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**12.3.3.1.1 DIMSE Service Group (N-SET)**

The N-SET DIMSE Service is used by Vivid and EchoPAC Software Only v206 to update the Basic Grayscale Image Box SOP Instance. Table 12.5.6 defines the Basic Image Box Presentation Module attributes used.

**12.3.3.2 Basic Color Image Box SOP Class**

The Basic Color Image Box IOD is an abstraction of the presentation of an image and image related data in the image area of a film. The DIMSE services that are applicable to the IOD are shown in Table 12.3.4.

**TABLE 12.3.4  
DIMSE SERVICE GROUP**

DIMSE Service Element	Usage SCU	Reference
N-SET	M	see 12.3.3.2.1

**12.3.3.2.1 DIMSE Service Group (N-SET)**

The N-SET DIMSE Service is used by Vivid and EchoPAC Software Only v206 to update the Basic Color Image Box SOP Instance. Table 12.5.6 defines the Basic Image Box Presentation Module attributes used.

**12.3.4 Printer SOP Class**

The Printer IOD is an abstraction of the hard copy printer and is the basic Information Entity to monitor the status of the printer. The DIMSE services that are applicable to the IOD are shown in Table 12.3.5.

**12.3.4.1 DIMSE Service Group**

**TABLE 12.3.5  
DIMSE SERVICE GROUP**

DIMSE Service Element	Usage SCU	Reference
N-EVENT-REPORT	M	see 12.3.4.1.1
N-GET	U	see 12.3.4.1.2

**12.3.4.1.1 N-EVENT\_REPORT**

Vivid and EchoPAC Software Only v206 confirms the N-EVENT-REPORT initiated by the SCP (printer).

**12.3.4.1.2 N-GET**

Used by Vivid and EchoPAC Software Only v206 to request the SCP to get a Printer SOP Instance. Table 12.5.7 defines the Printer Module attributes.

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**12.4 PRINT MANAGEMENT IODS**

Within an entity of a DICOM Print Management, attributes are grouped into a related set of attributes. A set of related attributes is termed a module. A module facilitates the understanding of the semantics concerning the attributes and how the attributes are related with each other. A module grouping does not infer any encoding of information into datasets.

Table 12.4.1, Table 12.4.2, Table 12.4.3 and Table 12.4.4 identify the defined modules within the entities which comprise the DICOM Print Management Service IODs.

Modules are identified by Module Name.

See DICOM for a complete definition of the entities, modules and attributes.

**12.4.1 Film Session IOD Module**

**TABLE 12.4.1  
FILM SESSION IOD MODULES**

<b>Module Name</b>	<b>Reference</b>	<b>Module Description</b>
SOP Common Module	12.5.2.1	Contains SOP Common information
Basic Film Session Presentation Module	12.5.2.1	Contains Film Session presentation information
Basic Film Session Relationship Module	12.5.2.2	References to related SOPs

**12.4.2 Basic Film Box IOD Module Table**

**TABLE 12.4.2  
BASIC FILM BOX IOD MODULES**

<b>Module Name</b>	<b>Reference</b>
SOP Common Module	12.5.1.1
Basic Film Box Presentation Module	12.5.2.3
Basic Film Box Relationship Module	12.5.2.2

**12.4.3 Basic Image Box IOD Module Table**

**TABLE 12.4.3  
BASIC IMAGE BOX IOD MODULES**

<b>Module Name</b>	<b>Reference</b>
SOP Common Module	12.5.1.1
Image Box Pixel Presentation Module	12.5.2.5

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**12.4.4 Printer IOD Module Table**

**TABLE 12.4.4  
PRINTER IOD MODULES**

Module Name	Reference
SOP Common Module	12.5.1.1
Printer Module	12.5.2.6

**12.5 INFORMATION MODULE DEFINITIONS**

Please refer to DICOM Standard Part 3 (Information Object Definitions) for a description of each of the entities and modules that comprise the Print Management.

The following modules are included to convey Enumerated Values, Defined Terms, and Optional Attributes supported.

**12.5.1 General Modules**

**12.5.1.1 SOP Common Module**

This section defines the attributes that are required for proper functioning and identification of the associated SOP Instances. They do not specify any semantics about the Real-World Object represented by the IOD.

**TABLE 12.5.1  
SOP COMMON MODULE ATTRIBUTES**

Attribute Name	Tag	Type	Attribute Description
SOP Class UID	(0008,0016)	1	Varies with Module Instance and DIMSE Service being used. 1.2.840.100011.5.1.1.1 (Film Session) 1.2.840.100011.5.1.1.2 (Film Box) 1.2.840.100011.5.1.1.4 (Image Box)
SOP Instance UID	(0008,0018)	1	Provided by SCP (printer).
Specific Character Set	(0008,0005)	1C	Not used as expanded or replacement character sets not used.
Instance Creation Date	(0008,0012)	3	Not used.
Instance Creation Time	(0008,0013)	3	Not used.
Instance Creator UID	(0008,0014)	3	Not used.

**12.5.2 Print Management Modules**

For all user configurable tags with no default, no value will be sent if the tag is not configured.

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**12.5.2.1 Basic Film Session Presentation Module**

This section defines the attributes that are common for all films of a film session. The attributes described in Table 12.5.2 apply when the N-CREATE DIMSE service is used.

**TABLE 12.5.2**

**BASIC FILM SESSION PRESENTATION MODULE ATTRIBUTES**

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Number of Copies	(2000,0010)	U	Defined Terms used (user configurable): Default is 1. Max is 99.
Print Priority	(2000,0020)	U	Defined Terms used (user configurable): HIGH, MED, LOW. Default is HIGH.
Medium Type	(2000,0030)	U	Defined Terms used (user configurable): PAPER BLUE FILM CLEAR FILM Default is CLEAR FILM.
Film Destination	(2000,0040)	U	Defined Terms used (user configurable): MAGAZINE - default PROCESSOR
Film Session Label	(2000,0050)	U	User configurable. No default.
Memory Allocation	(2000,0060)	U	Not Used
Owner Id	(2100,0160)	U	Not Used

**12.5.2.2 Basic Film Session Relationship Module**

**TABLE 12.5.3**

**BASIC FILM SESSION RELATIONSHIP MODULE ATTRIBUTES**

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Referenced Film Box Sequence	(2000,0500)	U	Not used
>Referenced SOP Class UID	(0008,1150)	U	
>Referenced SOP Instance UID	(0008,1155)	U	

**12.5.2.3 Basic Film Box Presentation Module**

The attributes described in Table 12.5.4 apply when the N-CREATE DIMSE service is used.

**TABLE 12.5.4  
BASIC FILM BOX PRESENTATION MODULE ATTRIBUTES**

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Image Display Format	(2010,0010)	M	Enumerated values used (user configurable):  STANDARD\X,Y, where X and Y can take values from 1 to 5.  Default is STANDARD\1,1.
Annotation Display Format ID	(2010,0030)	U	Not used.
Film Orientation	(2010,0040)	U	Defined Terms used (user configurable):  PORTRAIT - default  LANDSCAPE
Film Size ID	(2000,0050)	U	Defined Terms used (user configurable):  8INX10IN - default 10INX12IN 10INX14IN 11INX14IN 14INX14IN 14INX17IN 24CMX24CM 24CMX30CM
Magnification Type	(2010,0060)	U	Defined Terms Used (user configurable):  REPLICATE - default BILINEAR CUBIC NONE
Smoothing Type	(2010,0080)	U	Free form text entry field (user configurable) and only sent if Magnification Type is CUBIC.  No default
Border Density	(2010,0100)	U	Defined Terms Used (user configurable):  BLACK WHITE  Default is BLACK.

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Empty Image Density	(2010,0110)	U	Defined Terms Used (user configurable): BLACK WHITE Default is WHITE.
Min Density	(2010,0120)	U	User configurable. No default. Max is 999.
Max Density	(2010,0130)	U	User configurable. No default. Max is 999.
Trim	(2010,0140)	U	Enumerated Values Used (user configurable): YES NO Default is NO.
Configuration Information	(2010,0150)	U	User configurable. No default.

### 12.5.2.4 Basic Film Box Relationship Module

This section defines the attributes that describe the common parameters, which apply for all images on a given sheet of film.

**TABLE 12.5.5**  
**BASIC FILM BOX RELATIONSHIP MODULE ATTRIBUTES**

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Referenced Film Session Sequence	(2010,0500)	M	
>Referenced SOP Class UID	(0008,1150)	M	1.2.840.10008.5.1.1.1
>Referenced SOP Instance UID	(0008,1155)	M	Provided by SCP (printer)
Referenced Image Box Sequence	(2010,0510)	U	Used for the subsequent handling of Image Boxes
>Referenced SOP Class UID	(0008,1150)	U	
>Referenced SOP Instance UID	(0008,1155)	U	
Referenced Basic Annotation Sequence	(2010,0520)	U	Not used
>Referenced SOP Class UID	(0008,1150)	U	
>Referenced SOP Instance UID	(0008,1155)	U	

### 12.5.2.5 Image Box Pixel Presentation Module

The attributes described in Table 12.5.6 apply when the DIMSE Service N-SET is used. The first attributes in the table are used for both grayscale and color printing. The attributes within the sequences are used for each type of printing respectively.

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**TABLE 12.5.6  
IMAGE BOX PIXEL PRESENTATION MODULE ATTRIBUTES**

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Image Position	(2020,0010)	M	Based on the image display format.
Polarity	(2020,0020)	U	Defined term, NORMAL
Requested Image Size	(2020,0030)	U	Not sent
Basic Grayscale Image Sequence	(2020,0110)	M	
>Samples Per Pixel	(0028,0002)	M	Value = '1'
>Photometric Interpretation	(0028,0004)	M	Defined Term MONOCHROME2 used
>Rows	(0028,0010)	M	Value depends on scanning mode and configuration setup.
>Columns	(0028,0011)	M	Value depends on scanning mode and configuration setup.
>Pixel Aspect Ratio	(0028,0034)	MC	Not used
>Bits Allocated	(0028,0100)	M	Value always = 0008H
>Bits Stored	(0028,0101)	M	Value always = 0008H
>High Bit	(0028,0102)	M	Value always = 0007H
>Pixel Representation	(0028,0103)	M	Defined Value '0' - unsigned integer
>Pixel Data	(7FE0,0010)	M	
Basic Color Image Sequence	(2020,0111)	M	
>Samples Per Pixel	(0028,0002)	M	Value = '3'
>Photometric Interpretation	(0028,0004)	M	Defined Term RGB used
>Rows	(0028,0010)	M	Value depends on scanning mode and configuration setup.
>Columns	(0028,0011)	M	Value depends on scanning mode and configuration setup.
>Pixel Aspect Ratio	(0028,0034)	MC	Not used
>Bits Allocated	(0028,0100)	M	Value always = 0008H
>Bits Stored	(0028,0101)	M	Value always = 0008H
>High Bit	(0028,0102)	M	Value always = 0007H
>Pixel Representation	(0028,0103)	M	Defined Value '0' - unsigned integer
>Pixel Data	(7FE0,0010)	M	
>Planar Configuration	(0028, 0006)	M	0001H, color-by-plane, when Basic Color Image Sequence is set

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**12.5.2.6 Printer Module**

This section defines the attributes that are used to monitor the status of the printer. The attributes described in Table 12.5.7 apply when the DIMSE Service N-GET is used.

**TABLE 12.5.7**

**PRINTER MODULE ATTRIBUTES**

Attribute Name	Tag	USAGE (SCU)	Attribute Description
Printer Status	(2110,0010)	U	Used to check the status of the printer before a print operation is started.  If the status is different from NORMAL, the print operation is aborted, a message is displayed, and the print files reside in the print buffer.
Printer Status Info	(2110,0020)	U	If return status is "FAILURE" an error message is displayed, and the print files resides in the print buffer.
Printer Name	(2110,0030)	U	Requested, but not used
Manufacturer	(0008,0070)	U	Requested, but not used
Manufacturer Model Name	(0008,1090)	U	Requested, but not used
Device Serial Number	(0018,1000)	U	Requested, but not used
Software Versions	(0018,1020)	U	Requested, but not used
Date Last Calibration	(0018,1200)	U	Requested, but not used
Last Calibration	(0018,1201)	U	Requested, but not used



## 13. STUDY ROOT QUERY/RETRIEVE INFORMATION MODEL DEFINITION

### 13.1 INTRODUCTION

This section specifies the use of the DICOM Study Root Query/Retrieve Model used to organize data and against which a Query/Retrieve will be performed. The contents of this section are:

**Error! Reference source not found.** - Information Model Description

13.2 - Information Model Entity-Relationship Model

13.3 - Information Model Keys

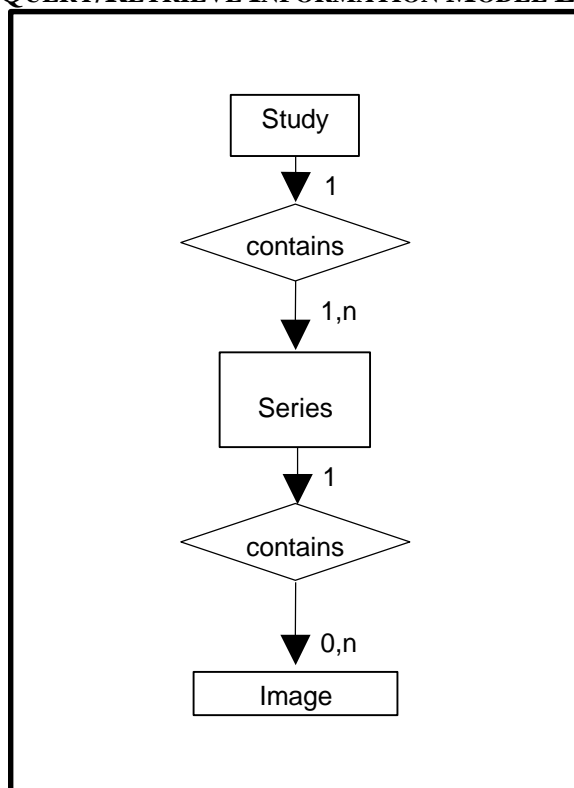
### 13.2 STUDY ROOT INFORMATION MODEL ENTITY-RELATIONSHIP MODEL

The Entity-Relationship diagram for the Study Root Information Model schema is shown in Illustration 13.2.1. In this figure, the following diagrammatic convention is established to represent the information organization:

- each entity is represented by a rectangular box
- each relationship is represented by a diamond shaped box.
- the fact that a relationship exists between two entities is depicted by lines connecting the corresponding entity boxes to the relationship boxes.

The relationships are fully defined with the maximum number of possible entities in the relationship shown. In other words, the relationship between Series and Image can have up to n Images per Series.

**ILLUSTRATION 13.2.1**  
**STUDY ROOT QUERY/RETRIEVE INFORMATION MODEL E/R DIAGRAM**



**13.2.1 Entity Descriptions**

Please refer to DICOM Standard PS 3.4 (Service Class Specifications) for a description of each of the levels contained within the Study Root Query/Retrieve Information Model.

**13.2.2 Vivid and EchoPAC Software Only v206 Mapping of DICOM entities**

**TABLE 13.2.1**  
**MAPPING OF DICOM ENTITIES TO VIVID v206 ENTITIES**

DICOM	Vivid and EchoPAC Software Only v206 Entity
Study	Exam
Series	Exam
Image	Image

**13.3 SCU OF THE STUDY ROOT Q/R - INFORMATION MODEL – FIND SOP CLASS**

As a Service Class User of the Study Root Q/R - Information Model - FIND SOP Class, the Vivid scanner and EchoPAC Software Only application use the C-FIND-RQ message and supports the Query Keys listed in Table 13.3.1 – Table 13.3.3.

The supported matching types listed in the Matching Type Column are:

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- SINGLE\_VALUE: SCU can request single value matching.
- UID: SCU can request UID matching.
- WILDCARD: SCU can request Wildcard matching.
- RANGE: SCU can request Range matching.
- SEQUENCE: SCU can request sequence matching.
- RETURN\_KEY: SCU can request attribute as a return value (universal matching).

All non-required matching fields can be configured in Config screen to be either enabled, enabled with a constant value, or disabled. The constant value will be used as entered by user.

For the Query Value Source column, the following values are supported:

- FIXED: The query value cannot be modified by the user or by configuration.
- GENERATED: The query value is generated by the system (e.g., current date as the study date).
- CONFIGURATION: The query value is dependent on system configuration.
- USER: The query value is entered by the user.
- SCANNED: The query value is read from a barcode scanner or similar device.
- EMPTY: The query value is left empty to indicate it is a return key only.

Supported matching keys for STUDY level queries are described in Table 13.3.1. This query takes place when the DICOM Q/R dataflow is selected. The goal of the query is to bring up a list of Patients and Studies so that the user can select which to retrieve.

**TABLE 13.3.1  
SUPPORTED STUDY LEVEL C-FIND MATCHING KEYS FOR STUDY ROOT Q/R MODEL -  
SCU**

Attribute Name	Tag	Matching Type	Query Value	Value	Display on UI	Comments
Specific Character Set	(0008,0005)	SINGLE_VALUE, RETURN_KEY	FIXED	ISO_IR 100		Set if extended characters are used in the query. ISO_IR 100 is supported in responses.
			EMPTY			Otherwise
Study Date	(0008,0020)	SINGLE_VALUE, RANGE, RETURN_KEY	USER, GENERATED, EMPTY			GENERATED means today's date. RANGE is specified in the "Exam before/after" UI fields.

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Attribute Name	Tag	Matching Type	Query Value	Value	Display on UI	Comments
Study Time	(0008,0030)	SINGLE_VALUE, RANGE, RETURN_KEY	CONFIGURAT ION, EMPTY			Range indicator is '-'
Accession Number	(0008,0050)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, USER, EMPTY			
Query Retrieve Level	(0008,0052)	SINGLE_VALUE	FIXED	STUDY		
Modalities in Study	(0008,0061)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			Modalities are separated by '\'
Referring Physician's Name	(0008,0090)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Study Description	(0008,1030)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Procedure Code Sequence	(0008,1032)	RETURN_KEY	EMPTY			
Name of Physician(s) Reading Study	(0008,1060)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Admitting Diagnoses Description	(0008,1080)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Referenced Study Sequence	(0008,1110)	RETURN_KEY	EMPTY			
Referenced Patient Sequence	(0008,1120)	RETURN_KEY	EMPTY			
Patient's Name	(0010,0010)	SINGLE_VALUE, WILDCARD, RETURN_KEY	USER, EMPTY			
Patient ID	(0010,0020)	SINGLE_VALUE, RETURN_KEY	USER, EMPTY			
Patient's Birth Date	(0010,0030)	SINGLE_VALUE, RANGE, RETURN_KEY	USER, EMPTY			Filtering is supported.
Patient's Birth Time	(0010,0032)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Patient's Sex	(0010,0040)	SINGLE_VALUE, RETURN_KEY	USER, EMPTY			Filtering is supported.
Other Patient IDs	(0010,1000)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Other Patient Names	(0010,1001)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Patient's Age	(0010,1010)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Patient's Size	(0010,1020)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Patient's Weight	(0010,1030)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			

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Attribute Name	Tag	Matching Type	Query Value	Value	Display on UI	Comments
Ethnic Group	(0010,2160)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Occupation	(0010,2180)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Additional Patient History	(0010,21B0)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Patient Comments	(0010,4000)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Study Instance UID	(0020,000D)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Study ID	(0020,0010)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, USER, EMPTY			
Other Study Numbers	(0020,1070)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Number of Patient Related Studies	(0020,1200)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Number of Patient Related Series	(0020,1202)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Number of Patient Related Instances	(0020,1204)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Number of Study Related Series	(0020,1206)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Number of Study Related Instances	(0020,1208)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Interpretation Author	(4008,010C)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			

Supported matching keys for SERIES level queries are described in Table 13.3.2. These queries take place after the STUDY level query, when the user has selected which Patient and Studies load; it is the first step of the “Retrieve” part of DICOM Query/Retrieve.

**TABLE 13.3.2**  
**SUPPORTED SERIES LEVEL C-FIND MATCHING KEYS FOR STUDY ROOT Q/R MODEL -SCU**

Attribute Name	Tag	Matching Type	Query Value	Value	Display on UI	Comments
Specific Character Set	(0008,0005)	SINGLE_VALUE, RETURN_KEY	FIXED	ISO_IR 100		Set if extended characters are used in the query.
			EMPTY			Otherwise
			EMPTY			

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Attribute Name	Tag	Matching Type	Query Value	Value	Display on UI	Comments
Series Date	(0008,0021)	SINGLE_VALUE, RANGE, RETURN_KEY	CONFIGURAT ION, EMPTY			Range indicator is character ‘-’
Series Time	(0008,0031)	SINGLE_VALUE, RANGE, RETURN_KEY	CONFIGURAT ION, EMPTY			Range indicator is character ‘-’
Query Retrieve Level	(0008,0052)	SINGLE_VALUE	FIXED	SERIES		
Modality	(0008,0060)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Series Description	(0008,103E)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Institutional Department Name	(0008,1040)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Performing Physicians’ Name	(0008,1050)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Operator’s Name	(0008,1070)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Software Versions	(0018,1020)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Protocol Name	(0018,1030)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Study Instance UID	(0020,000D)	UID	GENERATED			Study Instance UID is taken from STUDY level Query response
Series Instance UID	(0020,000E)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Series Number	(0020,0011)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Number of Series Related Instances	(0020,1209)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Performed Procedure Step Start Date	(0040,0244)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Performed Procedure Step Start Time	(0040,0245)	SINGLE_VALUE, RETURN_KEY	CONFIGURAT ION, EMPTY			
Request Attributes Sequence	(0040,0275)	RETURN_KEY	EMPTY			

Supported matching keys for IMAGE level queries are described in Table 13.3.3. Theses queries take place immediately after the SERIES level queries. The goal of the queries is

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to get a list of all the images to load; it is the second step of the Retrieve part of DICOM Query/Retrieve. (The third and final step is C-MOVE.)

**TABLE 13.3.3  
SUPPORTED IMAGE LEVEL C-FIND MATCHING KEYS FOR STUDY ROOT Q/R MODEL  
-SCU**

Attribute Name	Tag	Matching Type	Query Value	Value	Display on UI	Comments
Specific Character Set	(0008,0005)	SINGLE_VALUE, RETURN_KEY	FIXED	ISO_IR 100		Set if extended characters are used in the query.
			EMPTY			Otherwise
SOP Class UID	(0008,0016)	RETURN_KEY	EMPTY			
SOP Instance UID	(0008,0018)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Query Retrieve Level	(0008,0052)	SINGLE_VALUE	FIXED	IMAGE		
Contrast/Bolus Agent	(0018,0010)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			
Study Instance UID	(0020,000D)	UID	GENERATED			The value is taken from the STUDY level Query response
Series Instance UID	(0020,000E)	UID	GENERATED			The value is taken from the SERIES level Query response
Instance Number	(0020,0013)	SINGLE_VALUE, RETURN_KEY	CONFIGURATION, EMPTY			

**13.4 SCP OF THE STUDY ROOT Q/R - INFORMATION MODEL – FIND SOP CLASS - N/A**

Not supported.

**13.5 SCU OF THE STUDY ROOT Q/R - INFORMATION MODEL – MOVE SOP CLASS**

If no C-STORE requests are received within this configurable timeframe it repeats the C-MOVE-Request for the configured number of retries; and shows proper error to the user if no C-STORE requests received even after all retries.

**13.6 SCP OF THE STUDY ROOT Q/R - INFORMATION MODEL – MOVE SOP CLASS - N/A**

Not supported.

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**13.7 PRIVATE DATA DICTIONARY**

No private data dictionary is defined.



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**14. ADULT AND PEDIATRIC ECHOCARDIOGRAPHY  
PROCEDURE REPORTS**

This section describes the contents of the adult and pediatric echocardiography reports.

**14.1 USAGE AND EXTENSIONS OF TID 5200 ECHOCARDIOGRAPHY  
PROCEDURE REPORT**

	NL	Rel with Parent	VT	Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV (125200, DCM, "Adult Echocardiography Procedure Report")	1	M		Root node
2	>	HAS CONCEPT MOD	INCLUDE	DTID 1204 "Language of Content Item and Descendants"	1	U		
3	>	HAS OBS CONTEXT	INCLUDE	DTID 1001 "Observation Context <b>Concept</b> "	1	M		
4	>	CONTAINS	CONTAINER	DT (55111-9, LN, "Current Procedure Descriptions")	1	U		
5	>>	CONTAINS	CODE	DT (125203, DCM, "Acquisition Protocol")	1-n	M		BCID 12001 "Ultrasound Protocol Types"
6	>	CONTAINS	INCLUDE	DTID 5201 "Echocardiography Patient Characteristics"	1	U		
7	>	CONTAINS	CONTAINER	EV (111028, DCM, "Image Library")	1	U		
8	>>	CONTAINS	IMAGE	No purpose of reference	1-n	M		
9	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-32600, SRT, "Left Ventricle")  \$MeasType = DCID 12200 "Echocardiography Left Ventricle"
10	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-32500, SRT, "Right Ventricle")  \$MeasType = DCID 12204 "Echocardiography Right Ventricle"

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	NL	Rel with Parent	VT	Name	VM	Req Type	Condition	Value Set Constraint
11	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-32300, SRT, "Left Atrium")  \$MeasType = DCID 12205 "Echocardiography Left Atrium"
12	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-32200, SRT, "Right Atrium")  \$MeasType = DCID 12206 "Echocardiography Right Atrium"
13	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-35400, SRT, "Aortic Valve")  \$MeasType = DCID 12211 "Echocardiography Aortic Valve"
14	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-35300, SRT, "Mitral Valve")  \$MeasType = DCID 12207 "Echocardiography Mitral Valve"
15	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-35200, SRT, "Pulmonic Valve")  \$MeasType = DCID 12209 "Echocardiography Pulmonic Valve"
16	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-35100, SRT, "Tricuspid Valve")  \$MeasType = DCID 12208 "Echocardiography Tricuspid Valve"
17	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-42000, SRT, "Aorta")  \$MeasType = DCID 12212 "Echocardiography Aorta"
18	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-44000, SRT, "Pulmonary artery")

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	NL	Rel with Parent	VT	Name	VM	Req Type	Condition	Value Set Constraint
								\$MeasType = DCID 12210 "Echocardiography Pulmonary Artery"
19	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-48600, SRT, "Vena Cava")  \$MeasType = DCID 12215 "Echocardiography Vena Cavae"
20	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-48581, SRT, "Pulmonary Venous Structure")  \$MeasType = DCID 12214 "Echocardiography Pulmonary Veins"
21	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-39050, SRT, "Pericardial cavity")  \$MeasType = DCID 12250 "Cardiac Ultrasound Common Linear Measurements"
22	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (P5-30031, SRT, "Cardiac Shunt Study")  \$MeasType = DCID 12217 "Echocardiography Cardiac Shunt"
23	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (D4-30000, SRT, "Congenital Anomaly of Cardiovascular System")  \$MeasType = DCID 12218 "Echocardiography Congenital"
24	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-42102, SRT, "Aortic Sinotubular Junction")
25	>	CONTAINS	INCLUDE	DTID 5202 "Echo Section"	1	U		\$SectionSubject = EV (T-42200, SRT, "Sinus of Valsalva")

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	NL	Rel with Parent	VT	Name	VM	Req Type	Condition	Value Set Constraint
26	>	CONTAINS	INCLUDE	DTID 5202 “Echo Section”	1	U		\$SectionSubject = EV (T-43000, SRT, “Coronary Artery”)
27	>	CONTAINS	INCLUDE	DTID 5202 “Echo Section”	1	U		\$SectionSubject = EV (D4-31012, SRT, “Patent Foramen Ovale”)
28	>	CONTAINS	INCLUDE	DTID 5202 “Echo Section”	1	U		\$SectionSubject = EV (D4-32012, SRT, “Sinus of Valsalva”)
29	>	CONTAINS	INCLUDE	DTID 5202 “Echo Section”	1	U		\$SectionSubject = EV (GEU-106-0056, 99GEMS, “Mitral Valve (prosthetics)”)
30	>	CONTAINS	INCLUDE	DTID 5202 “Echo Section”	1	U		\$SectionSubject = EV (GEU-106-0057, 99GEMS, “Aortic Valve (prosthetics)”)
31	>	CONTAINS	INCLUDE	DTID 5202 “Echo Section”	1	U		\$SectionSubject = EV (T-42300, SRT, “Aortic Arch”)
32	>	CONTAINS	INCLUDE	CTID 5202 “Echo Section”	1	U		\$SectionSubject = EV (T-43110, SRT, “Anterior Descending Branch of Left Coronary Artery”)

**14.2 USAGE AND EXTENSION OF TID 5220 PEDIATRIC, FETAL AND CONGENITAL CARDIAC ULTRASOUND REPORTS**

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	DCID 12245 “Cardiac Ultrasound Report Titles”	1	M		Root node
	>	HAS CONCEPT MODE	INCLUDE	DTID 1204 “Language of Content Item and Descendants”	1	M		

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	>	HAS OBS CONTEXT	INCLUDE	DTID 1001 "Observation Context"	1	M		
	>	CONTAINS	CONTAINER	EV (18785-6, LN, "Indications for Procedure")	1	U		
	>>	CONTAINS	CODE	EV (121071, DCM, "Finding")	1-n	U		DCID 12246 "Cardiac Ultrasound Indication for Study"
	>>	CONTAINS	TEXT	EV (121071, DCM, "Finding")	1	U		
	>	CONTAINS	INCLUDE	DTID 3802 "Cardiovascular Patient History"	1	U		
	>	CONTAINS	INCLUDE	DTID 3602 "Cardiovascular Patient Characteristics"	1	U		
	>	CONTAINS	INCLUDE	DTID 5225 "Cardiac Ultrasound Fetal Characteristics"	1-n	U		No more than one inclusion per fetus
	>	CONTAINS	INCLUDE	DTID 5226 "Cardiac Ultrasound Summary Section"	1	U		
	>	CONTAINS	INCLUDE	DTID 5227 "Cardiac Ultrasound Fetal Summary Section"	1-n	U		No more than one inclusion per fetus
	>	CONTAINS	CONTAINER	EV (111028, DCM, "Image Library")	1	U		
	>>	CONTAINS	IMAGE	No purpose of reference	1	U		
	>	CONTAINS	INCLUDE	DTID 5221 "Cardiac Ultrasound Pediatric Echo Measurement Section"	1	U		
	>	CONTAINS	INCLUDE	DTID 5228 "Cardiac Ultrasound Fetal Measurement Section"	1-n	UC	For Fetal Report Only	No more than one inclusion per fetus

**14.3 TID 3602 CARDIOVASCULAR PATIENT CHARACTERISTICS**

	NL	Relation with Parent	Value Type	Concept Name	VM	Req Type	Condition	Value Set Constraint
1			CONTAINER	EV (121118, DCM, "Patient Characteristics")	1	M		
	>	CONTAINS	NUM	EV (121033, DCM, "Subject Age")	1	M		Units = DCID (7456) Units of Measure for Age
	>	CONTAINS	CODE	EV (121032, DCM, "Subject Sex")	1	M		DCID (7455) Sex
	>	CONTAINS	NUM	EV (8302-2, LN, "Patient Height")	1	M		UNITS = EV (cm, UCUM, "cm")
	>	CONTAINS	NUM	EV (29463-7, LN, "Patient Weight")	1	M		UNITS = EV (kg, UCUM, "kg")
	>	CONTAINS	NUM	EV (122221, DCM, "Thorax Diameter, sagittal")	1	U		UNITS = EV (cm, UCUM, "cm")

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	>	CONTAINS	NUM	EV (8277-6., LN, "Body Surface Area")	1	MC	IF BSA used for indexed measurements in SOP Instance	UNITS = EV (kg/m2, UCUM, "kg/m2)
	>>	INFERRED FROM	CODE	EV (9278-4, LN, "Body Surface Area Formula")	1	U		BCID 3663 "Body Surface Area Equations"
	>	CONTAINS	NUM	EV (F-01860, SRT, "Body Mass Index")	1	U		UNITS = EV (kg/m2, UCUM, "kg/m2)
	>>>	INFERRED FROM	CODE	EV (121420, DCM, "Equation")	1	U		DT (122265, DCM, "BMI = Wt/Ht^2")
	>	CONTAINS	NUM	EV (8867-4, LN, "Heart Rate")	1	U		UNITS = EV ({H.B.}/min, UCUM, "BPM")
	>	CONTAINS	NUM	EV (F-008EC, SRT, "Systolic Blood Pressure")	1	U		UNITS = DCID 3500 "Pressure Units"
	>	CONTAINS	NUM	EV (F-008ED, SRT, "Diastolic Blood Pressure")	1	U		UNITS = DCID 3500 "Pressure Units"
	>	CONTAINS	CODE	DT (8884-9, LN, "Cardiac Rhythm")	1	U		BCID 3415 "Cardiac Rhythms"
	>	CONTAINS	NUM	EV (F-03D8C, SRT, "Chest Circumference")	1	U		UNITS = EV (cm, UCUM, "cm")
	>	CONTAINS	TEXT	EV (F-009E4, SRT, "Breast size")	1	U		Bra size as text string
	>	CONTAINS	CODE	EV (121071, DCM, "Finding")	1	U		DCID 3202 "Chest Pain"
	>	CONTAINS	CODE	EV (F-04FCC, SRT, "Functional capacity")	1	U		DCID 3719 "Canadian Clinical Classification"
	>	CONTAINS	CODE	EV (F-04FCC, SRT, "Functional capacity")	1	U		DCID 3736 "NYHA Classification"
	>	CONTAINS	CODE	EV (121071, DCM, "Finding")	1-n	U		
	>	CONTAINS	TEXT	EV (121110, DCM, "Patient Presentation")	1	U		

## 14.4 MEASUREMENTS MAPPING TO STRUCTURED REPORTS

This table maps the product's internal parameter ids (each parameter id has a corresponding alias which is the parameter name displayed in the product's user interface) and in some cases the mode to:

(Anatomy) Section, Base Measurement and Modifiers in Echocardiography Procedure Report (TID 5200) SR. The parameters are grouped by Section.

Note: If "Use older SR version" is enabled (see 2.6, 3.6 and 7) the corresponding mapping table present in the DICOM Conformance Statement of the selected version should be used.

**Section Left Ventricle**

<b>GEU Parameter ID (and corresponding alias)</b>	<b>Base Measurement Concept Name</b>	<b>Concept or Acquisition Context Modifier</b>
<b>GPSL(4D)</b>  <b>Alias: GPSL</b>	<b>(GEU-106-0001, 99GEMS, "Global Peak Longitudinal Strain")</b>	<b>(G-0373, SRT, "Image Mode") = (125231, DCM, "3D mode")</b>
<b>LVd Mass(4D)</b>  <b>Alias: EDMass</b>	<b>(18087-7, LN, "Left Ventricle Mass")</b>	<b>(G-0373, SRT, "Image Mode") = (125231, DCM, "3D mode") (R-4089A, SRT, "Cardiac Cycle Point") = (F-32010, SRT, "Diastole") (G-C036, SRT, "Measurement Method") = (GEU-106-0023, 99GEMS, "4D Auto Left Ventricle Quantification")</b>
<b>LVs Mass(4D)</b>  <b>Alias: ESMass</b>	<b>(18087-7, LN, "Left Ventricle Mass")</b>	<b>(G-0373, SRT, "Image Mode") = (125231, DCM, "3D mode") (R-4089A, SRT, "Cardiac Cycle Point") = (F-32020, SRT, "Systole") (G-C036, SRT, "Measurement Method") = (GEU-106-0023, 99GEMS, "4D Auto Left Ventricle Quantification")</b>
<b>Auto2DEF/HR_2Ch_Q</b>  <b>Alias: HR_2Ch_Q</b>	<b>(8867-4, LN, "Heart rate")</b>	<b>(111031, DCM, "Image View") = (G-A19B, SRT, "Apical two chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-</b>

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		0019, 99GEMS, "2D Auto EF")
Auto2DEF/LVVED_2Ch_Q Alias: LVVED_2Ch_Q	(18026-5, LN, "Left Ventricular End Diastolic Volume")	(111031, DCM, "Image View") = (G-A19B, SRT, "Apical two chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")
Auto2DEF/LVVES_2Ch_Q Alias: LVVES_2Ch_Q	(18148-7, LN, "Left Ventricular End Systolic Volume")	(111031, DCM, "Image View") = (G-A19B, SRT, "Apical two chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")
Auto2DEF/LVEF_2Ch_Q Alias: LVEF_2Ch_Q	(18043-0, LN, "Left Ventricular Ejection Fraction")	(111031, DCM, "Image View") = (G-A19B, SRT, "Apical two chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")
Auto2DEF/LVSV_2Ch_Q Alias: LVSV_2Ch_Q	(F-32120, SRT, "Stroke Volume")	(111031, DCM, "Image View") = (G-A19B, SRT, "Apical two chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")
Auto2DEF/LVCO_2Ch_Q Alias: LVCO_2Ch_Q	(F-32100, SRT, "Cardiac Output")	(111031, DCM, "Image View") = (G-A19B, SRT, "Apical two chamber") (G-C036, SRT,



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		"Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")
Auto2DEF/LVLs_2Ch_Q Alias: LVLs_2Ch_Q	(18073-7, LN, "Left Ventricular Major Axis Systolic Dimension, 2-chamber view")	(G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")
Auto2DEF/LVLd_2Ch_Q Alias: LVLd_2Ch_Q	(18072-9, LN, "Left Ventricular Major Axis Diastolic Dimension, 2-chamber view")	(G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")
Auto2DEF/HR_4Ch_Q Alias: HR_4Ch_Q	(8867-4, LN, "Heart rate")	(111031, DCM, "Image View") = (G-A19C, SRT, "Apical four chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")
Auto2DEF/LVVED_4Ch_Q Alias: LVVED_4Ch_Q	(18026-5, LN, "Left Ventricular End Diastolic Volume")	(111031, DCM, "Image View") = (G-A19C, SRT, "Apical four chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")
Auto2DEF/LVVES_4Ch_Q Alias: LVVES_4Ch_Q	(18148-7, LN, "Left Ventricular End Systolic Volume")	(111031, DCM, "Image View") = (G-A19C, SRT, "Apical four chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")

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<p><b>Auto2DEF/LVEF_4Ch_Q</b></p> <p><b>Alias: LVEF_4Ch_Q</b></p>	<p><b>(18043-0, LN, "Left Ventricular Ejection Fraction")</b></p>	<p><b>(111031, DCM, "Image View") = (G-A19C, SRT, "Apical four chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")</b></p>
<p><b>Auto2DEF/LVSV_4Ch_Q</b></p> <p><b>Alias: LVSV_4Ch_Q</b></p>	<p><b>(F-32120, SRT, "Stroke Volume")</b></p>	<p><b>(111031, DCM, "Image View") = (G-A19C, SRT, "Apical four chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")</b></p>
<p><b>Auto2DEF/LVCO_4Ch_Q</b></p> <p><b>Alias: LVCO_4Ch_Q</b></p>	<p><b>(F-32100, SRT, "Cardiac Output")</b></p>	<p><b>(111031, DCM, "Image View") = (G-A19C, SRT, "Apical four chamber") (G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")</b></p>
<p><b>Auto2DEF/LVLs_4Ch_Q</b></p> <p><b>Alias: LVLs_4Ch_Q</b></p>	<p><b>(18075-2, LN, "Left Ventricular Major Axis Systolic Dimension, 4-chamber view")</b></p>	<p><b>(G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")</b></p>
<p><b>Auto2DEF/LVLd_4Ch_Q</b></p> <p><b>Alias: LVLd_4Ch_Q</b></p>	<p><b>(18074-5, LN, "Left Ventricular Major Axis Diastolic Dimension, 4-chamber view")</b></p>	<p><b>(G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")</b></p>
<p><b>Auto2DEF/LVVED_BiP_Q</b></p> <p><b>Alias: LVVED_BiP_Q</b></p>	<p><b>(18026-5, LN, "Left Ventricular End Diastolic Volume")</b></p>	<p><b>(G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")</b></p>

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<b>Auto2DEF/LVVES_BiP_Q</b> <b>Alias: LVVES_BiP_Q</b>	<b>(18148-7, LN, "Left Ventricular End Systolic Volume")</b>	<b>(G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")</b>
<b>Auto2DEF/LVEF_BiP_Q</b> <b>Alias: LVEF_BiP_Q</b>	<b>(18043-0, LN, "Left Ventricular Ejection Fraction")</b>	<b>(G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")</b>
<b>Auto2DEF/LSV_BiP_Q</b> <b>Alias: LSV_BiP_Q</b>	<b>(F-32120, SRT, "Stroke Volume")</b>	<b>(G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")</b>
<b>Auto2DEF/LVCO_BiP_Q</b> <b>Alias: LVCO_BiP_Q</b>	<b>(F-32100, SRT, "Cardiac Output")</b>	<b>(G-C036, SRT, "Measurement Method") = (GEU-106-0019, 99GEMS, "2D Auto EF")</b>
<b>TomTec/LVFunction/EDV</b> <b>Alias: LVEDV(TomTec)</b>	<b>(18026-5, LN, "Left Ventricular End Diastolic Volume")</b>	<b>(G-C036, SRT, "Measurement Method") = (GEU-106-0021, 99GEMS, "4D Left Ventricle Volume")</b>
<b>TomTec/LVFunction/ESV</b> <b>Alias: LVESV(TomTec)</b>	<b>(18148-7, LN, "Left Ventricular End Systolic Volume")</b>	<b>(G-C036, SRT, "Measurement Method") = (GEU-106-0021, 99GEMS, "4D Left Ventricle Volume")</b>
<b>TomTec/LVFunction/SV</b> <b>Alias: SV(TomTec)</b>	<b>(F-32120, SRT, "Stroke Volume")</b>	<b>(G-C036, SRT, "Measurement Method") = (GEU-106-0021, 99GEMS, "4D Left Ventricle Volume")</b>
<b>TomTec/LVFunction/EF</b> <b>Alias: EF(TomTec)</b>	<b>(18043-0, LN, "Left Ventricular Ejection Fraction")</b>	<b>(G-C036, SRT, "Measurement Method") = (GEU-106-0021, 99GEMS, "4D Left Ventricle Volume")</b>

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		<b>Left Ventricle Volume")</b>
<b>TomTec/LVFunction/SDI16</b>  <b>Alias: SDI16(TomTec)</b>	<b>(GEU-106-0016, 99GEMS, "Systolic Dyssynchrony Index")</b>	<b>(G-C036, SRT, "Measurement Method") = (GEU-106-0021, 99GEMS, "4D Left Ventricle Volume")</b>
<b>LVLad(apical)</b>  <b>Alias: TEa(d)</b>	<b>(G-0377, SRT, "Left Ventricle Semi-major Axis Diastolic Dimension")</b>	
<b>LVLas(apical)</b> <b>Alias: LVLas Apical</b>	<b>(GEU-106-0067, 99GEMS, "Left ventricle Semi-major axis between apex and cavity minor radius")</b>	<b>(G-0373, SRT, "Image Mode") = (G-03A2, SRT, "2D mode") (R-4089A, SRT, "Cardiac Cycle Point") = (F-32020, SRT, "Systole") (G-C036, SRT, "Measurement Method") = (125222, DCM, "Left Ventricle Mass Truncated Ellipse")</b>
<b>LVLds(apical)</b> <b>Alias: LVLds Apical</b>	<b>(GEU-106-0068, 99GEMS, "Left ventricle truncated Semi-major axis between cavity minor radius and mitral valve")</b>	<b>(G-0373, SRT, "Image Mode") = (G-03A2, SRT, "2D mode") (R-4089A, SRT, "Cardiac Cycle Point") = (F-32020, SRT, "Systole") (G-C036, SRT, "Measurement Method") = (125222, DCM, "Left Ventricle Mass Truncated Ellipse")</b>
<b>LVLdd(apical)</b>  <b>Alias: Ted(d)</b>	<b>(G-0378, SRT, "Left Ventricle Truncated Semi-major Axis Diastolic Dimension")</b>	

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<p><b>LVd Mass(TE)</b> <b>Alias: LVd Mass TE</b></p>	<p><b>(18087-7, LN, “Left Ventricle Mass”)</b></p>	<p><b>(R-4089A, SRT, “Cardiac Cycle Point”) = (F-32010, SRT, “Diastole”) (G-C036, SRT, “Measurement Method”) = (125222, DCM, “Left Ventricle Mass Truncated Ellipse”)</b></p>
<p><b>LVd Mass Index(TE)</b> <b>Alias: LVd Mass Ind TE</b></p>	<p><b>(GEU-106-0028, 99GEMS, “Left Ventricle Mass Index”)</b></p>	<p><b>(R-4089A, SRT, “Cardiac Cycle Point”) = (F-32010, SRT, “Diastole”) (G-C036, SRT, “Measurement Method”) = (125222, DCM, “Left Ventricle Mass Truncated Ellipse”)</b></p>
<p><b>LVs Mass(TE)</b> <b>Alias: LVs Mass TE</b></p>	<p><b>(18087-7, LN, “Left Ventricle Mass”)</b></p>	<p><b>(R-4089A, SRT, “Cardiac Cycle Point”) = (F-32020, SRT, “Systole”) (G-C036, SRT, “Measurement Method”) = (125222, DCM, “Left Ventricle Mass Truncated Ellipse”)</b></p>
<p><b>LVLd(avg)</b> <b>Alias: LVLd(avg)</b></p>	<p><b>(18077-8, LN, “Left Ventricle diastolic major axis”)</b></p>	<p><b>(G-C036, SRT, “Measurement Method”) = (GEU-106-0017, 99GEMS, “Triplane”)</b></p>
<p><b>LVEDV(Geom)</b> <b>Alias: LVEDV(Geom)</b></p>	<p><b>(18026-5, LN, “Left Ventricular End Diastolic Volume”)</b></p>	<p><b>(G-C036, SRT, “Measurement Method”) = (GEU-106-0017, 99GEMS, “Triplane”)</b></p>
<p><b>LVLs(avg)</b> <b>Alias: LVLs(avg)</b></p>	<p><b>(18076-0, LN, “Left Ventricle systolic major axis”)</b></p>	<p><b>(G-C036, SRT, “Measurement Method”) = (GEU-106-</b></p>

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		<b>0017, 99GEMS, “Triplane”)</b>
<b>LVCd(avg) Alias: LVLs Avg</b>	<b>(GEU-106-0101, 99GEMS, “Left Ventricle Circumference by triplane method”)</b>	<b>(R-4089A, SRT, “Cardiac Cycle Point”) = (F-32010, SRT, “Diastole”) (G-C036, SRT, “Measurement Method”) = (GEU-106- 0017, 99GEMS, “Triplane”)</b>
<b>LVCs(avg) Alias: LVCs Avg</b>	<b>(GEU-106-0101, 99GEMS, “Left Ventricle Circumference by triplane method”)</b>	<b>(R-4089A, SRT, “Cardiac Cycle Point”) = (F-32020, SRT, “Systole”) (G-C036, SRT, “Measurement Method”) = (GEU-106- 0017, 99GEMS, “Triplane”)</b>
<b>LVESV(Geom) Alias: LVESV(Geom)</b>	<b>(18148-7, LN, “Left Ventricular End Systolic Volume”)</b>	<b>(G-C036, SRT, “Measurement Method”) = (GEU-106- 0017, 99GEMS, “Triplane”)</b>
<b>EF(Geom) Alias: EF(Geom)</b>	<b>(18043-0, LN, “Left Ventricular Ejection Fraction”)</b>	<b>(G-C036, SRT, “Measurement Method”) = (GEU-106- 0017, 99GEMS, “Triplane”)</b>
<b>SV(Geom) Alias: SV(Geom)</b>	<b>(F-32120, SRT, “Stroke Volume”)</b>	<b>(G-C036, SRT, “Measurement Method”) = (GEU-106- 0017, 99GEMS, “Triplane”)</b>
<b>CO(Geom) Alias: CO(Geom)</b>	<b>(F-32100, SRT, “Cardiac Output”)</b>	<b>(G-C036, SRT, “Measurement Method”) = (GEU-106- 0017, 99GEMS, “Triplane”)</b>

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<p><b>TSI/BS PeakVel</b> <b>Alias: BS PeakVel</b></p>	<p><b>(11726-7, LN, “Peak Velocity”)</b></p>	<p><b>(G-C0E3, SRT, “Finding Site”) = (R-10076, SRT, “left ventricle basal inferoseptal segment”) (G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)</b></p>
<p><b>TSI/BS TimeToPeak</b> <b>Alias: BS TimeToPeak</b></p>	<p><b>(GEU-106-0006, 99GEMS, “Time To Peak”)</b></p>	<p><b>(G-C0E3, SRT, “Finding Site”) = (R-10076, SRT, “left ventricle basal inferoseptal segment”) (G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)</b></p>
<p><b>TSI/MS PeakVel</b> <b>Alias: MS PeakVel</b></p>	<p><b>(11726-7, LN, “Peak Velocity”)</b></p>	<p><b>(G-C0E3, SRT, “Finding Site”) = (R-10078, SRT, “left ventricle mid inferoseptal segment”) (G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”)</b></p>

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		(G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)
<b>TSI/MS TimeToPeak</b> <b>Alias: MS TimeToPeak</b>	<b>(GEU-106-0006, 99GEMS, “Time To Peak”)</b>	(G-C0E3, SRT, “Finding Site”) = (R-10078, SRT, “left ventricle mid inferoseptal segment”) (G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)
<b>TSI/ML PeakVel</b> <b>Alias: ML PeakVel</b>	<b>(11726-7, LN, “Peak Velocity”)</b>	(G-C0E3, SRT, “Finding Site”) = (R-1007C, SRT, “left ventricle mid anterolateral segment”) (G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)



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<p><b>TSI/ML TimeToPeak</b> <b>Alias: ML TimeToPeak</b></p>	<p><b>(GEU-106-0006, 99GEMS, “Time To Peak”)</b></p>	<p><b>(G-C0E3, SRT, “Finding Site”) = (R- 1007C, SRT, “left ventricle mid anterolateral segment”)</b> <b>(G-0373, SRT, “Image Mode”) = (GEU-106- 0024, 99GEMS, “Tissue Doppler Imaging”)</b> <b>(G-C036, SRT, “Measurement Method”) = (GEU-106- 0020, 99GEMS, “Tissue Synchronization Imaging”)</b></p>
<p><b>TSI/BL PeakVel</b> <b>Alias: BL PeakVel</b></p>	<p><b>(11726-7, LN, “Peak Velocity”)</b></p>	<p><b>(G-C0E3, SRT, “Finding Site”) = (R- 1007A, SRT, “left ventricle basal anterolateral segment”)</b> <b>(G-0373, SRT, “Image Mode”) = (GEU-106- 0024, 99GEMS, “Tissue Doppler Imaging”)</b> <b>(G-C036, SRT, “Measurement Method”) = (GEU-106- 0020, 99GEMS, “Tissue Synchronization Imaging”)</b></p>
<p><b>TSI/BL TimeToPeak</b> <b>Alias: BL TimeToPeak</b></p>	<p><b>(GEU-106-0006, 99GEMS, “Time To Peak”)</b></p>	<p><b>(G-C0E3, SRT, “Finding Site”) = (R- 1007A, SRT, “left ventricle basal anterolateral segment”)</b> <b>(G-0373, SRT, “Image Mode”) = (GEU-106-</b></p>

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		0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106- 0020, 99GEMS, “Tissue Synchronization Imaging”)
TSI/BI PeakVel  Alias: BI PeakVel	(11726-7, LN, “Peak Velocity”)	(G-C0E3, SRT, “Finding Site”) = (T- 32615, SRT, “left ventricle basal inferior segment”) (G-0373, SRT, “Image Mode”) = (GEU-106- 0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106- 0020, 99GEMS, “Tissue Synchronization Imaging”)
TSI/BI TimeToPeak  Alias: BI TimeToPeak	(GEU-106-0006, 99GEMS, “Time To Peak”)	(G-C0E3, SRT, “Finding Site”) = (T- 32615, SRT, “left ventricle basal inferior segment”) (G-0373, SRT, “Image Mode”) = (GEU-106- 0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106- 0020, 99GEMS, “Tissue Synchronization Imaging”)

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<p><b>TSI/MI PeakVel</b> <b>Alias: MI PeakVel</b></p>	<p><b>(11726-7, LN, “Peak Velocity”)</b></p>	<p><b>(G-C0E3, SRT, “Finding Site”) = (T-32616, SRT, “left ventricle mid inferior segment”)</b> <b>(G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”)</b> <b>(G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)</b></p>
<p><b>TSI/MI TimeToPeak</b> <b>Alias: MI TimeToPeak</b></p>	<p><b>(GEU-106-0006, 99GEMS, “Time To Peak”)</b></p>	<p><b>(G-C0E3, SRT, “Finding Site”) = (T-32616, SRT, “left ventricle mid inferior segment”)</b> <b>(G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”)</b> <b>(G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)</b></p>
<p><b>TSI/MA PeakVel</b> <b>Alias: MA PeakVel</b></p>	<p><b>(11726-7, LN, “Peak Velocity”)</b></p>	<p><b>(G-C0E3, SRT, “Finding Site”) = (T-32617, SRT, “left ventricle mid anterior segment”)</b> <b>(G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”)</b></p>

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		(G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)
<b>TSI/MA TimeToPeak</b> <b>Alias: MA TimeToPeak</b>	(GEU-106-0006, 99GEMS, “Time To Peak”)	(G-C0E3, SRT, “Finding Site”) = (T-32617, SRT, “left ventricle mid anterior segment”) (G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)
<b>TSI/BA PeakVel</b> <b>Alias: BA PeakVel</b>	(11726-7, LN, “Peak Velocity”)	(G-C0E3, SRT, “Finding Site”) = (T-32619, SRT, “left ventricle basal anterior segment”) (G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)
<b>TSI/BA TimeToPeak</b> <b>Alias: BA TimeToPeak</b>	(GEU-106-0006, 99GEMS, “Time To Peak”)	(G-C0E3, SRT, “Finding Site”) = (T-32619, SRT, “left

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		ventricle basal anterior segment") (G-0373, SRT, "Image Mode") = (GEU-106-0024, 99GEMS, "Tissue Doppler Imaging") (G-C036, SRT, "Measurement Method") = (GEU-106-0020, 99GEMS, "Tissue Synchronization Imaging")
<b>TSI/BP PeakVel</b> <b>Alias: BP PeakVel</b>	<b>(11726-7, LN, "Peak Velocity")</b>	(G-C0E3, SRT, "Finding Site") = (R-10079, SRT, "left ventricle basal inferolateral segment") (G-0373, SRT, "Image Mode") = (GEU-106-0024, 99GEMS, "Tissue Doppler Imaging") (G-C036, SRT, "Measurement Method") = (GEU-106-0020, 99GEMS, "Tissue Synchronization Imaging")
<b>TSI/BP TimeToPeak</b> <b>Alias: BP TimeToPeak</b>	<b>(GEU-106-0006, 99GEMS, "Time To Peak")</b>	(G-C0E3, SRT, "Finding Site") = (R-10079, SRT, "left ventricle basal inferolateral segment") (G-0373, SRT, "Image Mode") = (GEU-106-0024, 99GEMS, "Tissue Doppler Imaging") (G-C036, SRT, "Measurement Method") = (GEU-106-

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		0020, 99GEMS, “Tissue Synchronization Imaging”)
TSI/MP PeakVel Alias: MP PeakVel	(11726-7, LN, “Peak Velocity”)	(G-C0E3, SRT, “Finding Site”) = (R- 1007B, SRT, “left ventricle mid inferolateral segment”) (G-0373, SRT, “Image Mode”) = (GEU-106- 0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106- 0020, 99GEMS, “Tissue Synchronization Imaging”)
TSI/MP TimeToPeak Alias: MP TimeToPeak	(GEU-106-0006, 99GEMS, “Time To Peak”)	(G-C0E3, SRT, “Finding Site”) = (R- 1007B, SRT, “left ventricle mid inferolateral segment”) (G-0373, SRT, “Image Mode”) = (GEU-106- 0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106- 0020, 99GEMS, “Tissue Synchronization Imaging”)
TSI/MAS PeakVel Alias: MAS PeakVel	(11726-7, LN, “Peak Velocity”)	(G-C0E3, SRT, “Finding Site”) = (R- 10077, SRT, “left ventricle mid anteroseptal segment”) (G-0373, SRT, “Image

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		Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)
TSI/MAS TimeToPeak Alias: MAS TimeToPeak	(GEU-106-0006, 99GEMS, “Time To Peak”)	(G-C0E3, SRT, “Finding Site”) = (R-10077, SRT, “left ventricle mid anteroseptal segment”) (G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)
TSI/BAS PeakVel Alias: BAS PeakVel	(11726-7, LN, “Peak Velocity”)	(G-C0E3, SRT, “Finding Site”) = (R-10075, SRT, “left ventricle basal anteroseptal segment”) (G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue

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		<b>Synchronization Imaging”)</b>
<b>TSI/BAS TimeToPeak</b> <b>Alias: BAS TimeToPeak</b>	<b>(GEU-106-0006, 99GEMS, “Time To Peak”)</b>	<b>(G-C0E3, SRT, “Finding Site”) = (R-10075, SRT, “left ventricle basal anteroseptal segment”) (G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)</b>
<b>TSI/BL minus BS</b> <b>Alias: Septal Lat delay</b>	<b>(GEU-106-0007, 99GEMS, “Septal Lateral Delay”)</b>	<b>(G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)</b>
<b>TSI/BP minus BAS</b> <b>Alias: Septal Post delay</b>	<b>(GEU-106-0008, 99GEMS, “Septal Posterior Delay”)</b>	<b>(G-0373, SRT, “Image Mode”) = (GEU-106-0024, 99GEMS, “Tissue Doppler Imaging”) (G-C036, SRT, “Measurement Method”) = (GEU-106-0020, 99GEMS, “Tissue Synchronization Imaging”)</b>