic Vascular Structure	Aorta	Result: Mean Gradient
Aorta	Embryonic Vascular Structure	Aorta	Result: Doppler Correction Angle
APD	Fetal Biometry	Anterior-Posterior Abdominal Diameter	
APTD	Fetal Biometry	Anterior-Posterior Trunk Diameter	
Asc Ao Diam	Fetal Heart	Ascending Aortic Diameter	
Bladder AP	Fetal Biometry	Bladder Antero-posterior Dimension	
Bladder L	Fetal Biometry	Bladder Longitudinal Dimension	
Bladder Tr	Fetal Biometry	Bladder Transverse Dimension	
BPD	Fetal Biometry	Biparietal Diameter	

Label	Group / Finding Site	Concept	Modifiers
Breathing	Biophysical Profile	Fetal Breathing	
Cerebellum	Fetal Biometry	Trans Cerebellar Diameter	
Cerv Length	Pelvis and Uterus	Cervix Length	
Cist Mag	Fetal Cranium	Cisterna Magna length	
Clavicle	Fetal Long Bones	Clavicle length	
CRL	Early Gestation	Crown Rump Length	
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: End Diastolic Velocity
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Minimum Diastolic Velocity
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Peak Systolic Velocity
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Time averaged mean velocity
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Time averaged peak velocity
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Acceleration Index
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Peak Gradient
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Pulsatility Index
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Resistivity Index
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Systolic to Diastolic Velocity Ratio
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Acceleration Time
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Deceleration Time
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Vessel lumen diameter
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Velocity Time Integral
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Heart Rate
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Mean Gradient
Desc Ao	Embryonic Vascular Structure	Descending Aorta	Result: Doppler Correction Angle
Desc Ao Diam	Fetal Heart	Descending Aortic Diameter	
Duct Art Diam (2D)	Fetal Heart	Ductus Arteriosus Diameter	
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: End Diastolic Velocity
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Minimum Diastolic Velocity
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Peak Systolic Velocity
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Time averaged mean velocity
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Time averaged peak velocity
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Acceleration Index
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Peak Gradient
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Pulsatility Index
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Resistivity Index
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Systolic to Diastolic Velocity Ratio
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Acceleration Time
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Deceleration Time
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Vessel lumen diameter
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Velocity Time Integral
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Heart Rate
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Mean Gradient
Duct Ven	Embryonic Vascular Structure	Ductus Venosus	Result: Doppler Correction Angle
Ear	Fetal Biometry	Ear length	
Fibula	Fetal Long Bones	Fibula length	
FL	Fetal Biometry	Femur Length	
Fluid Volume	Biophysical Profile	Amniotic Fluid Volume	
Foot	Fetal Biometry	Foot length	
FTA	Fetal Biometry	Fetal Trunk Cross Sectional Area	
Gest Sac	Early Gestation	Gestational Sac Diameter	
HC	Fetal Biometry	Head Circumference	
Heart Area (2D)	Fetal Biometry	Heart Area	
Heart Circ (2D)	Fetal Biometry	Heart Circumference	
Heart Rate	Fetus Summary	Fetal Heart Rate	
Humerus	Fetal Long Bones	Humerus length	
Iliac Crest	Fetal Biometry	Iliac Crest Dimension	
IOD	Fetal Cranium	Inner Orbital Diameter	
IVS (2D)	Fetal Heart	Interventricular Septum	

Label	Group / Finding Site	Concept	Modifiers
		Thickness	
L Lung Diam	Fetal Biometry	Left Lung Diameter	
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Peak Systolic Velocity
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: End Diastolic Velocity
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Minimum Diastolic Velocity
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Time averaged mean velocity
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Time averaged peak velocity
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Acceleration Index
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Peak Gradient
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Resistivity Index
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Pulsatility Index
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Systolic to Diastolic Velocity Ratio
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Acceleration Time
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Deceleration Time
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Vessel lumen diameter
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Velocity Time Integral
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Heart Rate
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Mean Gradient
L MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Left, Result: Doppler Correction Angle
L Ov Height	Ovary	Left Ovary Height	
L Ov Length	Ovary	Left Ovary Length	
L Ov Width	Ovary	Left Ovary Width	
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: End Diastolic Velocity
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Minimum Diastolic Velocity
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Peak Systolic Velocity
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Time averaged mean velocity
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Time averaged peak velocity
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Acceleration Index
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Peak Gradient
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Pulsatility Index
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Resistivity Index
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Systolic to Diastolic Velocity Ratio
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Acceleration Time
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Deceleration Time
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Vessel lumen diameter
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Velocity Time Integral
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Heart Rate
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Mean Gradient
L Uterine A	Pelvic Vascular Structure	Uterine Artery	Laterality: Left, Result: Doppler

Label	Group / Finding Site	Concept	Modifiers
			Correction Angle
LA Dimension	Fetal Heart	Left Atrium Dimension	
LA Length	Fetal Heart	Left Atrium Length	
LA Width	Fetal Heart	Left Atrium Width	
Lat Vent	Fetal Cranium	Lateral Ventricle width	
LLQ	Amniotic Sac	Left Lower Quadrant Diameter	
LUQ	Amniotic Sac	Left Upper Quadrant Diameter	
LV Dimension	Fetal Heart	Left Ventricle Dimension	
LV Length	Fetal Heart	Left Ventricle Length	
LV Width	Fetal Heart	Left Ventricle Width	
LVOT Diam	Fetal Heart	LV Outflow Tract Diameter	
M Phalanx 5	Fetal Biometry	Length of middle Phalanx of the 5th Digit	
Mandible	Fetal Biometry	Mandible Diameter	
Movement	Biophysical Profile	Gross Body Movement	
MPA Diam (2D)	Fetal Heart	Main Pulmonary Artery Diameter	
MV Annul Diam	Fetal Heart	Mitral Annulus Diameter	
Nasal	Fetal Long Bones	Nasal Bone Length	
Nuch Fold	Fetal Cranium	Nuchal Fold thickness	
Nuch Luc	Early Gestation	Nuchal Translucency	
OFD	Fetal Biometry	Occipital-Frontal Diameter	
OOD	Fetal Cranium	Outer Orbital Diameter	
Orbit1	Fetal Cranium	Diameter of the First Orbit	
Orbit2	Fetal Cranium	Diameter of the Second Orbit	
Pelvis AP	Fetal Biometry	Pelvis Antero-posterior Dimension	
Pelvis L	Fetal Biometry	Pelvis Longitudinal Dimension	
Pelvis Tr	Fetal Biometry	Pelvis Transverse Dimension	
Post Fossa	Fetal Biometry	Post Fossa Dimension	
R Lung Diam	Fetal Biometry	Right Lung Diameter	
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Peak Systolic Velocity
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: End Diastolic Velocity
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Minimum Diastolic Velocity
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Time averaged mean velocity
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Time averaged peak velocity
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Acceleration Index
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Peak Gradient
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Resistivity Index
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Pulsatility Index
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Systolic to Diastolic Velocity Ratio
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Acceleration Time
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Deceleration Time
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Vessel lumen diameter
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Velocity Time Integral
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Heart Rate
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Mean Gradient
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Doppler

Label	Group / Finding Site	Concept	Modifiers
			Correction Angle
R Ov Height	Ovary	Right Ovary Height	
R Ov Length	Ovary	Right Ovary Length	
R Ov Width	Ovary	Right Ovary Width	
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Acceleration Time
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Deceleration Time
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Vessel lumen diameter
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Velocity Time Integral
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Heart Rate
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Mean Gradient
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Acceleration Time
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Deceleration Time
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Vessel lumen diameter
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Velocity Time Integral
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Heart Rate
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Mean Gradient
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Acceleration Time
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Deceleration Time
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Vessel lumen diameter
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Velocity Time Integral
R MCA	Embryonic Vascular Structure	Middle Cerebral Artery	Laterality: Right, Result: Heart Rate
RA Dimension	Fetal Heart	Right Atrium Dimension	
RA Length	Fetal Heart	Right Atrium Length	
RA Width	Fetal Heart	Right Atrium Width	
Radius	Fetal Long Bones	Radius length	
Renal AP	Fetal Biometry	Renal Antero-posterior Dimension	
Renal L	Fetal Biometry	Renal Longitudinal Dimension	
Renal Pelvis	Fetal Biometry	Renal Pelvis Dimension	
Renal Tr	Fetal Biometry	Renal Transverse Dimension	
RLQ	Amniotic Sac	Right Lower Quadrant Diameter	
RUQ	Amniotic Sac	Right Upper Quadrant Diameter	
RV Dimension	Fetal Heart	Right Ventricle Dimension	
RV Length	Fetal Heart	Right Ventricle Length	
RV Width	Fetal Heart	Right Ventricle Width	
RVOT Diam	Fetal Heart	RV Outflow Tract Diameter	
Sac Diam1	Early Gestation	Sac Diameter 1	
Sac Diam2	Early Gestation	Sac Diameter 2	
Sac Diam3	Early Gestation	Sac Diameter 3	
Scapula	Fetal Biometry	Scapula Dimension	
SL	Early Gestation	Spine Length	
TAD	Fetal Biometry	Transverse Abdominal Diameter	
TC	Fetal Biometry	Thoracic Circumference	
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: End Diastolic Velocity
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Minimum Diastolic Velocity
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Peak Systolic Velocity
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Time averaged mean velocity
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Time averaged peak velocity

Label	Group / Finding Site	Concept	Modifiers
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Acceleration Index
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Peak Gradient
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Pulsatility Index
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Resistivity Index
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Systolic to Diastolic Velocity Ratio
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Acceleration Time
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Deceleration Time
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Vessel lumen diameter
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Velocity Time Integral
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Heart Rate
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Mean Gradient
Thoracic Ao	Embryonic Vascular Structure	Thoracic aorta	Result: Doppler Correction Angle
Tibia	Fetal Long Bones	Tibia length	
Tone	Biophysical Profile	Fetal Tone	
TTD	Fetal Biometry	Transverse Thoracic Diameter	
TV Annul Diam	Fetal Heart	Tricuspid Annulus Diameter	
Ulna	Fetal Long Bones	Ulna length	
Umbilical A	PelvicEmbryonic Vascular Structure	Umbilical Artery	Result: Peak SystolicEnd Diastolic Velocity
Umbilical A	PelvicEmbryonic Vascular Structure	Umbilical Artery	Result: EndMinimum Diastolic Velocity
Umbilical A	PelvicEmbryonic Vascular Structure	Umbilical Artery	Result: Time averaged peak velocityResult: Peak Systolic Velocity
Umbilical A	PelvicEmbryonic Vascular Structure	Umbilical Artery	Result: Resistivity IndexResult: Time averaged mean velocity
Umbilical A	PelvicEmbryonic Vascular Structure	Umbilical Artery	Result: Pulsatility IndexResult: Time averaged peak velocity
Umbilical A	PelvicEmbryonic Vascular Structure	Umbilical Artery	Result: Systolic to Diastolic Velocity RatioResult: Acceleration Index
Umbilical A	PelvicEmbryonic Vascular Structure	Umbilical Artery	Result: Doppler Correction AnglePeak Gradient
Umbilical A	Embryonic Vascular Structure	Umbilical Artery	Result: Pulsatility Index
Umbilical A	Embryonic Vascular Structure	Umbilical Artery	Result: Resistivity Index
Umbilical A	Embryonic Vascular Structure	Umbilical Artery	Result: Systolic to Diastolic Velocity Ratio
Umbilical A	Embryonic Vascular Structure	Umbilical Artery	Result: Acceleration Time
Umbilical A	Embryonic Vascular Structure	Umbilical Artery	Result: Deceleration Time
Umbilical A	Embryonic Vascular Structure	Umbilical Artery	Result: Vessel lumen diameter
Umbilical A	Embryonic Vascular Structure	Umbilical Artery	Result: Velocity Time Integral
Umbilical A	Embryonic Vascular Structure	Umbilical Artery	Result: Heart Rate
Umbilical A	Embryonic Vascular Structure	Umbilical Artery	Result: Mean Gradient
Umbilical A	Embryonic Vascular Structure	Umbilical Artery	Result: Doppler Correction Angle
Ureter AP	Fetal Biometry	Ureter Antero-posterior Dimension	
Ureter Tr	Fetal Biometry	Ureter Transverse Dimension	
Yolk Sac	Early Gestation	Yolk Sac length	

APPLICATION: OB, CALCULATIONS

Label	Group / Finding Site	Concept	Modifiers
AC(c)	Fetal Biometry	Abdominal Circumference	Derivation: Calculated
AFI	Amniotic Sac	Amniotic Fluid Index	
Ao/PA	Fetal Heart	Ratio of Aortic Root Diameter to Main PA Diameter	
AUA	Fetus Summary	Composite Ultrasound Age	
BPDa	Fetal Biometry	BPD area corrected	
BPP Score	Biophysical Profile	Biophysical Profile Sum Score	
CI	Fetal Biometry Ratios	Cephalic Index	
EDD (AUA)	Summary	EDD from average ultrasound age	
EDD (Con)	Summary	EDD from conception date	

Label	Group / Finding Site	Concept	Modifiers
EDD (LMP)	Summary	EDD from LMP	
FL/AC	Fetal Biometry Ratios	FL/AC	
FL/BPD	Fetal Biometry Ratios	FL/BPD	
GA (Con)	Fetus Summary	Gestational Age by conception date	
GA (EDD)	Fetus Summary	Gestational Age by EDD	
GA (LMP)	Fetus Summary	Gestational Age by LMP	
HC(c)	Fetal Biometry	Head Circumference	Derivation: Calculated
HC/AC	Fetal Biometry Ratios	HC/AC	
HrtC/ThrC	Fetal Biometry	HrtC/TC (Heart Circumference/Thoracic Circumference)	
L Ov Volume	Ovary	Left Ovary Volume	
LA/Ao	Fetal Biometry	Ratio of LA Dimension to Aortic Root Diameter	
LA/RA	Fetal Heart	Ratio of LA Dimension to RA Dimension	
LMP (Con)	Summary	Estimated LMP by conception date	
LMP (EDD)	Summary	Estimated LMP by EDD	
LV/RV	Fetal Heart	Ratio of LV Dimension to RV Dimension	
Mean Sac Diam	Early Gestation	Mean Sac Diameter	
R Ov Volume	Ovary	Right Ovary Volume	
TC(c)	Fetal Biometry	Thoracic Circumference	Derivation: Calculated

APPLICATION: GYN, MEASUREMENTS

Label	Group / Finding Site	Concept	Modifiers
Cerv Length	Pelvis and Uterus	Cervix Length	
Endo Thick	Pelvis and Uterus	Endometrium Thickness	
Foll1-10	Ovarian Follicle	Follicle Diameter	Identifier: 1-10
L Ov Height	Ovary	Left Ovary Height	
L Ov Length	Ovary	Left Ovary Length	
L Ov Width	Ovary	Left Ovary Width	
R Ov Height	Ovary	Right Ovary Height	
R Ov Length	Ovary	Right Ovary Length	
R Ov Width	Ovary	Right Ovary Width	
Uterus Height	Pelvis and Uterus	Uterus Height	
Uterus Length	Pelvis and Uterus	Uterus Length	
Uterus Width	Pelvis and Uterus	Uterus Width	

APPLICATION: GYN, CALCULATIONS

Label	Group / Finding Site	Concept	Modifiers
Foll1-10 Volume	Ovarian Follicle	Volume	Identifier: 1-10
L Ov Volume	Ovary	Left Ovary Volume	
R Ov Volume	Ovary	Right Ovary Volume	
Uterus Volume	Pelvis and Uterus	Uterus Volume	

AUTHORS

Gestational Age

Meas	Author	Type	Reference
AC	ASUM (2001)	Table of Values	AC, ASUM 2001
AC	Hadlock	Equation	AC, Hadlock 1984
AC	Hansmann	Table of Values	AC, Hansmann 1986
BPDa	Chitty (Outer Inner)	Equation	BPDa-oi, Chitty 1997
BPDa	Chitty (Outer Outer)	Equation	BPDa-oo, Chitty 1997
BPDa	Hadlock	Equation	BPDa, Hadlock 1984
BPD	ASUM (2001)	Table of Values	BPD, ASUM 2001
BPD	Chitty (Outer Inner)	Equation	BPD-oi, Chitty 1997
BPD	Chitty (Outer Outer)	Equation	BPD-oo, Chitty 1997

Meas	Author	Type	Reference
BPD	Hadlock	Equation	BPD, Hadlock 1984
BPD	Hansmann	Table of Values	BPD, Hansmann 1986
BPD	Jeanty	Table of Values	BPD, Jeanty 1984
Cerebellum	Chitty	Equation	TCD, Chitty 1997
Cerebellum	Hill	Equation	TCD, Hill 1990
Clavicle	Yarkoni	Table of Values	Clavical length,Yarkoni 1985
CRL	ASUM (2001)	Table of Values	CRL, ASUM 2001
CRL	Hadlock	Equation	CRL, Hadlock 1992
CRL	Hansmann	Table of Values	CRL, Hansmann 1986
CRL	Robinson	Equation	CRL, Robinson 1975
FL	ASUM (2001)	Table of Values	FL, ASUM 2001
FL	Chitty	Equation	FL, Chitty 1997
FL	Hadlock	Equation	FL, Hadlock 1984
FL	Hansmann	Table of Values	FL, Hansmann 1986
FL	Jeanty	Equation	FL, Jeanty 1984
FTA	Osaka	Table of Values	Fetal Trunk Cross-Sectional Area, Osaka 1989
Gest Sac	Hansmann	Table of Values	GS, Hansmann 1982
Gest Sac	Nyberg	Equation	GS, Nyberg 1992
HC	ASUM (2001)	Table of Values	HC, ASUM 2001
HC	Chitty (Derived)	Equation	HC derived, Chitty 1997
HC	Chitty (Measured)	Equation	HC measured, Chitty 1997
HC	Hadlock	Equation	HC, Hadlock 1984
HC	Hansmann	Table of Values	HC, Hansmann 1986
Humerus	ASUM (2001)	Table of Values	Humerus, ASUM 2001
Humerus	Jeanty	Table of Values	Humerus, Jeanty 1984
MSD	Hellman	Equation	MSD, Hellman 1969
OFD	ASUM (2001)	Table of Values	OFD, ASUM 2001
OFD	Hansmann	Table of Values	OFD, Hansmann 1985
OOD	Jeanty	Table of Values	OOD, Jeanty 1984
SL	Tokyo	Table of Values	Spine Length, Tokyo, 1989
TAD	Hansmann	Table of Values	TAD Hansmann, 1979
TC	Nimrod	Equation	TCD, Nimrod 1986
Tibia	Jeanty	Table of Values	Tibia, Jeanty 1984
TTD	Hansmann	Table of Values	Transverse Thoracic Diameter, Hansmann 1985
Ulna	Jeanty	Table of Values	Ulna, Jeanty 1984

Estimated Fetal Weight

Author	Type	Reference
Campbell	Equation	EFW by AC, Campbell 1975
Hadlock (AC,FL)	Equation	EFW by AC, FL, Hadlock 1985
Hadlock (AC,FL,HC)	Equation	EFW by AC, FL, HC, Hadlock 1985
Hadlock (AC,FL,HC,BPD)	Equation	EFW by AC, BPD, FL, HC, Hadlock 1985
Hadlock (AC,FL,BPD)	Equation	EFW by AC, BPD, FL, Hadlock 1985

Fetal Weight Percentile

Note: FWP values that are out of range will not be exported when Author = Brenner or Williams

Author	Type	Reference
Philips Custom	Table of Values	FWP by MA, Philips Custom
Brenner	Table of Values	FWP by MA, Brenner 1976
Hadlock	Table of Values	FWP by MA, Hadlock 1991
Williams Male	Table of Values	FWP by MA, Williams (Male) 1982
Williams Female	Table of Values	FWP by MA, Williams (Female) 1982
Philips Custom	Table of Values	FWP by GA, Philips Custom
Brenner	Table of Values	FWP by GA, Brenner 1976
Hadlock	Table of Values	FWP by GA, Hadlock 1991
Williams Male	Table of Values	FWP by GA, Williams (Male) 1982
Williams Female	Table of Values	FWP by GA, Williams (Female) 1982

TID 5100 VASCULAR ULTRASOUND PROCEDURE REPORT

Vascular is the same on both iU22 and iE33. Only iU22 supports Abdominal.

Vascular PDE / Study Info

Label	Referenced Template ID (TID)	Type	Units
Height	**5101, Line 3**	NUM	m
Weight	**5101, Line 4**	NUM	kg
Smoker	**Private**	CHECK	
Hypertension	**Private**	CHECK	
Diabetic	**Private**	CHECK	
Diabetic Type	**Private**	TEXT	
Recent Injury	**Private**	TEXT	
Surgeries	**Private**	TEXT	
Aphasia	**Private**	CHECK	
Double Vision	**Private**	CHECK	
Memory Loss	**Private**	CHECK	
Syncope	**Private**	CHECK	
Confusion	**Private**	CHECK	
Bruit	**Private**	CHECK	
Stroke	**Private**	CHECK	
Stroke Date	**Private**	DATE	
Endarterectomy Right	**Private**	CHECK	
Endarterectomy Left	**Private**	CHECK	
Endarterectomy Date	**Private**	DATE	
Hemiparesis Right	**Private**	CHECK	
Hemiparesis Left	**Private**	CHECK	
Weakness Right	**Private**	CHECK	
Weakness Left	**Private**	CHECK	
Amaurosis Fugax Right	**Private**	CHECK	
Amaurosis Fugax Left	**Private**	CHECK	
Obesity	**Private**	CHECK	
Edema	**Private**	CHECK	
Previous DVT Right	**Private**	CHECK	
Previous DVT Left	**Private**	CHECK	
History of Pulmonary Thrombosis	**Private**	CHECK	
History of Malignancy	**Private**	CHECK	
Pregnant	**Private**	CHECK	
Birth Control Medication	**Private**	CHECK	
Birth Control Medication Duration	**Private**	TEXT	
Claudication	**Private**	TEXT	

Abdominal PDE / Study Info

Label	Referenced Template ID (TID)	Type	Units
Height	**5101, Line 3**	NUM	m
Weight	**5101, Line 4**	NUM	kg
RUQ Pain	**Private**	CHECK	
LUQ Pain	**Private**	CHECK	
Midline Pain	**Private**	CHECK	
RLQ Pain	**Private**	CHECK	
LLQ Pain	**Private**	CHECK	
Periumbilical Pain	**Private**	CHECK	
Nausea	**Private**	CHECK	
Nausea Duration	**Private**	TEXT	
Vomiting	**Private**	CHECK	
Vomiting Duration	**Private**	TEXT	
Diarrhea	**Private**	CHECK	
Diarrhea Duration	**Private**	TEXT	
Weight Loss	**Private**	CHECK	
Weight Loss Duration	**Private**	TEXT	
Abnormal Lab Values	**Private**	TEXT	
History of Aortic Aneurysm	**Private**	CHECK	

Label	Referenced Template ID (TID)	Type	Units
Previous Measurement	**Private**	TEXT	
Aortic Aneurysm Date	**Private**	DATE	
Cholesystectomy	**Private**	CHECK	
Cholesystectomy Date	**Private**	DATE	
TIPSS	**Private**	CHECK	
TIPSS Date	**Private**	DATE	
Other Surgeries	**Private**	TEXT	

Reference for the columns in the Vascular mapping table

Finding Site	TID 5100, Row 9 – 27, $SectionScope
Anatomy Group	TID 5100, Row 9 – 27, $Anatomy
Modifiers	TID 5100, Row 9 – 27, $SectionLaterality
Anatomy Ratio	TID 5100, Row 9 – 27, $AnatomyRatio

APPLICATION: VASCULAR, MEASUREMENTS

Label	Section Scope	Anatomy Group	Modifiers
Antecube	Artery Of Upper Extremity	Antecube	
Ax A	Artery Of Upper Extremity	Axillary Artery	
Ax V	Vein Of Upper Extremity	Axillary vein	
Brachioceph A	Artery Of Upper Extremity	Innominate Artery	
Brachioceph V	Vein Of Upper Extremity	Innominate vein	
Bulb	Artery of neck	Carotid Bulb	
CCA - ratio	Artery of neck	ICA/CCA Ratio Denominator	
CFA	Artery of Lower Extremity	Common Femoral Artery	
CFV	Vein of Lower Extremity	Common Femoral Vein	
Com Iliac A	Artery of Lower Extremity	Common Iliac Artery	
Com Iliac V	Vein of Lower Extremity	Common Iliac Vein	
Dist ATA	Artery of Lower Extremity	Anterior Tibial Artery	Segment: Distal
Dist ATV	Vein of Lower Extremity	Anterior Tibial Vein	Segment: Distal
Dist Basilic V	Vein Of Upper Extremity	Basilic vein	Segment: Distal
Dist Brach A	Artery Of Upper Extremity	Brachial Artery	Segment: Distal
Dist Brach V	Vein Of Upper Extremity	Brachial vein	Segment: Distal
Dist CCA	Artery of neck	Common Carotid Artery	Segment: Distal
Dist Ceph V	Vein Of Upper Extremity	Cephalic vein	Segment: Distal
Dist GSV Calf	Vein of Lower Extremity	Great Saphenous Vein of Calf	Segment: Distal
Dist GSV Thigh	Vein of Lower Extremity	Great Saphenous Vein of Thigh	Segment: Distal
Dist ICA	Artery of neck	Internal Carotid Artery	Segment: Distal
Dist LSV	Vein of Lower Extremity	Lesser Saphenous Vein	Segment: Distal
Dist Pero A	Artery of Lower Extremity	Peroneal Artery	Segment: Distal
Dist Pero V	Vein of Lower Extremity	Peroneal Vein	Segment: Distal
Dist Pop A	Artery of Lower Extremity	Popliteal Artery	Segment: Distal
Dist Pop V	Vein of Lower Extremity	Popliteal Vein	Segment: Distal
Dist PTA	Artery of Lower Extremity	Posterior Tibial Artery	Segment: Distal
Dist PTV	Vein of Lower Extremity	Posterior Tibial Vein	Segment: Distal
Dist Rad A	Artery Of Upper Extremity	Radial Artery	Segment: Distal
Dist Rad V	Vein Of Upper Extremity	Radial vein	Segment: Distal
Dist SFA	Artery of Lower Extremity	Superficial Femoral Artery	Segment: Distal
Dist SFV	Vein of Lower Extremity	Superficial Femoral Vein	Segment: Distal
Dist Ulnar A	Artery Of Upper Extremity	Ulnar Artery	Segment: Distal
Dist Ulnar V	Vein Of Upper Extremity	Ulnar vein	Segment: Distal
Dor Pedis	Artery of Lower Extremity	Dorsalis Pedis Artery	
Ext Iliac A	Artery of Lower Extremity	External Iliac Artery	
Ext Iliac V	Vein of Lower Extremity	External Iliac Vein	
ICA - ratio	Artery of neck	ICA/CCA Ratio Nominator	
IJV	Vein Of Upper Extremity	Internal Jugular vein	
Int Iliac A	Artery of Lower Extremity	Internal Iliac Artery	
Int Iliac V	Vein of Lower Extremity	Internal iliac vein	
Lat Sural V	Vein of Lower Extremity	Gastrocnemius vein	Branch: Lateral

Label	Section Scope	Anatomy Group	Modifiers
Med Sural V	Vein of Lower Extremity	Gastrocnemius vein	Branch: Medial
Mid ATA	Artery of Lower Extremity	Anterior Tibial Artery	Segment: Mid-longitudinal
Mid ATV	Vein of Lower Extremity	Anterior Tibial Vein	Segment: Mid-longitudinal
Mid Basilic V	Vein Of Upper Extremity	Basilic vein	Segment: Mid-longitudinal
Mid CCA	Artery of neck	Common Carotid Artery	Segment: Mid-longitudinal
Mid Ceph V	Vein Of Upper Extremity	Cephalic vein	Segment: Mid-longitudinal
Mid GSV Calf	Vein of Lower Extremity	Great Saphenous Vein of Calf	Segment: Mid-longitudinal
Mid GSV Thigh	Vein of Lower Extremity	Great Saphenous Vein of Thigh	Segment: Mid-longitudinal
Mid ICA	Artery of neck	Internal Carotid Artery	Segment: Mid-longitudinal
Mid LSV	Vein of Lower Extremity	Lesser Saphenous Vein	Segment: Mid-longitudinal
Mid Pero A	Artery of Lower Extremity	Peroneal Artery	Segment: Mid-longitudinal
Mid Pero V	Vein of Lower Extremity	Peroneal Vein	Segment: Mid-longitudinal
Mid Pop V	Vein of Lower Extremity	Popliteal Vein	Segment: Mid-longitudinal
Mid PTA	Artery of Lower Extremity	Posterior Tibial Artery	Segment: Mid-longitudinal
Mid PTV	Vein of Lower Extremity	Posterior Tibial Vein	Segment: Mid-longitudinal
Mid Rad A	Artery Of Upper Extremity	Radial Artery	Segment: Mid-longitudinal
Mid Rad V	Vein Of Upper Extremity	Radial vein	Segment: Mid-longitudinal
Mid SCL A	Artery of neck	Subclavian Artery	Segment: Mid-longitudinal
Mid SCL V	Vein Of Upper Extremity	Subclavian vein	Segment: Mid-longitudinal
Mid SFA	Artery of Lower Extremity	Superficial Femoral Artery	Segment: Mid-longitudinal
Mid SFV	Vein of Lower Extremity	Superficial Femoral Vein	Segment: Mid-longitudinal
Mid Ulnar A	Artery Of Upper Extremity	Ulnar Artery	Segment: Mid-longitudinal
Mid Ulnar V	Vein Of Upper Extremity	Ulnar vein	Segment: Mid-longitudinal
Prox ATA	Artery of Lower Extremity	Anterior Tibial Artery	Segment: Proximal
Prox ATV	Vein of Lower Extremity	Anterior Tibial Vein	Segment: Proximal
Prox Basilic V	Vein Of Upper Extremity	Basilic vein	Segment: Proximal
Prox Brach A	Artery Of Upper Extremity	Brachial Artery	Segment: Proximal
Prox Brach V	Vein Of Upper Extremity	Brachial vein	Segment: Proximal
Prox CCA	Artery of neck	Common Carotid Artery	Segment: Proximal
Prox Ceph V	Vein Of Upper Extremity	Cephalic vein	Segment: Proximal
Prox DPF V	Vein of Lower Extremity	Profunda Femoris Vein	Segment: Proximal
Prox ECA	Artery of neck	External Carotid Artery	Segment: Proximal
Prox GSV Calf	Vein of Lower Extremity	Great Saphenous Vein of Calf	Segment: Proximal
Prox GSV Thigh	Vein of Lower Extremity	Great Saphenous Vein of Thigh	Segment: Proximal
Prox ICA	Artery of neck	Internal Carotid Artery	Segment: Proximal
Prox LSV	Vein of Lower Extremity	Lesser Saphenous Vein	Segment: Proximal
Prox Pero A	Artery of Lower Extremity	Peroneal Artery	Segment: Proximal
Prox Pero V	Vein of Lower Extremity	Peroneal Vein	Segment: Proximal
Prox PFA	Artery of Lower Extremity	Profunda Femoris Artery	Segment: Proximal
Prox Pop A	Artery of Lower Extremity	Popliteal Artery	Segment: Proximal
Prox Pop V	Vein of Lower Extremity	Popliteal Vein	Segment: Proximal
Prox PTA	Artery of Lower Extremity	Posterior Tibial Artery	Segment: Proximal
Prox PTV	Vein of Lower Extremity	Posterior Tibial Vein	Segment: Proximal
Prox Rad A	Artery Of Upper Extremity	Radial Artery	Segment: Proximal
Prox Rad V	Vein Of Upper Extremity	Radial vein	Segment: Proximal
Prox SCL A	Artery of neck	Subclavian Artery	Segment: Proximal
Prox SCL V	Vein Of Upper Extremity	Subclavian vein	Segment: Proximal
Prox SFA	Artery of Lower Extremity	Superficial Femoral Artery	Segment: Proximal
Prox SFV	Vein of Lower Extremity	Superficial Femoral Vein	Segment: Proximal
Prox Ulnar A	Artery Of Upper Extremity	Ulnar Artery	Segment: Proximal
Prox Ulnar V	Vein Of Upper Extremity	Ulnar vein	Segment: Proximal
SFJ	Vein of Lower Extremity	Saphenofemoral Junction	
Vertebral A	Artery of neck	Vertebral Artery	

APPLICATION: VASCULAR, CALCULATIONS

Label	Section Scope	Anatomy Ratio	Modifiers
ICA/CCA Ratio	Artery of neck	ICA/CCA velocity ratio	

APPLICATION: ABDOMEN, MEASUREMENTS

Label	Section Scope	Anatomy Group	Modifiers
Celiac A	Artery of Abdomen	Celiac Axis	
Com Hepatic A	Artery of Abdomen	Common Hepatic Artery	
Dist Ao	Artery of Abdomen	Aorta	Segment: Distal
Dist IVC	Vein of Abdomen	Inferior Vena Cava	Segment: Distal
Dist Ren A	Vascular Structure Of Kidney	Renal Artery	Segment: Distal
Dist SMA	Artery of Abdomen	Superior Mesenteric Artery	Segment: Distal
GDA	Artery of Abdomen	Gastroduodenal Artery	
Hilar A	Vascular Structure Of Kidney	Hilar Artery	
IMA	Artery of Abdomen	Inferior Mesenteric Artery	
IMV	Vein of Abdomen	Inferior Mesenteric Vein	
Inf Arc	Vascular Structure Of Kidney	Arcuate Artery of the Kidney	Branch: Inferior
Inf Ren Ao	Artery of Abdomen	Infra-renal Aorta	
Inf Seg	Vascular Structure Of Kidney	Segmental Artery	Branch: Inferior
L Hepatic A	Artery of Abdomen	Left Branch of Hepatic Artery	
L Hepatic V	Vein of Abdomen	Left Hepatic Vein	
L Port V	Vein of Abdomen	Left Main Branch of Portal Vein	
M Hepatic V	Vein of Abdomen	Middle Hepatic Vein	
M Port V	Vein of Abdomen	Portal Vein	
Med Arc	Vascular Structure Of Kidney	Arcuate Artery of the Kidney	Branch: Medial
Med Seg	Vascular Structure Of Kidney	Segmental Artery	Branch: Medial
Mid Ren A	Vascular Structure Of Kidney	Renal Artery	Segment: Mid-longitudinal
Mid SMA	Artery of Abdomen	Superior Mesenteric Artery	Segment: Mid-longitudinal
Prox IVC	Vein of Abdomen	Inferior Vena Cava	Segment: Proximal
Prox Ren A	Vascular Structure Of Kidney	Renal Artery	Segment: Proximal
Prox SMA	Artery of Abdomen	Superior Mesenteric Artery	Segment: Proximal
R Hepatic A	Artery of Abdomen	Right Branch of Hepatic Artery	
R Hepatic V	Vein of Abdomen	Right Hepatic Vein	
R Port V	Vein of Abdomen	Right Main Branch of Portal Vein	
Ren A Org	Vascular Structure Of Kidney	Renal Artery	Segment: Origin of vessel
Ren V	Vascular Structure Of Kidney	Renal Vein	
SMV	Vein of Abdomen	Superior Mesenteric Vein	
Splenic A	Artery of Abdomen	Splenic Artery	
Splenic V	Vein of Abdomen	Splenic Vein	
Sup Arc	Vascular Structure Of Kidney	Arcuate Artery of the Kidney	Branch: Superior
Sup Ren Ao	Artery of Abdomen	Supra-renal Aorta	
Sup Seg	Vascular Structure Of Kidney	Segmental Artery	Branch: Superior

APPLICATION: ABDOMEN, CALCULATIONS

Label	Section Scope	Anatomy Group	Modifiers
Kid Volume	Anatomic Structures	Kidney	

TID 5200 ADULT ECHOCARDIOGRAPHY PROCEDURE REPORT

Adult Echo PDE / Study Info

Label	Referenced Template ID (TID)	Type	Units
Height	**5201, Line 3**	NUM	m
Weight	**5201, Line 4**	NUM	kg
Systolic Blood Pressure	**5201, Line 5**	NUM	mmHg
Diastolic Blood Pressure	**5201, Line 6**	NUM	mmHg
Smoker	**Private**	CHECK	
Hypertension	**Private**	CHECK	
History of Rheumatic Fever	**Private**	CHECK	
Congestive Heart Failure	**Private**	CHECK	
Surgeries	**Private**	TEXT	
Murmur	**Private**	CHECK	
Murmur Type	**Private**	TEXT	
Murmur Grade	**Private**	TEXT	
Arrythmia	**Private**	TEXT	
Chest Pain	**Private**	CHECK	
Jugular Venous Distension	**Private**	CHECK	
Dyspnea	**Private**	CHECK	
Peripheral Edema	**Private**	CHECK	
Fatigue	**Private**	CHECK	
Ascites	**Private**	CHECK	
Syncope	**Private**	CHECK	
Infection	**Private**	CHECK	
Dizziness	**Private**	CHECK	
Fever of Unknown Origin	**Private**	CHECK	
Hemoptysis	**Private**	CHECK	
TIA / Stroke	**Private**	CHECK	
Bioprosthetic Valve Replacement Type	**Private**	TEXT	
Bioprosthetic Valve Replacement Date	**Private**	DATE	
Mechanical Valve Replacement Type	**Private**	TEXT	
Mechanical Valve Replacement Date	**Private**	DATE	
Pacemaker	**Private**	CHECK	
BSA	**Private**	NUM	m^2

Reference for the columns in the mapping table

Finding Site	TID5200, Row 7 through 20, value passed as $SectionSubject
Concept	TID5200, Row 7 through 20, value passed as $MeasType
Mode	TID5202, Row 4, value OR TID5203, Row 5, value
Target	TID5203, Row 1, value passed as $TargetSite
Method	TID5202, Row 6, value passed as $Method
View	TID5203, Row 6, value
Direction	TID5203, Row 2, value
Phase	TID5203, Row 4, value
Disk	TID5203, Row 4, code Private Extension

All instances of a measurement are exported, in addition to the average, if selected. See the Edit Report page for option selection.

Note: In Analysis setups, it is possible to select multiple results for a single measurement. Default settings are listed in setups via Analysis Config>Adult Echo>Measurements. In most cases, the primary measurement is the only one exported via DICOM. As an example, it is possible to select an automatically derived area measurement based on a single distance. The distance measurement will export, the area will not. Generally, diameter measurements may have an optional area displayed, which will not export.

- Which value selected is communicated using TID310, row 6, Selection Status (121404,DCM)
- The mean value is encoded using TID300, row 4, Derivation
- Subresults are now exported

APPLICATION: ADULT ECHO, MEASUREMENTS

Label	Site	Concept	Modifiers
A Wave Amp	Pulmonic Valve	A Wave Amp	Mode: M mode
A2Cd	Left Ventricle	Left Ventricle MOD Diam	View: Apical two chamber, Disk: 1-20
A2Cs	Left Ventricle	Left Ventricle MOD Diam	View: Apical two chamber, Disk: 1-20
A4Cd	Left Ventricle	Left Ventricle MOD Diam	View: Apical four chamber, Disk: 1-20
A4Cs	Left Ventricle	Left Ventricle MOD Diam	View: Apical four chamber, Disk: 1-20
AI Accel Time	Aortic Valve	Acceleration Time	Direction: Regurgitant Flow
AI Alias Vel	Aortic Valve	Alias Velocity	Direction: Regurgitant Flow
AI Dec Slope	Aortic Valve	Deceleration Slope	Direction: Regurgitant Flow
AI Dec Slope	Aortic Valve	Deceleration Time	Direction: Regurgitant Flow
AI End Dias Vel	Aortic Valve	End Diastolic Velocity	Direction: Regurgitant Flow
AI P ½ t	Aortic Valve	Pressure Half-Time	Direction: Regurgitant Flow
AI Radius	Aortic Valve	Flow Radius	Direction: Regurgitant Flow
AI Vmax	Aortic Valve	Peak Velocity	Direction: Regurgitant Flow
AI Vmax	Aortic Valve	Peak Gradient	Direction: Regurgitant Flow
AI VTI	Aortic Valve	Mean Gradient	Direction: Regurgitant Flow
AI VTI	Aortic Valve	Velocity Time Integral	Direction: Regurgitant Flow
AI VTI	Aortic Valve	Mean Velocity	Direction: Regurgitant Flow
Ao Arch Diam	Aorta	Aortic Arch Diameter	Mode: 2D mode
Ao Isthmus Diam	Aorta	Aortic Isthmus Diameter	Mode: 2D mode
AoR Diam (2D)	Aorta	Aortic Root Diameter	Mode: 2D mode
AoR Diam (MM)	Aorta	Aortic Root Diameter	Mode: M mode
Asc Ao Diam	Aorta	Ascending Aortic Diameter	Mode: 2D mode
AV Accel Time	Aortic Valve	Acceleration Time	Direction: Antegrade Flow
AV Area	Aortic Valve	Cardiovascular Orifice Area	Mode: 2D mode, Method: Planimetry
AV Cusp Sep	Aortic Valve	Aortic Valve Cusp Separation	Mode: M mode
AV Decel Time	Aortic Valve	Deceleration Time	Direction: Antegrade Flow
AV Vmax	Aortic Valve	Peak Velocity	Direction: Antegrade Flow
AV Vmax	Aortic Valve	Peak Gradient	Direction: Antegrade Flow
AV VTI	Aortic Valve	Mean Gradient	Direction: Antegrade Flow
AV VTI	Aortic Valve	Velocity Time Integral	Direction: Antegrade Flow
AV VTI	Aortic Valve	Mean Velocity	Direction: Antegrade Flow
B-C Slope	Pulmonic Valve	B-C Slope	Mode: M mode
Desc Ao Diam	Aorta	Descending Aortic Diameter	Mode: 2D mode
EDA_AP2-S-AR-CX	Left Ventricle	Left Ventricular Diastolic Area	Mode: 2D mode, View: Apical two chamber, Method: QLab Complex Area Method, Single Plane
EDA_AP2-S-AR-SM	Left Ventricle	Left Ventricular Diastolic Area	Mode: 2D mode, View: Apical two chamber, Method: QLab Simple Area Method, Single Plane
EDA_AP4-S-AR-CX	Left Ventricle	Left Ventricular Diastolic Area	Mode: 2D mode, View: Apical four chamber, Method: QLab Complex Area Method, Single Plane
EDA_AP4-S-AR-SM	Left Ventricle	Left Ventricular Diastolic Area	Mode: 2D mode, View: Apical four chamber, Method: QLab Simple Area Method, Single Plane
EDA_SAX-S-AR-CX	Left Ventricle	Left Ventricular Diastolic Area	Mode: 2D mode, View: Parasternal short axis at the Papillary Muscle level, Method: QLab Complex Area Method, Single Plane
EDA_SAX-S-AR-SM	Left Ventricle	Left Ventricular Diastolic Area	Mode: 2D mode, View: Parasternal short axis at the Papillary Muscle level, Method: QLab Simple Area Method, Single Plane
EDV_3D-VOL	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 3D mode, Method: QLab 3D Volume Data
EDV_AP2-S-AL-CX	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, View: Apical two chamber, Method: Area-Length Single Plane
EDV_AP2-S-AL-SM	Left Ventricle	Left Ventricular End Diastolic	Mode: 2D mode, View: Apical two chamber,

Label	Site	Concept	Modifiers
		Volume	Method: Area-Length Single Plane
EDV_AP2-S-MD-CX	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
EDV_AP2-S-MD-SM	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
EDV_AP4-S-AL-CX	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, View: Apical four chamber, Method: Area-Length Single Plane
EDV_AP4-S-AL-SM	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, View: Apical four chamber, Method: Area-Length Single Plane
EDV_AP4-S-MD-CX	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
EDV_AP4-S-MD-SM	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
EDV_AP-B-MD-CX	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, Method: Method of Disks, Biplane
EDV_AP-B-MD-SM	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, Method: Method of Disks, Biplane
EDV_BP-TEMPL	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 3D mode, View: MPR views, Method: QLab Biplane Template
EF_3D-VOL	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 3D mode, Method: QLab 3D Volume Data
EF_AP2-S-AL-CX	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, View: Apical two chamber, Method: Area-Length Single Plane
EF_AP2-S-AL-SM	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, View: Apical two chamber, Method: Area-Length Single Plane
EF_AP2-S-MD-CX	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
EF_AP2-S-MD-SM	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
EF_AP4-S-AL-CX	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, View: Apical four chamber, Method: Area-Length Single Plane
EF_AP4-S-AL-SM	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, View: Apical four chamber, Method: Area-Length Single Plane
EF_AP4-S-MD-CX	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
EF_AP4-S-MD-SM	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
EF_AP-B-MD-CX	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, Method: Method of Disks, Biplane
EF_AP-B-MD-SM	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, Method: Method of Disks, Biplane
EF_BP-TEMPL	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 3D mode, View: MPR views, Method: QLab Biplane Template
ESA_AP2-S-AR-CX	Left Ventricle	Left Ventricular Systolic Area	Mode: 2D mode, View: Apical two chamber, Method: QLab Complex Area Method, Single Plane
ESA_AP2-S-AR-SM	Left Ventricle	Left Ventricular Systolic Area	Mode: 2D mode, View: Apical two chamber, Method: QLab Simple Area Method, Single Plane
ESA_AP4-S-AR-CX	Left Ventricle	Left Ventricular Systolic Area	Mode: 2D mode, View: Apical four chamber, Method: QLab Complex Area Method, Single Plane
ESA_AP4-S-AR-SM	Left Ventricle	Left Ventricular Systolic Area	Mode: 2D mode, View: Apical four chamber, Method: QLab Simple Area Method, Single Plane
ESA_SAX-S-AR-CX	Left Ventricle	Left Ventricular Systolic Area	Mode: 2D mode, View: Parasternal short axis at the Papillary Muscle level, Method: QLab Complex Area Method, Single Plane
ESA_SAX-S-AR-SM	Left Ventricle	Left Ventricular Systolic Area	Mode: 2D mode, View: Parasternal short axis at the Papillary Muscle level, Method: QLab Simple Area Method, Single Plane
ESV_3D-VOL	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 3D mode, Method: QLab 3D Volume Data
ESV_AP2-S-AL-CX	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, View: Apical two chamber, Method: Area-Length Single Plane

Label	Site	Concept	Modifiers
ESV_AP2-S-AL-SM	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, View: Apical two chamber, Method: Area-Length Single Plane
ESV_AP2-S-MD-CX	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
ESV_AP2-S-MD-SM	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
ESV_AP4-S-AL-CX	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, View: Apical four chamber, Method: Area-Length Single Plane
ESV_AP4-S-AL-SM	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, View: Apical four chamber, Method: Area-Length Single Plane
ESV_AP4-S-MD-CX	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
ESV_AP4-S-MD-SM	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
ESV_AP-B-MD-CX	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, Method: Method of Disks, Biplane
ESV_AP-B-MD-SM	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, Method: Method of Disks, Biplane
ESV_BP-TEMPL	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 3D mode, View: MPR views, Method: QLab Biplane Template
FAC_AP2-S-AR-CX	Left Ventricle	Left Ventricular Fractional Area Change	Mode: 2D mode, View: Apical two chamber, Method: QLab Complex Area Method, Single Plane
FAC_AP2-S-AR-SM	Left Ventricle	Left Ventricular Fractional Area Change	Mode: 2D mode, View: Apical two chamber, Method: QLab Simple Area Method, Single Plane
FAC_AP4-S-AR-CX	Left Ventricle	Left Ventricular Fractional Area Change	Mode: 2D mode, View: Apical four chamber, Method: QLab Complex Area Method, Single Plane
FAC_AP4-S-AR-SM	Left Ventricle	Left Ventricular Fractional Area Change	Mode: 2D mode, View: Apical four chamber, Method: QLab Simple Area Method, Single Plane
FAC_SAX-S-AR-CX	Left Ventricle	Left Ventricular Fractional Area Change	Mode: 2D mode, View: Parasternal short axis at the Papillary Muscle level, Method: QLab Complex Area Method, Single Plane
FAC_SAX-S-AR-SM	Left Ventricle	Left Ventricular Fractional Area Change	Mode: 2D mode, View: Parasternal short axis at the Papillary Muscle level, Method: QLab Simple Area Method, Single Plane
Hepatic A Revs Dur	Hepatic Veins	Hepatic Vein A-Wave Duration	
Hepatic A Revs Vel	Hepatic Veins	Hepatic Vein Atrial Contraction Reversal Peak Velocity	
Hepatic Dias Vel	Hepatic Veins	Hepatic Vein Diastolic Peak Velocity	
Hepatic Sys Vel	Hepatic Veins	Hepatic Vein Systolic Peak Velocity	
HR - AV	Aortic Valve	Heart rate	
HR - LV	Left Ventricle	Heart rate	
HR - MV	Mitral Valve	Heart rate	
HR - PV	Pulmonic Valve	Heart rate	
HR - TV	Tricuspid Valve	Heart rate	
IVCT	Left Ventricle	Left Ventricular Isovolumic Contraction Time	
IVRT	Left Ventricle	Left Ventricular Isovolumic Relaxation Time	
IVSd (2D)	Left Ventricle	Interventricular Septum Diastolic Thickness	Mode: 2D mode
IVSd (MM)	Left Ventricle	Interventricular Septum Diastolic Thickness	Mode: M mode
IVSs (2D)	Left Ventricle	Interventricular Septum Systolic Thickness	Mode: 2D mode
IVSs (MM)	Left Ventricle	Interventricular Septum Systolic Thickness	Mode: M mode
LA Dimen (2D)	Left Atrium	Left Atrium Antero-posterior Systolic Dimension	Mode: 2D mode
LA Dimen (MM)	Left Atrium	Left Atrium Antero-posterior	Mode: M mode

Label	Site	Concept	Modifiers
		Systolic Dimension	
Lat A` Area	Left Ventricle	Area under LV A Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Lat Accel Time	Left Ventricle	Acceleration Time	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Lat Decel Time	Left Ventricle	Deceleration Time	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Lat E` Area	Left Ventricle	Area under LV E Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Lat IVCT	Left Ventricle	Left Ventricular Isovolumic Contraction Time	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Lat IVRT	Left Ventricle	Left Ventricular Isovolumic Relaxation Time	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Lat Peak A` Vel	Left Ventricle	LV Peak Diastolic Tissue Velocity During Atrial Systole	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Lat Peak E` Vel	Left Ventricle	Left Ventricular Peak Early Diastolic Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Lat Peak S Vel	Left Ventricle	Left Ventricular Peak Systolic Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Late Dias Slope	Pulmonic Valve	Late Diastolic Slope	Mode: M mode
LPA Diam	Pulmonary artery	Left Pulmonary Artery Diameter	Mode: 2D mode
LV dP/dt	Mitral Valve	Mitral Regurgitation dP/dt derived from Mitral Reg velocity	
LV ET	Left Ventricle	Eject Time	Mode: M mode
LV PEP	Left Ventricle	Pre-Eject Time	Mode: M mode
LVAd Sax Endo	Left Ventricle	Left Ventricular Diastolic Area	View: Parasternal short axis at the Papillary Muscle level
LVAd Sax Epi	Left Ventricle	Left Ventricle Epicardial Diastolic Area, psax pap view	View: Parasternal short axis at the Papillary Muscle level
LVIDd (2D)	Left Ventricle	Left Ventricle Internal End Diastolic Dimension	Mode: 2D mode
LVIDd (MM)	Left Ventricle	Left Ventricle Internal End Diastolic Dimension	Mode: M mode
LVIDs (2D)	Left Ventricle	Left Ventricle Internal Systolic Dimension	Mode: 2D mode
LVIDs (MM)	Left Ventricle	Left Ventricle Internal Systolic Dimension	Mode: M mode
LVLd Apical	Left Ventricle	Left Ventricle diastolic major axis	View: Apical four chamber
LVOT Accel Time	Left Ventricle	Acceleration Time	Target: Left Ventricle Outflow Tract
LVOT Diam	Left Ventricle	Cardiovascular Orifice Diameter	Target: Left Ventricle Outflow Tract
LVOT Vmax	Left Ventricle	Peak Velocity	Target: Left Ventricle Outflow Tract
LVOT Vmax	Left Ventricle	Peak Gradient	Target: Left Ventricle Outflow Tract
LVOT VTI	Left Ventricle	Mean Gradient	Target: Left Ventricle Outflow Tract
LVOT VTI	Left Ventricle	Velocity Time Integral	Target: Left Ventricle Outflow Tract
LVOT VTI	Left Ventricle	Mean Velocity	Target: Left Ventricle Outflow Tract
LVPWd (2D)	Left Ventricle	Left Ventricle Posterior Wall Diastolic Thickness	Mode: 2D mode
LVPWd (MM)	Left Ventricle	Left Ventricle Posterior Wall Diastolic Thickness	Mode: M mode
LVPWs (2D)	Left Ventricle	Left Ventricle Posterior Wall Systolic Thickness	Mode: 2D mode
LVPWs (MM)	Left Ventricle	Left Ventricle Posterior Wall Systolic Thickness	Mode: M mode
Med A` Area	Left Ventricle	Area under LV A Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Medial Mitral Annulus
Med Accel Time	Left Ventricle	Acceleration Time	Mode: Tissue Doppler Imaging, Target: Medial Mitral Annulus
Med Decel Time	Left Ventricle	Deceleration Time	Mode: Tissue Doppler Imaging, Target: Medial Mitral Annulus
Med E` Area	Left Ventricle	Area under LV E Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Medial Mitral Annulus
Med IVCT	Left Ventricle	Left Ventricular Isovolumic	Mode: Tissue Doppler Imaging, Target: Medial

Label	Site	Concept	Modifiers
		Contraction Time	Mitral Annulus
Med IVRT	Left Ventricle	Left Ventricular Isovolumic Relaxation Time	Mode: Tissue Doppler Imaging, Target: Medial Mitral Annulus
Med Peak A` Vel	Left Ventricle	LV Peak Diastolic Tissue Velocity During Atrial Systole	Mode: Tissue Doppler Imaging, Target: Medial Mitral Annulus
Med Peak E` Vel	Left Ventricle	Left Ventricular Peak Early Diastolic Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Medial Mitral Annulus
Med Peak S Vel	Left Ventricle	Left Ventricular Peak Systolic Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Medial Mitral Annulus
MPA Diam	Pulmonary artery	Main Pulmonary Artery Diameter	Mode: 2D mode
MR Alias Vel	Mitral Valve	Alias Velocity	Direction: Regurgitant Flow
MR Radius	Mitral Valve	Flow Radius	Direction: Regurgitant Flow
MR Vmax	Mitral Valve	Peak Velocity	Direction: Regurgitant Flow
MR Vmax	Mitral Valve	Peak Gradient	Direction: Regurgitant Flow
MR VTI	Mitral Valve	Mean Gradient	Direction: Regurgitant Flow
MR VTI	Mitral Valve	Velocity Time Integral	Direction: Regurgitant Flow
MR VTI	Mitral Valve	Mean Velocity	Direction: Regurgitant Flow
MV A Dur	Mitral Valve	Mitral Valve A-Wave Duration	
MV A-C Interval	Mitral Valve	Mitral Valve A-C Interval	Mode: M mode
MV Accel Time	Mitral Valve	Acceleration Time	Direction: Antegrade Flow
MV Alias Vel	Mitral Valve	Alias Velocity	Direction: Antegrade Flow
MV Area (Planim)	Mitral Valve	Cardiovascular Orifice Area	Mode: 2D mode, Method: Planimetry
MV D-E Exc	Mitral Valve	Mitral Valve D-E Excursion	Mode: M mode
MV D-E Slope	Mitral Valve	Mitral Valve D-E Slope	Mode: M mode
MV Dec Slope	Mitral Valve	Deceleration Slope	Direction: Antegrade Flow
MV Decel Time	Mitral Valve	Deceleration Time	Direction: Antegrade Flow
MV Diam	Mitral Valve	Cardiovascular Orifice Diameter	Mode: 2D mode
MV E-E Sep	Mitral Valve	Mitral Valve E-E Separation	Mode: M mode
MV E-F Slope	Mitral Valve	Mitral Valve E-F Slope by M-Mode	Mode: M mode
MV EPSS	Mitral Valve	Mitral Valve EPSS, E wave	Mode: M mode
MV P ½ t	Mitral Valve	Pressure Half-Time Peak velocity	
MV P ½ t	Mitral Valve	Pressure Half-Time	
MV Peak A Vel	Mitral Valve	Mitral Valve A-Wave Peak Velocity	Direction: Antegrade Flow
MV Peak E Vel	Mitral Valve	Mitral Valve E-Wave Peak Velocity	Direction: Antegrade Flow
MV Radius	Mitral Valve	Flow Radius	Direction: Antegrade Flow
MV Vmax	Mitral Valve	Peak Velocity	Direction: Antegrade Flow
MV Vmax	Mitral Valve	Peak Gradient	Direction: Antegrade Flow
MV VTI	Mitral Valve	Mean Gradient	Direction: Antegrade Flow
MV VTI	Mitral Valve	Velocity Time Integral	Direction: Antegrade Flow
MV VTI	Mitral Valve	Mean Velocity	Direction: Antegrade Flow
PI End Dias Vel	Pulmonic Valve	Peak Gradient	Direction: Regurgitant Flow
PI End Dias Vel	Pulmonic Valve	End Diastolic Velocity	Direction: Regurgitant Flow
Pulm A Revs Dur	Pulmonary Venous Structure	Pulmonary Vein A-Wave Duration	
Pulm A Revs Vel	Pulmonary Venous Structure	Pulmonary Vein Atrial Contraction Reversal Peak Velocity	
Pulm Dias Vel	Pulmonary Venous Structure	Pulmonary Vein Diastolic Peak Velocity	
Pulm Sys Vel	Pulmonary Venous Structure	Pulmonary Vein Systolic Peak Velocity	
PV Accel Time	Pulmonic Valve	Acceleration Time	Direction: Antegrade Flow
PV Vmax	Pulmonic Valve	Peak Velocity	Direction: Antegrade Flow
PV Vmax	Pulmonic Valve	Peak Gradient	Direction: Antegrade Flow
PV VTI	Pulmonic Valve	Mean Gradient	Direction: Antegrade Flow
PV VTI	Pulmonic Valve	Velocity Time Integral	Direction: Antegrade Flow
PV VTI	Pulmonic Valve	Mean Velocity	Direction: Antegrade Flow
RA Pressure	Right Atrium	Right Atrium Systolic Pressure	
RPA Diam	Pulmonary artery	Right Pulmonary Artery Diameter	Mode: 2D mode
RV ET	Right Ventricle	Eject Time	Mode: M mode
RV PEP	Right Ventricle	Pre-Eject Time	Mode: M mode
RVAWd (2D)	Right Ventricle	Right Ventricular Anterior Wall	Mode: 2D mode

Label	Site	Concept	Modifiers
		Diastolic Thickness	
RVAWd (MM)	Right Ventricle	Right Ventricular Anterior Wall Diastolic Thickness	Mode: M mode
RVIDd (2D)	Right Ventricle	Right Ventricular Internal Diastolic Dimension	Mode: 2D mode
RVIDd (MM)	Right Ventricle	Right Ventricular Internal Diastolic Dimension	Mode: M mode
RVOT Diam	Right Ventricle	Cardiovascular Orifice Diameter	Mode: 2D mode, Target: Right Ventricle Outflow Tract
RVOT Vmax	Right Ventricle	Peak Velocity	Target: Right Ventricle Outflow Tract
RVOT Vmax	Right Ventricle	Peak Gradient	Target: Right Ventricle Outflow Tract
RVOT VTI	Right Ventricle	Mean Gradient	Target: Right Ventricle Outflow Tract
RVOT VTI	Right Ventricle	Velocity Time Integral	Target: Right Ventricle Outflow Tract
RVOT VTI	Right Ventricle	Mean Velocity	Target: Right Ventricle Outflow Tract
Stroke Vol	Left Ventricle	Stroke Volume	Mode: 3D mode, Method: QLab 3D Volume Data
Time to Lat E`	Left Ventricle	Time to LV E Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Time to Lat S	Left Ventricle	Time to LV S Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
Time to Med E`	Left Ventricle	Time to LV E Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Medial Mitral Annulus
Time to Med S	Left Ventricle	Time to LV S Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Medial Mitral Annulus
Tmsv 12-DIF (%)	Left Ventricle	Nrm. Mx Dif of Time to min sys vol for 6 basal N 6 Mid segments	Mode: 3D mode
Tmsv 12-DIF (ms)	Left Ventricle	Max Dif of Time to min sys vol for 6 basal N 6 Mid segments	Mode: 3D mode
Tmsv 12-SD (%)	Left Ventricle	Nrm. SD of Time to min sys vol for 6 basal N 6 Mid segments	Mode: 3D mode
Tmsv 12-SD (ms)	Left Ventricle	SD of Time to min sys vol for 6 basal N 6 Mid segments	Mode: 3D mode
Tmsv 16-DIF (%)	Left Ventricle	Nrm. Mx Dif of Time to min sys vol for 16 wall segments	Mode: 3D mode
Tmsv 16-DIF (ms)	Left Ventricle	Max Dif of Time to min sys vol for 16 wall segments	Mode: 3D mode
Tmsv 16-SD (%)	Left Ventricle	Nrm. SD of Time to min sys vol for 16 wall segments	Mode: 3D mode
Tmsv 16-SD (ms)	Left Ventricle	SD of Time to min sys vol for 16 wall segments	Mode: 3D mode
Tmsv 6-DIF (%)	Left Ventricle	Nrm. Mx Dif of Time to min sys vol for 6 basal segments	Mode: 3D mode
Tmsv 6-DIF (ms)	Left Ventricle	Max Dif of Time to min sys vol for 6 basal segments	Mode: 3D mode
Tmsv 6-SD (%)	Left Ventricle	Nrm. SD of Time to min sys vol for 6 basal segments	Mode: 3D mode
Tmsv 6-SD (ms)	Left Ventricle	SD of Time to min sys vol for 6 basal segments	Mode: 3D mode
Tmsv S-L (%)	Left Ventricle	Nrm. Diff of Time to min sys vol btn basal sept N lat segments	Mode: 3D mode
Tmsv S-L (ms)	Left Ventricle	Dif of Time to min sys vol btn basal sept N lat segments	Mode: 3D mode
Tmsv S-P (%)	Left Ventricle	Nrm. Diff of Time to min sys vol btn basal sept N post segments	Mode: 3D mode
Tmsv S-P (ms)	Left Ventricle	Dif of Time to min sys vol btn basal sept N post segments	Mode: 3D mode
TR Alias Vel	Tricuspid Valve	Alias Velocity	Direction: Regurgitant Flow
TR Radius	Tricuspid Valve	Flow Radius	Direction: Regurgitant Flow
TR Vmax	Tricuspid Valve	Peak Velocity	Direction: Regurgitant Flow
TR Vmax	Tricuspid Valve	Peak Gradient	Direction: Regurgitant Flow
TR VTI	Tricuspid Valve	Mean Gradient	Direction: Regurgitant Flow
TR VTI	Tricuspid Valve	Velocity Time Integral	Direction: Regurgitant Flow
TR VTI	Tricuspid Valve	Mean Velocity	Direction: Regurgitant Flow

Label	Site	Concept	Modifiers
TV A-C Interval	Tricuspid Valve	Tricuspid Valve A-C Interval	Mode: M mode
TV Accel Time	Tricuspid Valve	Acceleration Time	Direction: Antegrade Flow
TV Alias Vel	Tricuspid Valve	Alias Velocity	Direction: Antegrade Flow
TV D-E Exc	Tricuspid Valve	Tricuspid Valve D-E Excursion	Mode: M mode
TV D-E Slope	Tricuspid Valve	Tricuspid Valve D-E Slope	Mode: M mode
TV Diam	Tricuspid Valve	Cardiovascular Orifice Diameter	Mode: 2D mode
TV E-F Slope	Tricuspid Valve	Tricuspid Valve E-F Slope	Mode: M mode
TV Peak A Vel	Tricuspid Valve	Tricuspid Valve A Wave Peak Velocity	Direction: Antegrade Flow
TV Peak E Vel	Tricuspid Valve	Tricuspid Valve E Wave Peak Velocity	Direction: Antegrade Flow
TV Radius	Tricuspid Valve	Flow Radius	Direction: Antegrade Flow
TV Vmax	Tricuspid Valve	Peak Velocity	Direction: Antegrade Flow
TV Vmax	Tricuspid Valve	Peak Gradient	Direction: Antegrade Flow
TV VTI	Tricuspid Valve	Mean Gradient	Direction: Antegrade Flow
TV VTI	Tricuspid Valve	Velocity Time Integral	Direction: Antegrade Flow
TV VTI	Tricuspid Valve	Mean Velocity	Direction: Antegrade Flow

APPLICATION: ADULT ECHO, CALCULATIONS

Label	Site	Concept	Modifiers
AI ERO	Aortic Valve	Cardiovascular Orifice Area	Method: Proximal Isovelocity Surface Area, Direction: Regurgitant Flow
AI Flow Rate	Aortic Valve	Peak Instantaneous Flow Rate	Direction: Regurgitant Flow
AI Fraction	Aortic Valve	Regurgitant Fraction	Direction: Regurgitant Flow
AI Volume	Aortic Valve	Volume Flow	Direction: Regurgitant Flow
AVA(Vmax)	Aortic Valve	Cardiovascular Orifice Area	Method: Continuity Equation by Peak Velocity
AVA(VTI)	Aortic Valve	Cardiovascular Orifice Area	Method: Continuity Equation by Velocity Time Integral
CI (2D-Cubed)	Left Ventricle	Cardiac Index	Mode: 2D mode, Method: Cube Method
CI (2D-Teich)	Left Ventricle	Cardiac Index	Mode: 2D mode, Method: Teichholz
CI (A/L)	Left Ventricle	Cardiac Index	Mode: 2D mode, Method: Single Plane Ellipse
CI (A2C)	Left Ventricle	Cardiac Index	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
CI (A4C)	Left Ventricle	Cardiac Index	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
CI (BP)	Left Ventricle	Cardiac Index	Mode: 2D mode, Method: Method of Disks, Biplane
CI (MM-Cubed)	Left Ventricle	Cardiac Index	Mode: M mode, Method: Cube Method
CI (MM-Teich)	Left Ventricle	Cardiac Index	Mode: M mode, Method: Teichholz
CO (2D-Cubed)	Left Ventricle	Cardiac Output	Mode: 2D mode, Method: Cube Method
CO (2D-Teich)	Left Ventricle	Cardiac Output	Mode: 2D mode, Method: Teichholz
CO (A/L)	Left Ventricle	Cardiac Output	Mode: 2D mode, Method: Single Plane Ellipse
CO (A2C)	Left Ventricle	Cardiac Output	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
CO (A4C)	Left Ventricle	Cardiac Output	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
CO (BP)	Left Ventricle	Cardiac Output	Mode: 2D mode, Method: Method of Disks, Biplane
CO (LVOT)	Left Ventricle	Cardiac Output	Target: Left Ventricle Outflow Tract
CO (MM-Cubed)	Left Ventricle	Cardiac Output	Mode: M mode, Method: Cube Method
CO (MM-Teich)	Left Ventricle	Cardiac Output	Mode: M mode, Method: Teichholz
CO (MV)	Mitral Valve	Cardiac Output	
CO (RVOT)	Right Ventricle	Cardiac Output	Target: Right Ventricle Outflow Tract
CO (TV)	Tricuspid Valve	Cardiac Output	
E/Lat E`	Left Ventricle	Ratio of MV Peak Velocity to LV Peak Tissue Velocity E-Wave	Target: Lateral Mitral Annulus
E/Med E`	Left Ventricle	Ratio of MV Peak Velocity to LV Peak Tissue Velocity E-Wave	Target: Medial Mitral Annulus
E`/A` Lateral	Left Ventricle	Ratio of LV E to A Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Lateral Mitral Annulus
E`/A` Medial	Left Ventricle	Ratio of LV E to A Tissue Velocity	Mode: Tissue Doppler Imaging, Target: Medial

Label	Site	Concept	Modifiers
			Mitral Annulus
EDV (2D-Cubed)	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, Method: Cube Method
EDV (2D-Teich)	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, Method: Teichholz
EDV (A/L)	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, Method: Single Plane Ellipse
EDV (A2C)	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
EDV (A4C)	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
EDV (BP)	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: 2D mode, Method: Method of Disks, Biplane
EDV (MM-Cubed)	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: M mode, Method: Cube Method
EDV (MM-Teich)	Left Ventricle	Left Ventricular End Diastolic Volume	Mode: M mode, Method: Teichholz
EF (2D-Cubed)	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, Method: Cube Method
EF (2D-Teich)	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, Method: Teichholz
EF (A/L)	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, Method: Single Plane Ellipse
EF (A2C)	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
EF (A4C)	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
EF (BP)	Left Ventricle	Left Ventricular Ejection Fraction	Mode: 2D mode, Method: Method of Disks, Biplane
EF (MM-Cubed)	Left Ventricle	Left Ventricular Ejection Fraction	Mode: M mode, Method: Cube Method
EF (MM-Teich)	Left Ventricle	Left Ventricular Ejection Fraction	Mode: M mode, Method: Teichholz
ESV (2D-Cubed)	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, Method: Cube Method
ESV (2D-Teich)	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, Method: Teichholz
ESV (A/L)	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, Method: Single Plane Ellipse
ESV (A2C)	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
ESV (A4C)	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
ESV (BP)	Left Ventricle	Left Ventricular End Systolic Volume	Mode: 2D mode, Method: Method of Disks, Biplane
ESV (MM-Cubed)	Left Ventricle	Left Ventricular End Systolic Volume	Mode: M mode, Method: Cube Method
ESV (MM-Teich)	Left Ventricle	Left Ventricular End Systolic Volume	Mode: M mode, Method: Teichholz
FS (2D-Cubed)	Left Ventricle	Left Ventricular Fractional Shortening	Mode: 2D mode, Method: Cube Method
FS (2D-Teich)	Left Ventricle	Left Ventricular Fractional Shortening	Mode: 2D mode, Method: Teichholz
FS (MM-Cubed)	Left Ventricle	Left Ventricular Fractional Shortening	Mode: M mode, Method: Cube Method
FS (MM-Teich)	Left Ventricle	Left Ventricular Fractional Shortening	Mode: M mode, Method: Teichholz
Hepatic S/D	Hepatic Veins	Hepatic Vein Systolic to Diastolic Ratio	
IVS % (2D)	Left Ventricle	Interventricular Septum % Thickening	Mode: 2D mode
IVS % (MM)	Left Ventricle	Interventricular Septum % Thickening	Mode: M mode
IVS/LVPW (2D)	Left Ventricle	Interventricular Septum to Posterior Wall Thickness Ratio	Mode: 2D mode
IVS/LVPW (MM)	Left Ventricle	Interventricular Septum to Posterior Wall Thickness Ratio	Mode: M mode

Label	Site	Concept	Modifiers
LA/Ao (2D)	Left Atrium	Left Atrium to Aortic Root Ratio	Mode: 2D mode
LA/Ao (MM)	Left Atrium	Left Atrium to Aortic Root Ratio	Mode: M mode
LV Mass (A/L)	Left Ventricle	Left Ventricle Mass	Mode: 2D mode
LV Mass (Cubed)	Left Ventricle	Left Ventricle Mass	Mode: M mode, Method: Cube Method
LV Mass Index (A/L)	Left Ventricle	Left Ventricle Mass Index	
LV Mass Index (Cubed)	Left Ventricle	Left Ventricle Mass Index	Mode: M mode, Method: Cube Method
LV PEP/ET	Left Ventricle	PEP/ET	
LVAd (A/L)	Left Ventricle	Left Ventricular Diastolic Area	Mode: 2D mode, Method: Single Plane Ellipse
LVAd (A2C)	Left Ventricle	Left Ventricular Diastolic Area	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
LVAd (A4C)	Left Ventricle	Left Ventricular Diastolic Area	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
LVAs (A/L)	Left Ventricle	Left Ventricular Systolic Area	Mode: 2D mode, Method: Single Plane Ellipse
LVAs (A2C)	Left Ventricle	Left Ventricular Systolic Area	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
LVAs (A4C)	Left Ventricle	Left Ventricular Systolic Area	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
LVLd (A/L)	Left Ventricle	Left Ventricle diastolic major axis	Mode: 2D mode, Method: Single Plane Ellipse
LVLd (A2C)	Left Ventricle	Left Ventricle diastolic major axis	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
LVLd (A4C)	Left Ventricle	Left Ventricle diastolic major axis	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
LVLs (A/L)	Left Ventricle	Left Ventricle systolic major axis	Mode: 2D mode, Method: Single Plane Ellipse
LVLs (A2C)	Left Ventricle	Left Ventricle systolic major axis	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
LVLs (A4C)	Left Ventricle	Left Ventricle systolic major axis	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
LVOT Area	Left Ventricle	Cardiovascular Orifice Area	Mode: 2D mode, Target: Left Ventricle Outflow Tract
LVPW % (2D)	Left Ventricle	Left Ventricle Posterior Wall % Thickening	Mode: 2D mode
LVPW % (MM)	Left Ventricle	Left Ventricle Posterior Wall % Thickening	Mode: M mode
MR ERO	Mitral Valve	Cardiovascular Orifice Area	Method: Proximal Isovelocity Surface Area, Direction: Regurgitant Flow
MR Flow Rate	Mitral Valve	Peak Instantaneous Flow Rate	Direction: Regurgitant Flow
MR Fraction	Mitral Valve	Regurgitant Fraction	Direction: Regurgitant Flow
MR Volume	Mitral Valve	Volume Flow	Method: Proximal Isovelocity Surface Area, Direction: Regurgitant Flow
MV Area	Not mapped		
MV E/A	Mitral Valve	Mitral Valve E to A Ratio	
MVA (P ½ t)	Mitral Valve	Cardiovascular Orifice Area	Method: Area by Pressure Half-Time
MVA (PISA)	Mitral Valve	Cardiovascular Orifice Area	Method: Proximal Isovelocity Surface Area
MVA (VTI)	Mitral Valve	Cardiovascular Orifice Area	Method: Continuity Equation by Velocity Time Integral
PISA (AI)	Aortic Valve	Aortic Valve Flow Area	Method: Proximal Isovelocity Surface Area, Direction: Regurgitant Flow
PISA (MR)	Mitral Valve	Mitral Valve Flow Area	Method: Proximal Isovelocity Surface Area, Direction: Regurgitant Flow
PISA (TR)	Tricuspid Valve	Tricuspid Valve Flow Area	Method: Proximal Isovelocity Surface Area, Direction: Regurgitant Flow
Pulm S/D	Pulmonary Venous Structure	Pulmonary Vein Systolic to Diastolic Ratio	
PVA(Vmax)	Pulmonic Valve	Cardiovascular Orifice Area	Method: Continuity Equation by Peak Velocity
PVA(VTI)	Pulmonic Valve	Cardiovascular Orifice Area	Method: Continuity Equation by Velocity Time Integral
Qp/Qs	Cardiac Shunt Study	Pulmonary-to-Systemic Shunt Flow Ratio	
RV PEP/ET	Right Ventricle	PEP/ET	
RVOT Area	Right Ventricle	Cardiovascular Orifice Area	Mode: 2D mode, Target: Right Ventricle Outflow Tract

Label	Site	Concept	Modifiers
RVSP	Right Ventricle	Right Ventricular Peak Systolic Pressure	
SI (2D-Cubed)	Left Ventricle	Stroke Index	Mode: 2D mode, Method: Cube Method
SI (2D-Teich)	Left Ventricle	Stroke Index	Mode: 2D mode, Method: Teichholz
SI (A/L)	Left Ventricle	Stroke Index	Mode: 2D mode, Method: Single Plane Ellipse
SI (A2C)	Left Ventricle	Stroke Index	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
SI (A4C)	Left Ventricle	Stroke Index	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
SI (BP)	Left Ventricle	Stroke Index	Mode: 2D mode, Method: Method of Disks, Biplane
SI (MM-Cubed)	Left Ventricle	Stroke Index	Mode: M mode, Method: Cube Method
SI (MM-Teich)	Left Ventricle	Stroke Index	Mode: M mode, Method: Teichholz
SV (2D-Cubed)	Left Ventricle	Stroke Volume	Mode: 2D mode, Method: Cube Method
SV (2D-Teich)	Left Ventricle	Stroke Volume	Mode: 2D mode, Method: Teichholz
SV (A/L)	Left Ventricle	Stroke Volume	Mode: 2D mode, Method: Single Plane Ellipse
SV (A2C)	Left Ventricle	Stroke Volume	Mode: 2D mode, View: Apical two chamber, Method: Method of Disks, Single Plane
SV (A4C)	Left Ventricle	Stroke Volume	Mode: 2D mode, View: Apical four chamber, Method: Method of Disks, Single Plane
SV (BP)	Left Ventricle	Stroke Volume	Mode: 2D mode, Method: Method of Disks, Biplane
SV (LVOT)	Left Ventricle	Stroke Volume	Target: Left Ventricle Outflow Tract
SV (MM-Cubed)	Left Ventricle	Stroke Volume	Mode: M mode, Method: Cube Method
SV (MM-Teich)	Left Ventricle	Stroke Volume	Mode: M mode, Method: Teichholz
SV (MV)	Mitral Valve	Stroke Volume	
SV (RVOT)	Right Ventricle	Stroke Volume	Target: Right Ventricle Outflow Tract
SV (TV)	Tricuspid Valve	Stroke Volume	
Tei Index	Mitral Valve	Tei Index	
TR ERO	Tricuspid Valve	Cardiovascular Orifice Area	Method: Proximal Isovelocity Surface Area, Direction: Regurgitant Flow
TR Flow Rate	Tricuspid Valve	Peak Instantaneous Flow Rate	Direction: Regurgitant Flow
TR Fraction	Tricuspid Valve	Regurgitant Fraction	Direction: Regurgitant Flow
TR Volume	Tricuspid Valve	Volume Flow	Direction: Regurgitant Flow
TV Area	Tricuspid Valve	Cardiovascular Orifice Area	Mode: 2D mode
TV E/A	Tricuspid Valve	Tricuspid Valve E to A Ratio	
TVA (PISA)	Tricuspid Valve	Cardiovascular Orifice Area	Method: Proximal Isovelocity Surface Area

TID 995300 PEDIATRIC ECHO PROCEDURE REPORT

Pediatric Echo PDE / Study Info

Label	Referenced Template ID (TID)	Type	Units
Height	**300**	NUM	m
Weight	**300**	NUM	kg
Body Surface Area	**300**	NUM	m2
Systolic Blood Pressure	**Private**	NUM	mmHg
Diastolic Blood Pressure	**Private**	NUM	mmHg
Murmur	**Private**	CHECK	
Arrhythmia	**Private**	TEXT	
Chest Pain	**Private**	CHECK	
Cardiomegaly	**Private**	CHECK	
Cyanosis	**Private**	CHECK	
Dextracardia	**Private**	CHECK	
Dyspnea	**Private**	CHECK	
Fever	**Private**	CHECK	
Hemoptysis	**Private**	CHECK	
Hypertension	**Private**	CHECK	
IDM	**Private**	CHECK	
Mesocardia	**Private**	CHECK	
Syncope	**Private**	CHECK	
Pacemaker	**Private**	CHECK	
VSD	**Private**	CHECK	
PDA	**Private**	CHECK	
PS	**Private**	CHECK	
AS	**Private**	CHECK	
COA	**Private**	CHECK	
TOF	**Private**	CHECK	
PAPVR	**Private**	CHECK	
Comp ECD	**Private**	CHECK	
Part ECD	**Private**	CHECK	
Comp TGA	**Private**	CHECK	
Interr Ao Arch	**Private**	CHECK	
MS	**Private**	CHECK	
MVP	**Private**	CHECK	
HIV	**Private**	CHECK	
MR (MV regurgitation)	**Private**	CHECK	
Kawasaki	**Private**	CHECK	
Rheum. Fever	**Private**	CHECK	
AR	**Private**	CHECK	
Arrhythmia Type	**Private**	TEXT	
Murmur Type	**Private**	TEXT	
ASD	**Private**	CHECK	
Cardiomyopathy type	**Private**	TEXT	
Infections Type	**Private**	TEXT	
Surgeries Type	**Private**	TEXT	
Comments	**Private**	TEXT	
BSA via Weight only	**Private**	CHECK	
Acquired AS	**Private**	CHECK	

Reference for the columns in the mapping table

Mode	System imaging mode
Label	Analysis Label displayed
Site	TID95300, Row 7 through 43, value passed as $SectionSubject
Concept	TID995300, Row 7 through 43, value passed as $MeasType

All instances of a measurement are exported, in addition to the average, if selected. See the Edit Report page for option selection.

Note: In Analysis setups, it is possible to select multiple results for a single measurement. Default settings are listed in setups via Analysis Config>Pediatric Echo>Measurements. In most cases, the primary measurement is the only one exported via DICOM. As an example, it is possible to select an automatically derived area measurement based on a single distance. The distance measurement will export, the area will not. Generally, diameter measurements may have an optional area displayed, which will not export.

- Which value selected is communicated using TID310, row 6, Selection Status
- The mean value is encoded using TID300, row 4, Derivation

APPLICATION: PEDIATRIC ECHO, MEASUREMENTS AND CALCULATIONS

Mode	Label	Site	Concept
2D	Cx	Circumflex Coronary Artery	Diameter
2D	LAD	Left Anterior Descending Coronary Artery	Diameter
2D	Left Main	Left Main Coronary Artery	Diameter
2D	PD	Proximal Circumflex Coronary Artery	Diameter
2D	RCA	Right Coronary Artery	Diameter
2D	ASD Major	Atrial Septal Defect	Major Axis
2D	ASD Minor	Atrial Septal Defect	Minor Axis
2D	HR - LV	Left Ventricle	Heart Rate
2D	IVSd (2D)	Interventricular septum	Thickness
2D	IVSs (2D)	Interventricular septum	Thickness
2D	LA Major - A4C	Left Atrium	Major Axis
2D	LAed Major - A4C	Left Atrium	Major Axis
2D	LAes Major - A4C	Left Atrium	Major Axis
2D	LA Minor - A4C	Left Atrium	Minor Axis
2D	LAed Minor - A4C	Left Atrium	Minor Axis
2D	LAes Minor - A4C	Left Atrium	Minor Axis
2D	LVed – SAX CH	Left Ventricle	Distance
2D	LVed – SAX PM	Left Ventricle	Distance
2D	LVed Major - A4C	Left Ventricle	Major Axis
2D	LVes Major - A4C	Left Ventricle	Major Axis
2D	LVed Minor - A4C	Left Ventricle	Minor Axis
2D	LVes – SAX CH	Left Ventricle	Distance
2D	LVes – SAX PM	Left Ventricle	Distance
2D	LVes Minor - A4C	Left Ventricle	Minor Axis
2D	LVIDd (2D)	Left Ventricle	Internal Dimension
2D	LVIDs (2D)	Left Ventricle	Internal Dimension
2D	LVPWd (2D)	Left ventricle posterior wall	Thickness
2D	LVPWs (2D)	Left ventricle posterior wall	Thickness
2D	PDA Diam	Patent ductus arteriosus	Diameter
2D	RA Major - A4C	Right Atrium	Major Axis
2D	RAed Major - A4C	Right Atrium	Major Axis
2D	RAes Major - A4C	Right Atrium	Major Axis
2D	RA Minor - A4C	Right Atrium	Minor Axis
2D	RAed Minor - A4C	Right Atrium	Minor Axis
2D	RAes Minor - A4C	Right Atrium	Minor Axis
2D	RV Major - A4C	Right Ventricle	Major Axis
2D	RVed Major - A4C	Right Ventricle	Major Axis
2D	RVes Major - A4C	Right Ventricle	Major Axis
2D	RV Minor - A4C	Right Ventricle	Minor Axis
2D	RVed Minor - A4C	Right Ventricle	Minor Axis
2D	RVes Minor - A4C	Right Ventricle	Minor Axis
2D	RVAWd (2D)	Right Ventricular Anterior Wall	Thickness
2D	RVIDd (2D)	Right Ventricle	Internal Dimension
2D	VSD Major	Ventricular Septal Defect	Major Axis
2D	VSD Minor	Ventricular Septal Defect	Minor Axis
2D	CI (2D-Cubed)	Left Ventricle	Cardiac Index
2D	CI (2D-Teich)	Left Ventricle	Cardiac Index
2D	CO (2D-Cubed)	Left Ventricle	Cardiac Output
2D	CO (2D-Teich)	Left Ventricle	Cardiac Output

Mode	Label	Site	Concept
2D	EDV (2D-Cubed)	Left Ventricle	Volume
2D	EDV (2D-Teich)	Left Ventricle	Volume
2D	EF (2D-Cubed)	Left Ventricle	Ejection Fraction
2D	EF (2D-Teich)	Left Ventricle	Ejection Fraction
2D	ESV (2D-Cubed)	Left Ventricle	Volume
2D	ESV (2D-Teich)	Left Ventricle	Volume
2D	FS (2D-Cubed)	Left Ventricle	Fractional Shortening
2D	FS (2D-Teich)	Left Ventricle	Fractional Shortening
2D	IVS % (2D)	Interventricular septum	% Thickening
2D	IVS/LVPW (2D)	Left Ventricle	Interventricular Septum to Posterior Wall Thickness Ratio
2D	LVPW % (2D)	Left ventricle posterior wall	% Thickening
2D	SI (2D-Cubed)	Left Ventricle	Stroke Index
2D	SI (2D-Teich)	Left Ventricle	Stroke Index
2D	SV (2D-Cubed)	Left Ventricle	Stroke Volume
2D	SV (2D-Teich)	Left Ventricle	Stroke Volume
2D	A2Cd	Left Ventricle	Left Ventricle MOD Diam
2D	A2Cs	Left Ventricle	Left Ventricle MOD Diam
2D	A4Cd	Left Ventricle	Left Ventricle MOD Diam
2D	A4Cs	Left Ventricle	Left Ventricle MOD Diam
2D	CI (A2C)	Left Ventricle	Cardiac Index
2D	CI (A2C-A/L)	Left Ventricle	Cardiac Index
2D	CI (A4C)	Left Ventricle	Cardiac Index
2D	CI (A4C-A/L)	Left Ventricle	Cardiac Index
2D	CI (BP)	Left Ventricle	Cardiac Index
2D	CO (A2C)	Left Ventricle	Cardiac Output
2D	CO (A2C-A/L)	Left Ventricle	Cardiac Output
2D	CO (A4C)	Left Ventricle	Cardiac Output
2D	CO (A4C-A/L)	Left Ventricle	Cardiac Output
2D	CO (BP)	Left Ventricle	Cardiac Output
2D	EDV (A2C)	Left Ventricle	Volume
2D	EDV (A2C-A/L)	Left Ventricle	Volume
2D	EDV (A4C)	Left Ventricle	Volume
2D	EDV (A4C-A/L)	Left Ventricle	Volume
2D	EDV (BP)	Left Ventricle	Volume
2D	EF (A2C)	Left Ventricle	Ejection Fraction
2D	EF (A2C-A/L)	Left Ventricle	Ejection Fraction
2D	EF (A4C)	Left Ventricle	Ejection Fraction
2D	EF (A4C-A/L)	Left Ventricle	Ejection Fraction
2D	EF (BP)	Left Ventricle	Ejection Fraction
2D	ESV (A2C)	Left Ventricle	Volume
2D	ESV (A2C-A/L)	Left Ventricle	Volume
2D	ESV (A4C)	Left Ventricle	Volume
2D	ESV (A4C-A/L)	Left Ventricle	Volume
2D	ESV (BP)	Left Ventricle	Volume
2D	LVAd (A2C)	Left Ventricle	Area
2D	LVAd (A4C)	Left Ventricle	Area
2D	LVAs (A2C)	Left Ventricle	Area
2D	LVAs (A4C)	Left Ventricle	Area
2D	LVLd (A2C)	Left Ventricle	Major Axis
2D	LVLd (A4C)	Left Ventricle	Major Axis
2D	LVLs (A2C)	Left Ventricle	Major Axis
2D	LVLs (A4C)	Left Ventricle	Major Axis
2D	SI (A2C)	Left Ventricle	Stroke Index
2D	SI (A2C-A/L)	Left Ventricle	Stroke Index
2D	SI (A4C)	Left Ventricle	Stroke Index
2D	SI (A4C-A/L)	Left Ventricle	Stroke Index
2D	SI (BP)	Left Ventricle	Stroke Index
2D	SV (A2C)	Left Ventricle	Stroke Volume
2D	SV (A2C-A/L)	Left Ventricle	Stroke Volume
2D	SV (A4C)	Left Ventricle	Stroke Volume
2D	SV (A4C-A/L)	Left Ventricle	Stroke Volume
2D	SV (BP)	Left Ventricle	Stroke Volume
2D	IVC Diam	Inferior vena cava	Diameter
2D	L Lower PulmV Diam	Pulmonary Vein	Diameter
2D	L Upper PulmV Diam	Pulmonary Vein	Diameter

Mode	Label	Site	Concept
2D	LA Dimen (2D)	Left Atrium	Distance
2D	MR Radius	Mitral Valve	Flow Radius
2D	MV Annul Diam	Mitral Valve	Diameter
2D	MV Major	Mitral Valve	Major Axis
2D	MV Minor	Mitral Valve	Minor Axis
2D	R Lower PulmV Diam	Pulmonary Vein	Diameter
2D	R Upper PulmV Diam	Pulmonary Vein	Diameter
2D	RA Dimen (2D)	Right Atrium	Distance
2D	SVC Diam	Superior vena cava	Diameter
2D	TR Radius	Tricuspid Valve	Flow Radius
2D	TV Annul Diam	Tricuspid Valve	Diameter
2D	TV Radius	Tricuspid Valve	Flow Radius
2D	MV Annul Area	Mitral Valve	Cardiovascular Orifice Area
2D	MV Area	Mitral Valve	Area
2D	MV Area (Ellipse)	Mitral Valve	Cardiovascular Orifice Area
2D	TV Annul Area	Tricuspid Valve	Cardiovascular Orifice Area
2D	TV Area	Tricuspid Valve	Area
2D	LVAd Sax Endo	Left Ventricle	Endocardial Area
2D	LVAd Sax Epi	Left Ventricle	Epicardial Area
2D	LVLd Apical	Left Ventricle	Major Axis
2D	LV Mass	Left Ventricle	Left Ventricle Mass
2D	LV Mass Index (A/L)	Left Ventricle	Left Ventricle Mass Index
2D	Ao Arch Diam	Aortic arch	Diameter
2D	Ao Arch Dist Diam	Aortic arch	Diameter
2D	Ao Isthmus Diam	Aortic isthmus	Diameter
2D	Ao Sinus Diam	Aortic sinus	Diameter
2D	Ao ST Jx Diam	Aortic sinotubular junction	Diameter
2D	AoR Diam (2D)	Aortic root	Diameter
2D	Asc Ao Diam	Ascending aorta	Diameter
2D	AV Annul Diam	Aortic Valve	Diameter
2D	AV Area	Aortic Valve	Area
2D	Coarctation Diam	Coarctation of aorta	Diameter
2D	Desc Ao Diam	Descending aorta	Diameter
2D	LPA Diam	Left pulmonary artery	Diameter
2D	MPA Diam	Main pulmonary artery	Diameter
2D	PV Annul Diam	Pulmonic Valve	Diameter
2D	RPA Diam	Right pulmonary artery	Diameter
2D	AoR Area	Aortic root	Cardiovascular Orifice Area
2D	LA/Ao (2D)	Left Atrium	Left Atrium to Aortic Root Ratio
2D	LVOT Area	Left ventricle outflow tract	Cardiovascular Orifice Area
2D	MPA Area	Main pulmonary artery	Cardiovascular Orifice Area
2D	RVOT Area	Right ventricle outflow tract	Cardiovascular Orifice Area
2D	ASD Diam	Atrial Septal Defect	Diameter
2D	VSD Diam	Ventricular Septal Defect	Diameter
Doppler	HR - MV	Mitral Valve	Heart rate
Doppler	IVCT	Left Ventricle	Isovolumic Contraction Time
Doppler	IVRT	Left Ventricle	Isovolumic Relaxation Time
Doppler	LL PulmV A Dur	Pulmonary vein	A Wave Duration
Doppler	LL PulmV A Vel	Pulmonary vein	Atrial Contraction Reversal Peak Velocity
Doppler	LL PulmV Dias Vel	Pulmonary vein	Diastolic blood velocity, peak
Doppler	LL PulmV Sys Vel	Pulmonary vein	Systolic blood velocity, peak
Doppler	LU PulmV A Dur	Pulmonary vein	A Wave Duration
Doppler	LU PulmV A Vel	Pulmonary vein	Atrial Contraction Reversal Peak Velocity
Doppler	LU PulmV Dias V	Pulmonary vein	Diastolic blood velocity, peak
Doppler	LU PulmV Sys V	Pulmonary vein	Systolic blood velocity, peak
Doppler	LV Eject Time	Left Ventricle	Ejection Time
Doppler	LVOT Diam	Left ventricle outflow tract	Cardiovascular Orifice Diameter
Doppler	LVOT VTI	Left ventricle outflow tract	Mean Velocity
Doppler	LVOT VTI	Left ventricle outflow tract	Velocity Time Integral
Doppler	MR Alias Vel	Mitral Valve	Alias velocity
Doppler	MR Vmax	Mitral Valve	Peak Gradient
Doppler	MR Vmax	Mitral Valve	Peak Velocity
Doppler	MR VTI	Mitral Valve	Mean Gradient
Doppler	MR VTI	Mitral Valve	Mean Velocity
Doppler	MR VTI	Mitral Valve	Velocity Time Integral

Mode	Label	Site	Concept
Doppler	MV A Dur	Mitral Valve	A Wave Duration
Doppler	MV Accel Slope	Mitral Valve	Acceleration Slope
Doppler	MV Accel Time	Mitral Valve	Acceleration Time
Doppler	MV Alias Vel	Mitral Valve	Alias velocity
Doppler	MV Area (Planim)	Mitral Valve	Cardiovascular Orifice Area
Doppler	MV Closure to Opening	Mitral Valve	Closure to Opening Time
Doppler	MV Decel Slope	Mitral Valve	Deceleration Slope
Doppler	MV Decel Time	Mitral Valve	Deceleration Time
Doppler	MV DFP	Mitral Valve	Tricuspid Diastolic Filling Period (DFPt)
Doppler	MV Diam	Mitral Valve	Cardiovascular Orifice Diameter
Doppler	MV Mean PG	Mitral Valve	Mean Gradient
Doppler	MV P ½ t	Mitral Valve	Pressure Half-Time
Doppler	MV P ½ t	Mitral Valve	Pressure Half-Time Peak velocity
Doppler	MV Peak E Vel	Mitral Valve	E Wave Peak Velocity
Doppler	MV Radius	Mitral Valve	Flow Radius
Doppler	MV Vmax	Mitral Valve	Peak Gradient
Doppler	MV Vmax	Mitral Valve	Peak Velocity
Doppler	MV VTI	Mitral Valve	Mean Velocity
Doppler	MV VTI	Mitral Valve	Velocity Time Integral
Doppler	PulmV A Dur	Pulmonary vein	A Wave Duration
Doppler	PulmV A Vel	Pulmonary vein	Atrial Contraction Reversal Peak Velocity
Doppler	PulmV Dias Vel	Pulmonary vein	Diastolic blood velocity, peak
Doppler	PulmV Sys Vel	Pulmonary vein	Systolic blood velocity, peak
Doppler	RL PulmV A Dur	Pulmonary vein	A Wave Duration
Doppler	RL PulmV A Vel	Pulmonary vein	Atrial Contraction Reversal Peak Velocity
Doppler	RL PulmV Dias Vel	Pulmonary vein	Diastolic blood velocity, peak
Doppler	RL PulmV Sys Vel	Pulmonary vein	Systolic blood velocity, peak
Doppler	RU PulmV A Dur	Pulmonary vein	A Wave Duration
Doppler	RU PulmV A Vel	Pulmonary vein	Atrial Contraction Reversal Peak Velocity
Doppler	RU PulmV Dias Vel	Pulmonary vein	Diastolic blood velocity, peak
Doppler	RU PulmV Sys Vel	Pulmonary vein	Systolic blood velocity, peak
Doppler	CO (MV)	Mitral Valve	Cardiac Output
Doppler	L Lower Pulm V S/D	Pulmonary vein	Systolic to Diastolic Velocity Ratio
Doppler	L Upper Pulm V S/D	Pulmonary vein	Systolic to Diastolic Velocity Ratio
Doppler	LV MPI	Left Ventricle	Left Ventricular Index of Myocardial Performance
Doppler	MR ERO	Mitral Valve	Cardiovascular Orifice Area
Doppler	MR Flow Rate	Mitral Valve	Peak Instantaneous Flow Rate
Doppler	MR Fraction	Mitral Valve	Regurgitant Fraction
Doppler	MR Volume Flow	Mitral Valve	Volume Flow
Doppler	MVA (P ½ t)	Mitral Valve	Cardiovascular Orifice Area
Doppler	MVA (PISA)	Mitral Valve	Cardiovascular Orifice Area
Doppler	MVA (VTI)	Mitral Valve	Cardiovascular Orifice Area
Doppler	PISA (MR)	Mitral Valve	Flow Area
Doppler	Pulm S/D	Pulmonary vein	Systolic to Diastolic Velocity Ratio
Doppler	R Lower Pulm V S/D	Pulmonary vein	Systolic to Diastolic Velocity Ratio
Doppler	R Upper Pulm V S/D	Pulmonary vein	Systolic to Diastolic Velocity Ratio
Doppler	SV (MV)	Mitral Valve	Stroke Volume
Doppler	Tei Index	Mitral Valve	Tei Index
Doppler	AI Accel Slope	Aortic Valve	Acceleration Slope
Doppler	AI Accel Time	Aortic Valve	Acceleration Time
Doppler	AI Alias Vel	Aortic Valve	Alias velocity
Doppler	AI Decel Slope	Aortic Valve	Deceleration Slope
Doppler	AI Decel Time	Aortic Valve	Deceleration Time
Doppler	AI End Dias Vel	Aortic Valve	End Diastolic Velocity
Doppler	AI P ½ t	Aortic Valve	Pressure Half-Time
Doppler	AI Radius	Aortic Valve	Flow Radius
Doppler	AI Vmax	Aortic Valve	Peak Gradient
Doppler	AI Vmax	Aortic Valve	Peak Velocity
Doppler	AI VTI	Aortic Valve	Mean Gradient
Doppler	AI VTI	Aortic Valve	Mean Velocity
Doppler	AI VTI	Aortic Valve	Velocity Time Integral
Doppler	AS Vmax	Aortic Valve	Stenosis Peak Gradient
Doppler	AS Vmax	Aortic Valve	Stenosis Peak Velocity
Doppler	Asc Ao Max PG	Ascending aorta	Peak Gradient
Doppler	Asc Ao Max PG	Ascending aorta	Peak Velocity

Mode	Label	Site	Concept
Doppler	Asc Ao Mean PG	Ascending aorta	Mean Gradient
Doppler	AV Accel Slope	Aortic Valve	Acceleration Slope
Doppler	AV Accel Time	Aortic Valve	Acceleration Time
Doppler	AV Max PG	Aortic Valve	Peak Gradient
Doppler	AV Max PG	Aortic Valve	Peak Velocity
Doppler	AV Mean PG	Aortic Valve	Mean Gradient
Doppler	AV Vmax	Aortic Valve	Peak Gradient
Doppler	AV Vmax	Aortic Valve	Peak Velocity
Doppler	AV VTI	Aortic Valve	Mean Velocity
Doppler	AV VTI	Aortic Valve	Velocity Time Integral
Doppler	Desc Ao Max PG	Descending aorta	Peak Gradient
Doppler	Desc Ao Max PG	Descending aorta	Peak Velocity
Doppler	Desc Ao Mean PG	Descending aorta	Mean Gradient
Doppler	HR - AV	Aortic Valve	Heart rate

Additional Codes and Modifiers Used

OB-GYN – TID5000

T / CID	CSD	CV	CM
CID 224	DCM	121411	Most recent value chosen
CID 228	DCM	121424	Table of Values
TID 310, Row 6	DCM	121404	Selection Status
TID 1008, Row 4	LN	11951-1	Fetus ID
TID 300, Row 4	DCM	121401	Derivation
CID 226,3488,3627	SRT	R-00317	Mean (and others)
CID 224	DCM	121412	Mean Value Chosen
TID 5103	SRT	G-C0E3	Finding Site
TID 5103	SRT	G-C171	Laterality
CID 2	SRT	G-A101	Left
CID 2	SRT	G-A100	Right
TID 5000, Row 17	LN	11879-4	Number of follicles in left ovary
TID 5000, Row 18	LN	11880-2	Number of follicles in right ovary
TID 5014, Row 2	DCM	12510	Identifier
TID 5014, Row 4	LN	11793-7	Follicle Diameter
TID 5013, Row 2	SRT	T-87600	Ovarian Follicle
TID 5000, Row 20	SRT	T-F6800	Embryonic Vascular Structure
TID 5000, Row 23	SRT	T-D6007	Pelvic Vascular Structure
TID 5010, Row 2	SRT	T-F1300	Amniotic Sac
TID 5010, Row 3	LN	11627-7	Amniotic Fluid Index
TID 5012, Row 2	SRT	T-87000	Ovary
TID 5012, Row 3	LN LN LN LN	11829-9 11840-6 11857-0 12164-0	Left Ovary Width Left Ovary Length Left Ovary Height Left Ovary Volume
TID 5012, Row 4	LN LN LN LN	11830-7 11841-4 11858-8 12165-7	Right Ovary Width Right Ovary Length Right Ovary Height Right Ovary Volume

VASCULAR – TID5100

T / CID	CSD	CV	CM
	99PMSBLUS	T5100-01	Anatomic Structures
	99PMSBLUS	T5100-02	Anatomic Structures (unilateral)
CID 4031	SNM3	T-60610	Bileduct
TID 300, Row 7	SRT	G-A1F8	Topographical Modifier
TID 5100, Row 9, 10, 11	SRT	T-40501	Blood Vessel of the Head
TID 5100, Row 12, 13	SRT	T-45005	Artery of neck
TID 5100, Row 24, 25, 26	SRT	T-46002	Artery of Abdomen
TID 5100, Row 13, 14	SRT	T-47020	Artery of Upper Extremity
TID 5100, Row 14, 15	SRT	T-47040	Artery of Lower Extremity
TID 5100, Row 27, 28, 29	SRT	T-487A0	Vein of Abdomen
TID 5100, Row 20, 21	SRT	T-49103	Vein of Upper Extremity
TID 5100, Row 16, 17	SRT	T-49403	Vein of Lower Extremity
TID 5100, Row 22, 23	SRT	T-71019	Vascular Structure of Kidney

ADULT ECHO – TID5200

T / CID	CSD	CV	CM
TID 5203, Row 6	DCM	111031	Image View
TID 5203, Row 5	SRT	G-0373	Image Mode
TID 5203, Row 2	SRT	G-C048	Flow Direction
TID 5200, Row 19	SRT	P5-30031	Cardiac Shunt Study
TID 5203, Row 4	SRT	R-4089A	Cardiac Cycle Point

T / CID	CSD	CV	CM
TID 5200, Row 14	SRT	T-35100	Tricuspid Valve
TID 5200, Row 13	SRT	T-35200	Pulmonic Valve
TID 5200, Row 11	SRT	T-35400	Aortic Valve
TID 5200, Row 16	SRT	T-44000	Pulmonic artery
TID 5200, Row 18	SRT	T-48581	Pulmonary Venous Structure

PEDIATRIC ECHO – TID995300

Additional Codes and Modifiers used in Pediatric Echo SR

T / CID	CSD	CV	CM
TID 995300, Row 32	99PMSBLUS	C3010-01	Main pulmonary artery
TID 995300, Row 23	SNM3	T-4311A	Left anterior Descending Coronary Artery
TID 995300, Row 25	SNM3	T-43120	Circumflex Coronary Artery
TID 995300, Row 37	SNM3	T-43203	Right Coronary Artery
TID 995300, Row 38	SNM3	T-44200	Right pulmonary artery
TID 995300, Row 26	SNM3	T-44400	Left pulmonary artery
TID 995300, Row 10	SNM3	T-48610	Superior vena cava
TID 995300, Row 8	SNM3	T-48710	Inferior vena cava
TID 995300, Row 19	SRT	D4-32014	Coarctation of aorta
TID 995300, Row 22	SRT	T-32410	Interventricular septum
TID 995300, Row 9	SRT	T-48500	Pulmonary vein
TID 995300, Row 31	BARI	11	Left Main Coronary Artery
TID 995300, Row 34	BARI	18	Proximal Circumflex Coronary Artery
TID 995300, Row 9	SNM3	D4-32012	Patent ductus arteriosus
TID X203, Row 5	99SUP72	T-2	Anatomical Site Modifier

Private Template Extensions

The PDE and Study Info data that is not already part of the DICOM templates is included using the following template extensions, per the appropriate application.

TID5001: OB-GYN Patient Characteristics

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
...	...	...	...	...	...	...	...	...
9	>	CONTAINS	TEXT or DATE or NUM	DCID (99002) General Study Info	1	U		
10	>	CONTAINS	TEXT or DATE or NUM	DCID (99003) OB Study Info	1	U		
11	>	CONTAINS	TEXT or DATE or NUM	DCID (99004) Gyn Study Info	1	U		

Line 4.1 is used only with a user-defined table or equation.

TID5008: Fetal Biometry Group

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
...	...	...	...	...	...	...	...	...
3	>	CONTAINS	NUM	EV (18185-9, LN, "Gestational Age")	1	MC	At least one of row 2 and 3 shall be present	Units = EV (d, UCUM, days)
4	>>	INFERRED FROM	CODE	DCID (228) Equation or Table	1	U	IF row 4.1 is absent	DCID (12013) Gestational Age Equations and Tables
4.1	>>	INFERRED FROM	TEXT	DCID (228) Equation or Table	1	U	IF row 4 is absent	
5	>>	R-INFERRED FROM	NUM		1-n	U		

TID5101: Vascular Patient Characteristics

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
...	...	...	...	...	...	...	...	...
7	>	CONTAINS	TEXT or DATE or NUM	DCID (99002) General Study Info	1	U		
8	>	CONTAINS	TEXT or DATE or NUM	DCID (99005) Vascular Study Info	1	U		
9	>	CONTAINS	TEXT or DATE or NUM	DCID (99006) Abdominal Study Info	1	U		

TID5202: Echocardiography Patient Characteristics

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
…	…	…	…	…	…	…	…	…
9	>	CONTAINS	TEXT or DATE or NUM	DCID (99002) General Study Info	1	U		
10	>	CONTAINS	TEXT or DATE or NUM	DCID (99007) Adult Echo Study Info	1	U		

Trace Method indicates the specific trace type that was used by QLAB during the acquisition of measurement data.

TID5203: Echo Measurement

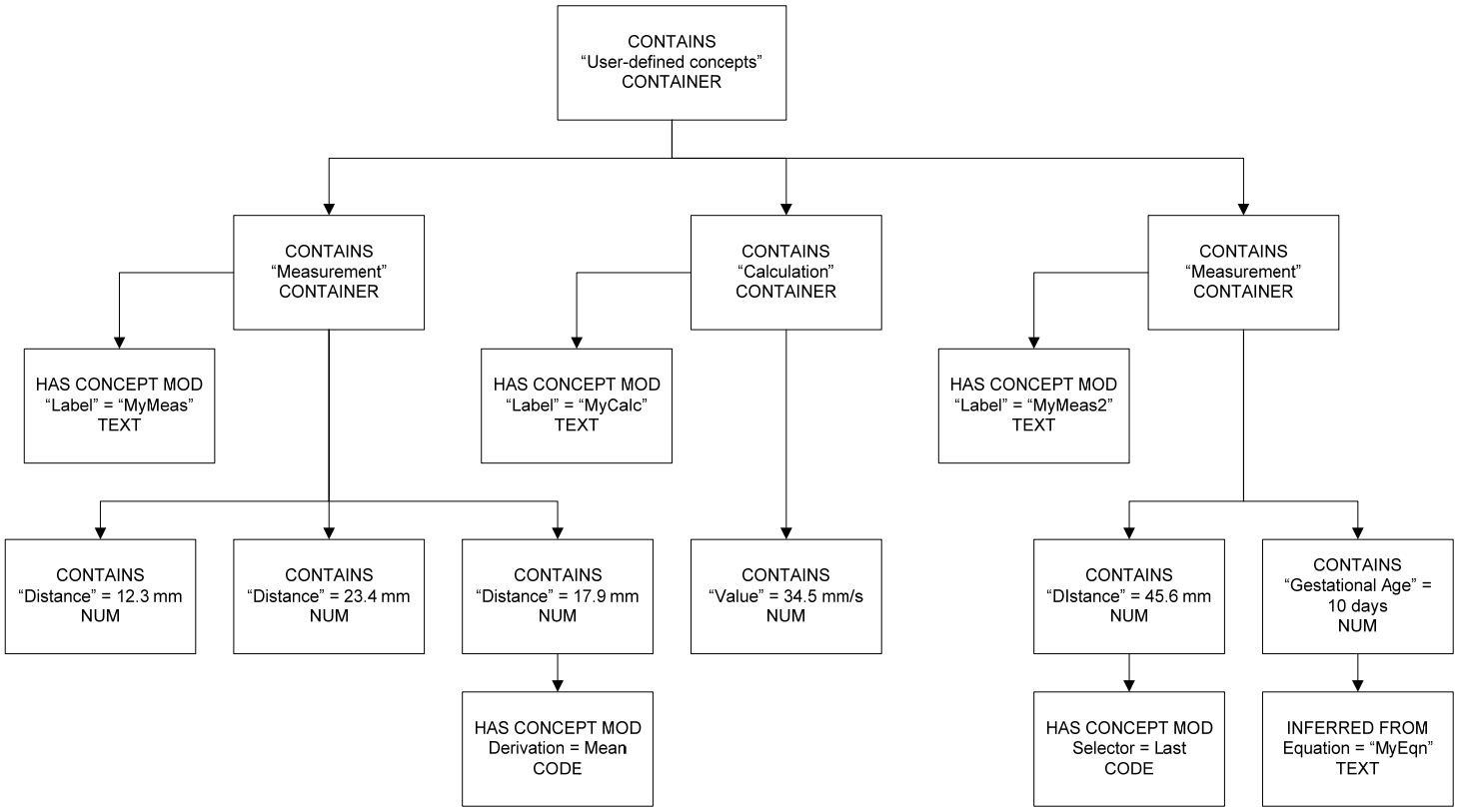
	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
…	…	…	…	…	…	…	…	…
7	>	HAS CONCEPT MOD	CODE	EV (G-C036-99, 99PMSBLUS, "Trace Method")	1	U		DCID (99000) Extended Trace Type Modifier

User-defined measurements and calculations

DESCRIPTION

In order to export all user-defined measurements and calculations, a generic structure was created that does not assign specific codes to the individual measurements, rather uses the label given by the user. This will allow all user-defined measurements to be treated in a uniform manner, without needing a per-site dictionary of user-defined codes.

STRUCTURE



TEMPLATE DEFINITION

Private Template and Template Extensions

TID5000: OB-GYN Ultrasound Procedure Report

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
...	...	...	...	...	...	...	...	...
25	>	CONTAINS	INCLUDE	TID (9902) Fetal Heart Section	1	U		
26	>	CONTAINS	INCLUDE	TID (9900) User-defined concepts	1	U		

TID5100: Vascular Ultrasound Report

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
...	...	...	...	...	...	...	...	...
31	>	CONTAINS	INCLUDE	TID (9900) User-defined concepts	1	U		

TID5200: Echocardiography Procedure Report

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
...	...	...	...	...	...	...	...	...
22	>	CONTAINS	INCLUDE	TID (9900) User-defined concepts	1	U		

TID995300: Pediatric Echocardiography Procedure Report

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
...	...	...	...	...	...	...	...	...
22	>	CONTAINS	INCLUDE	TID (9900) User-defined concepts	1	U		

TID9900: User-defined concepts

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT (T9900-01, 99PMSBLUS, "User-defined concepts")	1	M		
2	>	CONTAINS	INCLUDE	TID (9901) User-defined concept	1-n	MC	One of row 2 and 3 must be present	$Type = DT (T9900-02, 99PMSBLUS, "Measurement")
3	>	CONTAINS	INCLUDE	TID (9901) User-defined concept	1-n	MC	One of row 2 and 3 must be present	$Type = DT (T9900-03, 99PMSBLUS, "Calculation")

TID9901: User-defined concept

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	$Type	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID (1008) Subject	1	MC	IF this template is invoked more	

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
				Context, Fetus			than once to describe more than one fetus	
3	>	HAS CONCEPT MOD	TEXT	DT (T9900-04, 99PMSBLUS, "Label")	1	M		
4	>	HAS CONCEPT MOD	CODE	DT (G-C171, SRT, "Laterality")	1	U		DCID (244) Laterality
5	>	CONTAINS	INCLUDE	TID (300)	1	1-n	IFF $Type = "Measurement"	$Measurement = DCID (99008) Results $Derivation = DCID (3627) Measurement Type
6	>	CONTAINS	INCLUDE	TID (300)	1	1	IFF $Type = "Calculation"	$Measurement = DT (T9900-05, 99PMSBLUS, "Value")
7	>	CONTAINS	NUM	EV (18185-9, LN, "Gestational Age")	1	U		$Units = EV (d, 1.4, UCUM, days)
8	>	INFERRED FROM	TEXT	DCID (228) Equation or Table	1	U		

TID9902: Fetal Heart Section

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT (99999, 99PMSBLUS, "Fetal Heart")	1	M	…	…
2	>	HAS OBS CONTEXT	INCLUDE	DTID (1008) Subject Context. Fetus	1	MC	IF this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	INCLUDE	DTID (5008) Fetal Biometry Group	1-n	M		$Biometery Type=MemberOf (DCID (99001) Fetal Heart)

TID 5009: Fetal Biophysical Profile Section

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT 125006,DCM,"Biophysical Profile")	1	M		
2	>	HAS OBS CONTEXT	INCLUDE	DTID (1008) Subject Context. Fetus	1	MC	IF this template is invoked more than once to describe more than one fetus	
3	>	CONTAINS	NUM	EV (11631-9,LN, "Gross Body Movement")	1	MC	At least one of row 3-7 shall be present	Units = DT ("{0:2}", UCUM, "range 0:2")
4	>	CONTAINS	NUM	EV (11632-7,LN, "Fetal Breathing")	1	MC	At least one of row 3-7 shall be present	Units = DT ("{0:2}", UCUM, "range 0:2")
5	>	CONTAINS	NUM	EV (11635-0,LN, "Fetal	1	MC	At least one of row	Units = DT ("{0:2}",

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
				Tone")			3-7 shall be present	UCUM, "range 0:2")
6	>	CONTAINS	NUM	EV (11635-5,LN, "Fetal Heart Reactivity")	1	MC	At least one of row 3-7 shall be present	Units = DT ("{0:2}", UCUM, "range 0:2")
7	>	CONTAINS	NUM	EV (11630-1,LN, "Amniotic Fluid Volume")	1	MC	At least one of row 3-7 shall be present	Units = DT ("{0:2}", UCUM, "range 0:2")
8	>	CONTAINS	NUM	DT (11634-3,LN, "Bipohysical Profile Sum Score")	1	U		

TID 5016: Pelvis and Uterus Section

	NL	Rel with Parent	VT	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DT 125011,DCM,"Pelvis and Uterus")	1	M		
2	>	CONTAINS	INCLUDE	DTID (5016) LWH Volume Group	1	U		$GroupName = EV (T-83000, SRT, "Uterus") $Width = EV (11865-3,LN," Uterus Width") $Length = EV (11842-2, LN," Uterus Length") $Height = EV (11859-6, LN," Uterus Height") $Volume = EV (33192-6, LN, "Uterus Volume")
3	>	CONTAINS	INCLUDE	DTID (300) Measurement	1-n	U		$Measurement = DCID (12011) Ultrasound Pelvis and Uterus $Derivation = DCID (3627) Measurement Type

Context Group 99008: Measurement Results (from Tools & Results tab in Analysis Config)

Result (long)	Result (short)	CSD	CV	CM
Alias Velocity	Alias Vel	99PMSBLUS	C12222-02	Alias Velocity
Distance 1	Dist 1	99PMSBLUS	C7470-02	Distance 1 of 3 Distance Volume
Distance 2	Dist 2	99PMSBLUS	C7470-03	Distance 2 of 3 Distance Volume
Distance 3	Dist 3	99PMSBLUS	C7470-04	Distance 3 of 3 Distance Volume
Acceleration Index	AI	LN	20167-3	Acceleration Index
Acceleration Time	AT	LN	20168-1	Acceleration Time
Alpha	α	99PMSBLUS	C12122-04	Alpha of Hip Angle
Area	Area	SNM3	G-A166	Area
Area 1	Area 1	99PMSBLUS	C7471-01	Area 1 of Area Percent Reduction
Area 2	Area 2	99PMSBLUS	C7471-02	Area 2 of Area Percent Reduction
% Area Reduction	Area Reduc	SRT	G-0371	Percent Area Reduction
Beta	β	99PMSBLUS	C12122-05	Beta of Hip Angle
bpp	bpp			
Mean Pressure Gradient	Mean PG	LN	20256-4	Mean Gradient
Mean Velocity	Vmean	LN	11692-1	Time averaged peak velocity
Circumference	Circ	SNM3	M-02560	Circumference
D	D	99PMSBLUS	C7470-17	(D)Diameter of Circle in d:D Ratio
d	d	99PMSBLUS	C7470-18	(d)Distance Between Medial and Iliac line in d:D Ratio
d:D	d:D	99PMSBLUS	C12121-01	d:D Ratio
Deceleration Time	DT	LN	20217-6	Deceleration Time
Diam 1	Diam 1	99PMSBLUS	C7470-05	Diameter 1 of Diameter Reduction
Diam 2	Diam 2	99PMSBLUS	C7470-06	Diameter 2 of Diameter Reduction
% Diam Reduction	Diam Reduc	SRT	G-0372	Percent Diameter Reduction
Distance	Dist	DCM	121206	Distance
Theta	θ	99PMSBLUS	C12122-01	Doppler Correction Angle
dP/dt	dP/dt	DCM	109025	Max dp/dt
Slope	Slope	99PMSBLUS	C99PMSBLUS-GM-01	Doppler Slope

Result (long)	Result (short)	CSD	CV	CM
Time	Time	99PMSBLUS	C99PMSBLUS-GM-02	Doppler Time
End Diastolic Vel	EDV	LN	11653-3	End Diastolic Velocity
EF	EF	99PMSBLUS	C3467-01	Ejection Fraction
Distance	Dist	99PMSBLUS	C7470-07	Distance of Ellipse Distance Volume
Heart Rate	HR	LN	8867-4	Heart Rate
Major Axis	Major	SRT	G-A193	Major Axis
Max PG	Max PG	LN	20247-3	Max Peak Gradient
Min Diastolic Velocity	MDV	LN	11665-7	Minimum Diastolic Velocity
Minor	Minor	SRT	G-A194	Minor Axis
Dist2	Dist2	99PMSBLUS	C7470-10	MMode Distance 2
Dist3	Dist3	99PMSBLUS	C7470-11	MMode Distance 3
Dist4	Dist4	99PMSBLUS	C7470-12	MMode Distance 4
Dist5	Dist5	99PMSBLUS	C7470-13	MMode Distance 5
Dist6	Dist6	99PMSBLUS	C7470-14	MMode Distance 6
Dist7	Dist7	99PMSBLUS	C7470-15	MMode Distance 7
Dist8	Dist8	99PMSBLUS	C7470-16	MMode Distance 8
Slope	Slope	99PMSBLUS	C99PMSBLUS-GM-03	MMode Slope
Time	Time	99PMSBLUS	C99PMSBLUS-GM-04	MMode Time
Percent	Percent			
Pressure Gradient	PG	LN	20247-3	Peak Gradient
Mean Pressure Gradient	MG	LN	20256-4	Mean Gradient
Pressure Half-Time	P 1/2 t	LN	20280-4	Pressure Half-Time
Pulsatility Index	PI	LN	12008-9	Pulsatility Index
Peak Systolic Vel	PSV	LN	11726-7	Peak Systolic Velocity
Resistive Index	RI	LN	12023-8	Resistivity Index
Systolic/Diastiolic Ratio	S/D	LN	12144-2	Systolic to Diastolic Velocity Ratio
LV Area	LV Area	99PMSBLUS	C7471-04	Simpson Area
LV Length	LV Length	99PMSBLUS	C7470-09	Simpson Distance
LV Volume	LV Vol	99PMSBLUS	C7472-01	Simpson Volume
Time Avg Mean Velocity	TAMV	LN	20352-1	Time averaged mean velocity
Time Avg Peak Velocity	TAPV	LN	11692-1	Time averaged peak velocity
Time	Time			
ICA/CCA Ratio	ICA/CCA Ratio			
Pressure	Pressure	99PMSBLUS	C12220-08	Blood Pressure
Velocity	Vel	DCM	122207	Blood velocity, peak
Max Velocity	Vmax	LN	11726-7	Peak Velocity
Min Velocity	Vmin	LN	20352-1	Mean Velocity
Volume	Volume	SNM3	G-D705	Volume
Volume Flow	Vol Flow	LN	33878-0	Volume Flow
Volume Flow Area	Area	99PMSBLUS	C7471-03	Area of Volume Flow
Volume Flow Diameter	Diam	99PMSBLUS	C7470-08	Diameter of Volume Flow
Velocity Time Integral	VTI	LN	20354-7	Velocity Time Integral

Data Dictionary

*Key: **CSD** = Coding Scheme Designator; **CV** = Code Value; **CM** = Code Meaning*

PDE AND STUDY INFO

Context: 99002, General PDE fields

CSD	CV	CM
99PMSBLUS	T9910-01	Patient's Name
99PMSBLUS	T9910-02	Patient ID
99PMSBLUS	T9910-03	Patient's Sex
99PMSBLUS	T9910-04	Patient's Birth Date
DCM	121106	Comment
LN	8302-2	Patient Height
LN	29463-7	Patient Weight
99PMSBLUS	T9910-05	Accession Number
99PMSBLUS	T9910-06	Sonographer
99PMSBLUS	T9910-07	Study Description
99PMSBLUS	T9910-08	Referring Physician
99PMSBLUS	T9910-09	Exam date
99PMSBLUS	T9910-105	Study Date

Context: 99003, OB Study Info

CSD	CV	CM
LN	11955-2	LMP
LN	33067-0	Conception Date
LN	11878-6	Number of Fetuses
99PMSBLUS	T9910-103	Diabetic
99PMSBLUS	T9910-104	Diabetic Type
LN	11996-6	Gravida
LN	11977-6	Para
LN	11612-9	Aborta
LN	33065-4	Ectopic Pregnancies

Context: 99004, GYN Study Info

CSD	CV	CM
99PMSBLUS	T9910-10	Expected Ovulation Date
99PMSBLUS	T9910-11	Abnormal Cycles
99PMSBLUS	T9910-12	Birth Control Medication
99PMSBLUS	T9910-13	Birth Control Medication Duration
99PMSBLUS	T9910-100	Hormone Replacement Therapy
99PMSBLUS	T9910-101	Hormone Replacement Therapy Year Started
99PMSBLUS	T9910-102	Menopause
99PMSBLUS	T9910-14	Pelvic Pain Right
99PMSBLUS	T9910-15	Pelvic Pain Left
99PMSBLUS	T9910-16	Bleeding
99PMSBLUS	T9910-17	Bleeding Duration
99PMSBLUS	T9910-18	Complete Hysterectomy
99PMSBLUS	T9910-19	Partial Hysterectomy
99PMSBLUS	T9910-20	Ovary Surgery Right
99PMSBLUS	T9910-21	Ovary Surgery Left
99PMSBLUS	T9910-22	Ovary Surgery Bilateral
99PMSBLUS	T9910-23	Endometrium

Context: 99005, Vascular Study Info

CSD	CV	CM
99PMSBLUS	T9910-74	Smoker
99PMSBLUS	T9910-75	Hypertension
99PMSBLUS	T9910-103	Diabetic
99PMSBLUS	T9910-104	Diabetic Type

CSD	CV	CM
99PMSBLUS	T9910-24	Recent Injury
99PMSBLUS	T9910-25	Surgeries
99PMSBLUS	T9910-26	Aphasia
99PMSBLUS	T9910-27	Double Vision
99PMSBLUS	T9910-28	Memory Loss
99PMSBLUS	T9910-29	Syncope
99PMSBLUS	T9910-30	Confusion
99PMSBLUS	T9910-31	Bruit
99PMSBLUS	T9910-32	Stroke
99PMSBLUS	T9910-33	Stroke Date
99PMSBLUS	T9910-34	Endarterectomy Right
99PMSBLUS	T9910-35	Endarterectomy Left
99PMSBLUS	T9910-36	Endarterectomy Date
99PMSBLUS	T9910-37	Hemiparesis Right
99PMSBLUS	T9910-38	Hemiparesis Left
99PMSBLUS	T9910-39	Weakness Right
99PMSBLUS	T9910-40	Weakness Left
99PMSBLUS	T9910-41	Amaurosis Fugax Right
99PMSBLUS	T9910-42	Amaurosis Fugax Left
99PMSBLUS	T9910-43	Obesity
99PMSBLUS	T9910-44	Edema
99PMSBLUS	T9910-45	Previous DVT Right
99PMSBLUS	T9910-46	Previous DVT Left
99PMSBLUS	T9910-47	History of Pulmonary Thrombus
99PMSBLUS	T9910-48	History of Malignancy
99PMSBLUS	T9910-49	Pregnant
99PMSBLUS	T9910-12	Birth Control Medication
99PMSBLUS	T9910-13	Birth Control Medication Duration
99PMSBLUS	T9910-50	Claudication
99PMSBLUS	T9910-135	Additional Clinical Information

Context: 99006, Abdominal Study Info

CSD	CV	CM
99PMSBLUS	T9910-51	RUQ Pain
99PMSBLUS	T9910-52	LUQ Pain
99PMSBLUS	T9910-53	Midline Pain
99PMSBLUS	T9910-54	RLQ Pain
99PMSBLUS	T9910-55	LLQ Pain
99PMSBLUS	T9910-56	Periumbilical Pain
99PMSBLUS	T9910-57	Nausea
99PMSBLUS	T9910-58	Nausea Duration
99PMSBLUS	T9910-59	Vomiting
99PMSBLUS	T9910-60	Vomiting Duration
99PMSBLUS	T9910-61	Diarrhea
99PMSBLUS	T9910-62	Diarrhea Duration
99PMSBLUS	T9910-63	Weight Loss
99PMSBLUS	T9910-64	Weight Loss Duration
99PMSBLUS	T9910-65	Abnormal Lab Values
99PMSBLUS	T9910-66	History of Aortic Aneurysm
99PMSBLUS	T9910-67	Previous Measurement
99PMSBLUS	T9910-68	Aortic Aneurysm Date
99PMSBLUS	T9910-69	Cholesystectomy
99PMSBLUS	T9910-70	Cholesystectomy Date
99PMSBLUS	T9910-71	TIPSS
99PMSBLUS	T9910-72	TIPSS Date
99PMSBLUS	T9910-73	Other Surgeries

Context: 99007, Adult Echo Study Info

CSD	CV	CM
SRT	F-008EC	Systolic Blood Pressure

CSD	CV	CM
SRT	F-008ED	Diastolic Blood Pressure
99PMSBLUS	T9910-74	Smoker
99PMSBLUS	T9910-75	Hypertension
99PMSBLUS	T9910-76	History of Rheumatic Fever
99PMSBLUS	T9910-77	Congestive Heart Failure
99PMSBLUS	T9910-78	Surgeries
99PMSBLUS	T9910-79	Murmur
99PMSBLUS	T9910-80	Murmur Type
99PMSBLUS	T9910-81	Murmur Grade
99PMSBLUS	T9910-82	Arrythmia
99PMSBLUS	T9910-83	Chest Pain
99PMSBLUS	T9910-84	Jugular Venous Distention
99PMSBLUS	T9910-85	Dyspnea
99PMSBLUS	T9910-86	Peripheral Edema
99PMSBLUS	T9910-87	Fatigue
99PMSBLUS	T9910-88	Ascites
99PMSBLUS	T9910-89	Syncope
99PMSBLUS	T9910-90	Infection
99PMSBLUS	T9910-91	Dizziness
99PMSBLUS	T9910-92	Fever of Unknown Origin
99PMSBLUS	T9910-93	Hemoptysis
99PMSBLUS	T9910-94	TIA / Stroke
99PMSBLUS	T9910-95	Bioprosthetic Value Replacement Type
99PMSBLUS	T9910-96	Bioprosthetic Value Replacement Date
99PMSBLUS	T9910-97	Mechanical Value Replacement Type
99PMSBLUS	T9910-98	Mechanical Value Replacement Date
99PMSBLUS	T9910-99	Pacemaker

Context: 995300, Pediatric Echo Study Info

CSD	CV	CM
LN	8302-2	Height
LN	29463-7	Weight
LN	8277-6	Body Surface Area
SRT	F-008EC	Systolic Blood Pressure
SRT	F-008ED	Diastolic Blood Pressure
99PMSBLUS	T9910-136	Murmur
99PMSBLUS	T9910-137	Arrhythmia
99PMSBLUS	T9910-139	Chest Pain
99PMSBLUS	T9910-141	Cardiomegaly
99PMSBLUS	T9910-142	Cyanosis
99PMSBLUS	T9910-143	Dextracardia
99PMSBLUS	T9910-145	Dyspnea
99PMSBLUS	T9910-148	Fever
99PMSBLUS	T9910-149	Hemoptysis
99PMSBLUS	T9910-150	Hypertension
99PMSBLUS	T9910-151	IDM
99PMSBLUS	T9910-155	Mesocardia
99PMSBLUS	T9910-156	Syncope
99PMSBLUS	T9910-157	Pacemaker
99PMSBLUS	T9910-158	Ventricular Septal Defect (VSD)
99PMSBLUS	T9910-159	Patent Ductus Arteriosus (PDA)
99PMSBLUS	T9910-160	Pulmonary Stenosis (PS)
99PMSBLUS	T9910-161	AS (Congenital Heart Defect)
99PMSBLUS	T9910-162	Coarctation of the Aorta (COA)
99PMSBLUS	T9910-163	Tetralogy of Fallot (TOF)
99PMSBLUS	T9910-164	Partial Anomalous Pulmonary Venous Return (PAPVR)
99PMSBLUS	T9910-165	Complete Endocardial Cushion Defect (Comp ECD)
99PMSBLUS	T9910-166	Partial Endocardial Cushion Defect (Part ECD)
99PMSBLUS	T9910-167	Complete Transposition of the Great Arteries

CSD	CV	CM
		(Comp TGA)
99PMSBLUS	T9910-168	Interrupted Aortic Arch
99PMSBLUS	T9910-169	MV Stenosis (MS)
99PMSBLUS	T9910-170	MV Prolapse (MVP)
99PMSBLUS	T9910-171	HIV
99PMSBLUS	T9910-172	MV Regurgitation
99PMSBLUS	T9910-173	Mucocutaneous Lymph Node Syndrome (Kawazaki)
99PMSBLUS	T9910-174	Rheumatic Fever
99PMSBLUS	T9910-175	AV Regurgitation (AR)
99PMSBLUS	T9910-176	Arrhythmia Type
99PMSBLUS	T9910-178	Murmur Type
99PMSBLUS	T9910-179	Atrial Septal Defect (ASD)
99PMSBLUS	T9910-180	Cardiomyopathy type
99PMSBLUS	T9910-181	Infections Type
99PMSBLUS	T9910-182	Surgeries Type
99PMSBLUS	T9910-183	Comments
99PMSBLUS	T9910-186	BSA via Weight only
99PMSBLUS	T9910-187	AV Stenosis (acquired) (AS)

ALL MEASUREMENT CONTEXTS, CODES USED, BY CONTEXT GROUP

Context: 4, Anatomic Region

CSD	CV	CM
SNM3	T-71000	Kidney
SNM3	T-62000	Liver
SNM3	T-63000	Gallbladder
SNM3	T-74000	Bladder
SNM3	T-C3000	Spleen

Context: 3462, Chamber Identification

CSD	CV	CM
SRT	T-32600	Left Ventricle
SRT	T-32500	Right Ventricle
SRT	T-32300	Left Atrium
SRT	T-32200	Right Atrium

Context: 3612, Pediatric Echo Blood Velocity Measurements

CSD	CV	CM
DCM	122202	Diastolic blood velocity, peak
DCM	122204	Systolic blood velocity, peak
DCM	122207	Blood velocity, peak
99PMSBLUS	C3612-01	Atrial Contraction Reversal Peak Velocity
99PMSBLUS	C3612-02	E Wave Peak Velocity
99PMSBLUS	C3612-03	A Wave Peak Velocity
99PMSBLUS	C3612-04	Tissue Velocity
99PMSBLUS	C3612-05	Tissue Velocity During Atrial Systole

Context: 3627, Measurement Type

CSD	CV	CM
DCM	121427	Estimated
DCM	121428	Calculated

Context: 7470, Linear Measurements

CSD	CV	CM
SRT	G-A22A	Length
SNM3	G-A220	Width
99PMSBLUS	C7470-01	Height

Context: 7472, Volume Measurements

CSD	CV	CM
DCM	121221	Volume of ellipsoid
SRT	G-D705	Volume

Context: 99000, Extended Trace Type Modifier

CSD	CV	CM
99PMSBLUS	C99-12228-01	Qlab Complex Method
99PMSBLUS	C99-12228-02	Qlab Simple Method

Context: 99001, Fetal Heart

CSD	CV	CM
99PMSBLUS	P5000-01-01	Right Ventricle Dimension
99PMSBLUS	P5000-01-02	Right Atrium Dimension
99PMSBLUS	P5000-01-03	RV Outflow Tract Diameter
99PMSBLUS	P5000-01-04	Left Ventricle Dimension
99PMSBLUS	P5000-01-05	Left Atrium Dimension
99PMSBLUS	P5000-01-06	LV Outflow Tract Diameter
LN	18015-8	Aortic Root Diameter
99PMSBLUS	P5000-01-08	Interventricular Septum Thickness
99PMSBLUS	P5000-01-09	Ratio of LV Dimension to RV Dimension
99PMSBLUS	P5000-01-10	Ratio of LA Dimension to RA Dimension
99PMSBLUS	P5000-01-11	Ratio of Aortic Root Diameter to Main PA Diameter
LN	18020-8	Main Pulmonary Artery Diameter
99PMSBLUS	P5000-01-12	Ratio of LA Dimension to Aortic Root Diameter
99PMSBLUS	P5000-01-13	Left Atrium Length
99PMSBLUS	P5000-01-14	Left Atrium Width
99PMSBLUS	P5000-01-15	Right Atrium Length
99PMSBLUS	P5000-01-16	Right Atrium Width
99PMSBLUS	P5000-01-17	Left Ventricle Length
99PMSBLUS	P5000-01-18	Left Ventricle Width
99PMSBLUS	P5000-01-19	Right Ventricle Length
99PMSBLUS	P5000-01-20	Right Ventricle Width
99PMSBLUS	P5000-01-21	Aortic Annulus Diameter
99PMSBLUS	P5000-01-22	Mitral Annulus Diameter
99PMSBLUS	P5000-01-23	Tricuspid Annulus Diameter
99PMSBLUS	P5000-01-24	Ductus Arteriosus Diameter
LN	18012-5	Ascending Aortic Diameter
LN	18013-3	Descending Aortic Diameter

Context: 12003, OB-GYN DATES

CSD	CV	CM
LN	11778-8	EDD
LN	11779-6	EDD from LMP
LN	11781-2	EDD from average ultrasound age
LN	33066-2	Estimated LMP by EDD
99PMSBLUS	C12003-01	EDD from conception date
99PMSBLUS	C12003-02	Estimated LMP by conception date

Context: 12004, Fetal Biometry Ratios

CSD	CV	CM
LN	11947-9	HC/AC
LN	11871-1	FL/AC
LN	11872-9	FL/BPD
LN	11823-2	Cephalic Index
99PMSBLUS	C12004-01	HrtC/TC (Heart Circumference/Thoracic Circumference)

Context: 12005, Fetal Biometry Measurements

CSD	CV	CM
LN	11979-2	Abdominal Circumference
LN	11818-2	Anterior-Posterior Abdominal Diameter
LN	11820-8	Biparietal Diameter
LN	11824-0	BPD area corrected
LN	11963-6	Femur Length
LN	11965-1	Foot length
LN	11984-2	Head Circumference
LN	11851-3	Occipital-Frontal Diameter
LN	11988-3	Thoracic Circumference
LN	11862-0	Transverse Abdominal Diameter
LN	11863-8	Trans Cerebellar Diameter
LN	11864-6	Transverse Thoracic Diameter
99PMSBLUS	C12005-01	Ear length
99PMSBLUS	C12005-02	Fetal Trunk Cross Sectional Area
99PMSBLUS	C12005-03	Heart Circumference
99PMSBLUS	C12005-04	Length of middle Phalanx of the 5th Digit
99PMSBLUS	C12005-07	Anterior-Posterior Thoracic Diameter
99PMSBLUS	C12005-08	Transverse Trunk Diameter
99PMSBLUS	C12005-09	Heart Area
99PMSBLUS	C12005-23	Mandible Diameter
99PMSBLUS	C12005-24	Left Lung Diameter
99PMSBLUS	C12005-25	Right Lung Diameter
99PMSBLUS	C12005-26	Post Fossa Dimension
99PMSBLUS	C12005-27	Scapula Dimension
99PMSBLUS	C12005-28	Iliac Crest Dimension

Context: 12006, Fetal Long Bones Measurements

CSD	CV	CM
LN	11966-9	Humerus length
LN	11967-7	Radius length
LN	11969-3	Ulna length
LN	11968-5	Tibia length
LN	11964-4	Fibula length
LN	11962-8	Clavicle length
99PMSBLUS	C12006-01	Nasal Bone Length

Context: 12007, Fetal Cranium

CSD	CV	CM
LN	12171-5	Lateral Ventricle width
LN	11860-4	Cisterna Magna length
LN	12146-7	Nuchal Fold thickness
LN	33070-4	Inner Orbital Diameter
LN	11629-3	Outer Orbital Diameter
99PMSBLUS	C12007-01	Diameter of the First Orbit
99PMSBLUS	C12007-02	Diameter of the Second Orbit

Context: 12008, OB-GYN Amniotic Sac

CSD	CV	CM
LN	11624-4	First Quadrant Diameter
LN	11626-9	Second Quadrant Diameter
LN	11625-1	Third Quadrant Diameter
LN	11623-6	Fourth Quadrant Diameter

Context: 12009, Early Gestation Biometry Measurements

CSD	CV	CM
LN	11957-8	Crown Rump Length
LN	11850-5	Gestational Sac Diameter
LN	33071-2	Spine Length

CSD	CV	CM
LN	11816-6	Yolk Sac length
LN	33069-6	Nuchal Translucency
99PMSBLUS	C12009-01	Sac Diameter 1
99PMSBLUS	C12009-02	Sac Diameter 2
99PMSBLUS	C12009-03	Sac Diameter 3
99PMSBLUS	C12009-04	Mean Sac Diameter

Context: 12011, Ultrasound Pelvis and Uterus

CSD	CV	CM
LN	11961-0	Cervix Length
LN	12145-9	Endometrium Thickness
99PMSBLUS	C4-01	Post Void Bladder
99PMSBLUS	C12011-01	Bladder Length
99PMSBLUS	C12011-02	Bladder Width
99PMSBLUS	C12011-03	Bladder Height
99PMSBLUS	C12011-04	Bladder Volume
99PMSBLUS	C12011-05	Post Void Bladder Length
99PMSBLUS	C12011-06	Post Void Bladder Width
99PMSBLUS	C12011-07	Post Void Bladder Height
99PMSBLUS	C12011-08	Post void Bladder Volume
99PMSBLUS	C12011-09	Renal Longitudinal Dimension
99PMSBLUS	C12011-10	Renal Antero-posterior Dimension
99PMSBLUS	C12011-11	Renal Transverse Dimension
99PMSBLUS	C12011-12	Renal Pelvis Dimension
99PMSBLUS	C12011-13	Pelvis Longitudinal Dimension
99PMSBLUS	C12011-14	Pelvis Antero-posterior Dimension
99PMSBLUS	C12011-15	Pelvis Transverse Dimension
99PMSBLUS	C12011-16	Ureter Antero-posterior Dimension
99PMSBLUS	C12011-17	Ureter Transverse Dimension
99PMSBLUS	C12011-18	Bladder Longitudinal Dimension
99PMSBLUS	C12011-19	Bladder Antero-posterior Dimension
99PMSBLUS	C12011-20	Bladder Transverse Dimension
99PMSBLUS	C12011-21	Adrenal Gland Longitudinal Dimension
99PMSBLUS	C12011-22	Adrenal Gland Antero-posterior Dimension
99PMSBLUS	C12011-23	Adrenal Gland Transverse Dimension

Context: 12013, Gestational Age Equations and Tables

CSD	CV	CM
LN	11885-1	Gestational Age by LMP

Context: 12019, OB-GYN Fetus Summary

CSD	CV	CM
LN	18185-9	Gestational Age
LN	11888-5	Composite Ultrasound Age
LN	11885-1	Gestational Age by LMP
LN	11727-5	Estimated Weight
LN	11767-1	EFW percentile rank
LN	11948-7	Fetal Heart Rate
99PMSBLUS	C12019-02	Gestational Age by conception date
99PMSBLUS	C12019-03	Gestational Age by EDD

Context: 12104, Extracranial Arteries

CSD	CV	CM
SRT	T-45170	Carotid Bulb
SRT	T-45100	Common Carotid Artery
SRT	T-45200	External Carotid Artery
SRT	T-45300	Internal Carotid Artery
SRT	T-46100	Subclavian Artery
SRT	T-45700	Vertebral Artery

CSD	CV	CM
99PMSBLUS	C12104-01	ICA/CCA Ratio Nominator
99PMSBLUS	C12104-02	ICA/CCA Ratio Denominator

Context: 12105, Intracranial Cerebral Vessels

CSD	CV	CM
99PMSBLUS	C12105-04	Vertebral Artery in TCD
SRT	G-0368	Anterior-Middle Cerebral Artery Bifurcation
SRT	G-0369	Anterior-Posterior Cerebral Artery Bifurcation
SRT	R-1024F	Middle Cerebral Artery M1 Segment
SRT	R-10251	Middle Cerebral Artery M2 Segment
SRT	R-10253	Posterior Cerebral Artery P1 Segment
SRT	R-10255	Posterior Cerebral Artery P2 Segment
SRT	R-10259	Great Saphenous Vein of Thigh
SRT	R-1025A	Great Saphenous Vein of Calf
SRT	R-102BD	Terminal internal carotid artery
SRT	T-45308	Carotid Siphon
SRT	T-45320	Posterior Communicating Artery
SRT	T-45400	Ophthalmic Artery
SRT	T-45530	Anterior Communicating Artery
SRT	T-45540	Anterior Cerebral Artery

Context: 12106, Intracranial Cerebral Vessels (unilateral)

CSD	CV	CM
SRT	T-45800	Basilar Artery

Context: 12107, Upper Extremity Arteries

CSD	CV	CM
SRT	T-47100	Axillary Artery
SRT	T-47160	Brachial Artery
SRT	T-46010	Innominate Artery
SRT	T-47300	Radial Artery
SRT	T-47200	Ulnar Artery
99PMSBLUS	sup71_001	Antecube

Context: 12108, Upper Extremity Veins

CSD	CV	CM
SRT	T-49110	Axillary vein
SRT	T-48052	Basilic vein
SRT	T-49350	Brachial vein
SRT	T-49240	Cephalic vein
SRT	T-48620	Innominate vein
SRT	T-48170	Internal Jugular vein
SRT	T-49340	Radial vein
SRT	T-48330	Subclavian vein
SRT	T-49330	Ulnar vein

Context: 12109, Lower Extremity Arteries

CSD	CV	CM
SRT	T-46710	Common Iliac Artery
SRT	T-47700	Anterior Tibial Artery
SRT	T-47400	Common Femoral Artery
SRT	T-47741	Dorsalis Pedis Artery
SRT	T-46910	External Iliac Artery
SRT	T-46740	Internal Iliac Artery
SRT	T-47630	Peroneal Artery
SRT	T-47500	Popliteal Artery
SRT	T-47600	Posterior Tibial Artery
SRT	T-47440	Profunda Femoris Artery

CSD	CV	CM
SRT	T-47403	Superficial Femoral Artery

Context: 12110, Lower Extremity Veins

CSD	CV	CM
SRT	T-49630	Anterior Tibial Vein
SRT	G-035B	Common Femoral Vein
SRT	T-48920	Common Iliac Vein
SRT	T-48930	External Iliac Vein
SRT	T-4942D	Gastrocnemius vein
SRT	R-10259	Great Saphenous Vein of Thigh
SRT	R-1025A	Great Saphenous Vein of Calf
SRT	T-49550	Lesser Saphenous Vein
SRT	T-49650	Peroneal Vein
SRT	T-49640	Popliteal Vein
SRT	T-49620	Posterior Tibial Vein
SRT	T-49660	Profunda Femoris Vein
SRT	T-D930A	Saphenofemoral Junction
SRT	G-035A	Superficial Femoral Vein
SRT	T-48940	Internal iliac vein

Context: 12112, Abdominal Arteries (unilateral)

CSD	CV	CM
SRT	T-42000	Aorta
SRT	T-42520	Infra-renal Aorta
SRT	T-42510	Supra-renal Aorta
SRT	T-46400	Celiac Axis
SRT	T-46421	Common Hepatic Artery
SRT	T-46440	Gastroduodenal Artery
SRT	T-46520	Inferior Mesenteric Artery
SRT	T-46460	Splenic Artery
SRT	T-46510	Superior Mesenteric Artery
SRT	T-46423	Right Branch of Hepatic Artery
SRT	T-46427	Left Branch of Hepatic Artery

Context: 12114, Abdominal Veins (unilateral)

CSD	CV	CM
SRT	T-48727	Left Hepatic Vein
SRT	T-48726	Middle Hepatic Vein
SRT	T-48725	Right Hepatic Vein
SRT	T-48810	Portal Vein
SRT	T-4881F	Left Main Branch of Portal Vein
SRT	T-4882A	Right Main Branch of Portal Vein
SRT	T-48910	Inferior Mesenteric Vein
SRT	T-48710	Inferior Vena Cava
SRT	T-48890	Splenic Vein
SRT	T-48840	Superior Mesenteric Vein

Context: 12115, Renal Vessels

CSD	CV	CM
SRT	T-46600	Renal Artery
SRT	G-035C	Hilar Artery
SRT	T-46659	Segmental Artery
SRT	T-4668A	Arcuate Artery of the Kidney
SRT	T-48740	Renal Vein

Context: 12116, Vessel Segment Modifiers

CSD	CV	CM
SRT	G-A119	Distal
SRT	G-A188	Mid-longitudinal

CSD	CV	CM
SRT	G-036A	Origin of vessel
SRT	G-A118	Proximal

Context: 12117, Vessel Branch Modifiers

CSD	CV	CM
SRT	G-A115	Inferior
SRT	G-A104	Lateral
SRT	G-A109	Medial
SRT	G-A116	Superior

Context: 12120, Blood Velocity Measurements

CSD	CV	CM
LN	11653-3	End Diastolic Velocity
LN	11665-7	Minimum Diastolic Velocity
LN	11726-7	Peak Systolic Velocity
LN	20352-1	Time averaged mean velocity
LN	11692-1	Time averaged peak velocity

Context: 12121, Vascular Indices and Ratios

CSD	CV	CM
LN	20167-3	Acceleration Index
LN	12008-9	Pulsatility Index
LN	12023-8	Resistivity Index
LN	12144-2	Systolic to Diastolic Velocity Ratio

Context: 12122, Other Vascular Properties

CSD	CV	CM
LN	20168-1	Acceleration Time
LN	20217-6	Deceleration Time
SRT	G-0364	Vessel lumen diameter
LN	20247-3	Peak Gradient
LN	20354-7	Velocity Time Integral
LN	20256-4	Mean Gradient
99PMSBLUS	C12122-01	Doppler Correction Angle

Context: 12123, Carotid Ratios

CSD	CV	CM
LN	33868-1	ICA/CCA velocity ratio

Context: 12140, Pelvic Vasculature Anatomical Location

CSD	CV	CM
SRT	T-46820	Uterine Artery

Context: 12141, Fetal Vasculature Anatomical Location

CSD	CV	CM
SRT	T-F1810	Umbilical Artery
SRT	T-42000	Aorta
SRT	T-D0765	Descending Aorta
SRT	T-45600	Middle Cerebral Artery
99PMSBLUS	C12141-01	Ductus Venosus
SRT	T-42070	Thoracic aorta

Context: 12201, Left Ventricle Linear

CSD	CV	CM
LN	29436-3	Left Ventricle Internal End Diastolic Dimension
LN	29438-9	Left Ventricle Internal Systolic Dimension
LN	18051-3	Left Ventricular Fractional Shortening
LN	18154-5	Interventricular Septum Diastolic Thickness

CSD	CV	CM
LN	18155-2	Interventricular Septum to Posterior Wall Thickness Ratio
LN	18054-7	Interventricular Septum % Thickening
LN	18158-6	Interventricular Septum Systolic Thickness
LN	18053-9	Left Ventricle Posterior Wall % Thickening
LN	18077-8	Left Ventricle diastolic major axis
LN	18076-0	Left Ventricle systolic major axis
LN	18156-0	Left Ventricle Posterior Wall Systolic Thickness
LN	18152-9	Left Ventricle Posterior Wall Diastolic Thickness
99PMSBLUS	C12201-01	Left Ventricle MOD Diam

Context: 12202, Left Ventricle Volume

CSD	CV	CM
LN	18026-5	Left Ventricular End Diastolic Volume
LN	18148-7	Left Ventricular End Systolic Volume
LN	18043-0	Left Ventricular Ejection Fraction

Context: 12203, Left Ventricle Other

CSD	CV	CM
LN	18087-7	Left Ventricle Mass
LN	18071-1	Left Ventricular Isovolumic Relaxation Time
SRT	G-037E	Left Ventricular Isovolumic Contraction Time
SRT	G-037A	Left Ventricular Peak Early Diastolic Tissue Velocity
SRT	G-037B	Ratio of MV Peak Velocity to LV Peak Tissue Velocity E-Wave
SRT	G-037C	LV Peak Diastolic Tissue Velocity During Atrial Systole
SRT	G-037D	Left Ventricular Peak Systolic Tissue Velocity
99PMSBLUS	C12203-01	Left Ventricle Mass Index
99PMSBLUS	C12203-02	Eject Time
99PMSBLUS	C12203-03	Pre-Eject Time
99PMSBLUS	C12203-04	PEP/ET
99PMSBLUS	C12203-05	Time to LV S Tissue Velocity
99PMSBLUS	C12203-06	Time to LV E Tissue Velocity
99PMSBLUS	C12203-07	Area under LV E Tissue Velocity
99PMSBLUS	C12203-08	Area under LV A Tissue Velocity
99PMSBLUS	C12203-09	Ratio of LV E to A Tissue Velocity
99PMSBLUS	C12203-10	SD of Time to min sys vol for 16 wall segments
99PMSBLUS	C12203-11	SD of Time to min sys vol for 6 basal N 6 Mid segments
99PMSBLUS	C12203-12	SD of Time to min sys vol for 6 basal segments
99PMSBLUS	C12203-13	Max Dif of Time to min sys vol for 16 wall segments
99PMSBLUS	C12203-14	Max Dif of Time to min sys vol for 6 basal N 6 Mid segments
99PMSBLUS	C12203-15	Max Dif of Time to min sys vol for 6 basal segments
99PMSBLUS	C12203-18	Nrm. SD of Time to min sys vol for 16 wall segments
99PMSBLUS	C12203-19	Nrm. SD of Time to min sys vol for 6 basal N 6 Mid segments
99PMSBLUS	C12203-20	Nrm. SD of Time to min sys vol for 6 basal segments
99PMSBLUS	C12203-21	Nrm. Mx Dif of Time to min sys vol for 16 wall segments
99PMSBLUS	C12203-22	Nrm. Mx Dif of Time to min sys vol for 6 basal N 6 Mid segments
99PMSBLUS	C12203-23	Nrm. Mx Dif of Time to min sys vol for 6 basal segments
99PMSBLUS	C12203-27	Mean Velocity of Circumferential Fiber Shortening

Context: 12204, Echocardiography Right Ventricle

CSD	CV	CM
LN	20304-2	Right Ventricular Internal Diastolic Dimension
SRT	G-0380	Right Ventricular Peak Systolic Pressure
LN	18153-7	Right Ventricular Anterior Wall Diastolic Thickness
99PMSBLUS	C12204-03	Right Ventricular Anterior Wall

Context: 12205, Echocardiography Left Atrium

CSD	CV	CM
LN	29469-4	Left Atrium Antero-posterior Systolic Dimension
LN	17985-3	Left Atrium to Aortic Root Ratio

Context: 12206, Echocardiography Right Atrium

CSD	CV	CM
LN	18070-3	Right Atrium Systolic Pressure

Context: 12207, Echocardiography Mitral Valve

CSD	CV	CM
LN	17978-8	Mitral Valve A-Wave Peak Velocity
LN	18037-2	Mitral Valve E-Wave Peak Velocity
LN	18038-0	Mitral Valve E to A Ratio
LN	18040-6	Mitral Valve E-F Slope by M-Mode
LN	18036-4	Mitral Valve EPSS, E wave
SRT	G-0385	Mitral Valve A-Wave Duration
LN	18035-6	Mitral Regurgitation dP/dt derived from Mitral Reg velocity
99PMSBLUS	C12207-01	Mitral Valve D-E Excursion
99PMSBLUS	C12207-02	Mitral Valve D-E Slope
99PMSBLUS	C12207-03	Mitral Valve E-E Separation
99PMSBLUS	C12207-04	Mitral Valve A-C Interval
99PMSBLUS	C12207-05	Tei Index
99PMSBLUS	C12207-06	Mitral Valve Flow Area

Context: 12208, Echocardiography Tricuspid Valve

CSD	CV	CM
LN	18031-5	Tricuspid Valve E Wave Peak Velocity
LN	18030-7	Tricuspid Valve A Wave Peak Velocity
LN	18039-8	Tricuspid Valve E to A Ratio
99PMSBLUS	C12208-01	Tricuspid Valve D-E Excursion
99PMSBLUS	C12208-02	Tricuspid Valve D-E Slope
99PMSBLUS	C12208-03	Tricuspid Valve E-F Slope
99PMSBLUS	C12208-04	Tricuspid Valve A-C Interval
99PMSBLUS	C12208-05	Tricuspid Valve Flow Area

Context: 12209, Echocardiography Pulmonic Valve

CSD	CV	CM
99PMSBLUS	C12209-01	Late Diastolic Slope
99PMSBLUS	C12209-02	A Wave Amp
99PMSBLUS	C12209-03	B-C Slope
99PMSBLUS	C12209-04	Pulmonic Annulus

Context: 12210, Echocardiography Pulmonary Artery

CSD	CV	CM
LN	18020-8	Main Pulmonary Artery Diameter
LN	18021-6	Right Pulmonary Artery Diameter
LN	18019-0	Left Pulmonary Artery Diameter

Context: 12211, Echocardiography Aortic Valve

CSD	CV	CM
LN	17996-0	Aortic Valve Cusp Separation

CSD	CV	CM
99PMSBLUS	C12211-01	Aortic Valve Flow Area

Context: 12212, Echocardiography Aorta

CSD	CV	CM
LN	18015-8	Aortic Root Diameter
LN	18011-7	Aortic Arch Diameter
LN	18012-5	Ascending Aortic Diameter
LN	18014-1	Aortic Isthmus Diameter
LN	18013-3	Descending Aortic Diameter

Context: 12214, Echocardiography Pulmonary Veins

CSD	CV	CM
LN	29450-4	Pulmonary Vein Systolic Peak Velocity
LN	29451-2	Pulmonary Vein Diastolic Peak Velocity
LN	29452-0	Pulmonary Vein Systolic to Diastolic Ratio
LN	29453-8	Pulmonary Vein Atrial Contraction Reversal Peak Velocity
SRT	G-038B	Pulmonary Vein A-Wave Duration

Context: 12216, Echocardiography Hepatic Veins

CSD	CV	CM
LN	29471-0	Hepatic Vein Systolic Peak Velocity
LN	29472-8	Hepatic Vein Diastolic Peak Velocity
LN	29473-6	Hepatic Vein Systolic to Diastolic Ratio
LN	29474-4	Hepatic Vein Atrial Contraction Reversal Peak Velocity
99PMSBLUS	C12216-01	Hepatic Vein A-Wave Duration
99PMSBLUS	T5200-01	Hepatic Veins

Context: 12217, Echocardiography Cardiac Shunt

CSD	CV	CM
LN	29462-9	Pulmonary-to-Systemic Shunt Flow Ratio

Context: 12219, Pulmonary Vein Modifiers

CSD	CV	CM
SRT	R-404A0	Right Upper Segment
SRT	R-4049E	Right Lower Segment
SRT	R-40491	Left Upper Segment
SRT	R-4214B	Left Lower Segment

Context: 12220, Echocardiography Common Measurements

CSD	CV	CM
LN	8867-4	Heart rate
99PMSBLUS	C12220-09	Pressure

Context: 12221, Flow Direction

CSD	CV	CM
SRT	R-42047	Antegrade Flow
SRT	R-42E61	Regurgitant Flow
99PMSBLUS	C12221-02	Sample Volume Depth
99PMSBLUS	C12221-03	TCD Mean Velocity
99PMSBLUS	C12221-04	TCD Pulsatility Index

Context: 12222, Orifice Flow Properties

CSD	CV	CM
LN	33878-0	Volume Flow
LN	34141-2	Peak Instantaneous Flow Rate
SRT	G-038E	Cardiovascular Orifice Area
SRT	G-038F	Cardiovascular Orifice Diameter

CSD	CV	CM
SRT	G-0390	Regurgitant Fraction
LN	11653-3	End Diastolic Velocity
LN	11726-7	Peak Systolic Velocity
LN	20352-1	Mean Velocity
LN	20247-3	Peak Gradient
LN	20256-4	Mean Gradient
LN	20354-7	Velocity Time Integral
LN	20280-4	Pressure Half-Time
LN	20168-1	Acceleration Time
LN	20217-6	Deceleration Time
LN	20216-8	Deceleration Slope
LN	12144-2	Systolic to Diastolic Velocity Ratio
99PMSBLUS	C12222-01	Flow Radius
99PMSBLUS	C12222-02	Alias Velocity
99PMSBLUS	C12222-03	Pressure Half-Time Peak velocity
99PMSBLUS	C12222-04	Acceleration Slope
99PMSBLUS	C12222-05	D-E Slope
99PMSBLUS	C12222-06	E-F Slope
99PMSBLUS	C12222-07	A-C Interval
99PMSBLUS	C12222-08	E to A Ratio
99PMSBLUS	C12222-09	Stenosis Peak Gradient
99PMSBLUS	C12222-10	Stenosis Peak Velocity

Context: 12223, Echocardiography Stroke Volume Origin

CSD	CV	CM
SNM3	T-32600	Left Ventricle
SNM3	T-32650	Left Ventricle Outflow Tract
SNM3	T-32550	Right Ventricle Outflow Tract
SNM3	T-35300	Mitral Valve
SNM3	T-42000	Aorta

Context: 12224, Ultrasound Image Modes

CSD	CV	CM
SRT	G-03A2	2D mode
SRT	G-0394	M mode
99PMSBLUS	T12224-01	3D mode
99PMSBLUS	T12224-02	Tissue Doppler Imaging

Context: 12226, Echocardiography Image View

CSD	CV	CM
SRT	G-A19B	Apical two chamber
SRT	G-A19C	Apical four chamber
SRT	G-0397	Parasternal short axis
SRT	G-0399	Parasternal short axis at the level of the mitral chords
SRT	G-039B	Parasternal short axis at the Papillary Muscle level
99PMSBLUS	C12226-01	MPR views

Context: 12228, Volume Methods

CSD	CV	CM
DCM	125205	Area-Length Single Plane
DCM	125211	Biplane Ellipse
DCM	125226	Single Plane Ellipse
DCM	125206	Cube Method
DCM	125207	Method of Disks, Biplane
DCM	125208	Method of Disks, Single Plane
DCM	125209	Teichholz
99PMSBLUS	C12228-01	Qlab Complex Area Method, Single Plane
99PMSBLUS	C12228-02	Qlab Simple Area Method, Single Plane

CSD	CV	CM
99PMSBLUS	C12228-03	Qlab Biplane Template
99PMSBLUS	C12228-04	Qlab 3D Volume Data
99PMSBLUS	T5203-01	Simpson's Disk Number

Context: 12229, Area Methods

CSD	CV	CM
DCM	125210	Area by Pressure Half-Time
DCM	125214	Continuity Equation by Peak Velocity
DCM	125215	Continuity Equation by Velocity Time Integral
DCM	125216	Proximal Isovelocity Surface Area
DCM	125220	Planimetry

Context: 12230, Gradient Methods

CSD	CV	CM
DCM	125217	Full Bernoulli

Context: XX231, Volume Flow Methods

CSD	CV	CM
DCM	125216	Proximal Isovelocity Surface Area

Context: 12233, Cardiac Phase

CSD	CV	CM
SRT	F-32011	End Diastole
DCM	109070	End Systole
99PMSBLUS	C12233-01	Early Diastole

Context: 12235, Mitral Valve Anatomic Sites

CSD	CV	CM
SRT	G-0391	Medial Mitral Annulus
SRT	G-0392	Lateral Mitral Annulus
SRT	T-35313	Mitral Annulus

Context: 12239, Cardiac Output Properties

CSD	CV	CM
SRT	F-32120	Stroke Volume
SRT	F-32100	Cardiac Output
SRT	F-32110	Cardiac Index
SRT	F-00078	Stroke Index
99PMSBLUS	C3467-01	Ejection Fraction
99PMSBLUS	C12239-02	Fractional Shortening

Context: 12240, Left Ventricle Area

CSD	CV	CM
SRT	G-0374	Left Ventricular Systolic Area
SRT	G-0375	Left Ventricular Diastolic Area
SRT	G-0376	Left Ventricular Fractional Area Change
SRT	G-0379	Left Ventricle Epicardial Diastolic Area, psax pap view

Context: 12241, Tricuspid Finding Sites

CSD	CV	CM
SRT	T-35111	Tricuspid Annulus

Context: 12242, Aortic Valve Finding Sites

CSD	CV	CM
SRT	T-35410	Aortic Valve Ring

Context: 12243, Left Ventricle Finding Sites

CSD	CV	CM
SRT	T-32650	Left ventricle outflow tract
99PMSBLUS	C12243-01	Left ventricle posterior wall

Context: 12244, Congenital Finding Sites

CSD	CV	CM
SRT	D4-31150	Ventricular Septal Defect
SRT	D4-31220	Atrial Septal Defect

Context: XX12245, Pediatric Echo Aorta

CSD	CV	CM
SNM3	T-42100	Ascending aorta
SRT	T-42310	Aortic isthmus
SNM3	T-42300	Aortic arch
SNM3	T-42400	Descending aorta
SRT	F-04403	Aortic root
99SUP78	C12245-01	Aortic sinotubular junction
99SUP78	C12245-02	Aortic sinus

Context: XX205, Pediatric Echo Aortic valve

CSD	CV	CM
LN	17996-0	Aortic Valve Cusp Separation
99PMSBLUS	C12212-02	Left Ventricle Diastolic Pressure with Aortic Insufficiency
99PMSBLUS	C12212-01	Left Ventricle Systolic Pressure with Aortic Stenosis

Context: XX211, Pediatric Echo Cardiac Shunt Study

CSD	CV	CM
LN	29462-9	Pulmonary-to-Systemic Shunt Flow Ratio

Context: XX216, Pediatric Echo Left Atrium

CSD	CV	CM
LN	29469-4	Left Atrium Antero-posterior Systolic Dimension
LN	17985-3	Left Atrium to Aortic Root Ratio

Context: XX219, Pediatric Echo Left Ventricle

CSD	CV	CM
LN	18155-2	Interventricular Septum to Posterior Wall Thickness Ratio
LN	18087-7	Left Ventricle Mass
SRT	G-037F	Left Ventricular Index of Myocardial Performance
SRT	G-037B	Ratio of MV Peak Velocity to LV Peak Tissue Velocity E-Wave
99PMSBLUS	C12203-01	Left Ventricle Mass Index
99PMSBLUS	C12203-26	Left Ventricle Meridional Wall Stress
99PMSBLUS	C12201-01	Left Ventricle MOD Diam
99PMSBLUS	C12203-05	Time to LV S Tissue Velocity
99PMSBLUS	C12203-06	Time to LV E Tissue Velocity
99PMSBLUS	C12203-07	Area under LV E Tissue Velocity
99PMSBLUS	C12203-08	Area under LV A Tissue Velocity
99PMSBLUS	C12203-09	Ratio of LV E to A Tissue Velocity
99PMSBLUS	C12203-39	Heart Rate-Corrected Mean Velocity of Circumferential Fiber Shortening

Context: XX223, Pediatric Echo Mitral Valve

CSD	CV	CM
LN	18035-6	Mitral Regurgitation dP/dt derived from Mitral Reg velocity
99PMSBLUS	C12207-03	Mitral Valve E-E Separation

CSD	CV	CM
LN	18036-4	Mitral Valve EPSS, E wave

Context: XX228, Pediatric Echo Pulmonic Valve

CSD	CV	CM
99PMSBLUS	C12210-01	Pulmonary Artery Pressure using Accel Time

Context: XX232, Pediatric Echo Right Ventricle

CSD	CV	CM
SRT	G-0381	Right Ventricular Index of Myocardial Performance

Context: XX236, Pediatric Echo Tricuspid Valve

CSD	CV	CM
SRT	R-003A9	Tricuspid Diastolic Filling Period (DFPt)

Context: XX7470-1-2, Pediatric Echo Dimensional Properties

CSD	CV	CM
SNM3	M-02550	Diameter
SRT	G-A22A	Length
DCM	121206	Distance
SNM3	G-A220	Width
SRT	G-A193	Major Axis
SRT	G-A194	Minor Axis
SNM3	G-A166	Area
SNM3	G-D705	Volume
DCM	121216	Volume estimated from single 2D region
DCM	121221	Volume of ellipsoid
99PMSBLUS	C7470-01	Height
99PMSBLUS	C7470-02	Distance 1 of 3 Distance Volume
99PMSBLUS	C7470-03	Distance 2 of 3 Distance Volume
99PMSBLUS	C7470-04	Distance 3 of 3 Distance Volume
99PMSBLUS	C7470-05	Diameter 1 of Diameter Reduction
99PMSBLUS	C7470-06	Diameter 2 of Diameter Reduction
99PMSBLUS	C7470-17	(D)Diameter of Circle in d:D Ratio
99PMSBLUS	C7470-18	(d)Distance Between Medial and Iliac line in d:D Ratio
99PMSBLUS	C7470-25	Thickness
99PMSBLUS	C7470-26	Internal Dimension
99PMSBLUS	C7470-27	D-E Excursion
99PMSBLUS	C7470-28	% Thickening
99PMSBLUS	C7471-01	Area 1 of Area Percent Reduction
99PMSBLUS	C7471-02	Area 2 of Area Percent Reduction
99PMSBLUS	C7471-05	Epicardial Area
99PMSBLUS	C7471-06	Flow Area
99PMSBLUS	C7471-07	Endocardial Area
99PMSBLUS	C12203-07	Area under LV E Tissue Velocity
99PMSBLUS	C12203-08	Area under LV A Tissue Velocity

Context: XX3613, Pediatric Echo Time Measurements

CSD	CV	CM
99PMSBLUS	C3613-01	Closure to Opening Time
99PMSBLUS	C3613-02	Isovolumic Relaxation Time
99PMSBLUS	C3613-03	Isovolumic Contraction Time
99PMSBLUS	C3613-04	Ejection Time
99PMSBLUS	C3613-05	Pre-Ejection Time
99PMSBLUS	C3613-06	Heart Rate-Corrected Ejection Time
99PMSBLUS	C3613-07	Heart Rate-Corrected Pre-Ejection Time
99PMSBLUS	C3613-08	A Wave Duration
99PMSBLUS	C3613-09	Ratio of Pre-Ejection Time to Ejection Time

Table of Units Codes

CSD	CSV	CV	CM
UCUM	1.4	mm	mm
UCUM	1.4	ms	ms
UCUM	1.4	1/min	bpm
UCUM	1.4	mm/s	mm/s
UCUM	1.4	mm2	mm2
UCUM	1.4	mm3	mm3
UCUM	1.4	mm[Hg]	mmHg
UCUM	1.4	mm/s2	mm/s2
UCUM	1.4	mm[Hg]/s	mmHg/s
UCUM		1	no units
UCUM		%	Percent
UCUM	1.4	g	grams
UCUM	1.4	d	days
UCUM	1.4	deg	deg
UCUM	1.4	mm3/s	mm3/s
UCUM	1.4	mm/s2	mm/s2
UCUM	1.4	g/m2	g/m2
UCUM	1.4	l/min/m2	l/min/m2
UCUM	1.4	ml/m2	ml/m2
UCUM	1.4	m2	m2

OB only and patient characteristics:

CSD	CSV	CV	CM
UCUM		{0:2}	range {0:2}
UCUM		{0:8}	range {0:8}
UCUM	1.4	m	m
UCUM	1.4	kg	kg

APPENDIX B – BULK PRIVATE TAGS

B.1 BULK PRIVATE TAGS

The private tags listed below are intended to provide awareness of large data sets of private data from iU22 and iE33 datasets

Attribute Name	DICOM Tag	VR	Description
Private Data	200D.300E	OB	Bulk data
Private Data	200D,300B	OB	Bulk data
Private Data	200D,3CF3	OB	Bulk data

***** End of Document *****